FIRST GENERATION COLLEGE STUDENT FINANCIAL LITERACY: IMPACT OF
SELF-EFFICACY AND BEHAVIOR

By

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of CHIO FLORES find it satisfactory and recommend that it be accepted.

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FIRST GENERATION COLLEGE STUDENT FINANCIAL LITERACY: IMPACT OF
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Abstract
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Financial literacy among college students has received considerable attention particularly
given the increasing costs of higher education and adverse financial behaviors including credit
card and loan indebtedness. Now, more than ever, it is important that higher education
administrators and educators take proactive steps to understand the components of financial
literacy. The purpose of this study was to explore the financial literacy of first generation, low-
income college students and the impact of self-efficacy and financial behavior. The study
examined the relationship and differences in the financial literacy level of first generation, low-
income students on the basis of academic and demographic measures, behavior, and self-
efficacy.

A financial framework was developed utilizing theories of social cognitive, self-efficacy
and behavior. The sample included 117 students, participants of Student Support Services, a
federal program that serves first generation, low-income and students with disabilities. The
Financial Literacy Self-Efficacy Survey measured the respondents’ financial literacy and self-
efficacy level and was modeled from the Jump$tart College Student Survey Questionnaire
(Mandell, 2008) and the Financial Self-Efficacy Scale (Lown, 2011).

The financial literacy score for the study sample was 57.8 percent, below a passing score
of 60 percent but within an average financial literacy level as defined by Mandell (2008). The
self-efficacy score was 14.89, out of a possible 24 points. The level of self-efficacy suggests that the study sample lacked self-efficacy based on Lown’s (2011) mean score of 17. The findings revealed that academic class, SAT/ACT scores, race/ethnicity and credit card use influenced financial literacy. The findings also indicate that the level of self-efficacy, credit debt, student loan debt, savings/investing and other demographic factors (i.e., employment, family income and gender) did not impact financial literacy.

The findings provide a greater understanding of the components that influence the financial literacy level of first generation, low-income college students. Based on the study results, recommendations are made for the development of financial literacy education programs for students that address their stage in college, demographic and behavioral patterns.
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CHAPTER 1: INTRODUCTION

Overview

In recent years, financial literacy among college students has gained increasingly greater attention particularly in relation to adverse financial behaviors (e.g., impulse buying, credit card and loan indebtedness, and low savings rates). The rising costs of higher education coupled with diminishing grant aid resources and mounting student loan indebtedness has also increased awareness of financial literacy specifically as it relates to issues of college access, affordability, retention and completion. The role of higher education has evolved significantly in the area of student services, including financial aid where many students are introduced to the reality of financing and budgeting for college. College students are increasingly assuming loans, using credit and often making decisions on a limited understanding of financial basics and concepts. Higher education institutions have a unique opportunity to influence a student’s development in positive fiscal practices because they combine a pivotal time frame, an educational setting, and a population with newly emerging responsibility for their financial affairs (Xiao, Shim, Barber, & Lyons, 2007). However, most higher education institutions are not equipped to provide additional programmatic support that aids in developing financial literacy among their student population. Some college and university administrators view financial literacy as a “life skill”, a distant or unsuitable priority. Institutions that engage in financial literacy initiatives often only do so irregularly or rely solely on departments such as the financial aid or bursar’s office to develop methods to combat bad financial decision making on part of the student (and in some cases, their parents). While there are several facets involved in understanding and achieving financial literacy, it is hard to argue against the notion that better informed students are more likely to make wise financial decisions during college and after graduation.
For most young adults, college marks the beginning of greater independence and personal responsibility. For many college students, it is the first time they are exposed to complex systems and processes such as academic planning, financial aid, and university billing. Given the increased scrutiny on college costs, high student loan reliance and an uncertain job market, higher education institutions are in a unique position to help students develop financial literacy and encourage prudent financial habits. In the case of first generation or low-income college students this is even more essential, as many do not often possess the academic and/or financial wherewithal - resources, confidence, and knowledge of higher education or the financial aid system to successfully negotiate their educational journey (Murphy & Hicks, 2006; Padilla, Trevino, Trevino, & Gonzalez, 1997). By focusing on the needs of first generation students, many of whom are low-income, institutions can develop strategies that result in a greater impact on retention and success with a growing subset of today’s college student population.

A student’s understanding of financial concepts and their level of self-efficacy is important in determining how well they will manage money, respond to or overcome financial obstacles. Tierney, Corwin and Colyar (2005) suggest that low-income students typically grow up with less access to financial knowledge than their higher income peers. At one point during their college career, students can and often experience times of financial stress. For the first generation, low-income student, the stress associated with finances has been found to be complicated by their experiences and circumstances which can further impact other aspects of their educational life, as well as, how well they respond or cope. Palmer et al., (2010) identified the most vulnerable groups among college students who tend to be adversely affected by financial stress as (a) low-income students, (b) women, (c) first-generation, and (d) minorities. Financial stress, particularly among at-risk students, further promotes low academic
performance, attrition and lower levels of wellness (Palmer et al., 2010; Pinto et al., 2001). The negative effects of financial stress on the retention of low-income students have increasingly become more apparent at public postsecondary institutions as aid resources become sparse (Carey & Dillon, 2011). Given that Lyons (2004) found that low-income students are also more at risk for dropping out for financial reasons because they have no safety net (i.e., more likely to have little or no financial support from their parents), financial stress can further potentially impact an institution’s retention and graduation rates.

**Statement of the Problem**

The United States Treasury Department and the Financial Industry Regulatory Authority (2013) released a study that suggests financial capability varies greatly by socio-economic status and other demographics and that many Americans are failing to meet existing financial demands, engage in little or no planning for events (e.g., financing college or retirement) and emergencies, and do not demonstrate a good understanding of the financial decision-making process. Therefore, it is not surprising that future adult consumers, high school and college students, repeatedly demonstrate low levels of financial literacy (Mandell, 2008) and that younger borrowers make less sophisticated financial decisions in regards to auto loans, credit cards, and cash advances (Agarwal, Driscoll, Gabaix, & Laibson, 2009). Several studies suggest that college students lack financial skills (Avard et al., 2005; Braunstein & Welch, 2002; Chen & Volpe, 1998; Eitel & Martin, 2009; Lyons, 2004, 2008; Thaden & Rookey, 2005). Researchers have also found that a growing number of college students are financially at risk because they misuse or mismanage credit cards and accumulate credit card debt to pay for college (Lyons, 2008; Norvilitis et al., 2006). The available research on low-income college students’ financial literacy indicate that in addition to those receiving need based aid, they are likely to have higher
student loan amounts and credit card debt than students from families with higher incomes (Lyons, 2004; Zhou & Su, 2000).

Higher education is viewed by the public as an environment that prepares students to be functional and productive members of society. The public expects university graduates to develop maturity, organizational skills, self-direction, self-discipline, critical thinking skills, problem solving skills and the ability to manage on their own (Immerwahr & Foleno, 2000). These expectations transcend a student’s academic life, incorporating personal and other aspects such as financial well-being. In recent years, higher education institutions have been grappling with significantly reduced operating budgets and staffing shortages, while also trying to provide a quality academic experience for students. At the same time, financial illiteracy is prevalent throughout the United States especially among individuals with no postsecondary education and low-income populations, with Hispanic and African-American communities disproportionately more illiterate (Lusardi, 2008). Rising costs, diminishing aid resources and growing student loan indebtedness have been contributed as factors in the urgency to solve financial illiteracy (Harnisch, 2010). While there are many factors confronting higher education that complicate its role in relation to financial literacy, the prevalence of financial illiteracy particularly with the first generation, low-income students, a growing college population, should send an alarming signal to educators and policymakers. Moreover, increased scrutiny and legislation that includes federal “school cost” watch lists, net price calculators, tax incentives, and new reporting of average loan indebtedness, graduation rates and proposed accountability measures that tie federal aid allocations to college success (White House Higher Education Issues Brief, 2014) should further galvanize higher education to respond and seek ways to eradicate financial illiteracy. The less financially literate a student is, the more likely it seems that he or she will experience or
encounter situations that could derail college completion. Given the changing demographics of college students, particularly among diverse, low-income and first generation groups, higher education institutions must recognize the need to adapt their actions and practices to meet their needs in order to increase persistence, retention and ultimately graduation rates (Nora & Crisp, 2009; Richardson & Skinner, 1990; Siedman, 2005; Tinto, 2006).

An understanding of how financial literacy can be assessed is an important consideration for higher education institutions that wish to engage in financial literacy efforts. The examination into how a student’s financial literacy level, financial behavior and self-efficacy may impact retention and success can potentially aid institutional efforts in developing programming or interventions. The factors identified in the study provide a lens into intersections between and/or the effect of financial literacy and self-efficacy on the financial behavior of first generation, low-income students. While higher levels of financial literacy is important for all students, the vulnerability of first generation, low-income students in terms of retention and graduation, calls for intentional action. A more in-depth understanding of the degree in which a first generation, low-income student’s self-efficacy and behavior shapes or is affected by financial literacy is more important today given the changing demographic landscape of college student participation.

**Theoretical Framework**

As access to credit cards has proliferated on college campuses (Education Resources Institute & The Institute for Higher Education Policy, 1998; Manning, 2000; Nellie Mae, 2005; U.S. General Accountability Office, 2001) researchers in disciplines such as economics, sociology, psychology and higher education administration have become increasingly interested in the financial conduct of college students (Xiao, Shim, Barber & Lyons, 2007). In addition,
financial consumer educators and researchers agree that there is a need for more attention to psychological aspects of behavior (Durban, 2010; Grable et al., 2010; Hira, 2010; Xiao et al., 2010). External variables and internal beliefs have been long recognized by psychologists as influencing human behavior. Psychosocial research is useful when attempting to determine the impact that a specific intervention can have on increasing self-efficacy and positive behavior. In particular, Bandura’s Social Cognitive Theory (1977, 1986, 1997) and Prochaska and DiClemente’s Transtheoretical Model (1984) have been successfully applied to financial behavior change in terms of self-efficacy, consumption, financial management and other behaviors relevant to financial risk reduction (Redding et al., 2000).

A theoretical framework that draws from key constructs of the Social Cognitive Theory and the Transtheoretical Model serves as an appropriate foundation to analyze where literacy, behavior and self-efficacy intersect and the impact this relationship may have on the financial well-being of college students. Furthermore, this framework can help demonstrate whether students from first generation and low-income backgrounds, including other key demographic factors, influence a student’s knowledge and confidence about finances and money management. If students can develop greater financial self-efficacy, it seems reasonable that they would be less prone to engaging in behavior that may lead to leaving school when faced with financial challenges. How financially literate students are depends on their background, level of knowledge, experience and skills, as well as, their application of financial concepts and tools. Therefore, a student’s positionality in terms of experience and readiness to learn and apply knowledge is also important to changing behavior.

A major factor influencing financial behavior is the feeling of self-efficacy, which is “having the confidence in one’s ability to deal with a situation without being overwhelmed”
The concept of self-efficacy is a central tenet of Albert Bandura’s (1977, 1986, and 1997). According to Social Cognitive Theory, individuals are more likely to attempt, to persist, and to succeed at activities or tasks when they possess a strong sense of self-efficacy (Bandura, 1977, 1986, 1997). Whether or not people undertake particular actions, attempt to perform particular tasks, or meet certain goals, depends on whether they believe that they will be successful in performing these actions (Bandura, 1986). The stronger a person’s perceived self-efficacy, the more one will exert effort and persist at a task (Fisk & Taylor, 1991). Therefore, in addition to having the literal resources (i.e., income) to demonstrate responsible financial management behavior, individuals must also feel that the information is important and relevant and will enable them to make a difference in the outcome (Perry & Morris, 2005). College students may have little monetary resources and given the fact that many rely on financial aid to finance their education, a strong sense of self-efficacy could enable them to demonstrate more positive financial behavior (i.e., staying within their budget, minimizing use of credit, and assuming less student loans).

Self-efficacy (the belief in one’s ability to perform well) alone cannot change financial behavior but rather serves as an important construct in understanding how certain individuals respond when making decisions throughout their lives. In their Transtheoretical Model of Behavior Change, Prochaska and DiClemente (1984) conceptualize behavior change as a five-stage process or continuum relating to a person's readiness to change spanning from the pre-contemplation, contemplation, preparation, action to maintenance stage. The Transtheoretical Model has been applied to financial behavior change within the areas of credit counseling and debt (Shockey & Seiling, 2004; Xiao, 2008; Xiao et al., 2004) and is based on the constructs of self-efficacy, decisional balance and the process of behavior change (Prochaska, Norcross &
DiClemente, 1994). If a heightened level self-efficacy sustains motivation and improves skills development (Schunk, 1991), then self-efficacy should lead to performance of some behavior. In determining whether financial literacy or knowledge has an impact on behavior, a better understanding of a student’s level of self-efficacy can help higher education institutions tailor interventions to match a student’s readiness for change and guide them through a process to help them make better financial decisions. These interventions (i.e., changes in practice, policy or programming offerings) can ultimately improve retention and graduation rates. The self-efficacy construct within the Social Cognitive Theory and the Transtheoretical Model lends clarity to the relationship that may exist between a college student’s financial literacy, behavior, and self-efficacy. The intent of this study is to extend college student financial literacy research by integrating a financial self-efficacy measure developed specifically to inform how a student’s confidence may impact literacy, financial decision making and ultimately, behavior. The study can help address and minimize financial illiteracy on college campuses and provides a unique perspective by presenting the first generation, low-income student experience.

**Significance of the Study**

Within the context of shrinking operating budgets and increased costs, higher education institutions dedicate considerable resources to recruit, retain and graduate students. Between 1985 and 2013, the average in-state cost of tuition at a public four-year institution increased from $1,318 (Lorin, 2012) to $8,655 (Payea, Baum & Kurose, 2013). Meanwhile other costs (i.e., housing, books, goods and services) have increased and although not necessarily correlated, student loan indebtedness as well. In 1985, there was $35 billion in outstanding student loan debt (Lorin, 2012). By 2013, almost two decades later, two-thirds of students attending a four-year institution borrowed and left college with an average of $26,600 in debt (Institute of College
Access and Success, 2012). This borrowing has led to the current national level of $1.1 trillion dollars in outstanding student loan debt among 38 million borrowers (Consumer Financial Protection Bureau, 2013). Undoubtedly, today’s college students are enrolled during high cost and turbulent economic times. It is also during a time when first generation college student enrollment has reached record highs and college student enrollments are becoming more diverse (Chronicle of Higher Education, 2008). First generation college students are also more likely to come from ethnic backgrounds underrepresented in higher education or lower socioeconomic groups (Bui, 2002). Many first generation, low-income students work or attend school part-time due to family financial considerations. They also face additional challenges with the college experience including navigating between various identities: ethnic, familial, personal, social, cultural, and community (Orbe, 2004). Despite increasing numbers of these students entering college, they continue to drop out before completion at greater rates when compared to their peers (Seidman, 2005). Academic preparation, the amount and type of financial aid and the level of available support services are factors that have been linked to overall student success (St. John, et al., 2004, 2005). Given these inherent challenges, the lack of financial literacy is another factor that is likely contributing to a student’s time to degree, persistence, and completion.

The study aims to clarify factors that impact the financial literacy of college students and by doing so, add to the body of knowledge and research on financial literacy. Higher education practitioners can leverage this research to develop policies and practices that promote financial well-being. College and universities can reaffirm the value of higher education by focusing attention and resources toward developing effective financial education programs. Positive benefits that may result from institutions engaging in financial literacy efforts include improved
retention, pace to degree, graduation rates, decreased student loan borrowing and student loan default rates, to the building of a base of active, engaged and financially stable alumni. The results of this study not only can benefit the overall success of first generation, low-income students but also has implications for all students pursuing higher education at either a two-year or four-year public, private or not-for profit institution.

**Purpose**

The intent of the study is two-fold. First, the goal is to explore the financial literacy of first generation, low-income college students. Secondly, to examine the relationship between first generation, low-income college students’ financial literacy and self-efficacy, including the degree of impact of their financial behavior. To better understand the link between financial literacy, behavior, and self-efficacy, the following research questions guide the study:

1. What differences exist in the financial literacy level of participants as it relates to academically related measures (grade point average, SAT/ACT score, and class standing)?
2. What is the relationship between participants’ financial literacy level and their a) credit card debt; b) student loan debt; and c) savings/investing?
3. To what degree do race/ethnicity, gender, employment status, and family income relate to financial literacy levels?
4. To what degree does self-efficacy relate to financial literacy levels?

**Data and Methodology**

Student Support Services program participants attending Washington State University, a research land-grant public university, are the focus of this study. Student Support Services, created to assist disadvantaged college students, is one of the largest federally funded TRIO
programs in the United States. In order to qualify for the Student Support Services program, a student must belong to one or more of three groups: low-income (within 150 percent of the U.S. income poverty level amount); first generation (neither parent completed college); or physically handicapped. Student Support Services programs differ in terms of the number of students served, type and level of programming offered. However, all Student Support Services Programs are required to improve the economic literacy of program participants. The economic (i.e., financial) literacy program requirement makes Student Support Services uniquely suitable for studying the relationship between financial literacy, self-efficacy and behavior of first generation, low-income students.

The Financial Literacy Self-Efficacy Survey, developed specifically for the study, assesses the Student Support Services program participants’ financial literacy, behavior and self-efficacy. The Financial Literacy Self-Efficacy Survey integrates questions from two instruments; the Jump$tart Coalition for Financial Literacy Survey for College Students (Mandell, 2008) and the Financial Self-Efficacy Scale (Lown, 2011). Additional student demographical information that is examined as part of the study includes academic measures, indebtedness and other related factors to aid in demonstrating the relationship that may exist between a student’s financial literacy level, behavior and self-efficacy.

**Definition of Terms**

The following definitions are provided to ensure uniformity and understanding of the terms used throughout the study.

*Financial behavior* is defined as any human behavior that is relevant to money management. Common financial behaviors include how individuals handle cash, credit, and
saving (Xiao, 2008; Xiao et al., 2006). For the purpose of this study, financial behavior is defined by the degree a student borrows (i.e., credit card or student loans) saves or invests.

Financial literacy generally denotes “one’s understanding and knowledge of financial concepts” (Fox, Bartholmae & Lee, 2005, p. 195). Financial literacy can also refer to “knowledge and skills related to money management and can include the ability to balance a checkbook, manage a credit card, prepare a budget, take out a loan, and buy insurance” (Beverly & Burkhalter, 2005, p. 121). For the purpose of this study, consistent with what has been adopted by the Student Support Services Program, financial literacy is defined as:

the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being (President’s Advisory Council for Financial Literacy, 2008, p.35).

First generation college student is defined as required by Student Support Services program participation (neither parent nor guardian of the student has a bachelor’s degree). Since the majority of Student Support Services program participants first generation college students are also low-income (below United States federally established poverty levels), first generation and low-income is used interchangeably throughout the study.

Self-efficacy refers to the “belief in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p.3). For this study, self-efficacy is defined in terms of a student’s confidence and/or perceived belief in overcoming financial difficulties.

Limitations and Delimitations

The study was conducted at Washington State University, a multi-campus public research university located in the State of Washington. Student Support Services program participants attending the university’s main campus in Pullman, Washington, were invited to participate in
the study. Washington State University’s regional campus in Richland, Washington also offers a Student Support Services program. However, focusing on the main campus allowed for consistency in terms of student choice of campus and their overall program Student Support Services experience. Findings and recommendations based on the survey results, including trends, are specific to this institution which limits the generalizability of the results. Data collected for this study took place during the spring semester 2013. Therefore, the study results may also only be generalizable to students studying during spring semester. The Financial Literacy and Self-Efficacy Survey developed for the study included questions integrated directly from the Jump$tart College Student Survey (Mandell, 2008). The Jump$tart Survey assesses the knowledge aspect of financial literacy. The integration of the Financial Self-Efficacy Scale questions (Lown, 2011) allows for the evaluation of a respondent’s awareness of their behavior and consequences associated with making specific financial decisions. For each instrument, choice of wording and order were maintained and only slightly altered for a college student audience. In some instances readability, word choice and flow may have affected survey responses. Regardless of these limitations, the study sheds light to the importance of the relationship between college student financial literacy, behavior and self-efficacy and ultimately the impact of these components on overall persistence, retention and completion.

**Organization and Structure**

The concerns regarding the financial well-being of young adults and their preparation for making financial decisions has led to increased attention and interest in financial literacy and education. For higher education institutions, this is particularly relevant given the wide range of students they serve including students who come from first generation, low-income backgrounds. Given national low rates of financial literacy among low-income populations (Lusardi &
Mitchell, 2006) and increased college going rates among certain racial and ethnic groups, it is critical to understand the nuances of financial literacy in relation to college success, retention and completion. The study addresses these distinctions from a first generation, low-income college student perspective. Chapter 1 includes the introduction, the statement of the problem, the theoretical framework and research questions that guide the study, as well as, the significance of the study, limitations, delimitations and definition of terms. Chapter 2 contains a review of literature on financial literacy, including college student research; examines higher education’s role in relation to financial literacy; and lastly, the interaction of financial literacy, behavior and self-efficacy within a theoretical framework that integrates key constructs from the Social Cognitive Theory (Bandura, 1977, 1986, 1997) and the Transtheoretical Model of Behavior Change (Prochaska & DiClemente, 1984). The research design, methodology and procedures used to gather data including details regarding the instrument and the analysis of the data is provided in Chapter 3. The results of analyses conducted to address the research questions and findings that emerged from the analyses are provided in Chapter 4. Chapter 5 contains a summary of the findings and the implications, recommendations and suggestions for further research.
CHAPTER 2: LITERATURE REVIEW

Overview

The role of higher education in the development and success of students has been studied extensively from different frameworks (i.e., access, participation, sociocultural, institutional, and cognitive). However, unraveling the relationship between higher education and financial literacy or higher education’s responsibility in addressing financial literacy is complicated and not easily or well understood. Financial literacy has not been uniformly defined nor is a measure that is easily evaluated or captured during the admission or financial aid application process. While some higher education institutions practice need-based admission policies (i.e., weigh family financial situation in the admission decision-making process) most institutions do not, and often gap financial need with student or parent loans. At the institutional level, characteristics such as mission, sector, type, size, and student body composition also typically dictate priorities, particularly in the allocation of resources. At the student level, tuition increases, declining federal, state operating and aid appropriations and mounting indebtedness, further compound the issue of how institutions can combat financial illiteracy.

A primary function of most higher education institutions includes the delivery of student financial aid and services. While aid programs, types, amounts and level of student service offered vary among institutions, financial aid offices traditionally provide information regarding the application process, costs and available aid resources. The complexity of financial aid, in terms of constantly changing regulations, policies and an increasingly growing applicant pool, do not necessarily foster an environment conducive to imparting financial literacy education or financial planning advice. Therefore, how successfully higher education institutions can respond to and address financial illiteracy depends largely on the literacy and self-efficacy of their
students. The same can be extended to parents, as well, as many finance their children’s college education and have been shown to influence their children’s level of financial literacy (Cude et al., 2006; Norvilitis & MacLean, 2010; Shim et al., 2009).

The study of college student financial stress, literacy, knowledge, and behavior is a relative recent phenomenon (Durband & Britt, 2011). As college student financial literacy research grows, awareness among higher education institutions has also increased, including changes in practice and program development. A poll by Student Lending Analytics (2010) revealed that nearly half (48%) of schools surveyed indicated they were providing some type of financial education beyond federally mandated entrance and exit student loan counseling. The earliest college financial education program in the United States was established in 1986 at Iowa State University (Durband & Britt, 2011). By 2011, at least 150 colleges and universities had websites that publically marketed some type of financial education program for students (Durband & Britt, 2011). Many schools engage in programming that is intended to educate and develop students in various capacities (e.g., academically, leadership, and civically). However, schools that engage in financial literacy education efforts typically only offer workshops on subjects such as budgeting, credit card information to loan repayment and minimizing loans (Grable, Law & Kaus, 2012). These workshops tend to be one-time offerings, non-customized workshops that may build on awareness but are not necessarily designed to increase knowledge or change behavior. College is an optimal place and time for young adults to learn how to manage money and make financial decisions that are in their best interest, in the short and long-term. Unfortunately institutions rarely focus on activities that involve individual, in-depth counseling or the assessment of the financial literacy levels, self-efficacy or behavior of their student body.
This chapter contains a literature review that provides a contextual overview of the role of higher education in relation to financial aid policy and financial literacy; broadly examines financial literacy, including prior research conducted on college students; explores the relationship between financial literacy, behavior and self-efficacy from a psychosocial theoretical and financial conceptual framework; and finally, aims to increase awareness and understanding of the importance of college student financial literacy, particularly for a growing and vulnerable student group on most college campuses - the first generation, low-income student.

**Higher Education, Financial Aid Policy and Financial Literacy**

With rising costs, diminishing state and federal support and reduced levels of aid, students’ reliance on loans or credit to finance the cost of higher education has increased, paradoxically building the need for stronger financial literacy skills. Against this backdrop, higher education institutions are balancing fiscal obligations, societal pressure to contain costs and increase quality of services while also trying to meet a myriad of constituency needs (e.g., federal, state, and private stakeholders). College participation rates and demographics have also changed considerably in the United States over the last several decades. The historical context in which higher education has evolved offers insight to understanding the intersection between market forces, financial aid policy, college pricing, costs and consumer behavior that exists today.

Higher education has had a longstanding commitment to ensuring equitable access to a college education for all. Since as early as 1947, the Truman Commission Report emphasized the need for affordable college tuition (Truman Library, 2013). The GI Bill of 1944, although tremendously popular, was only available for veterans. Not until the 1960’s and 1970’s did the
emphasis of the federal government to fund need based financial aid over that of competitive research grants shift in terms of priority. The Higher Education Act (HEA) of 1965 provided the framework for most of today’s federal financial aid programs and policies (Department of Education, 2014). The reauthorization of the HEA in 1972 increased access to low-income students with the creation of what would become known as the Federal Pell Grant Program. The HEA of 1972 also introduced mandated needs testing for receipt of federal aid, a standardized formula developed that takes into account income, assets and other factors to determine the ability of the student and families to pay for a college education (Department of Education, 2014). In 1978, the Middle Income Student Assistance Act passed allowing any student, regardless of need, to utilize unsubsidized student loans to help pay for college. Since 1978 the Higher Education Act has been authorized several times, each time resulting in additional regulatory requirements and often creating even more complexity to the financial aid process (Thelin, 2004).

The infusion of aid made directly to students rather than institutions set in motion market forces that have greatly affected higher education. With portable grants and loans, students were allowed greater institutional choice and institutions have responded by creating ways to attract, recruit and shape the class. Today, the majority of financial aid disbursed nationally comes from three major sources; government, higher education institutions and private individuals or organizations. During the 2012-2013 academic year, over $238.5 billion in aid (College Board, 2013) was distributed to students with federal aid representing the largest proportion (71 percent) of which close to 43 percent was loan aid; followed by institutional (19 percent), private (5 percent), and state aid (5 percent). In 2011-12, about 60 percent of four-year college students
who graduated from the institutions at which they began their studies graduated with debt, borrowing an average of $26,500 (College Board, 2012).

Historically, the primary role of financial aid was to increase educational opportunities for those with inadequate resources. In more recent years, financial aid has become viewed as a tool to help craft the entering class and ensure financial stability with increasingly more institutional aid being based on criteria that is not based on need (Baum, 2007). In 1985-86, 9 percent of all state grant aid for undergraduate students was awarded without regard to the students’ financial circumstances. By 2005-06, this percentage had risen to 28 percent; and remained constant through the 2009-10 academic year (College Board, 2011). Since 1965, financial aid policy has evolved from a programmatic focus of providing grants to needy students, to a much more complicated system that encompasses loans, educational tax deductions and credits, major specific (i.e., science, technology, engineering and math) scholarships for low-income students, to grants and loan forgiveness for public service or teachers (Kalsbeek & Hossler, 2009).

While investment on part of the federal government in terms of total aid has grown, the process for applying and determining financial aid eligibility has become increasingly complex. These aid policy factors have been studied and thought to affect college access, participation, persistence and success and attributed to a higher reliance on student loans (Pinto & Mansfield, 2006; St. John et al., 2005). Student aid reform policy and practice has consistently been a priority among legislators, educational associations, the public and higher education. However, many proposed plans or solutions offered rarely take into account the competing factors that face institutions of higher education. Kalsbeek and Hossler (2009) describe four of the challenges that impact the role of higher education in the today’s environment:
1. Cost of delivery and production – Declining alternate sources of revenue result in higher education institutions becoming more tuition dependent to sustain academic curriculum delivery and general operations. As a result, many schools attempt to mitigate the cost impact by recruiting non-resident or international students, enhancing and increasing distance education opportunities, and curtailing student services.

2. Tuition, fees and net price – Over time, tuition and fees have increased at a higher rate than inflation and are increasingly perceived as out of reach for an ever-growing proportion of students. While net price (what a student pays for tuition and other costs after grants or scholarships) more accurately represents the true cost, this can affect net revenue, particularly if the institution has a high tuition discount rate or is mandated to set aside a certain percentage of tuition proceeds for need based aid.

3. Changing demographics – Demographic trends suggest that the projected increase in traditional college-age students will come from among those of minority, low-income, first generation populations. In many states, any increase of high school graduates will come from the ranks of recent Latino immigrants. If gift aid (grants or scholarships) does not keep pace with costs, this may have a detrimental effect on who ultimately goes to college or successfully completes a degree.

4. Inequity of access – Most academically talented poor students go to college at the same rate as the least academically prepared wealthy student; and as family
income declines, the likelihood that a student earning a baccalaureate degree declines as well.

Regardless of the fiscal environment an institution may operate within and how expensive postsecondary education can be, a college education is still perceived as an important investment by the American public. Some level of postsecondary college or training has become increasingly necessary to achieving social mobility (College Board, 2013) and has been linked to other benefits (e.g., greater lifetime earnings and employment potential, healthier lifestyles, reduced health care costs and overall personal satisfaction). However, on a fundamental level, the lack of basic skills such as how to create and maintain a budget, understand credit, or save for the future, prevent many Americans from achieving economic well-being. As it is, only one-third of the 40 percent of families that set aside savings, do so for their children’s education (Lusardi, 2010). A better informed citizenry is needed to navigate the diversity and complexity of college pricing, including the multitude of educational tax incentives and cadre of aid programs that are now integral components of financing higher education, and supports the need for increased financial literacy.

The need for financial education is not an issue unique to any one population - it affects everyone, men and women, young and old, across all racial and socioeconomic lines (U.S. Department of the Treasury, Office of Financial Education, 2011). The specialization and complexity of the myriad of financial services available today requires better informed consumers. The velocity of change in the financial marketplace, the persistence of bias in financial decision making and the disparity between educators and financial services firms with resources in which to reach and educate consumers, leads to perhaps even a greater need for policies that will support better consumer financial outcomes (Willis, 2008). For the college-
aged population, this is even truer as students are not immune to the need for financial education as they often lack basic skills and experience in managing money. First generation and low-income students are particularly vulnerable as many are financially independent and often negotiate financial decision making with little or no guidance from parents or family. If institutions engage in activities that help build a student’s level of competency and confidence, this may help mitigate bad financial decision-making on their part.

**Defining and Measuring Financial Literacy**

Although not labeled or described specifically, the concept of financial literacy dates to the early 1900’s during the advent of United States consumer education research and initiatives (Jelley, 1958). While today there is no standard definition, the inherent complexity of addressing financial illiteracy, particularly among young adults, is not without considerable challenge. Several studies and research have revealed that many Americans lack a working knowledge of financial concepts, principles, practices and tools to make sound decisions that are advantageous to their economic well-being (Jump$tart Coalition, 2008; Lusardi, 2008; U.S. Department of Treasury, 2011). Despite the rapidly changing and increasingly sophisticated array of financial decisions confronting Americans today, there still exists widespread levels of financial illiteracy—especially among low-income and minority populations (Harnisch, 2010). The divergence between complex consumer decisions and financial illiteracy has led to consumer issues such as predatory lending and suboptimal consumer behaviors, resulting in record-high levels of debt and low saving rates (Anthes, 2004). More recently economic issues such as home foreclosures, declining values of investments, the collapse of the subprime lending market, and escalating numbers of personal bankruptcy have focused the nation’s attention on the importance of financial education (Hira, 2010).
In his review of financial literacy, Remund (2010) found that the concept carries varying conceptual definitions, as well as, diverse operational definitions and values. Fox, Bartholomae, and Lee (2005) define financial literacy as one’s understanding and knowledge of financial concepts. Thaden and Rookey (2005) define financial literacy as the understanding of financial facts, concepts, principles and technological tools that are fundamental to making sound financial decisions. Remund (2010) further expands these definitions by viewing financial literacy as “a measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate, short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions” (p. 284). The President’s Advisory Council for Financial Literacy (2008) encompasses many of the elements of the aforementioned definitions. For the purpose of the study, financial literacy is based on the President’s Advisory Council for Financial Literacy (2008) definition, which has also been adopted by Student Support Services, as “the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being.” (p. 35).

The operational definitions of financial literacy most commonly used in contemporary research (Remund, 2010) fall within four categories—budgeting, saving, borrowing and investing—all of which are behavior or ability based (Chen & Volpe 2002; Financial Fitness for Life, 2008; Jump$tart Coalition for Personal Financial Literacy, 2008; National Endowment for Financial Education, 2006; National Foundation for Credit Counseling, 2008; U.S. Department of Treasury, 2011). While narrowly defined, these four categories allow for the evaluation of aptitude in managing specific aspects of personal finance.
Financial literacy has been traditionally measured at the individual level and aggregated by groups (i.e., high school students, college students, and low-income adults). Surveys and polls seem to be the preferred method among researchers to measure financial literacy with most relying on the Jump$tart Coalition’s Personal Financial Literacy Survey. This national survey of high school seniors was developed by Lewis Mandell (1997) and has been conducted bi-annually between 1998 and 2008. The instrument consists of multiple choice questions and has since been duplicated or modified in many other studies (Braunstein & Welch, 2002; Fox, Bartholomae & Lee, 2005; McKenzie, 2009; Norvilitis et al., 2006; Thaden & Rookey, 2005).

The results of the initial Jump$tart high school baseline survey in 1997-1998 were not reassuring with only 10.2 percent of the 1,532 high school seniors receiving an average score of 57.3 percent (Mandell, 2008). After the first survey, the Jump$tart Coalition decided to administer the survey every two years to measure progress with an overall goal to improve financial literacy for all American high school graduates. At that time, the Jump$tart Coalition optimistically forecasted that by 2007-2008, the final survey results would document the achievement of the goal to increase beyond a “passing” score of 60. In 2008, along with the high school survey, the Jump$tart survey was modified and administered to 1030 college students nationally (Mandell, 2008). As compared to the high school students surveyed in the same year, college students were more financially literate, scoring an average score of 62.2 percent, nearly 15 percentage points above the 48.3 percent average of high school seniors, and above the “passing score” of 60 (Mandell, 2008). However, ten years after the survey baseline measure, the financial literacy scores for high school students dropped from 57.3 percent to 48.3 percent, revealing even worse literacy scores and a considerably dire situation (Mandell, 2008).
While a clearer definition or measurement for financial literacy may aid in disentangling the financial literacy puzzle, many researchers have examined college student financial literacy using similar conceptual and operational definitions. Over the last decade there have been a number of studies conducted on the financial literacy of college students, focused specifically on loan indebtedness, credit card usage, financial behavior, and parent socialization (Lyons, 2004, 2008; McKenzie, 2009; Norvilitis et al., 2006; Shim et al., 2009; Thaden & Rookey, 2005). Financial literacy experts generally agree that many, if not most, consumers lack the financial literacy necessary to make important financial decisions in their own best interests (Braunstein & Welch, 2002). Researchers also agree that financial knowledge appears to be directly correlated with self-beneficial financial behavior (Hilgert, Hogarth, & Beverly, 2002). However, little research has been conducted on college student financial self-efficacy or whether exposure to financial literacy concepts or educational interventions affects or promotes positive financial behavior. Higher education institutions that accurately assess the financial literacy and self-efficacy of students with care to their developmental stage (e.g., age, academic standing, and involvement or experience) and other factors (e.g., socio-economic status, gender, and race/ethnicity) can potentially realize a greater impact on retention and graduation rates.

**Financial Literacy and College Students**

The implication of poor financial management affects more than a student’s finances. Financial management can affect a student’s academic performance, mental and physical well-being, and even their ability to find employment after graduation (Bodvarsson & Walker, 2004; Lyons, 2003, 2004, 2007). Previous studies and financial literacy research have additionally demonstrated the effect of how certain financial decisions impact college students in the following areas:
Employment – Forty-five percent of students attending four-year colleges and universities work more than 20 hours a week (Johnson, Rochkind, Ott & Dupont, 2009). The balance between work and school has been known to affect college retention and six-year graduation rates. The number one reason students leave college is the stress of attending college and working at the same time with the need to work remaining the top reason they fail to return to college (Harnisch, 2010). Shim, Serido and Xiao (2009) found in their longitudinal study of college student financial success and well-being that 20 percent of the students worked an average of more than 20 hours per week that was linked to negative academic outcomes. The heavier work group included more female, Hispanic and in-state resident students. Lastly, Adams and Moore (2007) report that high risk credit behavior is prevalent among college students that work more hours, live off campus, and have lower grade point averages.

Credit Cards and Loans – A Sallie Mae survey (2009) on college student credit card usage revealed that nearly every indicator measured showed an increase in credit card usage since 2004. The median debt for freshman students almost tripled from 2004, and the average senior had a balance of over $4,100. The average amount charged for school-related expenses, according to the survey, more than doubled since 2004 (Sallie Mae, 2009). Several other studies have attempted to determine whether college students are in fact incurring excessive amounts of credit card debt (Allen & Jover, 1997; Armstrong & Craven, 1993; Baum & O'Malley, 2002; Education Resources Institute and the Institute for Higher Education Policy, 1998; Hayhoe, 2002; Hayhoe, Leach, & Turner, 1999; Hayhoe, Leach, Turner, Bruin, & Lawrence, 2000; Joo, Grable & Bagwell, 2001; Lyons & Andersen, 2002; Pinto & Mansfield, 2006; Staten & Barron, 2002; U.S. General Accounting Office, 2001; Xiao, Noring & Anderson, 1995). These studies not only examine students' use of credit but also credit card ownership, the amount of credit card
debts incurred, the types of credit cards held, and students' attitudes towards credit usage. Other researchers have also examined the ways in which college students’ credit card attitudes and behaviors were related to psychological and social factors such as locus of control (Joo et al., 2001), impulsivity, life satisfaction, and stress (Norvilitis & Santa Maria, 2002; Norvilitis, Szablicki, & Wilson, 2003). There have been studies that have attempted to assess the impact of student loan indebtedness on financial literacy (McKenzie, 2009; Norvilitis et al., 2006). Consumer and high student loan debt levels have also been used as evidence of financial illiteracy in other studies (Kinzie, 2007; MacDonald, 2000; Young Americans Center for Financial Education, 2007).

**Role of parents** – Shim’s, et al., (2009) multi-state research project on financial socialization found that financial attitude and perceived behavioral control were significantly related to a college student’s financial relationship with parents. The 2006 project study investigated how college students acquire financial knowledge and behaviors, as well as, factors that place some students at greater financial risk than others. The results of the project indicate that parents play a key role in their children’s financial socialization, with students overwhelmingly reporting that their parents influenced their money management behaviors. Cude, et al., (2006) specified that 89 percent of the college students reported learning about finances from their parents. In another study (Norvilitis & MacLean, 2010), parental mentoring of financial skills was most strongly related to lower levels of credit card debt. The relationship between parental mentoring and credit card debt was partially mediated by it leading to greater financial delay of gratification and less impulsive credit card purchasing.

**Financial Circumstances, Attitudes and Stress** - Lyons (2004) found that one in three students reported his/her financial situation was “likely” or “somewhat likely” to affect the
ability to complete a college degree. Bodvarsson and Walker (2004) after controlling for a wide variety of factors that affect college performance, reported that students receiving at least partial coverage from their parents for tuition and books were more likely than self-financed students to fail courses, to be placed on academic probation, and to earn lower GPA’s. In a study that focused on financial stress, Trombitas (2012) found higher rates among a national sample of undergraduates and recent graduates with one-third reporting that financial stress negatively impacted their academic performance or progress. In a recent national study by the American College Health Association (2012), approximately a third of students described their finances as “traumatic” or “very difficult.” College students' financial well-being is also known to be negatively correlated with academic progress and health (Adams & Moore, 2007; Lyons, 2004; Roberts, Golding, Towell & Weinreb, 1999).

**First Generation, Low-income Factors** - Data on the financial literacy of first generation, low-income students at the college level is rare. In a mixed methodology research study, Eitel and Martin (2011) found that first generation female college students lacked financial literacy and while these students had considerable perceived needs to financial literacy, these perceived needs did not result in information seeking behavior. Murphy’s (2005) exploratory study at a predominately Black institution on the influence of parental educational level and other factors (race, gender, age, and major) on financial knowledge found that race, major and parental educational level were important factors in explaining whether students had lower or higher levels of financial acumen.

The convergence of these factors (i.e., employment, indebtedness, parent influence, and other student characteristics) creates the perfect storm and while it’s difficult to isolate where and when higher education, financial aid policy and practice contribute to illiteracy, it is clear that a
student’s lack of understanding of how certain decisions (i.e., assuming loans, using credit, working, and delaying graduation) can affect his or her financial well-being. While financial aid packaging policies, counseling, outreach and technology efforts can be fine-tuned to match the characteristics of the student body (i.e., undergraduate versus graduate, socioeconomic status, academic profile, and distance learners), most institutions are constantly walking a tight rope – balancing the needs of students with that of the other priorities under the growing specter of access and affordability.

Today’s federal and state fiscal environment is affecting not only aid allocations but also resulting in legislation limiting the number of terms a student can receive aid. While these issues can affect all college students similarly, Kalsbeek and Hossler (2009) make a compelling case on how the changing demographics and overall fiscal environment of higher education can affect access, persistence and success, particularly for first generation, low-income students. It is clear that there are many internal and external factors that affect college participation, retention and ultimately, graduation. Higher education’s role in addressing financial literacy cannot be fully understood without recognizing the complexity behind the motivations and attitudes underlying a student’s approach to financial management. In order to understand whether and how higher education can address financial illiteracy, requires a deeper and more sophisticated probe into college student financial behavior and self-efficacy. Within the past decade, consumer researchers and scholars have embraced the study of behavioral aspects of consumption and financial management (Hira, 2010). Bandura’s Social Cognitive Theory (1977, 1986) and Prochaska and DiClemente’s Transtheoretical Model (1984) are two bodies of research that can provide a lens into how a student’s behavior, attitudes and self-efficacy can positively affect their financial well-being.
Theoretical Framework

Within the framework of the Social Cognitive Theory (Bandura, 1977, 1986), individuals evaluate their own experiences and thought processes through self-reflection. Bandura (1977) proposes that behavior change is affected by environmental influences, personal factors, and attributes of the behavior itself. Each may affect or be affected by each other. A central tenet of social cognitive theory is the concept of self-efficacy - a person must believe in his or her capability to perform the behavior and must perceive an incentive to do so. Because these expected outcomes are filtered through a person's expectations or perceptions of being able to perform the behavior in the first place, self-efficacy is believed to be the single most important characteristic that determines a person's behavior change. Prochaska’s Transtheoretical Model (1984) also integrates self-efficacy and decisional balance within a process of behavior change. The Transtheoretical Model of Behavior Change (Proschaska & DiClemente, 1984) along with Bandura’s Social Cognitive Theory (1977) can further unpack the interplay that exists between self-efficacy, financial literacy and behavior.

Social Cognitive Theory

According to Social Cognitive Theory, learners will be more likely to attempt, to persist, and to succeed at activities and tasks when they possess a strong sense of self-efficacy (Bandura, 1977, 1986, 1997). Self-efficacy refers to a sense of personal agency, the belief that one can achieve and succeed at a given task and is related to self-confidence but also motivation, optimism and the belief that one can cope with a variety of life’s challenges (Bandura, 1986, 2006). Bandura conceptualized self-efficacy as varying along three dimensions: level, strength, and generality. Level refers to the degree of difficulty of the behaviors or tasks that an individual feels capable of performing. Strength refers to the confidence a person has in his or her
performance estimates. Weak self-efficacy expectations are easily modified by disconfirming experiences, while strong self-efficacy perceptions are robust, promoting persistence in the face of obstacles. Generality refers to how self-efficacy provides individuals with the ability to influence course of action and/or alter their environment.

There might be a linkage between the degree to which a college student possesses self-efficacy about their personal financial management and financial literacy skills. Bandura (1982) suggests that individuals make day-to-day life decisions based on their perception of their capability in a particular area. Similarly, college students make financial decisions based on their perceived capability. Bandura (1982) further posits that a person’s misjudgment of capability can lead to negative outcomes and avoidance of a particular decision or task. College students may avoid facing financial management decisions if they haven’t experienced positive outcomes possibly due to a lack of confidence on their part. Therefore, it is important to consider the impact self-efficacy on financial literacy as it may indicate or reveal a lack of confidence. It is also important to consider that an individual’s perception of their capabilities is shaped by age, experience, background, gender, race/ethnicity, socio-economic status and educational level. The inclusion of self-efficacy allows for the examination of the effect these factors have on a college student’s perception and therefore, confidence in applying specific financial knowledge.

Self-efficacy has also been used as a predictor of academic achievement and purpose toward life in college students. Self-efficacy has been positively linked to grade point average (Vuong, Brown-Welty & Tracz, 2010; Zajacova, Lynch & Espenshade, 2005) and persistence (Vuong et al., 2010). Dewitz, Woolsey and Walsh (2009) further posit that self-efficacy is positively related to purpose in life and that a theoretical framework rooted in self-efficacy offers
higher education practitioners an important tool for developing interventions and programs that can assist college students outside of the classroom. These studies support the use of self-efficacy to predict positive outcomes and behaviors. A student’s self-efficacy is an essential, useful component and should be considered in promoting or predicting positive financial behaviors.

The Transtheoretical Model

The selection of financial behavior and self-efficacy as important components to financial literacy is supported by their application within the Transtheoretical Model of Behavioral Change. The Transtheoretical Model (TTM) is based on the constructs of self-efficacy, decisional balance, and the process of behavior change (Prochaska, Norcross, & DiClemente, 1994). TTM has been applied to financial behavior change within the areas of credit counseling and debt (Shockey & Seiling, 2004; Xiao, Newman, et al., 2004; Xiao, O’Neill et al., 2004). Xiao, Newman, et al. (2004) discussed how to use TTM in a consumer education program designed to change financial behavior (i.e., eliminate undesirable credit card debts). Shockey and Seiling (2004) used specific educational strategies developed within the TTM framework in financial education program for low-income consumers. And finally, Loibl & Hira (2007) used TTM to aid women on becoming better investors. The TTM has also been used in numerous studies to describe the process of the application and acquisition of new information such as money management practices, credit card and investments (Loibl & Hira, 2007; Lown, 2011; Lyons & Neelakantan, 2008; National Endowment for Financial Education, 2005; Seiling & Shockey, 2006; Shockey & Seiling, 2004; Xiao, Newman, et al., 2004; Xiao, O’Neill et al., 2004). The model has also been used to assess the effectiveness of a financial education program by shifting the focus from distributing information about personal financial
management to a focus on action, self-efficacy and behavioral change (Shockey & Seiling, 2004).

Prochaska and DiClemente (1984) conceptualize behavior change as a five-stage process or continuum related to a person's readiness to change. In TTM’s first stage, *pre-contemplation*, individuals don’t necessarily see the need to change and may feel pressured by others to change. In this stage, individuals will rarely seek and use information, react emotionally, or re-evaluate themselves with regard to negative aspects of their problem (Prochaska, Norcross & DiClemente, 1992). The second stage, *contemplation*, is the point at which individuals begin to acknowledge having a problem and begin to think about ways to solve it. They may be struggling and are seeking information and sources of help, fearing that they might not be able to change on their own (Prochaska, Norcross, & DiClemente, 1994). In this stage, individuals generally become open to educational processes, and begin to re-evaluate themselves with respect to the cognitive and affective aspects of the problem and what change would do for and to them (Prochaska, DiClemente & Norcross, 1992b). In the *preparation* stage, individuals become more serious about taking action and plan changes relatively quickly. Many seek information and support for this change, with some concern that it will be difficult and that they may not succeed (Prochaska, Norcross & DiClemente, 1994). *Action* is the fourth stage, when bad behavior stops or when good behavior begins. Considerable energy and effort is required during this stage. Individuals need to believe that they can implement the changes, be able to control what causes them to relapse into the old behaviors, and garner support to get them through the challenging times when the change process is particularly difficult (Prochaska, Norcross & DiClemente, 1994). The final stage, *maintenance*, is when the change is accomplished and considered terminated. However, lapses and relapses are frequent, and during this stage, individuals need to be able to
assess what conditions will make relapse possible or especially likely and establish successful coping strategies (Prochaska, DiClemente & Norcross, 1992b). Individuals progress through these five stages at varying rates, often moving back and forth along the continuum a number of times before attaining the goal of maintenance. As a result, the stages of change are often described as spiraling or cyclical rather than linear.

The Social Cognitive Theory (Bandura, 1977, 1986, 1997) and Prochaska and DiClemente’s (1984) inform the relationship between financial literacy, behavior and self-efficacy and are conceptualized by the financial framework provided in Figure 1. The relationship between the components of financial literacy, behavior and self-efficacy is depicted centrally as a Venn diagram. The interplay between these components that capture an individual’s level of knowledge (i.e., literacy), confidence (i.e., self-efficacy) and their ability to balance decision-making and behavior through the five TTM stages (i.e., pre-contemplation, contemplation, preparation, action and maintenance).

Figure 1 – Financial Framework
Financial literacy encompasses the understanding and knowledge of financial concepts, as well as, the application of that knowledge or skill to manage financial resources. Financial behavior includes the manner in which an individual handles aspects relevant to money management, particularly in relation to vehicles of credit, student loans, savings, and investing. Financial self-efficacy includes the level of confidence or perceived confidence of an individual to deal, respond to or cope with unexpected financial hardships. In the case of financial literacy, behavior and self-efficacy, change may be occurring simultaneously or within only one component. Each component (i.e., literacy, behavior or self-efficacy) could operate in a mutually exclusive fashion; however, greater effectiveness should be achieved if the components worked in tandem and within an educational change model or framework. If knowledge is a common component and central to financial literacy and if financial education is described as the process through which knowledge and skills are gained, then financial education should promote financial literacy and self-efficacy. If financial behavior change is needed to build capability in the area of financial management, then financial behavior should require increased literacy and self-efficacy. While there is evidence that financial behavior seems to be positively affected by financial literacy (Hilgert, Hogarth & Beverly, 2003) the affect that financial education has on financial behavior or literacy is less certain (Lyons, Palmer, Jayaratne & Scherpf, 2006; Willis, 2009). The missing component or factor may be self-efficacy, as the confidence or an individual’s ability to deal with financial challenges or stressors can serve as an inhibitor or accelerator in terms of increasing literacy or demonstrating positive financial behavior. Bandura (1986, 1997) posits that an individual’s self-efficacy is strengthened by experiencing success, receiving social persuasion (i.e., verbal expression of confidence from others), having vicarious learning experiences through role models — ideally, models who share common traits with the
individual—and managing physical/emotional states during tasks. A student’s self-efficacy can be fostered through career counseling, personal counseling, and academic advising, as well, with financial advising or counseling. The self-efficacy of a college student can be strengthened by their success in managing their budget, being recognized for being financially savvy, having learning experiences through role models (e.g., counselors, academic or student service advisors) who share a common background (e.g., first generation or low-income students) and how they manage tasks (e.g., balancing financial stressors).

An individual’s self-efficacy is, therefore, a key factor to better understanding how behavior and literacy can be affected within a continuum of change and impact a college student’s financial literacy. Successful financial education programs that will inspire and support change should be designed to meet the needs of people in the stage in which they fall (Prochaska, Norcross & DiClemente, 1994). When applied within a college setting, a financial educational program that includes econometric measures or activities for students who are not yet contemplating becoming more financially knowledgeable, and applying a step-by-step movement along the continuum of change may be more effective than encouraging them to move directly into saving money. In the case of promoting positive financial behaviors, providing first generation, low-income students with proper tools, knowledge and mentorship may also bolster financial self-efficacy. Given that many college students are developmentally facing many challenges as it relates to identity, peer pressure, and reliance on parents, valuing the consequences of poor financial decisions should be addressed from as many angles as possible.

According to TTM, tailoring interventions to match a person's readiness or stage of change is essential. The readiness for behavior change is not based solely upon the amount of information (or education) that one has about a problem or circumstance. There is a baseline
level of information and self-awareness that one must have to be able to see that a problem exists and that a solution is possible; however, information alone will not bring a person to behavior change (Prochaska, Norcross & DiClemente, 1994). Most college students, particularly freshmen, are likely in the stage of pre-contemplation. They may not see the need for change but may be hearing from or being pressured by parents that they must be more fiscally responsible. However, as an upper class student, they may find themselves in the contemplation stage when faced with having miscalculated their budget and seek information from specific offices (e.g., Bursar, Financial Aid, or Dean of Students) for guidance. In the preparation stage, the students are more serious taking action and making plans to change their financial situation. For example, they may apply for aid on-time, rearrange their schedule so they can work more, and make payment arrangements or plans with appropriate parties (i.e., bursars or landlord). In the action stage, where bad behavior stops and good behavior begins, students are actively taking measures to address lack of funding (i.e., searching for scholarships or paid internships), making changes to their budget by reducing costs or monitoring spending. Students must be empowered to implement the changes and control themselves through possible relapse before they reach the final stage of maintenance. Students will move through the give stages at varying rates, going back and forth along the continuum before they attain maintenance, when the desired financial change is accomplished.

The financial framework integrates the theoretical construct of self-efficacy as a key component in a student's financial literacy and behavior. However, in order to lend full clarity to the relationship between financial literacy, behavior and self-efficacy, other demographic variables (i.e., race/ethnicity, gender, age, year in college, income, first generation status) may be germane and should be considered.
Chapter Summary

Considerable attention and research has been dedicated to solving the issue of financial illiteracy. Given the financial vulnerability of college students, higher education administrators should be aware and informed about the potential negative effects of financial illiteracy. While a student’s success in college is dependent on many different factors, how well they navigate the financial terrain can impact their experience and the choices they make in terms of major, job, career or more immediately, completion of their degree. Regardless of the reasons for success, having a better understanding how and what motivates students to engage in behavior that ultimately promotes healthy financial habits, should help in the development of programming and service delivery. Financial literacy has many definitions and will continue to be conceptually and operationalized in different ways. However, the basic financial common concepts of literacy including budgeting, savings, borrowing and investing can be an integral part of college life and align well with work higher education is already committed to and involved in (i.e., leadership development, academic advising, counseling, and financial aid services). An institution that commits to building a stronger awareness of the importance of financial literacy potentially may affect a student self-efficacy and in turn, promote positive financial behaviors. A deeper understanding of the relationship between literacy, behavior and self-efficacy from a first generation, low-income student perspective can not only lend to improve educational programming but also has overarching implications for access, recruitment and retention. A financial framework that integrates the key components of financial literacy, financial behavior and financial self-efficacy within the stages of change that a student will likely follow or engage in can help higher education institutions in terms of the development of educational programing or activities.
The next chapter describes the Financial Literacy Self-Efficacy Survey instrument developed specifically to address the research questions and provides the methodology, data collection timeline and the analysis followed and used to examine the financial literacy, behavior and self-efficacy of the study sample, Student Support Services program participants.
CHAPTER 3: RESEARCH DESIGN, METHODOLOGY AND DATA

Overview

The intent of the study is to understand the financial literacy, behavior and self-efficacy of first generation, low-income college students. Traditionally surveys provide the primary method to evaluate financial literacy (Braunstein & Welch, 2002; Fox, Bartholomae & Lee, 2005; McKenzie, 2009; Norvilitis et al., 2006; Thaden & Rookey, 2005). Prior college student financial literacy research has primarily included study participants who were not first generation or ethnically diverse and came from more affluent income backgrounds (Chen & Volpe; 1998; Mandell, 2008; McKenzie, 2009; Norvilitis et al., 2006; Thaden & Rookey, 2005). While it was not feasible to conduct a longitudinal study to examine how the financial literacy, behavior and self-efficacy may have changed over the course of a student’s college career, the study provides baseline data and identifies specific factors that help describe the link between financial literacy level, self-efficacy and behavior for first generation, low-income students. The study was designed to address the following research questions:

Research Question One - What differences exist in the financial literacy level of participants as it relates to academically related measures (grade point average, SAT/ACT score, and class standing)?

Research Question Two - What is the relationship between participants’ financial literacy level and their credit card debt, student loan debt, saving/investing?

Research Question Three - To what degree do race/ethnicity, gender, employment status, and family income relate to financial literacy levels?

Research Question Four - To what degree does self-efficacy relate to financial literacy levels?
A financial framework that draws from key theoretical constructs of Bandura’s (1977, 1986, 1997) and Prochaska and DiClemente’s Transtheoretical Model of Behavior (1984) informs the study and helps assess the interaction and the interplay between each component (i.e., literacy, behavior and self-efficacy) and how each influences each other but ultimately, impact a student’s approach to personal financial management.

**Study Participants**

The participants for this study were drawn from students enrolled at Washington State University during spring semester 2013. Washington State University (WSU) is a land grant, research intensive multi-campus institution. The university’s main campus is in Pullman, Washington and other WSU campuses are located regionally throughout the state in Spokane, Vancouver and Richland. The study participants were active members of the Student Support Services Program, a federally funded program offered at WSU’s Pullman campus. Student Support Services (SSS) is part of TRIO, an educational opportunity outreach federal program designed to motivate and support students from disadvantaged backgrounds that targets low-income, first generation college students and individuals with disabilities. Higher education institutions compete for grant funding and if successful, the institution must provide a comprehensive, holistic program that includes: academic tutoring (e.g., instruction in reading, writing, study skills, mathematics, science, and other subjects); postsecondary course selection advice; assistance in completing financial aid applications and advice on available student financial aid programs, including benefits and resources for locating public and private scholarships; education or counseling services designed to improve financial and economic literacy; and lastly, assistance with the admission and financial aid in application process for baccalaureate, graduate and professional programs (United States Department of Education,
In addition, for any given grant period, two-thirds of all SSS program participants must be first generation, low-income students and one-third, a mix of either first generation, low-income or physically disabled. Each institution designs their own programming and service delivery opportunities but typically require students to meet regularly with professional staff for maximum consideration of specific program benefits (e.g., cultural events, books and scholarships).

The Student Support Services Program serves up to approximately 450 students annually (personal communication with Student Support Services Pullman Program Director, January 17, 2013). The Student Support Services office has existed at WSU since 2001. In 2008, Pullman received additional state and institutional funding to support the expansion of services. As a result, the program serves double the number of students supported previously with only federal monies. In 2010, Washington State University’s campus located in Richland, Washington, received funding to establish and offer a SSS program. For greater consistency with program and campus experience, the study focused on SSS participants attending WSU’s main campus in Pullman, Washington.

In addition to increasing the retention and graduation rates of its participants, the SSS program aims to teach students’ self-direction, resourcefulness and resiliency through one-on-one counseling focused on academic skills development and personal enrichment. Student Support Service Program participants are informed that they will become (skilled) successful students and college graduates (prepared to become self-actualizing) professionals, and global citizens who lead through best practices and lifelong learning. Specific program learning outcomes established for participants include 1) academic success; 2) cultural competence; 3) leadership; and 4) self-actualization (WSU Student Support Services, 2013). In order to be
considered for program benefits (i.e., scholarships, workshops, tutoring, priority registration and cultural enrichment events) students must regularly meet with their assigned counselor. In the enactment of the Higher Education Opportunity Act 2008, all TRIO programs including SSS were mandated to integrate economic literacy programming or activities as part of their student service portfolio. However, little consistency exists among SSS program in terms of the types of financial education programming and activities offered. As part of a research project, Kezar and Yang (2010), surveyed over 1,400 TRIO programs to determine whether they offered financial education and the types of service. They found that half of the programs were offering some sort of financial education and of these, less than half evaluated student learning and program effectiveness. Of the TRIO programs that did not offer financial education, 86 percent wanted to but lacked information on how to design or deliver the information (Kezar & Yang, 2010).

Instrumentation

In order to gain an understanding of the financial literacy and self-efficacy levels of the SSS program participants, the Financial Literacy and Self-Efficacy Survey (see Appendix A) was developed based on questions adopted from the Jump$Start Coalition Survey on College Student Financial Literacy (Mandell, 2008) and the Financial Self-Efficacy Scale (Lown, 2011). The Jump$Start Coalition Survey of Personal Financial Literacy Among Students (also referred to as the Jump$Start Survey) was originally developed in 1997 by Lewis Mandell to test the financial literacy of high school seniors for the Washington D.C. based non-profit organization Jump$Start Coalition of Personal Financial Literacy (Mandell, 1997, 2004). The Jump$Start Coalition is an umbrella organization of corporations, government agencies, and foundations dedicated to improving financial literacy throughout the United States. Since 1997, the Jump$Start survey has been administered biannually to over 1100 high school seniors each time. In 2008, Mandell
adapted the survey for college students and administered the first national survey to 1030 college students. The college survey consisted of 56 questions, the first 31 questions comprised the test of financial literacy and the remaining 25 questions consisted of financial behavior measures, such as credit card use, incurrence of debt, checking account balancing habits and incidence of insufficient funds and tax preparation (Mandell, 2008). Permission to use the survey for the purposes of the study was received from the Jump$tart Coalition of Personal Financial Literacy (personal communication, December 16, 2012).

The Financial Self-Efficacy Scale (Lown, 2011) was originally developed to measure the behavioral aspects of financial management for university employees. The Financial Self-Efficacy Scale instrument was modeled directly from the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) and designed to measure how employees managed financial problems and how they coped with setbacks. Since the General Self-Efficacy Scale (GSES) did not specifically assess specific behavior factors, Lown added items from Schwarzer’s (2011) health self-efficacy scale by incorporating specific financial management references to six of the original statements (Lown, 2011). Permission to use the Financial Self-Efficacy Scale was requested and received from Jean Lown (personal communication, January 27, 2013).

The Financial Literacy Self-Efficacy Survey (FLSES) included 59 total questions; five questions related to confidentiality and consent information; 48 questions from Mandell’s (2008) college student survey and six statements from Lown’s (2011) Financial Self-Efficacy Scale. The first section of the FLSES contained information regarding the intent of the survey and details regarding student consent and data confidentiality. The second section of the FLSES consisted of general case questions (multiple choice) related to personal finance based on categories within standards established by the Jump$tart Coalition (Mandell, 2008). The
questions in this section test the respondent’s knowledge and are designed to assess a respondent’s abilities in the areas of income, money management, savings and investment, spending and credit (Jump$tart Coalition of Personal Finance, 2008). The final and third section of the FLSES consisted of statements that measure a respondent’s level of self-efficacy in dealing and coping with financial challenges.

Financial Literacy Survey Knowledge Categories

The income category of the FLSES tests the respondent’s ability to identify sources of income, analyze how career choice, education, skills, and economic conditions affect income and how taxes, government transfer payments and employee benefits relate to disposable income (Mandell, 2008). The money management category specifically assesses the respondent’s ability to identify the opportunity cost of financial decisions, how limited personal financial resources affect the choices and the importance of taking responsibility for personal financial decisions. These questions test their ability to plan for earning, spending, saving, and investing; their knowledge of money management tools available at financial institutions, the effect of inflation on spending and investing decisions, and how insurance and other risk-management strategies protect against financial loss. The savings and investing category tests the respondent’s knowledge of the reason for and the relationship between saving and investing, how to buy and sell investments, and the risk, return and liquidity of investment alternatives; and knowledge of the different factors that affect the rate of return of investments, sources of investment information, and how investors are protected. The final category, spending and credit, tests the respondent’s ability to compare the benefits and costs of spending decisions, evaluate information about products and services, and their knowledge of the rights and responsibilities of buyers and sellers under consumer protection laws. The category also further tests their ability to
analyze the benefits and costs of consumer credit, to compare the advantages and disadvantages of different payment methods, to compare the sources of consumer credit and finally their knowledge of factors that affect creditworthiness and the purpose of credit records and ways to avoid or correct credit problems.

**Self-Efficacy Level**

The Financial Self-Efficacy Scale (Lown, 2011) was designed to develop a self-efficacy specific to financial behavior. The integration of the Financial Self-Efficacy Scale statements consisted of all Lown’s (2011) original statements with the exception of the last statement. In order to better suit a college age audience, the last question was modified slightly by removing “at retirement.” The self-efficacy scale measures aspects of the respondent’s behavior as it relates to financial management and is based on a one to four Likert-type scale that is comprised of: 1 = not true at all; 2 = hardly true; 3 = moderately true; and 4 = exactly true. The statements used in the FLSES include:

1. It is hard to stick to my spending plan when unexpected expenses arise.

2. It is challenging to make progress toward my financial goals.

3. When unexpected expenses occur I usually have to use credit.

4. When faced with a financial challenge, I have a hard time figuring out a solution.

5. I lack confidence in my ability to manage my finances.

6. I worry about running out of money.

Additional demographic information concerning the participant’s gender, race/ethnicity, class level, academic related measures (e.g., grade point average, admission standardized test scores and class level) and family income was obtained from available university student
records, including information from the admission application, the 2012-13 Free Application for Federal Student Aid (FAFSA) and Student Support Services program application and materials.

The FLSES balanced questions in the areas of knowledge, behavior and self-efficacy and designed to help measure the interplay, along with student demographical data, between these components. The FLSES contained specific questions that elicit responses that help assess the respondent’s knowledge of financial concepts through their familiarity with income, money management, savings/investing and spending/credit. The answers to questions related to credit card habits, prior financial education, familiarity with taxes, and savings and investment vehicles provided a more complete picture of the respondent’s level of financial acumen. A respondent’s’ level of self-efficacy when dealing with financial obstacles, gleaned from questions in the last section of the FLSES, provide key information relative to respondent’s attitude and confidence when faced with financial challenges, obstacles or hardships.

**Instrument Evaluation**

The Jump$tart Personal Financial Survey was evaluated in 2005 by Thomas Lucey, an independent researcher, using the results from 1997 and 2000 that were administered to high school seniors nation-wide. Using Kuder-Richardson 20 (KR20) to evaluate the internal consistency, Lucey (2005) reported that the entire Jump$tart survey had moderately high internal consistency with ($\alpha = 0.78$) and limited construct, congruent, and face validity. Lucey (2005) attributed the low levels of internal consistency of the categories to overlapping financial tenets and the limited number of items for some categories (i.e., income, money management, savings and investment, spending and credit). In calculating the test-retest reliability, Lucey (2005) identified several items that showed a significant difference in the responses. Lucey attributed these items to the lack of achievement data which was not collected and the random selection of
participants from high schools across the country. Since Lucey (2005) found that the knowledge categories (i.e., income, money management, savings and investment, spending and credit) had low levels of consistency, only the overall score was used and evaluated for the purposes of the study.

Lucey (2005) also evaluated the validity of the Jump$tart survey by reviewing literature related to the development of the survey, prior financial literacy measures, related research, and communication with the Jump$tart Coalition. In the development of the survey, the Jump$tart Coalition had financial professionals and educational leaders review the instrument to ensure that the survey aligned with the Coalition’s curriculum guidelines, which are the most widely recognized and accepted financial education standards at the time (Mandell, 2004). Based on these factors, Lucey (2005) determined that the survey has face and content validity.

Finally, Lucey had teachers evaluate the survey for social bias. The teachers evaluated the survey against how they believed the survey would be interpreted similarly by students from different races or ethnicities; family income; family wealth; living circumstances (e.g. living at home, living on own). Lucey (2005) identified social bias and determined that students of different ethnicities, family income and home environment would interpret questions differently. Lucey pointed out that some of the least agreed upon items related to tax rates, business tax effects, college savings, growth investments, government protection, emergency funds, and inflation. Lucey attributed the difference to the greater familiarity of upper socio-economic students would have with the financial content.

Lown (2011) measured internal consistency reliability of the Financial Self-Efficacy Scale using Cronbach’s alpha. Lown used a number of methods to assess the validity of the scale. For criterion-related validity, Lown correlated responses from the scale against the
Retirement Personality Type, a self-perception measure of investment sophistication adapted from a Retirement Confidence Survey conducted by the Employee Benefit Research Institute in 2000. Lown also applied a one-way analysis of variance (ANOVA) to assess validity. As part of the validation process, Lown also conducted a factor analysis to determine the extent to which financial self-efficacy is similar to or different from general self-efficacy. Lown hypothesized that the more sophisticated and self-confident the investor, the higher the financial self-efficacy score.

The Jump$tart Survey and Financial Self-Efficacy Scale, based on rigorous review, are appropriate instruments for use with college students. The Financial Literacy and Self-Efficacy Survey, therefore, is a useful tool to help understand and explain the financial literacy, behavior and self-efficacy of college students.

**Data Collection and Timeline**

On April 16, 2013, Student Support Services program participants were introduced by email to the purpose of the study and of their selection to participate (see Appendix B). The participant list of 449 students was provided by the Director of Student Support Services Program and included all enrolled, active members in the program during spring semester 2013. Prior to contacting the students, the study intent and protocol was reviewed with Student Support Service Program staff. The staff agreed to encourage students to complete the Financial Literacy Self-Efficacy Survey, as well as, hand out flyers that were created specifically to help with increasing participant response.

The Financial Literacy Self-Efficacy Survey was administered to participants following the Tailored Design Method (Dillman, et al., 2009) which includes principles for self-administered questionnaires in ways that will reduce survey error from coverage, sampling,
measurement and nonresponse. The FLSES was conducted online using the Survey Monkey website available at www.surveymonkey.com. The collection of data was conducted over an approximate four week period beginning on April 18, 2013, through May 10, 2013. On April 18, 2013, the 449 participants were emailed specific instructions on how to access the survey, including information on how they could qualify for a $200 Amazon card incentive (see Appendix C). Between April 25, 2013 and May 3, 2013, the participants who had not initiated the survey or had begun the survey but had not completed it, received two additional email reminders to complete the survey (see Appendix D). Each of these email reminders contained the link to the survey to increase the probability of the participants completing the survey (Dillman, et al., 2009).

Permission to access and use student record data was granted by the university’s student record data custodian (i.e., Vice President of Student Affairs and Enrollment). The Institutional Review Board form and supporting documents were submitted following the institution’s policy and procedures (see Appendix E). The study protocol was approved on April, 10, 2013. The student information including academic, demographic and financial aid data was obtained with the assistance of Washington State University’s Institutional Research Office and the Financial Aid and Scholarships Office.

**Data Management and Analysis**

The Financial Literacy Self-Efficacy Survey was developed and coded to ensure all pertinent questions were answered and avoid missing survey data. The survey data and responses were hosted on Survey Monkey’s secure server. The $200 Amazon card incentive drawing for the SSS participants who had completed the survey was conducted using a free online service available at random.org. The successful survey respondent was notified on May
29, 2013. After the six weeks of data collection expired, access to the FLSES was removed and the responses, along with student demographic, academic and financial aid data, were uploaded to an excel document and analyzed using the SPSS statistical software program.

The survey data that was uploaded from Survey Monkey included responses from 174 individual participants (39 percent) out of the total possible sample of 449 Student Support Services program participants. Of the 174 initial participants, a total of 57 (33 percent) completed only one of two sections, the confidential and consent or the knowledge based section. For the purpose of the study, data from only the participants who completed all three sections (i.e., confidential/consent, knowledge and self-efficacy) were analyzed. This included a total of one hundred and seventeen respondents ($n=117$), 26 percent of the possible 449 Student Support Services program participants. The first step in the analysis process involved gaining a better understanding of the overall dataset by conducting a descriptive statistical analysis. An additional aspect of the analysis included the assignment of values to determine the respondent’s level of financial literacy and self-efficacy.

**Financial Literacy Level**

For consistency purposes, a nominal value was assigned to measure correct versus incorrect answers for questions 6 through 36 on the Financial Literacy Self-Efficacy Survey. The rating scale developed by Mandell (2008) to determine the financial literacy score earned on the Jump$tart survey was used in this study to determine financial literacy levels. The scale rating included:

- Scores of 70 percent or greater equal a high level of financial literacy
- Scores between 50 percent and 70 percent equal average level of financial literacy
- Scores of 50 percent or less equal low level of financial literacy
Self-Efficacy Level

The rating scale used from the survey data to assess respondents’ answers to the six self-efficacy questions (54 through 59) was based on a one to four point Likert scale; 1 = Exactly true; 2 = Moderately true; 3 = Hardly true; and 4 = Not at all true. The score range (6 minimum to 24 maximum points) corresponded to Schwarzer and Jerusalem’s (1995) research and use of the total score as an appropriate measure to calculate the mean (Lown, 2011). Following Schwarzer and Jerusalem’s (1995) recommendation, Lown did not designate a specific cutoff score for assessing self-efficacy. However, based on the scores derived from the study, Lown conceptualized the scores of 16, 17, 18 as near the mean and 17 as above or below the mean.

In addition to the rating scales used to assess the respondent’s financial literacy and self-efficacy level, specific statistical tests were conducted to analyze each research question.

Research Question One - What differences exist in the financial literacy level of participants as it relates to academically related measures (grade point average, SAT/ACT score and class standing)?

Independent t-tests and analysis of variance (ANOVA) tests were conducted to examine the differences between the variables of this research question. The dependent variable was the financial literacy level of the respondents. The respondent’s financial literacy level was evaluated using moderating factors for each independent variable. The independent variables used for the independent t-tests and ANOVA test included the following:

- Washington State University (WSU) Grade Point Average (GPA) was grouped into two categories based on the university’s average undergraduate GPA:
  - Below average (a 3.05 cumulative GPA or less)
  - Above average (greater than a 3.05 cumulative GPA)
• High school GPA was grouped into two categories based on the average high school GPA for the WSU fall 2012 entering freshmen class:
  
  Below average (a 3.29 GPA or less)
  Above average (greater than a 3.29 GPA)

• Transfer GPA was grouped into two categories based on the average transfer GPA for the fall 2012 entering transfer student class:
  
  Below average (a 3.11 GPA or less)
  Above average (greater than a 3.11 GPA)

• SAT or composite ACT was grouped into two categories based on the average score for the fall 2012 entering freshmen class:
  
  Below average (a 1150 total math and verbal score or less)
  Above average (greater than a 1150 total math and verbal score)

• Academic class level was based on total semester credits earned at WSU, including credits earned in transfer, and grouped as:
  
  Freshmen (0-29 total credits)
  Sophomore (30-59 total credits)
  Junior (60-89 total credits)
  Senior (90 and greater total credits)

  *Research Question Two* - What is the relationship between participant’s financial literacy level and their credit card debt, student loan debt, and savings/investing?

  Pearson correlations were conducted to address each aspect of this question and the following relationships were evaluated:

  • The relationship between financial literacy level and student credit card debt.
• The relationship between financial literacy level and student loan debt.

• The relationship between financial literacy level and savings/investing.

The correlation tests helped identify the relationship between study constructs (i.e., financial literacy, credit and loan debt, and savings/investing). The $r$-value was reviewed and a $p$ value of 0.05 or less was used to determine if a statistical significance difference existed between these constructs. The dependent variable was the financial literacy level of the respondents. The independent variables included credit card, student loan debt, and savings/investing level.

*Research Question Three* - To what degree do race, ethnicity, gender, employment status and family income relate to financial literacy levels?

A multiple regression analysis was performed to evaluate the relationship between financial literacy levels and the variables of race/ethnicity, gender, employment and family income. The dependent variable was the respondents’ financial literacy level. The independent variables of race/ethnicity, gender, employment status, and family income were reviewed.

*Research Question Four* - To what degree does self-efficacy relate to financial literacy levels?

A Pearson correlation test was conducted to address this question. The relationship between financial literacy level and self-efficacy were evaluated. The independent variable (i.e., self-efficacy score) was calculated based on a numeric one to four Likert based scale (Lown, 2011). The $r$-value was reviewed and a $p$ value of 0.05 or less was used to determine if a statistical significance difference existed between the self-efficacy and financial literacy levels.

Lastly, specific demographic factors (i.e., race/ethnicity and gender) were examined for similarities and differences to that of Washington State University’s undergraduate population. The Kuder-Richardson 20 (KR20) was calculated and reported for the knowledge scored section
(questions 6 through 31) of the Financial Literacy Self-Efficacy Survey. The mean, standard deviation, skewness and kurtosis values were examined and applied to the evaluation of the financial literacy levels of the respondents. The differences in the mean scores in terms of loan debt, credit card number and outstanding balance, gender, race/ethnicity, academic class standing, Student Support Services category (i.e., first generation, low-income, disabled, or a combination thereof) and self-efficacy level were also evaluated.

**Chapter Summary**

The financial literacy, behavior and self-efficacy of Student Support Services participants were evaluated with the data derived from the Financial Literacy Self-Efficacy Survey, student demographical and academic record data. The survey was developed using the 2008 Jump$tart College Student Survey (Mandell, 2008) and the Financial Self-Efficacy Scale (Lown, 2011). The JumpStart Survey has been administered by the Jump$tart Coalition to assess the financial literacy level of over 10,000 graduating high school seniors. In 2008, the survey was administered for the first time to 1030 college students. Other surveys have been modeled from the Jump$tart high school survey and collectively have been administered to over 2000 participants (Danes & Hira, 1987; McKenzie, 2009; Thaden & Rookey, 2005). While other studies have sought to determine the impact of economic or financial self-efficacy (Dietz, Carrozza, & Ritchey, 2003; Dulebohn & Murray, 2007; Engleberg, 2007) the financial self-efficacy scale developed by Lown (2011) specifically measures behavioral aspects of personal financial management.

Research studies and surveys confirm that students seek more information or education on financial topics (Xiao et al., 2011; Goetz, Cude, Nielsen, Chatterjee, & Mimura, 2011). With
the enactment of the Higher Education Opportunity Act 2008 TRIO programs, including Student Support Services, are mandated to provide financial literacy programming specifically to:

improve the financial literacy and economic literacy of students in areas such as – (1) Basic personal income, household money management, and financial planning skills; and (2) Basic economic decision-making skills, the first college supported programs required to do so. (HEOA, 2008, 646.1, section 3).

The findings of this study provide information that should help Student Support Services better understand the needs of their participants but also help in satisfying financial (i.e., economic) literacy program requirements. Given that SSS can only support a limited number of students, the findings should be useful for other WSU departments and campuses. First generation students represent approximately 37.6 percent of Washington State University’s overall undergraduate student body, of which 36.2 percent attend the Pullman campus (WSU Institutional Research, personal communication, December 2013). In 2012-2013, WSU delivered over $31 million in Federal Pell grants to approximately 7200 students, which represents roughly 40 percent of the undergraduate student population (WSU’s Office of Financial Aid & Scholarships, personal communication, October 2013). The analyses revealed differences and trends that should help better understand the relationship between financial literacy, self-efficacy and behavior of Student Support Services participants, the majority of whom are first generation or low-income students. However, the study also carries wider implications for all students, regardless of background, and should pique the interest of faculty, administrator and students to seek more support in developing financial literacy, an important aspect of student life during college and as alumni, after college.
CHAPTER 4: RESULTS

While there has been research on the financial literacy of college students, little is known about the relationship between financial literacy, behavior and self-efficacy. The purpose of the study is to examine these factors, specifically from a first generation, low-income perspective, and add to the body of knowledge on college student financial literacy. Based on a theoretical framework that encompasses key behavior and self-efficacy constructs from Bandura’s Social Cognitive Theory (1977, 1986, 1997) and Prochaska’s and DiClemente’s Transtheoretical Model (1984), the study explores the following questions:

1. What differences exist in the financial literacy level of participants as it relates to academically related measures (grade point average, SAT/ACT score, and class standing)?

2. What is the relationship between participants’ financial literacy level and their a) credit card debt; b) student loan debt; and c) saving/investing?

3. To what degree do race/ethnicity, gender, employment status, and family income relate to financial literacy levels?

4. To what degree does self-efficacy relate to financial literacy levels?

General Descriptive Analyses

A total of 174 of the 449 Washington State University’s Student Support Services Program sample started the Financial Literacy Self-Efficacy Survey. Fifty-seven (n=57, 33 percent) of the 174 completed only the first section of the FLSES (i.e., the introductory, confidential and consent information). The remaining 120 participants completed the entire survey, with the exception of three respondents, who did not provide full consent or only partially completed the survey. As a result, one hundred seventeen (n=117) responses are
included in this study, representing 26 percent of the total Student Support Services program participant sample \((n=449)\). Table 1 provides the gender distribution of the SSS program, respondent pool and overall WSU population. Of the 117, thirty nine \((n=39)\) were males (33.3 percent) and seventy eight \((n=78)\) were females (66.7 percent). As compared to the sample Student Support Services program participant pool, this represents a slightly lower percentage in males \((n=165, 37\%\) and a slightly larger percentage rate in females \((n=284, 63\%\). Student Support Services participant rates by gender differ proportionately from that of Washington State University’s student body. In fall 2012, Washington State University’s undergraduate population reflected 48 percent females and 52 percent males out of 17,634 total students (WSU Institutional Research, 2014).

Table 1 Descriptive Statistics for Gender Distribution

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number of SSS Participants</th>
<th>Number of SSS Survey Respondents</th>
<th>SSS Survey Respondent Percentage Rate</th>
<th>SSS Participant Percentage Rate</th>
<th>WSU Percentage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>165</td>
<td>39</td>
<td>33.3%</td>
<td>37%</td>
<td>52%</td>
</tr>
<tr>
<td>Female</td>
<td>284</td>
<td>78</td>
<td>66.7%</td>
<td>63%</td>
<td>48%</td>
</tr>
</tbody>
</table>

Student Support Services Groups

Student Support Services at WSU provides programming for five distinct groups including disabled; disabled and low-income; first generation; first generation and low-income; and low-income. Table 2 provides the overall distribution by SSS group between participants and survey respondents. Of the total 117 respondents, 3.4 percent \((n=4)\) were disabled and low income; 45.3 percent \((n=53)\) were first generation; 48.7 percent \((n=57)\) were first generation and low-income; and 2.6 percent \((n=3)\) were low-income only. While no disabled only participants completed the survey, the distribution among the respondent group was similar to the overall SSS program participation \((n=449)\) with the exception of a slightly higher percentage in the
disabled and low-income (2 percent) and lower percentages in first generation (47 percent), first generation and low-income (45.8 percent), and low-income (3.3 percent) group.

Table 2 *Descriptive Statistics for SSS Group Distribution*

<table>
<thead>
<tr>
<th>SSS Group Category</th>
<th>Number of SSS Participants</th>
<th>Number of SSS Survey Respondents</th>
<th>SSS Survey Respondent Percentage Rate</th>
<th>SSS Participant Percentage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>6</td>
<td>0</td>
<td>0.0%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Disabled/Low Income</td>
<td>9</td>
<td>4</td>
<td>3.4%</td>
<td>2.0%</td>
</tr>
<tr>
<td>First Generation</td>
<td>213</td>
<td>53</td>
<td>45.3%</td>
<td>47.4%</td>
</tr>
<tr>
<td>First Generation/Low Income</td>
<td>206</td>
<td>57</td>
<td>48.7%</td>
<td>45.8%</td>
</tr>
<tr>
<td>Low Income</td>
<td>15</td>
<td>3</td>
<td>2.6%</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

**Academic Class Standing**

The academic class standing profile (see Table 3) of the respondents included 15 freshmen (12.8 percent); 24 sophomores (20.5 percent); 33 juniors (28.2 percent); and 45 seniors (38.5 percent). As compared to the overall SSS program participant sample, there were slightly fewer freshmen and sophomores, and more juniors and seniors who completed the survey.

Table 3 *Descriptive Statistics for Academic Class Standing Distribution*

<table>
<thead>
<tr>
<th>Academic Class</th>
<th>Number of SSS Participants</th>
<th>Number of SSS Survey Respondents</th>
<th>SSS Survey Respondent Percentage Rate</th>
<th>Overall SSS Participant Percentage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshmen</td>
<td>65</td>
<td>15</td>
<td>12.8%</td>
<td>14.5%</td>
</tr>
<tr>
<td>Sophomore</td>
<td>109</td>
<td>24</td>
<td>20.5%</td>
<td>24.3%</td>
</tr>
<tr>
<td>Junior</td>
<td>106</td>
<td>33</td>
<td>28.2%</td>
<td>23.6%</td>
</tr>
<tr>
<td>Senior</td>
<td>169</td>
<td>45</td>
<td>38.5%</td>
<td>37.6%</td>
</tr>
<tr>
<td>Total</td>
<td>449</td>
<td>117</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Race/Ethnicity

The race/ethnicity of the survey respondents and overall Student Support Services participant numbers are reflected in Table 4. Due to the small samples sizes (less than 8), participants who identified as either only Native American or Hawaiian were coded as “Other/unknown.” In addition, participants who indicated two or more races or ethnicities were listed under the “2 or more” category. Race/ethnicity representation among the Student Support Services program was similar to the survey respondent pool with the exception of slightly more White students and slightly fewer African American/Black students. The race/ethnicity distribution of the study respondent group or the Student Support Services program participants is not representative of the university. As shown in Table 4 white students represent 67 percent of the university’s student population, while Hispanics, Asian and Black/African students represent 9 percent, 5 percent, and 3 percent respectively.

Table 4

Descriptive Statistics for Race/Ethnicity Distribution

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>SSS Respondent Total</th>
<th>SSS Respondent Percentage</th>
<th>SSS Participant Total</th>
<th>SSS Participant Percentage</th>
<th>WSU Percentage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>32</td>
<td>27.4%</td>
<td>110</td>
<td>24.5%</td>
<td>67%</td>
</tr>
<tr>
<td>Black/African</td>
<td>14</td>
<td>12.0%</td>
<td>68</td>
<td>15.1%</td>
<td>3%</td>
</tr>
<tr>
<td>Hispanic origin</td>
<td>53</td>
<td>45.3%</td>
<td>198</td>
<td>44.1%</td>
<td>9%</td>
</tr>
<tr>
<td>Asian</td>
<td>8</td>
<td>6.8%</td>
<td>26</td>
<td>5.8%</td>
<td>5%</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>N/A</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Native</td>
<td>N/A</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Native American</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 or more</td>
<td>5</td>
<td>4.3%</td>
<td>18</td>
<td>4.0%</td>
<td>6%</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>5</td>
<td>4.3%</td>
<td>29</td>
<td>6.5%</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>449</td>
<td>17634</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Credit card data

As illustrated in Table 5, a total of 51 respondents (43.6 percent) indicated “none” and 35 respondents (29.9 percent) listed having at least one card for the question on “how many credit cards do you use, including store credit cards.” Of the 51 who reported using “none” for the number of credit cards, 48 indicated they had an outstanding balance of under $1000, and three respondents noted an outstanding balance of greater than $1000, $5,000 to $9,999, or more than $10,000. Given that “no balance” was not offered as an option, it is highly likely that the 48 respondents did not have a credit card or no longer used their credit card and therefore, did not carry a balance. Forty-seven percent (n=31) of the respondents who had credit cards owned more than one card and of those, 16 percent had three or more cards. In terms of the respondents who indicated when they received their first credit card, thirty-five (32 percent overall) reported they had done so before or when they graduated high school and seventy-six (68 percent overall) during college.

Table 5

**Descriptive Statistics for Credit Card Number Distribution**

<table>
<thead>
<tr>
<th>Credit Cards</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five or more</td>
<td>4</td>
<td>3.4</td>
</tr>
<tr>
<td>Four</td>
<td>1</td>
<td>.9</td>
</tr>
<tr>
<td>None</td>
<td>51</td>
<td>43.6</td>
</tr>
<tr>
<td>One</td>
<td>35</td>
<td>29.9</td>
</tr>
<tr>
<td>Three</td>
<td>7</td>
<td>6.0</td>
</tr>
<tr>
<td>Two</td>
<td>19</td>
<td>16.2</td>
</tr>
</tbody>
</table>

n=117

Table 6 summarizes the average credit balance activity for those respondents who reported that they were using at least one credit card (n=66), including the number who only paid
minimum balances or paid off the total balance at the end of the month. The majority \((n=38\) or 58 percent) of the respondents maintained an outstanding balance and \((n=47\) or 52.6 percent) carried a balance of under $1000.

Table 6

*Descriptive Statistics for Credit Card Balance Distribution*

<table>
<thead>
<tr>
<th>Average Credit Balance</th>
<th>Number of Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $1000</td>
<td>47</td>
<td>71.2%</td>
</tr>
<tr>
<td>$1000 to $2499</td>
<td>12</td>
<td>18.2%</td>
</tr>
<tr>
<td>$2500 to $4999</td>
<td>4</td>
<td>6.1%</td>
</tr>
<tr>
<td>$5000 to $9999</td>
<td>1</td>
<td>1.5%</td>
</tr>
<tr>
<td>More than $10000</td>
<td>2</td>
<td>3.0%</td>
</tr>
<tr>
<td>Pay off balance each month</td>
<td>28</td>
<td>42.0%</td>
</tr>
</tbody>
</table>

\(n = 66\)

**Loan Debt**

The mean student loan (i.e., federal Direct Student and Perkins) indebtedness of the respondents was $11,736. A total of 95 respondents (81 percent) borrowed amounts ranging from $500 to $43,115. Fourteen (12 percent) of the respondents had not borrowed student loans. The remaining eight respondents (6.8 percent) did not file a 2012-2013 FAFSA, therefore, no federal student loan data was available. As compared to the 332 Student Support Services program participants who did not complete the survey (i.e., non-respondents), 38 non-respondents (11 percent) did not file a FAFSA. Of the remaining 294 non-respondents who filed a FAFSA, 51 (20 percent) had not borrowed. The 234 participants (80 percent) who borrowed had debt ranging from $500 to $61,252, with a mean average loan indebtedness of $12,221.

Table 7 shows the loan indebtedness by specific ranges for respondents who filed a FAFSA. Forty-four (46 percent) of total borrowers had incurred debt above the mean loan indebtedness of $11,736. The maximum amount of loans (Stafford and Perkins cumulatively) a traditional dependent undergraduate student can borrow based on WSU’s financial aid packaging
policy is approximately $27,000. In 2011, the mean loan indebtedness for WSU’s graduating senior class (2,775 of 4,885 total students) was $21,637 (WSU Office of Financial Aid & Scholarships, September, 15, 2013). Approximately 22 percent (n=24) had incurred student loan debt close to or over the mean 2011 loan indebtedness for WSU graduating seniors.

Table 7

Descriptive Statistics for Loan Debt Distribution

<table>
<thead>
<tr>
<th>Loan Debt</th>
<th>Number of Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $4,999</td>
<td>26</td>
<td>23.9%</td>
</tr>
<tr>
<td>$5,000 to $9,999</td>
<td>23</td>
<td>21.1%</td>
</tr>
<tr>
<td>$10,000 to $14,999</td>
<td>13</td>
<td>11.9%</td>
</tr>
<tr>
<td>$15,000 to $19,999</td>
<td>9</td>
<td>8.3%</td>
</tr>
<tr>
<td>$20,000 to $24,999</td>
<td>6</td>
<td>5.5%</td>
</tr>
<tr>
<td>More than $25,000</td>
<td>18</td>
<td>16.5%</td>
</tr>
<tr>
<td>Had not borrowed</td>
<td>14</td>
<td>12.8%</td>
</tr>
</tbody>
</table>

n = 109

Financial Literacy Level

The financial literacy level (i.e., score) of the respondents was calculated in terms of percentage of correct responses to the scored section (questions 6 through 36) of the Financial Literacy Self-Efficacy Survey. The total maximum possible score a respondent could achieve was 31. The internal consistency of the FLSES was evaluated using Cronbach’s alpha. The survey had moderately high internal consistency with α = 0.788.

The financial literacy mean score of the respondents for the total 31 questions was 57.8 percent. The standard deviation was .164 and the scores ranged from 6 (19.4 percent) to 30 (96.8 percent). The study’s financial literacy mean score of 57.8 percent was higher than participant mean scores of three previous financial literacy studies conducted on college students. In one study, participants had a mean financial literacy score of 44 percent (Volpe, Chen & Pavlicko, 1996). In another study, the mean score of the participants was 52.87 percent (Chen & Volpe,
1998). Avard et al. (2005) found that the mean score of their study was 34.8 percent and an overwhelming 92 percent of the participants did not achieve a passing rate of at least 60 percent on the survey. The mean score of the study respondents fell close to or below the results of four other studies, one of which was a study that was conducted previously at Washington State University (Thaden & Rookey, 2005). In Thaden and Rookey’s (2005) study, a project that included assessing the financial literacy of WSU students with a questionnaire that was patterned on the Jump$tart survey, the overall mean score for freshmen (n=830) was 56 percent and seniors (n=401) was 58 percent. Norvilitis et al., (2006) administered the Jump$tart survey to 448 students from three different states and the average score of their study sample was 60 percent. In Mandell’s (2008) survey, college students scored an average of 62.2 percent. In another study (McKenzie, 2009) that measured the literacy level of students majoring in business, the mean score was significantly higher at 72.56 percent. McKenzie’s (2009) study is consistent with other research (Chen & Volpe, 1998; Murphy, 2005; Volpe, Chen & Pavlicko, 1996) that suggests participants majoring in business are more financially literate than non-business majors. In the review of academic major data, twelve (10.3 percent) of the 117 respondents in the study were business majors. The average score of respondents who were business majors was 62.6 percent. The mean score of business majors was close to 5 percentage points greater than the respondent’s overall mean score of 57.8 percent, which similarly suggests that business majors are more financially literate.

As shown in Table 8, the skewness value is -.265 (SE = .224) and the kurtosis value is .015 (SE = .444). A rule of thumb suggests that skewness and kurtosis values within the range of +/-2 (SE) are generally considered normal or within reasonable approximation (Lomax & Hahs-Vaugh, 2012). A more stringent application for determining normal distribution is to use +/-1
for skewness or kurtosis values. However, +/-1 is more sensitive to small sample sizes. The financial literacy score distribution was negatively skewed (-.265) which indicates that most of the financial literacy scores were on the high end. The distribution was leptokurtic (k=.015) which indicates that most scores were close to the mean score. Given these values, skewness is within the range of -.448 to +.448 and kurtosis is within the range of -.888 and +.888, and therefore, should be considered normal.

Table 8

Descriptive Statistics for Financial Literacy Score Distribution

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Skewness</th>
<th>Std Error of Skewness (SE)</th>
<th>Kurtosis</th>
<th>Std Error of Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Literacy Score</td>
<td>.578</td>
<td>.164</td>
<td>-.265</td>
<td>.224</td>
<td>.015</td>
<td>.444</td>
</tr>
<tr>
<td>n = 117</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There were eight extreme values on the low end of the score range. An outlier is commonly ruled as an observation that is between two or three standard errors from the mean. There were four outliers also on the low end of the score range which were above two standard deviations from the mean. On the high end of the score range, there were five extreme values and two outliers that were above two standard deviations from the mean. The outliers and extreme values on the low and high end of the financial literacy score distribution were considered during subsequent analyses.

Self-Efficacy Level

The respondent’s level of financial self-efficacy was measured on a one to four Likert based scale (6 minimum to 24 maximum score possible) with a larger score representing a higher level of self-efficacy. The respondents’ mean score (M=14.89) represented close to 53.8% of the
cumulative scores between 6 and 14. As shown in Table 9, the skewness value is \( -0.342 \) \( (SE = 0.224) \) and the kurtosis value is \( -0.249 \) \( (SE = 0.444) \). The self-efficacy score distribution was negatively skewed which indicates that most of the financial literacy scores were on the high end. The distribution was platykurtic which indicates that the scores were relatively flat.

Table 9

*Descriptive Statistics for Self-Efficacy Score*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Skewness</th>
<th>Std Error of Skewness</th>
<th>Kurtosis</th>
<th>Std Error of Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy</td>
<td>14.89</td>
<td>3.42</td>
<td>-0.180</td>
<td>0.224</td>
<td>-0.249</td>
<td>0.444</td>
</tr>
<tr>
<td>( n = 117 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In summary, the mean score for the respondent’s financial literacy was 57.8 percent and their self-efficacy mean score was 14.89. The general descriptive analyses also revealed more SSS female participants (66.7 percent) completed the survey than males. The race/ethnicity breakdown for respondents was similar to the SSS participant pool with slightly more representation among all groups with the exception of Black and Other/unknown categories. As compared to WSU’s overall undergraduate distribution by race/ethnicity, the representation among non-white groups was higher and significantly different from WSU’s undergraduate population in the White category (close to 40 percent lower) and Hispanic (36 percent greater).

In terms of credit card behavior, more than half (52.6 percent) of the 66 respondents who reported using at least one credit card, carried an outstanding balance of under $1000. And lastly, the mean student loan indebtedness of the 81 percent respondents who borrowed was $11,736.
Analysis – Bivariate and Multivariate

Research Question One: What differences exist in the financial literacy level of participants as it relates to academically related measures (grade point average, SAT/ACT score, and class standing?)

Independent $t$-tests and ANOVA tests were conducted to examine what differences existed in the financial literacy level of the respondents as it related to academically related measures (i.e., grade point average, SAT/ACT score and class standing). The independent $t$-test is traditionally conducted to examine differences in means, between the dependent variable and two groups or categories of the independent variable. The sample size of the two groups or categories need not be equal or the same. While the ANOVA test statistic ($F$) produces the identical results as the independent $t$-test statistic ($t$), the ANOVA test is typically used to accommodate an independent variable with more than two groups or categories.

For the purpose of this analysis, grade point average (GPA) was grouped to align with institutional student profile data as reported for each the high school, transfer and the WSU GPA group. At the time the original sampling was drawn, academic class and cumulative WSU GPA reflected the participant’s standing as of the beginning of spring 2013. The WSU GPA comprised of two groups, less than a 3.05 cumulative GPA (below) and greater than a 3.05 cumulative GPA (high), which corresponded to the average cumulative GPA for all students (WSU Institutional Research, 2014). High school and transfer GPA were grouped into two categories; below average and above average and were closely aligned to the GPA’s for the entering class of fall 2012; a 3.29 average high school GPA and 3.11 transfer GPA (WSU Fact Book, 2014). Similarly, standardized admission scores for SAT and ACT composite scores were grouped into two categories; below and above average to correspond with the average score.
(1150) for the entering class of fall 2012 (WSU Fact Book, 2014). And lastly, the academic class category included four undergraduate groups (i.e., freshmen, sophomore, junior and senior) based on the number of semester credits hours completed at WSU and other transferable credits.

**Financial Literacy Score and WSU GPA**

The distribution of the financial literacy scores were examined separately for each WSU GPA group (below and above a 3.05 GPA) including the mean, standard deviation, skewness and kurtosis values. In the review for extremes and outliers, six cases were noted in the below WSU GPA group that were within 2.4 standard deviations from the mean. There was evidence that the normality assumption was not met for financial literacy score and WSU GPA groups. The Kolmogorov-Smirnov test (K-S) and the Shapiro-Wilk test (S-W) reflected scores within a .05 level of significance, .010 and .031 respectively. Given that homogeneity of variance assumption was met, the independent t-test was conducted using ranked scores (Lomax & Hahs-Vaugh, 2012). A review of the ranked mean, standard deviation, skewness and kurtosis values is provided in Table 10. The WSU GPA groups had skewness (positive) and kurtosis values (platykurtic) that were within reasonable ranges.

Table 10

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below WSU GPA</td>
<td>56</td>
<td>26.88</td>
<td>16.28</td>
<td>.124</td>
<td>-1.20</td>
</tr>
<tr>
<td>Above WSU GPA</td>
<td>61</td>
<td>29.44</td>
<td>17.70</td>
<td>.100</td>
<td>-1.23</td>
</tr>
</tbody>
</table>

\( n = 117; \) Type I error rate \( \alpha = 0.05 \)

A summary table of the independent t-test ranked results for financial literacy score and WSU GPA is provided in Table 11. The obtained \( t (115) = .817, p = 0.417 \) was judged not to be statistically significant using the predetermined Type I error rate of \( \alpha = 0.05 \). The effect size (\( \eta^2 \) = .006) was small suggesting that less than one percent of the variance in the financial literacy
score is due to differences in WSU GPA. These results suggest that the ranked mean financial literacy scores for the WSU GPA groups do not differ and that WSU GPA does not have an impact on financial literacy scores.

Table 11

*Independent t-test Results for Ranked Financial Literacy Score and WSU GPA*

<table>
<thead>
<tr>
<th></th>
<th>Below Average</th>
<th>Above Average</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literacy Score</td>
<td>26.88</td>
<td>29.44</td>
<td>-8.81, 3.68</td>
<td>-0.817</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>16.28</td>
<td>17.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>56</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( n = 117; \) Type I error rate \( \alpha = 0.05 \)

**High School GPA Financial Literacy Score Distribution**

The distribution of the financial literacy scores were examined separately for the high school GPA groups (below and above a 3.29 GPA) including the mean, standard deviation, skewness and kurtosis values for each is provided in Table 12. In the review for extremes and outliers, three cases within the above average high school GPA group were two standard deviations over the mean. The skewness and kurtosis values were within reasonable ranges for both groups. The negative skewness value for the below average high school group indicated that most scores were on the high end. The positive skewness value for the above average high school group indicated that scores were toward the low end of the distribution and closer to normal. The distribution for each group was leptokurtic with the below average group closer to a normal distribution.
Table 12

Descriptive Statistics for Financial Literacy Score and High School GPA

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Average</td>
<td>28</td>
<td>.559</td>
<td>.173</td>
<td>-.414</td>
<td>.067</td>
</tr>
<tr>
<td>Above Average</td>
<td>62</td>
<td>.564</td>
<td>.160</td>
<td>.010</td>
<td>.209</td>
</tr>
</tbody>
</table>

n = 90

A summary table of the independent t-test results for financial literacy level and high school GPA is provided in Table 13. The obtained $t(115) = .976, p = 0.331$ was judged not to be statistically significant using the predetermined Type I error rate of $\alpha = 0.05$. The effect size ($\eta^2 = .000$) suggests none of the variance in financial literacy score is due to differences in high school GPA. These results suggest that the mean financial literacy scores for each of the high school GPA groups do not differ significantly and indicates that high school GPA does not have a significant impact on financial literacy scores.

Table 13

Independent t-test Results for Financial Literacy Score and High School GPA

<table>
<thead>
<tr>
<th></th>
<th>High School GPA</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Below Average</td>
<td>Above Average</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>Financial Literacy Score</td>
<td>.559</td>
<td>.173</td>
<td>28</td>
<td>.564</td>
</tr>
</tbody>
</table>

n = 90; Type I error rate $\alpha = 0.05$

Financial Literacy Level and Transfer GPA

The distribution of the financial literacy scores were examined separately for each transfer GPA group (below and above a 3.11 GPA) including the mean, standard deviation, skewness and kurtosis values for each group, is provided in Table 14. There were no outliers or extremes noted. The skewness and kurtosis statistics suggested that normality of financial literacy levels for the transfer GPA groups was a reasonable assumption.
Table 14

Descriptive Statistics for Transfer GPA Financial Literacy Score Distribution

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Average</td>
<td>16</td>
<td>.647</td>
<td>.119</td>
<td>.081</td>
<td>-1.25</td>
</tr>
<tr>
<td>Above Average</td>
<td>12</td>
<td>.610</td>
<td>.196</td>
<td>-.877</td>
<td>.430</td>
</tr>
</tbody>
</table>

A summary table of the independent t-test results for financial literacy level and transfer GPA is provided in Table 15. The obtained $t(26) = .621, p = 0.540$ was judged not to be statistically significant using the predetermined Type I error rate of $\alpha = 0.05$. The effect size ($\eta^2 = .015$) was small suggesting two percent of variance in the financial literacy score is due to differences in transfer GPA. These results suggest that the mean financial literacy score for the transfer GPA groups do not differ significantly and indicate that the transfer GPA does not have a significant impact on financial literacy scores.

Table 15

Independent t-test Results for Financial Literacy Score and Transfer GPA

<table>
<thead>
<tr>
<th></th>
<th>5% CI for Mean Difference</th>
<th>T</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Average</td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td>Financial Literacy Score</td>
<td>.647</td>
<td>.119</td>
<td>28</td>
</tr>
</tbody>
</table>

$n = 28$; Type I error rate $\alpha = 0.05$

Financial Literacy Score and SAT/ACT

The distribution of the financial literacy scores were examined separately for each SAT/ACT group (below and above 1150 average score). A summary including the mean, standard deviation, skewness and kurtosis values for the number of respondents in each SAT/ACT group is provided in Table 16. In the review, evidence of both extreme values and outliers were found in each group. There was one outlier in the lower end of the distribution and
two outliers in the upper end of the distribution for the SAT/ACT below average group. In the SAT/ACT above average group, there was one outlier in the lower end of the distribution. The review of the distribution skewness and kurtosis statistics suggested that normality of financial literacy levels was a reasonable assumption with the exception of the kurtosis value (1.96) of the SAT/ACT above average group. The two groups had negatively skewed distributions indicating most of the scores were toward the high end of the score range and were leptokurtic.

Table 16

Descriptive Statistics for SAT/ACT Group Financial Literacy Score Distribution

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below average</td>
<td>79</td>
<td>.551</td>
<td>.161</td>
<td>-.051</td>
<td>.273</td>
</tr>
<tr>
<td>Above average</td>
<td>11</td>
<td>.640</td>
<td>.167</td>
<td>-1.08</td>
<td>1.96</td>
</tr>
</tbody>
</table>

The results from the independent t-test conducted to identify if any difference existed in financial literacy levels and the respondents’ SAT/ACT score is provided in Table 17. The obtained t (88) = -1.75, p = .084, was judged not to be statistically significant using the predetermined Type I error rate of α = 0.05. The effect size was moderate (η2 = .049) suggesting less than five percent of the variance in financial literacy score was due to differences in SAT/ACT scores. These results suggest that the mean financial literacy score for the two SAT/ACT groups do not differ and that SAT/ACT scores have no impact on financial literacy scores.
Table 17

**Independent t-test Results for Financial Literacy Score and SAT/ACT Group**

<table>
<thead>
<tr>
<th>Financial Literacy Score</th>
<th>SAT/ACT Group Below Average</th>
<th>SAT/ACT Group Above Average</th>
<th>95% CI for Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td></td>
<td>.551</td>
<td>.161</td>
<td>79</td>
</tr>
</tbody>
</table>

$n = 90$; Type I error rate $\alpha = 0.05$

Given there was evidence of non-normality (i.e., an unequal sample sizes, a high kurtosis value and a Kruskal-Wallis test value of .047), an independent $t$-test was conducted on the ranked score distribution. The distribution of the financial literacy scores were re-examined for each SAT/ACT group. A summary including the mean, standard deviation, skewness and kurtosis values for the SAT/ACT groups is provided in Table 18.

Table 18

**Descriptive Statistics for SAT/ACT Group and Financial Literacy Ranked Score Distribution**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below average</td>
<td>79</td>
<td>49.62</td>
<td>32.21</td>
<td>.324</td>
<td>-.989</td>
</tr>
<tr>
<td>Above average</td>
<td>11</td>
<td>71.64</td>
<td>34.14</td>
<td>-.660</td>
<td>-.313</td>
</tr>
</tbody>
</table>

$n = 90$

A summary of the independent $t$-test results for the SAT/ACT group based on ranked financial literacy scores is provided in Table 19. The $t$ (88) = -2.11, $p = .038$, was judged to be statistically significant using the predetermined Type I error rate of $\alpha = 0.05$. The effect size was moderate ($\eta^2 = .088$) suggesting less than nine percent of the variance in academic class was due to differences in financial literacy score. These results suggest that the mean financial literacy score for the SAT/ACT groups differ and that there was a significant effect with the above average group receiving higher financial literacy scores, on average, than the below average
SAT/ACT group. The results suggest that the higher the SAT/ACT score, the higher the financial literacy score.

Table 19

*Independent t-test Results for the SAT/ACT group and Ranked Financial Literacy Score*

<table>
<thead>
<tr>
<th></th>
<th>SAT/ACT Group Below Average</th>
<th>SAT/ACT Group Above Average</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Literacy Score</td>
<td>M 49.62, SD 32.21, N 79</td>
<td>M 71.64, SD 34.14, N 11</td>
<td>-42.75, -1.27</td>
<td>-2.11</td>
<td>88</td>
</tr>
</tbody>
</table>

n = 90; Type I error rate α = 0.05

**Financial Literacy Score and Academic Class**

The distribution of the financial literacy scores were examined separately for each academic class status group. A summary including the mean, standard deviation, skewness and kurtosis values for the number of respondents in each class group is provided in Table 20. In the review for extremes and outliers, there was one case noted in the freshmen group and two in the senior group. Each extreme value and outlier was above two standard deviations. The review of the distribution skewness and kurtosis statistics suggested that normality for the academic classes were a reasonable assumption with the exception of the freshmen group (k = 1.78) which was close to an absolute value of two. The majority of the class groups indicated negatively skewed distributions with most of the scores falling on the high end of the score range. The junior class group was closer to normal and platykurtic (i.e., flatter) in distribution.
Table 20

*Descriptive Statistics for Academic Class Group Distribution*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshmen</td>
<td>15</td>
<td>.559</td>
<td>.107</td>
<td>-.791</td>
<td>1.78</td>
</tr>
<tr>
<td>Sophomore</td>
<td>24</td>
<td>.520</td>
<td>.192</td>
<td>-.296</td>
<td>-1.08</td>
</tr>
<tr>
<td>Junior</td>
<td>33</td>
<td>.576</td>
<td>.167</td>
<td>.242</td>
<td>-.022</td>
</tr>
<tr>
<td>Senior</td>
<td>45</td>
<td>.616</td>
<td>.155</td>
<td>-.433</td>
<td>.694</td>
</tr>
</tbody>
</table>

\( n = 117 \)

The results of the ANOVA test to identify if any difference existed in financial literacy levels and the respondent’s academic class (freshmen, sophomore, junior or senior) is provided in Table 21. The obtained F (3,113) = 1.94, \( p = .127 \), was judged not to be statistically significant using the predetermined Type I error rate of \( \alpha = 0.05 \). The effect size was moderate (\( \eta^2 = .049 \)) suggesting less than five percent of the variance in financial literacy score was due to differences in academic class. These results suggest that the mean financial literacy score among different academic classes do not differ and that academic class has no impact on financial literacy scores.

Table 21

*ANOVA Results for Academic Class and Financial Literacy Score*

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.152</td>
<td>3</td>
<td>.051</td>
<td>1.941</td>
<td>.127</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2.958</td>
<td>113</td>
<td>.026</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.110</td>
<td>116</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( n = 117; \) Type I error rate \( \alpha = 0.05 \)

However, based on the graphs (histograms stem-and-leaf and box plots), the residuals (scores), and the high kurtosis value in the freshmen group, sufficient evidence existed that indicated non-normality in the distribution among the academic classes. A new ANOVA test
was conducted after the removal of the observed extreme values and outliers. A summary including the mean, standard deviation, skewness and kurtosis values for the distribution of academic class and financial literacy score adjusted for outliers and extreme value is provided in Table 22. The skewness and kurtosis values, with the exception of the sophomore group, reflected closer to zero normality values.

Table 22

*Descriptive Statistics for Academic Class Groups and Financial Literacy Score Distribution Adjusted for Outliers and Extreme Values*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshmen</td>
<td>14</td>
<td>.578</td>
<td>.080</td>
<td>.441</td>
<td>-.568</td>
</tr>
<tr>
<td>Sophomore</td>
<td>24</td>
<td>.520</td>
<td>.192</td>
<td>-.296</td>
<td>-1.08</td>
</tr>
<tr>
<td>Junior</td>
<td>33</td>
<td>.576</td>
<td>.167</td>
<td>.242</td>
<td>-.022</td>
</tr>
<tr>
<td>Senior</td>
<td>43</td>
<td>.634</td>
<td>.157</td>
<td>.150</td>
<td>-.041</td>
</tr>
</tbody>
</table>

n = 114

A summary of the recalculated ANOVA results is provided in Table 23. \( F (1, 113) = 3.010, p = .033, \) was judged to be statistically significant using the predetermined Type I error rate of \( \alpha = 0.05 \). The effect size was moderate (\( \eta^2 = .076 \)) suggesting less than 8 percent of the variance in financial literacy score was due to differences in academic class. Based on the new results, the mean financial literacy scores for the academic class groups differ. The finding suggests that financial literacy scores differ significantly across academic classes.
Table 23

Recalculated ANOVA Results for Academic Class Groups and Financial Literacy Score

Distribution Adjusted for Outliers and Extreme Values

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.210</td>
<td>3</td>
<td>.070</td>
<td>3.010</td>
<td>.033</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2.559</td>
<td>110</td>
<td>.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.769</td>
<td>113</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( n = 114; \text{ Type I error rate } \alpha = 0.05 \)

Table 24 presents the results of the Tukey HSD comparisons of the mean differences for the academic classes adjusted for outliers and extreme values. The post hoc comparisons indicate that the mean of the sophomore group (M = .520, SD = .192) was significantly different, \( p = .020 \), from that of the senior group (M = .635, SD = .132). This further suggests that the mean financial literacy score for the academic class groups differ and that the significance is due to the difference between sophomores and seniors financial literacy scores as compared to freshmen and juniors.
Table 24

*Tukey Post-Hoc Means of Differences for Academic Class and Financial Literacy Score*

*Adjusted for Outliers and Extremes*

<table>
<thead>
<tr>
<th>Acad Class</th>
<th>Mean Difference</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR</td>
<td>SO</td>
<td>.058</td>
<td>.669</td>
<td>-.076</td>
<td>.192</td>
</tr>
<tr>
<td>JR</td>
<td>SO</td>
<td>.003</td>
<td>1.000</td>
<td>-.124</td>
<td>.129</td>
</tr>
<tr>
<td>SR</td>
<td>SO</td>
<td>-.056</td>
<td>.628</td>
<td>-.179</td>
<td>.066</td>
</tr>
<tr>
<td>SO</td>
<td>FR</td>
<td>-.058</td>
<td>.669</td>
<td>-.192</td>
<td>.076</td>
</tr>
<tr>
<td>JR</td>
<td>FR</td>
<td>-.056</td>
<td>.528</td>
<td>-.162</td>
<td>.051</td>
</tr>
<tr>
<td>SR</td>
<td>FR</td>
<td>-.114</td>
<td>.020</td>
<td>-.216</td>
<td>-.013</td>
</tr>
<tr>
<td>JR</td>
<td>SO</td>
<td>.003</td>
<td>1.000</td>
<td>-.130</td>
<td>.124</td>
</tr>
<tr>
<td>SR</td>
<td>SO</td>
<td>.056</td>
<td>.528</td>
<td>-.051</td>
<td>.162</td>
</tr>
<tr>
<td>SR</td>
<td>SR</td>
<td>-.059</td>
<td>.345</td>
<td>-.151</td>
<td>.033</td>
</tr>
<tr>
<td>JR</td>
<td>SO</td>
<td>.114</td>
<td>.020</td>
<td>.013</td>
<td>.216</td>
</tr>
<tr>
<td>JR</td>
<td>FR</td>
<td>.059</td>
<td>.345</td>
<td>-.033</td>
<td>.151</td>
</tr>
</tbody>
</table>

*The mean difference is significant at the .05 level.

In summary, the findings of the analyses conducted to address the first research question revealed that there was no statistical difference for any GPA group (i.e., WSU, high school or transfer) on financial literacy level. In the analysis of the SAT/ACT groups, a ranked distribution revealed that SAT/ACT score had an impact on financial literacy level. After the removal of outliers, an ANOVA and Tukey HSD test showed that academic class had a significant statistical impact on financial literacy level.

*Research Question Two:* What is the relationship between participants’ financial literacy level and their a) credit card debt; b) student loan debt; and c) saving/investing?

A Pearson correlation coefficient was computed to determine if there was a relationship between the respondents’ financial literacy scores and credit card debt, student loan debt, and
savings/investing level. Each test was conducted using an alpha or $p$ value of .05 to determine the significance of the relationship.

The result of the Pearson’s correlation on the relationship between financial literacy level and credit card debt ($n=66$) was ($r = .214, p = 0.084$). The relationship between financial literacy levels and respondent student loan debt ($n=109$) was ($r = .149, p = 0.123$). The relationship between financial literacy level and respondent savings/investing ($n=113$) was ($r = .047, p = 0.623$).

Cohen (1988) proposed, using $r$ as a measure of effect size, that $r = .1$ as weak, $r = .3$ as moderate, and $r = .5$ as a strong effect. As Table 25 illustrates, each relationship had weak effect size $r$ values and positive $p$ values greater than .05. A separate correlation analysis was conducted after extreme values and outliers were eliminated with no significant change to the results. Based on the results, which included extreme values and outliers, it was found that financial literacy level had no statistically significant relationship with credit card debt, student loan debt or savings/investing level.

Table 25

<table>
<thead>
<tr>
<th>Pearson Correlation Matrix among Financial Literacy Scores and Credit Card Debt, Student Loan Debt and Savings/Investing Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Literacy Score &amp; Credit Card</td>
</tr>
<tr>
<td>Financial Literacy Score &amp; Student Loan</td>
</tr>
<tr>
<td>Financial Literacy &amp; Savings/Investing</td>
</tr>
</tbody>
</table>

In summary, Pearson correlation tests revealed that for research question two, the specific behavioral variables of credit card, student loan, savings and investing had no significant impact on financial literacy scores.
Research Question Three - To what degree do race/ethnicity, gender, employment status, and family income relate to financial literacy levels?

A multiple regression step-wise analysis was performed to evaluate the relationship between financial literacy level and the independent variables (i.e., race/ethnicity, gender, employment status and family income). Each race/ethnic group was assigned a nominal value of one (1), to identify respondents of a specific group and a zero (0) value assigned to identify respondents from the other ethnic groups. The respondent’s 2011 calendar year wages provided on the 2012-2013 FAFSA was used as a measure of employment. Family income reflected parent income and/or student income. A total of eight respondents did not file a FAFSA and therefore, no income data was available. For the purpose of the analysis, the value of zero was assumed for family income for these respondents.

As part of the review, the data was screened for missing data or violation of assumptions prior to analysis. There were no results that had studentized residuals values of larger than +3. The skewness and kurtosis values were also within reasonable assumption of normality. The data was also screened for influential points. All results had a Cook’s distance of less than 1 and centered leverage values of less than .20 suggesting that there were no problems with certain cases exerting influence.

The focus of the step-wise analysis was to identify the best combination of independent variables that can predict the dependent variable with not all independent variables remaining in the regression equation. An overall relationship, F (2,114) = 4.72, p=.011), was found between the financial literacy level and two independent variables, the white and two more race/ethnicity groups. The data presented in Table 26 demonstrates that two independent variables, the white and two or more race/ethnicity groups, had a statistically significant impact on the financial
literacy scores. For the white group, the unstandardized partial slope (.085) and standardized partial slope (.231) was statistically significant at t (2.55, df = 115, p = .012). For the two or more group, the unstandardized partial slope (.074) and standardized partial slope (.184) was statistically significant at t (2.028, df = 114, p = .045); and the confidence intervals around the unstandardized partial slopes (white, .019, .150; two or more, .002, .147) further confirmed these variables had a statistically significant impact on financial literacy scores, individually and collectively. In addition, both groups also explained a small to moderate proportion of variance in financial literacy scores, R² = .076, F (1, 114) = 4.112, p = .045. The results indicate that the white and two or more group could be expected to have higher financial literacy scores after controlling for all other variables.

Table 26

*Standardized Regression Coefficient*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>.557</td>
<td>0.017</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>.076</td>
<td>0.033</td>
<td>.208</td>
</tr>
<tr>
<td>2</td>
<td>.623</td>
<td>0.037</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>.085</td>
<td>0.033</td>
<td>.231</td>
</tr>
<tr>
<td>Two Or More</td>
<td>.074</td>
<td>0.037</td>
<td>.184</td>
</tr>
</tbody>
</table>

In summary, the results of the multiple regression step-wise test conducted for research question three suggests that a significant proportion of the total variation in the financial literacy level was impacted by two race/ethnic groups (i.e., white and two or more). The other variables (i.e., family income, gender or employment) were not found to have a significant relationship to financial literacy scores.
**Research Question Four:** To what degree does self-efficacy relate to financial literacy levels?

A Pearson correlation was conducted to determine the degree in which self-efficacy related to the respondent’s financial literacy level. A total of 117 respondents were included in the analysis. The dependent variable was the financial literacy score and self-efficacy, the independent variable. The self-efficacy score ranged from 6 to 24, based on a one to four scale (1=not true at all; 2=hardly true; 3=moderately true; and 4=exactly true) for the six self-efficacy questions.

The correlation between the respondents’ self-efficacy and financial literacy scores was -.03, interpreted as a small effect size (Cohen, 1988) and not statistically significant ($r = -.03, n = 117, p = .745$). Based on the results it was found that self-efficacy has no significant relationship with financial literacy levels.

In summary, a Pearson correlation test revealed for research question four that the degree in which the respondents’ self-efficacy related to financial literacy level was not significant.

**Additional Analyses**

**Race/Ethnicity and Financial Literacy Scores**

Previous college student financial literacy studies (Mandell, 2008; McKenzie, 2009; Norvilitis et al., 2006; Thaden & Rookey, 2005) reported higher representation among the Caucasian/white groups and greater variance among financial literacy scores for race/ethnic groups. In order to determine whether similar findings were true of the study, further analyses was conducted. As previously noted, the race/ethnic group representation of the survey respondents varied considerably from that of the university’s population. In large part this is due to Student Support Services’ mission to support first generation and low-income students. In the
review of the distribution of financial literacy scores for the different race/ethnic groups, the mean, standard deviation, skewness and kurtosis values were evaluated. As illustrated in Table 27, the average mean among race/ethnic groups ranged from 53.6 percent (Black) to 69 percent (two or more). Three extreme values and two outliers were noted. In addition, there were skewness and kurtosis values that indicated non-normality (i.e., close to the absolute value of 2).

Table 27

**Descriptive Statistics for Race/Ethnicity and Financial Literacy Score Distribution**

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>53</td>
<td>.548</td>
<td>.167</td>
<td>-.028</td>
<td>-.131</td>
</tr>
<tr>
<td>Asian</td>
<td>8</td>
<td>.536</td>
<td>.226</td>
<td>.787</td>
<td>.800</td>
</tr>
<tr>
<td>Black</td>
<td>14</td>
<td>.537</td>
<td>.142</td>
<td>-1.55</td>
<td>1.84</td>
</tr>
<tr>
<td>White</td>
<td>32</td>
<td>.633</td>
<td>.140</td>
<td>-.959</td>
<td>1.66</td>
</tr>
<tr>
<td>Other/Unk</td>
<td>5</td>
<td>.606</td>
<td>.108</td>
<td>.888</td>
<td>1.47</td>
</tr>
<tr>
<td>Two or more</td>
<td>5</td>
<td>.697</td>
<td>.183</td>
<td>-.469</td>
<td>-3.04</td>
</tr>
</tbody>
</table>

n = 117; Type I error rate of α = 0.05

An ANOVA test was conducted and the F (1, 111) = 2.005, p = .083, was judged not to be statistically significant using the predetermined Type I error rate of α = 0.05. Table 28 provides results that suggest that the mean financial literacy score for different race/ethnic groups do not differ and that race/ethnicity does not impact financial literacy scores.

Table 28

**ANOVA Results for Race/Ethnicity and Financial Literacy Score**

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.258</td>
<td>5</td>
<td>.052</td>
<td>2.005</td>
<td>.083</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2.853</td>
<td>111</td>
<td>.026</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.110</td>
<td>116</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Given evidence of non-normality and unequal sample size among race/ethnic groups, an ANOVA was conducted without extreme and outliers. The results for the recalculated
distribution including means, standard deviation, skewness and kurtosis values are presented in Table 29.

Table 29

Descriptive Statistics for Race/Ethnicity & Financial Literacy Score Distribution After Adjusting for Extreme Values and Outliers

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>53</td>
<td>.548</td>
<td>.167</td>
<td>-.028</td>
<td>-.131</td>
</tr>
<tr>
<td>Asian</td>
<td>8</td>
<td>.536</td>
<td>.226</td>
<td>.787</td>
<td>.800</td>
</tr>
<tr>
<td>Black</td>
<td>11</td>
<td>.601</td>
<td>.048</td>
<td>.546</td>
<td>-.996</td>
</tr>
<tr>
<td>White</td>
<td>31</td>
<td>.647</td>
<td>.117</td>
<td>-.201</td>
<td>-.806</td>
</tr>
<tr>
<td>Other/Unk</td>
<td>4</td>
<td>.565</td>
<td>.062</td>
<td>-.855</td>
<td>-1.29</td>
</tr>
<tr>
<td>Two or more</td>
<td>5</td>
<td>.697</td>
<td>.183</td>
<td>-.469</td>
<td>-3.04</td>
</tr>
</tbody>
</table>

\( n = 112, \) Type I error rate of \( \alpha = 0.05 \)

An ANOVA (Table 30) was conducted and the \( F(1, 106) = 2.486, p = .036, \) was judged to be statistically significant using the predetermined Type I error rate of \( \alpha = 0.05. \) These results suggest that the financial literacy score across race/ethnic groups differ significantly and that race/ethnicity does have an impact on financial literacy scores.

Table 30

ANOVA Results for Race/ethnicity Groups and Financial Literacy Score

<table>
<thead>
<tr>
<th>FL Score</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sum of Squares</td>
</tr>
<tr>
<td>Between Groups</td>
<td>.279</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2.380</td>
</tr>
<tr>
<td>Total</td>
<td>2.659</td>
</tr>
</tbody>
</table>
Gender and Financial Literacy Scores

Prior studies have demonstrated that in general, males score higher on financial literacy surveys than females (Chen & Volpe, 2002; McKenzie, 2009; Thaden & Rookey, 2005). A review of the distribution of financial literacy scores between males and females was conducted. The mean, standard deviation, skewness and kurtosis values are presented in Table 31. The review of the distribution skewness and kurtosis statistics suggested that normality of financial literacy levels was a reasonable assumption.

Table 31

Gender and Financial Literacy Score Distribution

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>39</td>
<td>.582</td>
<td>.189</td>
<td>-.274</td>
<td>-.146</td>
</tr>
<tr>
<td>Female</td>
<td>78</td>
<td>.576</td>
<td>.151</td>
<td>-.281</td>
<td>.041</td>
</tr>
</tbody>
</table>

As illustrated in Table 32, the results of the ANOVA test, F (1, 115) = .042, p = .838 was judged not to be statistically significant using the predetermined Type I error rate of α = 0.05.

Table 32

ANOVA Results for Gender and Financial Literacy Score

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.001</td>
<td>1</td>
<td>.001</td>
<td>.042</td>
<td>.838</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3.109</td>
<td>115</td>
<td>.027</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.110</td>
<td>116</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In summary, while prior research has supported differences in mean scores between males and females there was no significant statistical difference in the financial literacy mean scores by gender in the study.
Credit Cards and Financial Literacy Score

Given prior research conducted on credit card usage, a Pearson correlation coefficient was computed to determine if there is a relationship between the financial literacy scores and number of credit cards used by the respondent. The result of the Pearson’s correlation on the relationship between financial literacy score and credit cards was \((n=66)\) and \((r = -.339, p = 0.005)\). Based on Cohen (1988), the effect size was moderate and results indicated that there was a negative correlation between financial literacy scores and the number of respondents’ credit cards. The results suggested that the greater number of credit cards a respondent had, the lower the financial literacy score.

Financial Knowledge, Behavior and Management Habits

There were several questions on the FLSES that provided additional insight into the general knowledge, behavior and management habits of the respondents. In addition to credit or student loan debt, over 51 percent \((n =60)\) of the respondents reported having personal or other forms of debt. This did not include auto loans, of which less than 7 percent \((n=8)\) of the respondents reported as having. The majority (113 total, 96.5 percent) had a checking account of which 91 (80 percent overall) had never bounced a check for insufficient funds. Eighty-seven percent \((n=102)\) of the respondents reported having a savings account. Only twelve (10 percent overall) total respondents reported having no savings account or other types of investments (i.e., certificate of deposit, mutual funds, and stocks). Of the 105, thirty-six total respondents (34 percent overall) rated their savings and investment level as much less than they should have indicating that while they may have had a savings account or investments, they were not saving or investing at the rate they may have wanted. As for prior finance education, only one respondent indicated that they had received no formal course (personal finance or economics) or
any education related curriculum in high school. Twenty six (or 22 percent overall) of the respondents had not taken any type of course (i.e., personal finance management, economics, finance or accounting) in college. Of the 26 who had not had any course in college, nine were underclassmen (freshmen or sophomore).

In summary, the financial management characteristics of the survey respondents indicate that more than half carried other debt obligation that did not include auto loans. A significant number reported having a savings account and over one-third reported having much less in savings and investing than they preferred. Many more of the respondents had taken a college course than received instruction or engaged in financial literacy activities during high school.

**Chapter Summary**

Initial results indicated that there was no difference between academic class and financial literacy levels. However, after adjusting for extreme values and outliers, a difference was found between academic class financial mean scores. Initial results also indicated there was no difference between SAT/ACT groups and financial literacy. After ranked scores were used, results indicated that there was a difference in the performance of SAT/ACT groups as it related to financial literacy levels. The multiple regression analysis revealed that two variables, the white and two or more race/ethnic groups, had a statistically significant impact in relation to financial literacy scores. In an additional review of the differences between race/ethnicity and financial literacy scores, race/ethnicity was found to have an impact on financial literacy scores. Finally, in the analysis of the number credit cards and respondent’s financial literacy score, there was a negative correlation between number of total credit cards and financial literacy.

The findings, including the study implications, recommendations, and suggestions for future research, are provided in Chapter 5.
CHAPTER 5: FINDINGS, IMPLICATIONS AND RECOMMENDATIONS

The purpose of the study is to explore the financial literacy of college students by examining differences in financial literacy levels and academic measures (i.e., GPA, class, and standardized test scores). In addition, the relationship between the financial literacy level in relation to credit card and student loan debt, savings/investing and self-efficacy, is assessed. Gender, employment status, race/ethnicity, and family income were other factors that are explored to determine if they were predictors of financial literacy levels. The focus of this chapter is to provide the key study findings, implications, recommendations and suggestions for future research.

Findings

The study on the financial literacy, behavior and self-efficacy of a group of first generation, low-income students was conducted at Washington State University, a public research intensive institution located in southeastern Washington. The findings of the study may be generalizable to other similar institutions particularly if the institution is comparable in terms of mission or student body and participates in a Student Support Services or another similar program.

Financial literacy, as defined by the President’s Advisory Council for Financial Literacy (2008), is “the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being.” (p. 35). The President’s Advisory Council for Financial Literacy definition has been adopted by TRIO programs, including Student Support Services, and is used for the purpose of this study.
The financial literacy level rating reported by Mandell (2008) was used to determine the financial literacy levels of SSS program participants who completed the survey. Mandell’s financial literacy score levels are rated on the basis of:

- 70 percent or greater were viewed as a high level of financial literacy
- 50 percent through 70 percent were viewed as an average level of financial literacy
- 50 percent or less were viewed as a low level of financial literacy

The mean financial literacy score of the 117 study respondents is 57.8 percent. Based on Mandell’s (2008) rating scale, the financial literacy mean score falls within an average financial literacy level (i.e., 50 to 70 percent correct). A total of 28 of the respondent mean scores fell in the highest level (70 percent or greater); 57 in the average level (50 percent to 70 percent) and; 32 in the lowest level (less than 50 percent). The score was higher than other previous research conducted on college student financial literacy (Chen & Volpe, 1998; Danes & Hira, 1987; Volpe, Chen & Pavlicko, 1996). However, due to the variance in the instruments used in these studies and the fact that most were conducted prior to 2000, a comparison to more recent studies, all of which used the Jump$tart Survey as the basis of their research, is more appropriate and relevant to this study.

The study’s financial literacy score results were lower by 5 percentage points as compared to Mandell’s (2008) college student survey in which participants (n=1030) achieved a 62.8 percent. The financial literacy scores of the study respondents also fell below the 72.56 percent mean score of another study (McKenzie, 2009). However, this study focused on university seniors who were business majors. McKenzie (2009) attributed the high mean score to the fact that business majors were more knowledgeable than non-business majors in how to obtain, understand and evaluate relevant financial information. Of perhaps greater significance,
the survey respondents’ financial literacy scores closely aligned to the results of another survey that was conducted at Washington State University. The survey was conducted as part of an overall financial literacy project established in 2003 on the Pullman campus. The survey instrument for the project measured the financial literacy levels of freshmen and seniors and closely modeled the Jump$tart Survey. The average financial literacy score of freshmen \((n=830)\) in the project was 56 percent, while seniors \((n=401)\) did only marginally better at 58 percent. Comparatively in this study, freshmen achieved the same score (56 percent) and seniors improved by four percentage points with a score of 62 percent. Thaden & Rookey’s (2005) analyses of the survey data focused on the financial literacy levels by knowledge categories (i.e., income, money management, savings/investing, and spending/credit). While demographic variables such as gender, class size, race/ethnicity, and financial need may have changed between 2005 and 2013, Thaden and Rookey (2005) found the variables of gender, student income, and student income aspirations, were statistically significant in terms of financial literacy scores.

The financial self-efficacy scale developed by Lown (2011) was adopted to measure Student Support Services program participants’ level of confidence or perceived belief in overcoming financial difficulties. The self-efficacy statements, scored on a one to four point scale, were rated on the basis of 1 = not true at all; 2 = hardly true; 3 = moderately true; and 4 = exactly true. The self-efficacy score of the respondents was 14.89, out of a total possible 24. While Lown (2011) did not assign a value but rather indicated that the closer the score was to 24, the higher the level of self-efficacy and conceptualized a score of 17 as above or below the mean. The study’s mean score of 14.89 indicates that respondents were below the mean and therefore, there is room for improvement in the respondents’ self-efficacy levels.
In summary, the financial literacy score of the study sample was 57.8 percent. While viewed as an average level of financial literacy (Mandell, 2008), the score is also below 60 percent, a “passing” grade in a traditional academic rating system. Also in comparison to the scores from a previous WSU survey (Thaden & Rookey, 2005) the findings suggest that the level of financial literacy of WSU students has not changed significantly in over eight years.

Although self-efficacy was not found to influence financial literacy, the mean score of 14.89 indicates the level of self-efficacy for the study sample was not high. Given that over one-third of the study respondents indicated they “worry often and nearly all the time about debt”, suggests that self-efficacy may well be a relevant factor.

**Research Question One**

What differences exist in the financial literacy level of participants as it relates to academically related measures (grade point average, SAT/ACT score and class standing)?

Independent *t*-tests and ANOVA tests were conducted to address the specific variables of this research question. The respondent’s WSU, high school, and transfer GPA, as well as, SAT/ACT scores were measured on the basis of below average or above average group levels. The specific cutoff values for each group level was established from average figures obtained from the university. In the analyses two variables, academic class and SAT/ACT scores were found to be significant in terms of their impact on financial literacy level.

Academic class was measured on the basis of the respondents’ undergraduate class grade level of freshmen, sophomore, junior or senior. In the initial analysis of the academic class, there were three extreme and outliers on the low end of the score distribution in both the freshmen and senior academic class groups. The extreme values and outliers that were at least two standard deviations from the mean score lowered the average score which can limit the ability to identify
differences. In the review of the scores, no evidence suggested that these scores were invalid. The three extreme values and outliers were removed from the sample and another ANOVA test was conducted to determine if any difference could be subsequently identified. The distribution of the adjusted financial literacy scores was examined separately for each academic class group.

The study findings indicated that there is a significant statistical difference in the means of academic class groups, particularly with sophomores and seniors. The results suggest that class standing has an effect on financial literacy scores. The evidence that class level influences financial literacy is supported by Mandell (2008). As compared to high school students' scores in Mandell’s survey, college students' financial literacy scores were higher by 15 percentage points. Based on the financial framework, it would seem reasonable for seniors (who had a mean score of 4, 6, 10 percentage points over that of juniors, freshmen, and sophomores, respectively) to have developed increased knowledge through general life experiences (i.e., budgeting, paying bills, obtaining and using credit). The mean score of sophomores (M=52) was the lowest of all the academic classes, particularly in comparison to seniors (M=58). At WSU, all freshmen are required to live on campus and as a result, may not have had limited exposure to financial matters. As sophomores, these students are now progressing through financial situations that may have them moving out of the pre-contemplation to the contemplation stage. Mandell (2008) and McKenzie (2009) found that specific majors (i.e., business, engineering, science and social science) also accounted for higher financial literacy scores. In the review of the academic majors, the mean score of the twelve of the 117 respondents were business majors was 62.6 percent. The academic majors of the seniors in the sample varied considerably however, exposure to financial or economic content in the courses that seniors may have taken could have
helped them gain a better grasp on numeracy, as well as, confidence in their ability understand with financial concepts or deal with challenges.

Similarly, the results of the initial analysis on the SAT/ACT groups (below or above average) indicated no significance between financial literacy level and SAT/ACT scores. However, given the evidence of non-normality, a second independent t-test was conducted on ranked financial literacy scores. The results indicated that the ranked financial literacy scores for the SAT/ACT groups were different and that SAT/ACT score had an impact on financial literacy scores. This finding suggests that literacy is knowledge and that the more knowledge a person has acquired, whether from exposure to rigorous coursework or standardized achievement tests, the stronger that person’s level of financial literacy. Of particular note, several respondents had below average SAT/ACT scores as compared to the general university population. For several years, WSU has operated an “assured admission” policy wherein entering freshmen are automatically assured admission if they have a high school GPA of 3.50 or better. However, for maximum consideration of university scholarships students are encouraged to provide SAT/ACT scores.

**Research Question Two**

2. What is the relationship between participants’ financial literacy level and their a) credit card debt; b) student loan debt; and c) savings/investing?

The study found that there was no relationship between first generation, low-income students’ financial literacy level and their financial behavior (i.e., credit card debt, student loan debt or savings/investing) which was consistent with the results of another study (McKenzie, 2009). Previous research conducted by Nellie Mae (2000, 2005) and Take Charge America Institute (2007) indicated that college students are graduating with high student loan debt and
other studies (Kinzie, 2007; MacDonald, 2000; Young Americans Center for Financial Education, 2007) have used consumer debt levels and other high debt levels as evidence of financial illiteracy.

Eighty-one percent of the respondents borrowed student loans. Student loan interest rates, which are guaranteed by the federal government, are traditionally lower than credit card interest rates. Over 43.5 percent of the respondents reported that they used no credit cards and 29 percent who had credits cards had balances that exceeded $1000, most of which did not exceed $2500. Other studies (Mandell, 2008; McKenzie, 2009) reported similar percentages in terms of credit card balances for their participants. The additional analysis conducted on the usage of credit cards revealed that there was a negative relationship between the number of credit cards and financial literacy scores. The more credit cards the respondent had corresponded to lower financial literacy scores. This result supports other research that indicates that despite their frequent use of credit cards, college students know little about the terms of their credit cards (Adams & Moore, 2007; Robb, 2011; Warwick & Mansfield, 2000) and that this lack of knowledge leads students to be surprised by the amount of their credit card balance (Sallie Mae, 2009). The survey results provide support that while having a credit card may expose students to specific knowledge (i.e., interest, making monthly payments, and budgeting) it can still impact financial literacy in a negative way. In addition, over 88 percent of the respondents had a savings account and 96.5 percent had a checking account, but one in five (20 percent) had bounced a check for insufficient funds. All of these factors (i.e., student loan borrowing, being banked) indicate that while these students may be learning how to budget, save, manage their student loans, they may behave in a financially illiterate manner in terms of bouncing checks and incurring insufficient penalty fees, or having too many credit cards. These experiences can serve
students well and might translate to competency in areas that increase wealth (i.e., better FICO scores and investments) but may hinder their ability to deal with financial emergencies. The actual act of managing credit, assuming loans and maintaining checking or savings accounts, can help individuals increase awareness and literacy. However, depending on whether the experience is positive or negative, the knowledge gained during the process can simultaneously impact self-efficacy while promoting avoidance, good behavior or bad behavior.

**Research Question Three**

3. To what degree do race, ethnicity, gender, employment status, and family income relate to financial literacy levels?

Race/ethnicity, gender, employment status, and family income are some of the factors shown by other researchers to be related to students’ financial literacy level (Chen, Volpe, & Pavlicko, 1996; Danes & Hira, 1987; Mandell, 2008; Markovich & DeVaney, 1997; McKenzie, 2009; Murphy, 2005; Thaden & Rookey, 2005). The study indicated that a relationship exists between financial literacy and race/ethnicity. The results of the study support the existing literature indicating that race/ethnicity impacts financial literacy level. Mandell (2008), McKenzie (2009), and Norvilitis et al., (2006) report that white students scored higher on the Jump$tart survey than other racial groups. Lusardi, Mitchell, and Curto (2010) found similar results in the administration of their financial literacy instrument. It is important to note that social bias may exist in the survey instrument utilized in this study (Lucey, 2005). The higher scores achieved by white students in this study suggest that social bias may be evident. However, given that the “two or more” race/ethnicity category was not disaggregated, the social bias impact cannot be easily ascertained.
The results of the additional analyses revealed no significant differences in financial literacy scores between males and females. Prior research is mixed in terms of the impact that gender has on financial literacy scores or level. Norvilitis et al., (2006) report that female college students as having greater financial literacy scores while Chen and Volpe (1998), Lusardi, Mitchell, and Curto (2010) and McKenzie (2009), report that female scores were significantly lower than male scores. Student Support Services male participants overall (37 percent) is almost 15 percentage points less as compared to the university’s male undergraduate rate (52 percent). Even if more males (more than the 33.3 percent) had completed the study, the likelihood is low that the score would have had a significant impact on financial literacy scores.

Previous research has identified family income as a factor that impacts financial literacy levels (Chen, Volpe & Pavlicko, 1996; Danes & Hira, 1987, Mandell, 2008; Markovich & DeVaney, 1997; Thaden & Rookey, 2005). The results of the study did not support family income as a predictor of financial literacy levels. Many of the previous studies relied on self-reported income. Most of the respondents in this study were low-income (i.e., below 150% of the United States poverty income level) based on verified data from the FAFSA. Therefore, the study sample was unique from previous studies in that it included a higher concentration of low-income students and as a result, was less heterogeneous.

**Research Question Four**

4. To what degree does self-efficacy relate to financial literacy levels?

The results of the study indicated there was no relationship between self-efficacy and financial literacy. The respondents mean score (M=14.89) was lower than Lown’s (2011) average score (M=17). Lown hypothesized that the closer the financial self-score was to 24 (the maximum score possible) the higher the self-efficacy level. Lown’s (2011) sample consisted of
university employees. The results indicate that stage in life does not necessarily dictate complete confidence in dealing with financial concerns. In addition to the six self-efficacy questions, respondents were also asked how much do you worry about your debts? Of the 117, a total of 41 (35 percent overall) reported that they worried about debt “often or nearly all the time.” Given that the self-efficacy mean score of the respondents was lower than Lown’s (2011) results, this question carries usefulness in terms of determining the respondents’ level of self-efficacy and how confident they are in dealing with their debt. Recent research on financial stress (Fosnacht, 2013; Trombitas, 2012), indicates there is prevalence of financial stress among students and many students are being impacted by financial concerns. Fosnacht (2013) found differences among gender (i.e., females had a higher probability of being financially stressed) and race/ethnicity with white students more unlikely to experience financial stress in contrast with 80 percent Latino/Hispanics. The largest differences Fosnacht (2013) found were within parental education and income membership. Among students whose parents did not complete a college degree, 44 percent were in the most impacted groups of financial stress, compared to only 27 percent of the students whose parents had completed a graduate degree. Over half of all students with a parental income greater than $100,000 compared to 15 percent of students with parental income of less than $35,000, belonged to the not financially stressed group.

The study findings revealed that academic class, SAT/ACT scores, race/ethnicity and credit card number influenced financial literacy. While the level of self-efficacy, credit debt, student loan debt, savings/investing and other demographic factors (i.e., employment, family income and gender) did not impact financial literacy, the findings suggest that a student’s level of financial literacy is influenced by academic preparation, stage in college, demographic and behavioral factors. Figure 2 conceptualizes the interplay between these factors. An individual
student’s background (i.e., age, socioeconomic status, race/ethnicity, gender, education level) can influence how they move through stages but may also be impacted by pre-enrollment factors (i.e., academic preparation, family socialization, cultural factors, community environment) as well as, their identity and development (i.e., life stage and experience) at any given point. Bandura (1986) defined perceived self-efficacy as “people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances - it is concerned not with the skills one has but with the judgments of what one can do with whatever skills one possesses (p. 391).” A student’s judgment is developed through experience, which can be positive or negative, and how they may deal with a particular hardship (i.e., financial) will depend on whether they believe they will be successful. Self-efficacy is related to self-confidence, motivation and optimism but also requires learning and application of a particular task, activity or goal. A student who may be deemed financially literate, may still lack self-efficacy and engage in risky financial behavior (i.e., possess many credit cards). On the other hand, a student who has a strong self-efficacy may not have the necessary knowledge to make sound financial decisions. A student’s level of literacy or self-efficacy may also be comprised due to unforeseen situations (i.e., death of a parent, inability to borrow, or loss of income).

These situations are often beyond a student’s control and can negatively impact their financial behavior (i.e., high credit card balances, penalty fees for insufficient funds).

Based the study findings, it is important to consider how a student’s academic preparation, demographics (i.e., race/ethnicity), habits and stage in life when developing a financial literacy program. These factors can help determine how students will move through the stages of behavior change of pre-contemplation, contemplation, preparation, action, and
maintenance but also help inform the most effective educational workshop offerings, activities or intervention for improving financial literacy, behavior and self-efficacy.

Figure 2: Financial Framework – Interplay of Preparation, Demographic Factors, Behavior and Stage in College

**Implications and Recommendations**

College student financial literacy is inherently influenced by complex social, economic, political and cultural influences. First generation and low-income students, including students of color, may have less exposure to personal financial management resources due to structural barriers. These groups may also not have the same access to internal or external networks that could provide beneficial personal financial management information. Given that a large percentage of first generation, low-income students will be enrolling in college, it is critical to
consider their needs when developing practices and policies within higher education that are aimed at improving retention or success. The benefit of assisting this population is that the information can be transferred to other student populations (Thayer, 2000). Based on the findings of this study, there are several implications for policy and practice at the national, institutional, and student level.

National Implications

College affordability has been a hot issue and will continue to go unabated unless new approaches, policies and practices are developed and successfully implemented. However, the issue of financial illiteracy must involve all levels (i.e., federal, state and institutional) in order for progress to be successfully eradicated. Specific behaviors from student loan indebtedness, credit card behavior, institutional tuition setting, state aid appropriation decisions, to academic and financial preparation are all important facets to helping solve financial illiteracy. The study found that financial literacy was not specifically related to credit card debt or student loan debt. The continued discussion in the press around the topic of crushing student loan debt or credit card abuse, while perhaps not always accurate or appropriate, has and will continue to shed the spotlight on financial literacy, a necessary skill for all populations, regardless of background, age and socioeconomic status. The federal government and other agencies (i.e., Jump$tart Coalition, National Endowment on Financial Education, the President’s Advisory Council on Financial Literacy) have convened many interested parties and produced various reports on the need to combat financial illiteracy in this country. In order to advance financial literacy efforts, a uniform definition (operationally and conceptually) is needed and for optimal impact, standardized evaluation and assessment measures should be developed that integrate financial behavior and self-efficacy constructs.
Institutional Implications

The federal government requires all first time student loan borrowers to attend and receive loan counseling. Typically conducted online, students learn about their rights and responsibilities when borrowing federal student loans. However, no other interventions are required on the part of the institution. Many borrowers are unaware of the total cumulative amount in loans they need to repay until their last semester, when they must attend and receive exit loan counseling. Given some of the research that links a student’s lack of financial knowledge to poor academic performance or delayed graduation, an institution could develop specific interventions that can help potential at-risk populations (i.e., student loan borrowers and those who are academically deficient) that aid in developing student awareness, build self-efficacy and ultimately, change behavior.

Kalsbeek and Hossler (2009) noted that the demographic trends in many states show the greatest participation among high school graduation rates will come from the Latino population. At WSU, Latino undergraduate enrollment has increased over 250 percent in ten years, from 600 students in 2002-03 to over 2100 in 2012-2013. This enrollment pattern is indicative of the Latino growth in the State of Washington, with similar increases anticipated throughout many regions in the United States (Pew Research, 2011). Given the low levels of financial literacy among low-income populations, particularly Latinos, institutions should consider developing financial educational programming that is customized or adapted to meet the needs of students who come from these backgrounds. For greater potential impact, the design of the program and communication efforts could integrate a parent outreach component that includes a bilingual assistance.
The use of the SAT for admission and scholarships has been considered as biased and unfair to low-income, first generation, and minority students (Soares, 2009). On March 5, 2014, the College Board announced the redesign of the SAT for the class of 2016. SAT/ACT scores at WSU are not heavily considered during the admission process, however, are presently used for scholarship awarding purposes. Given that the College Board, the creator of the SAT and other educational assessments, seems to be seeking to improve the opportunity among low-income students (Balf, 2014), research on the impact of the SAT (or similar standardized tests) on future WSU student enrollment could help inform admission policy and practice. Based on the overall findings of the study, it is clear that addressing financial literacy should involve a comprehensive, holistic approach versus a relying solely on academic measures (i.e., standard scores or GPA).

*Student Implications*

The Student Support Services Program has a unique opportunity to deliver financial or economic literacy programming that is sensitive to the needs of first generation, low-income students. However, the influence of psychosocial characteristics on a student’s financial behavior and decision-making suggest that a financial education program needs to be integrated across different units and student services offices for maximum effect. Financial education services should be available campus-wide as different individuals could help with the identification of students who are experiencing financial stress or experiencing doubts about how they will pay for college. As the study findings revealed, a student’s financial literacy changes as they progress in academic class. Access to financial education resources might cushion the negative impact of tuition increases, lack of financial aid, or unexpected financial crises that students may experience during their college career.
Although there was no statistically significant impact of self-efficacy on financial literacy scores, the survey provides a new measure that may be helpful in determining college student financial self-efficacy. A financial self-efficacy scale, as part of an overall financial literacy instrument or as a standalone, can be a useful tool, particularly with informing the development of a financial education program. Financial self-efficacy was selected as a construct or component of the framework for this study based on existing research from financial education professionals that confidence plays a role in financial literacy (Lown, 2011; Lyons & Neelakantan, 2008; National Endowment for Financial Education, 2005; Shockey & Seiling, 2004; Xiao, Newman et al., 2004; Xiao, O'Neill et al., 2004). Most college students are at a stage of life when they are making financial decisions and applying personal financial management for the first time. Any positive experiences students have could potentially bolster financial self-efficacy and any negative experiences dampen their financial self-efficacy.

In order for Student Support Services to achieve the program stated goals and outcomes, it is recommended that SSS continue to use the FLSES as a way to monitor overall program effectiveness but also financial literacy and self-efficacy in terms of how cohorts perform or change over time. Financial literacy, behavior and self-efficacy are skills and traits that take time to develop and if fostered within the five TTM stages, students move back and forth or follow a cyclical or iterative pattern as they face new concepts or challenges. Finally, the SSS program outcomes of resourcefulness and personal enrichment can be intentionally woven into a financial literacy curriculum that aims to improve access and understanding of financial related concepts and tools.
Implications for Future Research

The relationship between race/ethnicity and financial scores should be explored further. A better understanding could be helpful in the creation of financial education programming and interventions. Although in this study income did not impact financial literacy, Fosnacht (2013) suggests that low-income and minority students have a considerably higher probability of being financially stressed and are highly impacted by that stress. Over 80 percent of these students also stated that financial concerns frequently impacted their academic performance and a majority investigated dropping out due to costs (Fosnacht, 2013). While additional financial aid may help low-income students, education opportunities or interventions that can mitigate financial stress should benefit all students, regardless of income or race/ethnicity.

Additional research in the area of financial literacy that includes a qualitative approach is needed to aid in the development of educational programming. A better understanding of how values, beliefs, and attitudes inform a student’s financial literacy, behavior and self-efficacy can be extremely valuable in helping a student move more quickly and adeptly through the continuum of the five stages of change (i.e., pre-contemplation, contemplation, preparation, action and maintenance).

Lastly, there were problems with the study design that could be improved upon in future research that includes the assessment of college student financial literacy or self-efficacy level. First, the sample size was reduced considerably by the fact that over one-third of the sample study participants did not complete the consent process. The lack of participation or completion may have been due to the timing and duration of the survey. The survey was conducted close to the end of spring semester when many students may have been preparing for finals or graduation. It is also important to note that while the completion of the survey was not mandatory, SSS
program participants may have elected to take the survey based on a perceived expectation that it was required similar to other mandated workshops or activities. The low scores of some of the respondents also suggest that they may have completed the survey because they felt they had to and as a result, may have not taken the survey seriously.

**Conclusion**

Today’s college students are balancing several financial realities and multiple pressures. First, the sticker price and net cost of attending college has outpaced the rate of inflation (Baum & Ma, 2012). The increases are a result of factors ranging from declining state subsidies (Quintero, 2012), increased enrollments (Bound & Turner, 2007), to the effects of the recession (Baum & Ma, 2012). Second, family incomes have declined across the entire income distribution between 2001 and 2011, after accounting for inflation (Baum & Ma, 2012). Therefore, many families have experienced unprecedented financial hardship and the ability to pay for college has declined. Finally because of their low incomes and assets, as well as, lack of financial knowledge, students constitute a financially vulnerable population (Avard, Manton, English & Walker, 2006; Chen & Volpe, 1998; Murphy, 2005).

Any higher education institution that provides value added services that address the multiple financial concerns families and students might be dealing with, can potentially realize benefits that range from increased enrollment, improved graduation rates, to a highly satisfied and financially stable alumni base. A comprehensive financial education program that includes an array of services (i.e., workshops, coaching, drop in counseling sessions, and online tools) can serve a specific niche but can also distinguish the institution as a place that values the holistic development and success of the student. The changing landscape of higher education, including demographical shifts, revenue and cost considerations, has the potential to redefine priorities.
particularly in the type of services an institution chooses to provide. A financial education program has broad application and an institution that offers this type of service can potentially transform the development of the student, with long lasting implication and in the process, aid them to manage resources effectively for a lifetime of financial well-being.
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Part 1 – Brief description of survey intent, including confidentiality statement and consent information.

1. I confirm that I have read and understand the information regarding the Financial Literacy and Self-Efficacy Survey. If I have any questions, I have had the opportunity to ask them and receive clarification. I also understand that I may ask questions at any point during this process.

2. I understand that my participation is completely voluntary and that I am free to withdraw from this study at any time, or decline to participate in any part of the study, without penalty.

3. I understand that no discomfort, stress or risk to my health is foreseen.

4. I understand that information in this study will be completely confidential, and will not be released in any individually identifiable form without my prior consent, unless required by law.

5. I have read and completed the above statements and agree to participate in this study. I understand that if I have any questions or concerns I can contact the investigator at flseproject@gmail.com or the WSU Institutional Review Board at (509) 335-9661. I understand that I can receive a copy of this consent information upon request.

Part 2 – Case Questions and General Financial Information

6. Inflation can cause difficulty in many ways. Which group would have the greatest problem during periods of high inflation that last several years?

- a.) Older, working couples saving for retirement.
- b.) Older people living on fixed retirement income.*
- c.) Young couples with no children who both work.
- d.) Young working couples with children.

7. Which of the following is true about sales taxes?

- a.) The national sales tax percentage rate is 6%.
- b.) The federal government will deduct it from your paycheck.
- c.) You don’t have to pay the tax if your income is very low.
- d.) It makes things more expensive for you to buy. *

8. Rebecca has saved $12,000 for her college expenses by working part-time. Her plan is to start college next year and she needs all of the money she saved. Which of the following is the safest place for her college money?
a.) Locked in her closet at home.
b.) Stocks.
c.) Corporate bonds.
d.) A bank savings account.*

9. Which of the following types of investment would best protect the purchasing power of a family’s savings in the event of a sudden increase in inflation?

a.) A 10-year bond issued by a corporation.
b.) A certificate of deposit at a bank.
c.) A twenty-five year corporate bond.
d.) A house financed with a fixed-rate mortgage.*

10. Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?

a.) When you need to buy a car to get a much better paying job.*
b.) When you really need a week vacation.
c.) When some clothes you like go on sale.
d.) When the interest on the loan is greater than the interest you get on your savings.

11. Which of the following statements best describes your right to check your credit history for accuracy?

a.) Your credit record can be checked once a year for free.*
b.) You cannot see your credit record.
c.) All credit records are the property of the U.S. Government and access is only available to the FBI and Lenders.
d.) You can only check your record for free if you are turned down for credit based on a credit report.

12. Your take home pay from your job is less than the total amount you earn. Which of the following best describes what is taken out of your total pay?

a.) Social security and Medicare contributions.
b.) Federal income tax, property tax, and Medicare and Social Security contributions.
c.) Federal income tax, social security and Medicare contributions.*
d.) Federal income tax, sales tax, and social security contribution.

13. Retirement income paid by a company is called:

a.) 401 (k).
b.) Pension.*
c.) Rents and profits.
d.) Social Security.
14. Many people put aside money to take care of unexpected expenses. If Juan and Elva have money put aside for emergencies, in which of the following forms would it be of LEAST benefit to them if they needed it right away?

a.) Invested in a down payment on the house.*
b.) Checking account.
c.) Stocks.
d.) Savings account.

15. David just found a job with a take-home pay of $2,000 per month. He must pay $900 for rent and $150 for groceries each month. He also spends $250 per month on transportation. If he budgets $100 each month for clothing, $200 for restaurants and $250 for everything else, how long will it take him to accumulate savings of $600.

a.) 3 months.
b.) 4 months.*
c.) 1 month.
d.) 2 months.

16. Sara and Joshua just had a baby. They received money as baby gifts and want to put it away for the baby’s education. Which of the following tends to have the highest growth over periods of time as long as 18 years?

a.) A checking account.
b.) Stocks.*
c.) A U.S. Govt. savings bond.
d.) A savings account.

17. Barbara has just applied for a credit card. She is an 18-year-old high school graduate with few valuable possessions and no credit history. If Barbara is granted a credit card, which of the following is the most likely way that the credit card company will reduce ITS risk?

a.) It will make Barbara’s parents pledge their home to repay Karen’s credit card debt.
b.) It will require Barbara to have both parents co-sign for the card.
c.) It will charge Barbara twice the finance charge rate it charges older cardholders.
d.) It will start Barbara out with a small line of credit to see how she handles the account.*

18. Chelsea worked her way through college earning $15,000 per year. After graduation, her first job pays $30,000. The total dollar amount Chelsea will have to pay in Federal Income taxes in her new job will:

a.) Double, at least, from when she was in college.*
b.) Go up a little from when she was in college.
c.) Stay the same as when she was in college.
d.) Be lower than when she was in college.
19. Which of the following best describes the primary sources of income for most people age 20-35?

a.) Dividends and interest.
b.) Salaries, wages, tips.*
c.) Profits from business.
d.) Rents.

20. If you are behind on your debt payments and go to a responsible credit counseling service such as the Consumer Credit Counseling Services, what help can they give you?

a.) They can cancel and cut up all of your credit cards without your permission.
b.) They can get the federal government to apply your income taxes to pay off your debts.
c.) They can work with those who loaned you money to set up a payment schedule that you can meet.*
d.) They can force those who loaned you money to forgive all your debts.

21. Rob and Mary are the same age. At age 25 Mary began saving $2,000 a year while Rob saved nothing. At age 50, Rob realized that he needed money for retirement and started saving $4,000 per year while Mary kept saving her $2,000. Now they are both 75 years old. Who has the most money in his or her retirement account?

a.) They would each have the same amount because they put away exactly the same
b.) Rob, because he saved more each year
c.) Mary, because she has put away more money
d.) Mary, because her money has grown for a longer time at compound interest

22. Many young people receive health insurance benefits through their parents. Which of the following statements is true about health insurance coverage?

a.) You are covered by your parents’ insurance until you marry, regardless of your age.
b.) If your parents become unemployed, your insurance coverage may stop, regardless of your age. *
c.) Young people don’t need health insurance because they are so healthy.
d.) You continue to be covered by your parents’ insurance as long as you live at home, regardless of your age.

23. Don and Bill work together in the finance department of the same company and earn the same pay. Bill spends his free time taking work-related classes to improve his computer skills; while Don spends his free time socializing with friends and working out at a fitness center. After five years, what is likely to be true?

a.) Don will make more because he is more social.
b.) Don will make more because Bill is likely to be laid off.
c.) Bill will make more money because he is more valuable to his company.*
d.) Don and Bill will continue to make the same money.

24. If your credit card is stolen and the thief runs up a total debt of $1,000, but you notify the issuer of the card as soon as you discover it is missing, what is the maximum amount that you can be forced to pay according to Federal law?

a.) $500
b.) $1000
c.) Nothing.
d.) $50*

25. Which of the following statements is NOT correct about most ATM (Automated Teller Machine) cards?

a.) You can generally get cash 24 hours-a-day.
b.) You can generally obtain information concerning your bank balance at an ATM machine.
c.) You can get cash anywhere in the world with no fee.*
d.) You must have a bank account to have an ATM Card.

26. Matt has a good job on the production line of a factory in his home town. During the past year or two, the state in which Matt lives has been raising taxes on its businesses to the point where they are much higher than in neighboring states. What effect is this likely to have on Matt’s job?

a.) Higher business taxes will cause more businesses to move into Matt’s state, raising wages.
b.) Higher business taxes can’t have any effect on Matt’s job.
c.) Mark’s company may consider moving to a lower-tax state, threatening Matt’s job.*
d.) He is likely to get a large raise to offset the effect of higher taxes.

27. If you have caused an accident, which type of automobile insurance would cover damage to your own car?

a.) Comprehensive.
b.) Liability.
c.) Term.
d.) Collision.*

28. Scott and Eric are young men. Each has a good credit history. They work at the same company and make approximately the same salary. Scott has borrowed $6,000 to take a foreign vacation. Eric has borrowed $6,000 to buy a car. Who is likely to pay the lowest finance charge?

a.) Eric will pay less because the car is collateral for the loan. *
b.) They will both pay the same because the rate is set by law.
c.) Scott will pay less because people who travel overseas are better risks.
d.) They will both pay the same because they have almost identical financial backgrounds.
29. If you went to college and earned a four-year degree, how much more money could you expect to earn than if you only had a high school diploma?

a.) About 10 times as much.
b.) No more; I would make about the same either way.
c.) A little more; about 20% more.
d.) A lot more; about 70% more. *

30. Many savings programs are protected by the Federal government against loss. Which of the following is not?

a.) A U. S. Savings Bond.
b.) A certificate of deposit at the bank.
c.) A bond issued by one of the 50 States.*
d.) A U. S. Treasury Bond.

31. If each of the following persons had the same amount of take home pay, who would need the greatest amount of life insurance?

a.) An elderly retired man, with a wife who is also retired.
b.) A young married man without children.
c.) A young single woman with two young children.*
d.) A young single woman without children.

32. Which of the following instruments is NOT typically associated with spending?

a.) Debit card.
b.) Certificate of deposit.*
c.) Cash.
d.) Credit card.

33. Which of the following credit card users is likely to pay the GREATEST dollar amount in finance charges per year, if they all charge the same amount per year on their cards?

a.) Jessica, who pays at least the minimum amount each month and more, when she has the money.
b.) Vera, who generally pays off her credit card in full but, occasionally, will pay the minimum when she is short of cash
c.) Megan, who always pays off her credit card bill in full shortly after she receives it.
d.) Erin, who only pays the minimum amount each month.*

34. Which of the following statements is true?

a.) Banks and other lenders share the credit history of their borrowers with each other and are likely to know of any loan payments that you have missed.*
b.) People have so many loans it is very unlikely that one bank will know your history with another bank.
c.) Your bad loan payment record with one bank will not be considered if you apply to another bank for a loan.
d.) If you missed a payment more than 2 years ago, it cannot be considered in a loan decision.

35. Dan must borrow $12,000 to complete his college education. Which of the following would NOT be likely to reduce the finance charge rate?

a.) If he went to a state college rather than a private college. *
b.) If his parents cosigned the loan.
c.) If his parents took out an additional mortgage on their house for the loan.
d.) If the loan was insured by the Federal Government.

36. If you had a savings account at a bank, which of the following would be correct concerning the interest that you would earn on this account?

a.) Earnings from savings account interest may not be taxed.
b.) Income tax may be charged on the interest if your income is high enough.*
c.) Sales tax may be charged on the interest that you earn.
d.) You cannot earn interest until you pass your 18th birthday.

37. When you start to work full-time, after you finish your education, how much do you expect to make per year before deductions for taxes and other items?

- Under $30,000.
- $30,000 to $39,999.
- $40,000 to $49,999
- $50,000 or more

38. How many credit cards do you use, including store credit cards?

- None.
- One.
- Two.
- Three.
- Four.
- Five or more.

39. Which of the following statements best describes the way in which you make payments on your credit cards?

- I always pay off the total balance each month.
- I occasionally do not pay off the balance for a month or so when I am short on funds.
- I generally have an outstanding balance but occasionally am able to pay it off.
- I seldom, if ever, pay off all my balances, but try to pay them down when I can.
• I generally pay only the minimum required payment each month.

40. What is the outstanding balance on all of your credit cards?

• Under $1,000
• $1,000 to $2,499
• $2,500 to $4,999
• $5,000 to $9,999
• More than $10,000

41. When did you get your first credit card?

• Before graduating high school
• When I graduated from high school
• When I started college
• During my first year in college
• After completing my first year of college

42. How often are you late paying your credit card bills?

• Never
• Once or twice since I’ve had credit cards
• Once or twice per year
• More than two times per year

43. When you finish your undergraduate education, how much do you expect to owe in student loans?

• Nothing
• Less than $5,000
• $5,000 to $9,999
• $10,000 to $19,999
• $20,000 to $29,999
• $30,000 to $49,999
• $50,000 or more

44. Aside from any credit card debt or student loans you might have, what other types of debt do you have? (check ALL that apply)

• Auto loans
• Home Mortgage
• Personal debt or other debt

45. Do you have a checking account?
46. How often have you bounced a check (had it returned for insufficient funds)?

- Never
- Once or twice in my lifetime
- Once or twice per year
- More than twice per year

47. How often do you balance your checkbook?

- After every check, deposit and ATM withdrawal
- About once a week
- About once a month
- Several times per year
- Once or twice per year
- Never

48. In what form do you hold for your savings and investments? (Check ALL that apply)

- Savings account.
- Certificates of deposit.
- U. S. Savings Bonds.
- Stocks.
- Mutual funds.
- Bonds other than U. S. Savings Bonds.
- Retirement accounts such as 401k’s and IRAs.

49. How would you rate the savings and investments that you have?

- Adequate for my needs right now
- Slightly less than I should have right now
- Much less than I should have right now

50. How much do you worry about your debts?

- Never
- A little
- Sometimes
- Often
- Nearly all the time

51. Who prepares your income taxes?
- I do it myself by hand
- I do it myself using a computer program
- A tax preparer
- My parents

52. Which of the following classes did you have in high school? (Check ALL that apply)

- An entire course in personal money management or personal finance.
- A portion of a course where at least a week was focused on personal money management or personal finance.
- An entire course in economics.
- A portion of a course where at least a week was focused on economics.
- A course in which we played a stock market game.

53. Which of the following classes have you had in college? (Check ALL that apply)

- A semester-length course in personal money management or personal finance
- Coverage of money management or personal finance (including part of freshman orientation)
- Economics
- Finance
- Accounting

Part 3 – Financial Self-Efficacy Statements

Please respond to the following statements using these response categories:

1 = Exactly true 2 = Moderately true 3 = Hardly true 4 = Not at all true

54. It is hard to stick to my spending plan when unexpected expenses arise.
55. It is challenging to make progress toward my financial goals.
56. When unexpected expenses occur I usually have to use credit.
57. When faced with a financial challenge, I have a hard time figuring out a solution.
58. I lack confidence in my ability to manage my finances.
59. I worry about running out of money.
APPENDIX B
Introductory Email

March 2013

Greetings! I hope that you are enjoying your time at Washington State University (WSU) and your participation in the Student Support Services (SSS) Program. My name is Chio Flores. I am a doctoral candidate in the College of Education at Washington State University. As part of my research project, I am conducting a study of financial literacy and the outcomes associated with financial literacy, self-efficacy and behavior.

Student Support Services is in support of this project and also interested in learning more on they can help you and other SSS participants develop financial literacy skills.

As part of this study, you (and other SSS participants) will soon be receiving a consent form to review and complete. If you have any questions about this project until then, please feel free to contact me.

Chio Flores, Co-Principal Investigator
Doctoral Candidate

Chioflores1@gmail.com

509.432.8611
Hello again,

As a Student Support Services participant, you have been selected to participate in this study – *Financial Literacy of First Generation, Low Income College Students: Assessing the Impact of Self-Efficacy on Financial Behavior.*

Please copy and paste this link to access the Financial Literacy Self-Efficacy Survey:

This link is uniquely tied to this survey and your email address. Please do not forward this message.

If you have any questions or difficulty in accessing the survey, please email me at [flseproject@gmail.com](mailto:flseproject@gmail.com). By completing and submitting this survey, you will qualify for a $200 Amazon gift card. The drawing for the $200 gift card will take place in May 2013.

Thank you!

Chio Flores

Doctoral candidate

WSU, Higher Education
Subject: Reminder to finish the Financial Literacy Self-Efficacy Survey

Hello,

I would like to remind you that the survey is still active and it is still not too late to finish the survey (see the link below). Please finish the survey as soon as possible if you have not done so already to qualify for the $200 Amazon gift card drawing!

****LINK****

Thank you,

Chio Flores,
Doctoral Candidate

Subject: Final Reminder to complete the Financial Literacy Self-Efficacy Survey

Hello,

I would like to remind you that the survey is still active and can be accessed via the link below. Please complete the survey by May 10, 2013 to qualify for the $200 Amazon gift card drawing!

****LINK****

Thank you,

Chio Flores,
Doctoral Candidate
MEMORANDUM

TO: Kelly Ward and Chio Flores,

FROM: Patrick Conner, Office of Research Assurances (3005)

DATE: 4/10/2013

SUBJECT: Certification of Exemption, IRB Number 13090

Based on the Exemption Determination Application submitted for the study titled "Financial Literacy of First Generation, Low Income College Students: Assessing the Impact of Self-Efficacy on Financial Behavior," and assigned IRB # 13090, the WSU Office of Research Assurances has determined that the study satisfies the criteria for Exempt Research at 45 CFR 46.101(b)(2).

This study may be conducted according to the protocol described in the Application without further review by the IRB.

It is important to note that certification of exemption is NOT approval by the IRB. You may not include the statement that the WSU IRB has reviewed and approved the study for human subject participation. Remove all statements of IRB Approval and IRB contact information from study materials that will be disseminated to participants.

This certification is valid only for the study protocol as it was submitted to the ORA. Studies certified as Exempt are not subject to continuing review (this Certification does not expire). If any changes are made to the study protocol, you must submit the changes to the ORA for determination that the study remains Exempt before implementing the changes (The Request for Amendment form is available online at

http://www.irb.wsu.edu/documents/forms/rtf/Amendment_Request.rtf)
Exempt certification does NOT relieve the investigator from the responsibility of providing
continuing attention to protection of human subjects participating in the study and adherence to
ethical standards for research involving human participants.

In accordance with WSU Business Policies and Procedures Manual (BPPM), this Certification of Exemption, a copy of the Exemption Determination Application identified by this certification and all materials related to data collection, analysis or reporting must be retained by the Principal Investigator for THREE (3) years following completion of the project (BPPM 90.01). This retention schedule does not apply to audio or visual recordings of participants, which are to be erased, deleted or otherwise destroyed once all transcripts of the recordings are completed and verified.

You may view the current status or download copies of the Certified Application by going to https://myresearch.wsu.edu/IRB.aspx?HumanActivityID=37385. Washington State University is covered under Human Subjects Assurance Number FWA00002946 which is on file with the Office for Human Research Protections (OHRP).

Review Type: New
Review Category: Exempt
Date Received: 3/27/2013
Exemption Category: 45 CFR 46.101 (b)(2)
OGRD No.: N/A
Funding Agency: N/A

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