THE RELATIONSHIP BETWEEN FINANCIAL LITERACY AND MINDFULNESS:
AN EXPLORATION OF THE ATTITUDES, BEHAVIOR, AND KNOWLEDGE OF
STUDENTS AT A PRIVATE UNIVERSITY IN NEW ENGLAND AFTER COMPLETING
THEIR FIRST YEAR IN COLLEGE

A doctoral thesis presented
by
Meghan Fairfield Rydzik

to
The School of Education

In partial fulfillment of the requirements for the degree of
Doctor of Education

In the field of
Education

College of Professional Studies
Northeastern University
Boston, Massachusetts
March 20, 2016
Abstract

As college costs rise, researchers have become interested in the topic of financial literacy. ‘Financial literacy’ is comprised of three constructs in the literature: financial knowledge, financial attitudes, and financial behaviors. Researchers have examined how the constructs interact with each other, particularly in high school populations, with more recent studies focusing on college students. The relationship between financial literacy and mindfulness has not been well-addressed in the literature, particularly in college student populations. This research fills a gap in the literature by examining whether or not a lack of financial literacy combined with low mindfulness could lead to poor decisions and impact college students’ financial futures. The variables were studied quantitatively within a private higher education setting. The research asked to what extent do the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) relate to each other and how mindfulness impacts these relationships in students at a private university in New England after completing their first year in college. College students who had recently completed their first year at a private university in New England answered an electronic survey to measure financial literacy and mindfulness. Findings suggest that statistically significant positive relationship exist between financial attitudes and financial behaviors and mindfulness increases this relationship. These findings may help both high school and higher education administrators to better understand how to help students become successful in their financial endeavors.

Key words: financial literacy, mindfulness, college students, higher education
Acknowledgments

This doctoral journey has been a long one and without the support and guidance of a number of important individuals, I would not have made it to this point. First, I would like to thank my advisor, Dr. Tova Sanders, whose encouragement and guidance helped me to get to the end of this journey. Thank you to Dr. Al McCready whose comments and support were greatly appreciated over the time it took to complete this process. Also, thank you to Dr. Frederic Baker, whose continuing support and feedback contributed significantly to the development of my study. I am appreciative of all of your advice, guidance, and feedback throughout this journey.

I also need to thank Caulyne Barron for her editing expertise and encouragement along the way. Another thank you needs to go out to Matthew Hendrickson for coaching me through the statistics and encouraging me through the process.

Finally, I would like to thank my family and friends who have been there for me throughout this long journey. They helped support me, encourage me, and push me to not give up on this process. Without these individuals, I would not have been able to finally complete this doctoral journey.
# Table of Contents

Abstract .................................................................................................................. 3  
Acknowledgments ................................................................................................. 4  

Chapter I: Introduction .......................................................................................... 7  
  Problem of Practice ............................................................................................... 9  
  Significance of the Problem ................................................................................. 9  
  Propositions .......................................................................................................... 14  
  Research Questions ........................................................................................... 16  
  Conceptual Framework ..................................................................................... 18  
  Conceptual Background ................................................................................... 19  
  Methodology ....................................................................................................... 21  
  Positionality Statement ................................................................................... 22  
  Definitions ........................................................................................................ 23  
  Summary ........................................................................................................... 24  

Chapter II: Literature Review ............................................................................... 25  
  Financial Constructs ........................................................................................... 25  
  Definitions of Financial Literacy .................................................................... 26  
  Links Between Concepts of Financial Literacy ............................................ 32  
  Mindfulness ....................................................................................................... 37  
  Mindfulness and Financial Literacy ............................................................... 43  
  Conclusions ....................................................................................................... 45  

Chapter III: Methodology .................................................................................... 46  
  Research Propositions ....................................................................................... 46  
  Research Question ............................................................................................ 47  
  Research Design ................................................................................................ 49  
  Data Collection: Instruments .......................................................................... 51  
  Data Collection: Procedures ............................................................................ 56  
  Data Analysis ..................................................................................................... 57  
  Validity, Reliability, and Generalizability ....................................................... 59  
  Protection of Human Subjects ......................................................................... 60  
  Summary ........................................................................................................... 60  

Chapter VI: Reporting of the Findings ................................................................. 61  
  Description of Sample ....................................................................................... 61  
  Hypothesis Analysis .......................................................................................... 62  
  Summary ........................................................................................................... 87  
  Research Question .............................................................................................. 94
Chapter V: Conclusions ............................................................................................................. 97
  Brief Summary of Findings .................................................................................................. 99
  Implications .......................................................................................................................... 99
  Limitations ........................................................................................................................... 103
  Future Research ................................................................................................................ 105
  Conclusion ............................................................................................................................ 106

References ................................................................................................................................ 108

Appendix A: College Student Financial Literacy Survey (CSFLS) ............................................. 117

Appendix B: The Five Facet Mindfulness Questionnaire (FFMQ) ........................................... 129
Chapter I: Introduction

A college degree is important and is often a prerequisite for many careers. A 2013 study by the Center of Education and the Workplace at Georgetown University found that “by 2020, 65 percent of jobs will require at least some education or training beyond high school” (Carnivale, Gulish & Hanson, 2013, p. 13). However, college students are faced with the need to make many financial decisions due to the rising cost of tuition, increased cost of living, and other financial factors. Often, students end up spending more than they can afford, incurring debt beyond what they can afford to repay (Murphy, 2005). External financial pressures like tuition costs are a contributing factor, along with spending patterns and an inability to assess future salaries compared to accruing debt. In the 2010-2011 academic year, approximately 57% of students attending public four-year colleges graduated with an average debt of $23,800 (College Board Advocacy & Policy Center, 2012). Approximately two-third of students who received bachelor’s degrees from private non-profit institutions owed even more, an average of $29,900 (College Board Advocacy & Policy Center, 2012). The amount of non-federal loans that students borrowed grew from an estimated $7.9 billion (in 2011 dollars) in 2001-2002 to $25.2 billion in 2007-2008 (College Board Advocacy & Policy Center, 2012).

The financial choices students make have a lasting impact that first year students may not understand. Hartford Financial Services Group found that in 1991, 31% of graduates would have borrowed less if they had to make the same financial decision to attend college; but by 2002, this had increased to 54% (NSLP, 2010). They also found that only 24% of students were ready to deal with financial challenges after graduation (NSLP, 2010). The debt these students incur, along with other financial choices in college, can impact their whole life (NSLP, 2010).

Researchers (Eitel & Martin, 2009; Jorgensen & Salva, 2010; Murphy, 2005) suggest that a contributing factor to this lack of preparedness is a lack of financial literacy among college
students. Mandell (2009) found that there was a lack of financial literacy in both high school seniors and first year college students. In 2005, the Organization for Economic Cooperation and Development (OECD) reported that “financial illiteracy is widespread across age groups and geographical areas” (p. 95). However, there have been few studies that explored the relationship between financial knowledge, attitudes, and behaviors.

Another mitigating factor to a lack of financial preparedness may be mindfulness, defined as “bringing one’s complete attention to the experiences occurring in the present moment, in a non-judgmental or accepting way” (Baer, Hopkins, Krietemeyer, Smith & Toney, 2006, p. 27). Giving attention to one’s experiences allows a person to fully see what is going on and how they are dealing with it. The lens of mindfulness allows for a researcher to better understand how and why someone may be doing something once the person is aware more of the experiences that they have.

This study sought to investigate the idea that college students often lack mindfulness of the implications of their financial decisions and that they may lack the financial literacy (or a component of financial literacy) to make appropriate choices. While a few studies have linked the components of financial literacy (financial attitudes, financial knowledge and financial behaviors), fewer linked the components of financial literacy to mindfulness. Therefore, the purpose of this quantitative study was to examine the extent to which the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) relate to each other and how mindfulness impacts these relationships in students at a private university in New England after completing their first year in college.
Problem of Practice

There is a gap in the literature surrounding students’ financial literacy. The problem of practice is that the advice and guidance given to students is lacking and students suffer the consequences. Both scholars and practitioners could benefit by understanding the relationship between financial literacy and mindfulness that could be gained from the results of an empirical study. The work proposes that a lack of financial literacy combined with low mindfulness could lead to poor decisions and impact college students’ financial futures. Thus, the purpose of this quantitative study is to examine the extent to which the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) relate to each other and how mindfulness impacts these relationships in students at a private university in New England after completing their first year in college.

Significance of the Problem

When a student enters college, they may not look at the total cost of attendance, which includes tuition costs along with their other educational and living expenses (NSLP, 2010). Because of this, many college students start their adult lives without the ability to handle their own finances because of the decisions they made during college (NSLP, 2010). Chan, Chan, and Chau (2012) suggested that with the increased cost of receiving a college degree and continuing economic instability, it has become more difficult for students to focus on and complete their college degree. Bliss, Goetz, Moorman, and Palmer (2010) stated that a large portion of debt among college students is based on increased tuition costs, but that it also has to do with changing spending patterns of college students, including how students take out loans and utilize credit cards.
**Student loans.** College loans are often a large part of how students afford higher education. The federal education loan programs offer a variety of different loans to college students. There are loans for “undergraduate students with documented financial need (Direct Subsidized Loans), for undergraduate and graduate students (Direct Unsubsidized Loans), for graduate students only (Grad PLUS), for parents (PLUS), and for students with high need at some institutions (Perkins)” (College Board & Advocacy, 2012). In recent years, the percentage of undergraduate students who borrowed through federal Stafford loans has increased each academic year (College Board Advocacy & Policy Center, 2012). As shown in Figure 1, the percentage of borrowers increased from 29% in 2002-2003 to 34% in 2012-2013 (College Board Advocacy & Policy Center, 2013, p. 20).

Outside of federal education loan programs, students also have the option to take out private loans through a bank or other private lender. The amount of non-federal loans that students borrowed grew from an estimated $7.9 billion (in 2011 dollars) in 2001-2002 to $25.2 billion in 2007-2008 (College Board Advocacy & Policy Center, 2012, p. 4). As students accrue debt, they may not have a plan for how they will pay back these loans that they have borrowed.

The process to take out a loan is relatively simple. However, an explanation of the meaning and implications of that loan are not always given in detail. Students can apply for loans within the federal education loan program by filling out the Free Application for Federal Student Aid (FAFSA) online, by phone, or by mailing in a paper application. Once the FAFSA is complete, a college student works with the Financial Aid Office of the college or university that they will be attending to determine their loan eligibility. For private loans, college students apply directly with the bank or private lender to discuss and take out any loans that they are
eligible to use towards a college education. Some loans will accrue interest while the students are in school; others defer the interest until after graduation.

![Figure 1. Student loan trends.](image)

Once a student graduates from college or university, or once they leave the institution, they are responsible for payments on any loans they have taken out from either a private bank/lender or the federal government. If a student fails to make payments towards the loan, the loan may fall into default. A loan is considered to be in default status once it is 270 days passed the due date set up by the lender without a payment (Federal Student Aid, 2014). As of September 2011, 9.1% of student borrowers were in default on their federal student loans, the highest cohort default rate since 1996 (College Board Advocacy & Policy Center, 2012, p. 4).

Once a loan is considered in default status, the lender sends the information to the three credit bureaus and the loan is sent to a collection agency (Federal Student Aid, 2014). This
action is reported negatively on the student’s credit rating, which can affect their ability to buy a car or house or other products or services that depend on good credit (Federal Student Aid, 2014). Reestablishing good credit after default can take years (Federal Student Aid, 2014). Poor financial management can lead to a lifetime of financial concerns.

**Credit cards.** Beyond the direct concerns of tuition, many college students apply for and use credit cards for incidental items without understanding monthly payments and interest. Bliss et al. (2010) found that college students tended to have larger credit limits than they were realistically able to afford based on their limited income, leading to a higher tendency to make poor financial decisions. College students usually have little to no income (Bliss et al., 2010). However, credit companies continue to send credit card offers, enticing college students to want to make purchases that they do not necessarily need to make (Bliss et al., 2010). With this comes the issue of a student being able to afford the monthly payments and being able to avoid the large interest rates if a monthly payment is missed (Bliss et al., 2010). Without the appropriate knowledge, a college student may sign up for credit cards unaware of the debt that they may continue to incur (Bliss et al., 2010). The problems that stem from a lack of understanding about credit card debt and loans are more than just what they lack of awareness of spending patterns, but also additional concerns in terms of interest rates (Murphy, 2005). Without this knowledge, students may spend money without realizing that they owe additional amounts because of interest (Murphy, 2005).

**Lack of financial literacy.** Combining the increased loan and credit card usage, college students seem to struggle with issues of debt and spending. Bliss et al. (2010) stated that spending habits and use of debt are important issues for college students at colleges and universities. It is important for college students’ financial futures for them to understand what
they spend, how to save money, and the details surrounding the accrual of debt. Murphy (2005) stated that college students do not know a lot about saving, investing, or managing their money. According to Murphy (2005), students may find themselves in a downward spiral in terms of debt and their finances. Without stronger financial knowledge, students may not be able to focus on the task at hand: their education. This has long term implications for them and the broader society.

There seems to be a lack of financial literacy among college students. However, studies surrounding the components of financial literacy are limited. The direct link between financial knowledge and financial behaviors has been researched through a variety of different studies (Barber, Lyons, Shim, & Xiao, 2009; Chad, Simpson, Smith, & Taylor, 1995; Klein & Mandell, 2009). Researchers have also investigated the link between financial knowledge and financial behaviors, demonstrating how beneficial financial literacy is to college students (Barber, Card, Serido, Shim, & Xiao, 2010). However, how financial attitudes affect that link, as well as the relationship of financial attitudes to financial behaviors, has not been well addressed. Similarly, the level of mindfulness, or how one’s attention is focused on the present moment is not well addressed in the financial literacy literature. There is a clear gap that this study aims to fill.

**Societal implications.** In additional to personal implications, the lack of financial literacy also leads to an impact on society. This is a significant concern for society as poor financial management can lead to a lifetime of financial concerns that can impact individuals, the economy, and the future. Financial competence is rarely the primary concern of general information given to students as they select an institution of higher learning.

One societal concern is economic: once students graduate from college, the debt that they accrued from loans and/or credit cards may affect future spending. American Student Assistance
(ASA) (2013) studied the impact of student debt on the lives of young Americans and found that 63% of students stated that they were less likely to buy a car, house, or other larger item based on the fact that they had debt from student loans. With the current housing market difficulties, without this generation of students buying houses, the current housing market may have a slower recovery (ASA, 2013).

A related concern is the national discussion about the cost of college and a student’s realistic earning potential. The proposed gainful employment rules discussed throughout the federal government represent the legislative process through which the federal government monitors career colleges and career programs to ensure that the student debt incurred for the training can lead to job placement (U. S. Department of Education, 2014). As a part of the requirements, colleges with career-focused degrees and programs must disclose information about withdrawal rates of the college, employment rates, and loans repayment and default rates. The goal is to allow for informed decisions about the program they wish to attend so that they are able to avoid unwarranted debt. However, it does not affect traditional two- and four-year degree programs where students tend to accrue the most debt based on the longer programs and higher tuition and fees.

**Propositions**

This study proposed that the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) predict each other and mindfulness makes these relationships stronger. The first general proposition is that financial knowledge and financial attitudes, individually and collectively, predict financial behaviors. Figure 2 depicts the relationships in the first proposition.
Figure 2. Proposition one, financial knowledge and financial attitudes, individually and together, predict financial behaviors.

The second general proposition is that the strength of these relationships increases with mindfulness. Figure 3 depicts these relationships.

Specifically examining the concept of financial behaviors within financial literacy, there are a variety of different adjectives that can be used to describe them. For example, Robb and Woodyard (2011) studied responsible financial behaviors whereas Savla and Jorgensen (2010) studied high financial behaviors. Xiao, Tang, and Shim (2009) described financial behaviors as being positive or negative. Although the adjective may change, the meaning behind the research does not change.
Research Questions

The central research question guiding this study was: To what extent do the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) relate to each other and how mindfulness impacts these relationships in students at a private university in New England after completing their first year in college? This was operationalized as the following sub-questions and hypotheses:

1. Is financial knowledge related to financial behaviors in students after completing their first year in college?
2. If there is a relationship between financial knowledge and their financial behavior, does mindfulness affect the strength of that relationship in students after completing their first year in college?
3. Are financial attitudes related to financial behaviors in students after completing their first year in college?
4. If there is a relationship between financial attitudes and their financial behaviors, does mindfulness affect the strength of that relationship in students after completing their first year in college?

5. Is financial knowledge and financial attitudes related to financial behaviors in students after completing their first year in college?

6. If there is a relationship between financial knowledge, financial attitudes, and their financial behavior, does mindfulness affect the strength of that relationship in students after completing their first year in college?

**Hypotheses and null hypotheses.**

**H1:** High financial knowledge is positively related to responsible financial behaviors in students after completing their first year in college.

**H10:** High financial knowledge is not positively related to responsible financial behaviors in students after completing their first year in college.

**H2:** High financial knowledge is positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.

**H20:** High financial knowledge is positively related to responsible financial behaviors but mindfulness does not influence the strength of the relationship in students after completing their first year in college.

**H3:** High financial attitudes are positively related to responsible financial behaviors in students after completing their first year in college.

**H30:** High financial attitudes are not positively related to responsible financial behaviors in students after completing their first year in college.
H4: High financial attitudes are positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.

H40: High financial attitudes are positively related to responsible financial behaviors but mindfulness does not influence the strength of that positive relationship in students after completing their first year in college.

H5: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors in students after completing their first year in college.

H50: Having both high financial knowledge and high financial attitudes does not predict responsible financial behaviors in students after completing their first year in college.

H6: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors and high mindfulness positively influences the strength of that relationship in students after completing their first year in college.

H60: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors but mindfulness does not positively influence the strength of that relationship in students after they complete their first year in college.

The relationship between these questions, hypotheses, and the conceptual framework is detailed in Figure 5, which follows the discussion of the conceptual framework.

Conceptual Framework

The conceptual framework presented in Figure 4 integrates mindfulness with the components of financial literacy (financial attitudes, financial knowledge, and financial behaviors). The independent variables are financial attitudes and financial knowledge. Financial behaviors are defined as a dependent variable and mindfulness as a moderating variable. Within
this framework, the four variables are utilized to better understand how college students relate their financial literacy to their daily lives and how aware they are of this process.

Figure 4. The financial knowledge, financial attitudes, financial behaviors, and mindfulness’ constructs are operationalized in the College Student Financial Literacy Survey and the Five Facets of Mindfulness Questionnaire.

Conceptual Background

Financial literacy. Financial literacy is an important attribute in creating financially smart students (NSLP, 2010). A student should know the challenges that may surface from a large amount of loans and other debt incurred while enrolled in college. The challenges of financing higher education are not new. In 1965, the Higher Education Act (HEA) was passed (Carter, Paulsen, & St. John, 2005). This act leads to an overall acceptance of the federal government equalizing educational possibilities (Carter et al., 2005). Through the HEA, the government began to offer loans that, after a grace period, the student would need to pay back to
the government (Sawchuk, 2011).

Students who may have access to higher education may not always find success without the proper tools to help them along (Eitel & Martin, 2009). As students make the decision to attend an institution of higher learning, it is important to determine if they have considered the financial implications of the next four years of their education. With increased access to student loans and greater credit card, it means that students are also incurring more debt in college (NSLP, 2010). Many students do not understand the importance of how much college costs, if financial aid is available, and the difference of financial matters such as cost between public versus private and two-year versus four-year institutions (NSLP, 2010). This lack of knowledge makes it difficult for students to assess whether they were making positive financial decisions and thus an increased level of financial literacy may be needed. Carter et al. (2005) found that increasing levels of financial literacy allowed students to be aware of what they were spending and led to important financial decisions such as what college to attend, whether to take out student loans, and whether to rely on credit cards and other sources of support. Thus, it is important to understand the level of financial literacy students possess as well as factors that may be associated with this literacy.

Mindfulness. One of the factors that may contribute to the level of financial literacy a student possesses is mindfulness. Mindfulness started as a part of the Buddhist teachings and has evolved into a notion that is used to study how aware different groups are within research. Cognitive mindfulness has been described as a conscious state of awareness (Robinson, 2012). Mindfulness looks at creating new categories which leads to people paying more attention to different situations and contexts (Langer, 1989). Current ideals of mindfulness stem from the original philosophies within Buddhism. For example, Jon Kabat-Zinn (2005) relies on the
balance between therapeutic mindfulness and the origins within Buddhism. Daniel J. Siegal (2007) states that awareness is part of the faculties of how we think, feel and attend to stimuli. The ideals behind Buddhism are essential to the study of mindfulness. Mindfulness is a way to understand aware someone is of what they are thinking, doing, and/or saying. In making someone aware to this it helps to understand why they do certain things such as why they do or do not save money for college.

**Methodology**

This study used survey research to look at the mindfulness of college students towards financial literacy and measure financial attitudes, financial knowledge, and financial behaviors. The study was a quantitative cross-sectional study utilizing two different surveys. The two surveys reviewed the components of financial literacy and mindfulness. The sample included the segment of the student population who recently completed their first year in college at a private, non-profit college in New England in order to be able to reach a population of 1057 students.

The College Student Financial Literacy Survey (CSFLS) was created by Bryce Jorgensen in 2010 based on literature and feedback from different experts in the field of financial literacy (Jorgensen & Savla, 2010). The CSFLS has four different sections to address the components of financial literacy: financial knowledge, financial attitudes, financial behaviors, and perceived influences (Jorgensen & Savla, 2010). This study utilized Baer et al. (2006)’s survey called Five Facet Mindfulness Questionnaire (FFMQ-SF) to survey mindfulness. This questionnaire looks at five separate facets: non-reactivity to inner experience, observing, acting with awareness, describing, and non-judging of inner experience (Baer et al., 2006). The surveys utilized in this study are operationalized in Figure 5.
Figure 5. Six hypotheses propose measuring the relationships between the three CSFLS constructs, both directly and as moderated by mindfulness.

The survey was created utilizing Campus Labs Baseline (Baseline) which emailed students directly from the program. Baseline also stores data making it easier to work within its parameters to run some basic reports. For further analysis, SPSS was used to analyze the data to ensure that it was appropriately analyzed. The study investigated how mindfulness moderates the relationship between the components of financial literacy specifically looking at the relationship with financial attitudes, financial knowledge, and financial behaviors.

**Positionality Statement**

The researcher believes the topic of financial literacy for first year students is important. Attending a college or university is a large financial decision for students who may not realize the financial debt that they could incur. As an administrator at institutions of higher learning for eight years, the researcher has personally seen how many college students do not fully understand the debt that they are incurring. As Chavez (2008) stated, this insider position can be
a positive, providing immediate legitimacy in the field. Working in residential life offered the opportunity to see how many students were unable to return their institution because they were unable to pay the balance on their student account. The researcher’s experiences suggest that those who do return may not fully understand how much debt they incur when they agree to take out the loans to afford a private college or university.

Since moving to a position in financial aid, the researcher has direct knowledge of the other side: how institutions relay financial information and the long term implications, supplying “knowledge of the historical and practical happenings of the field,” another positive of insider status (Chavez, 2008). Watching students applying for loans and having the chance to work with them as they begin understand the process has shown the researcher that many students simply do not understand loans and debt after only one meeting with a financial aid representative. This position also allows for access for this study.

Although being an insider is a benefit in many ways, there are some drawbacks. Since the researcher has worked in the field of higher education for a long period of time, the researcher may have some bias to students’ feelings and an understanding of certain aspects of how students answer questions. Having previously worked as an administrator in the university being studied, students may feel that it is important to answer the survey as it will affect their college experience. It will be important to make a distinct line where this survey research is a separate entity outside of university survey research.

Definitions

There are specific terms that were utilized throughout the research. They are defined here as they are used in this study.
1. **Financial literacy** is defined as “the relationship between the three concepts of financial knowledge, financial attitudes, and financial behaviors” (Jorgensen and Savla, 2010, p. 467).

2. **Financial attitude** is defined as “economic beliefs held by a decision-maker about the outcome of a certain behavior and are thus a key factor in the personal decision making process” (Grichnik, Kellermans, & Koropp, 2013).

3. **Financial behavior** is defined as “a positive or good behavior that is recommended by economists to improve financial well-being” (Shim, Tang, & Xiao, 2009).

4. **Financial knowledge** is defined as “understanding issues related to personal finance” (Robb & Woodyard, 2011, p. 60).

5. **Mindfulness** is defined as “bringing one’s complete attention to the experiences occurring in the present moment, in a non-judgmental or accepting way” (Baer, Hopkins, Krietemeyer, Smith & Toney, 2006, p. 27).

**Summary**

The purpose of this quantitative study was to examine the extent to which the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) relate to each other and how mindfulness impacts these relationships in students after they complete their first year in college at a private university in New England. As the cost of attendance rises within the realm of higher education, it becomes more important than ever for college students to understand and be aware of their financial decisions. These financial decisions are what make attending colleges and universities accessible to students, but also have long term implications.
Chapter II: Literature Review

This study examined the relationship between three aspects of financial literacy and mindfulness in college students. The following chapter provides an overview of these constructs including how they have been defined and operationalized in this study. In addition, it provides an introduction to studies about college students and these constructs.

Financial Constructs

To understand the context of this study, it must be placed within the larger literature that seeks to understand financial habits. Since the 1970’s, there has been a deregulation of the U.S. financial service industry. This deregulation has caused issues for American consumers who are less financially knowledgeable (Klein & Mandell, 2009). Grable et al. (2012) discussed the creation of a ‘financial citizen’ who could gain and develop financial knowledge associated with smart financial decision making. For example, this might include better understanding credit card debt before opening a credit card account. Beyond financial knowledge, Grable et al. (2012) found financial experiences were also important. Real world financial experiences allow individuals to utilize financial knowledge gained from different interactions and socializations.

Being financially literate and financially capable are large parts of the idea of financial literacy. Alessie, Lusardi, and Van Rooij (2011) studied how well equipped individuals were to make smart financial decisions, and whether or not they were ‘financially literate’ and knowledgeable. Grable, Joo, Kim, Lee and Sohn (2012) reported that the idea of ‘financial capability,’ or the ability to manage financial resources, was a large part of financial literacy. Financial capability is an important concept in the research of financial literacy because it presumes that individuals need a basic understanding of financial issues prior to taking action and making financial decisions.
Complimentary to financial literacy, Alessie et al. (2011) discussed ‘financial illiteracy,’ which includes factors that lead to a lack of knowledge of basic principles intrinsic in financial decision making. According to these researchers, there is a lack of knowledge regarding debt, savings, and other financial concerns. Additional researchers found that those who are not financially literate struggle with everyday financial concerns, including paying higher interest on student loans (Alessie, Lusardi, & Van Rooij, 2011; Eitel & Martin, 2009; Sprow, 2011).

**Definitions of Financial Literacy**

Generally, financial literacy relates to attitudes, behavior, and knowledge. While the discussion about financial literacy has taken prominence in the literature in recent years, there is no common definition of this construct, nor a single way of conceptualizing financial literacy. Barber et al. (2010) defined financial literacy as self-efficacy, self-confidence, and technical and objective knowledge. In addition, the authors included financial management practices as a component of financial literacy, indicating that there was a behavioral component to the construct. Hung, Parker, and Young (2009) also emphasized knowledge and behavior, while adding financial experience as an element of financial literacy. They defined financial literacy as “(a) a specific form of knowledge, (b) the ability or skills to apply that knowledge, (c) perceived knowledge, (d) good financial behavior, and even (e) financial experience” (p. 5, original emphasis). Jorgensen and Savla (2010) defined financial literacy as “the relationship between the three concepts of financial knowledge, financial attitudes, and financial behaviors” (p. 467). These constructs are summarized in Table 1.

This study used Jorgensen and Savla's (2010) conceptualization of financial literacy because it encompasses both the behavioral and cognitive aspects: how a person understands and utilizes concepts related to planning for their future financial endeavors. In addition, this
definition can be applied to understand how college students are able to take knowledge, attitudes, and behaviors and utilize them as part of how they understand finances.

Table 1.
Financial Literacy Constructs

<table>
<thead>
<tr>
<th>Theorist</th>
<th>Definition</th>
<th>Taxonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barber et al. (2010)</td>
<td>Self-efficacy, self-confidence, behavioral, and technical and objective knowledge</td>
<td>Financial management practices</td>
</tr>
<tr>
<td>Hung et al. (2009)</td>
<td>“(a) a specific form of knowledge, (b) the ability or skills to apply that knowledge, (c) perceived knowledge, (d) good financial behavior, and even (e) financial experience” (p. 5)</td>
<td>Utilizing knowledge to create good financial decisions</td>
</tr>
<tr>
<td>Jorgensen and Salva (2010)</td>
<td>&quot;the relationship between the three concepts of financial knowledge, financial attitudes, and financial behaviors” (p. 467)</td>
<td>Conceptualization encompassing behavioral, attitudinal, and cognitive aspects of how a person understands and utilizes plans for financial endeavors</td>
</tr>
</tbody>
</table>

Accordingly, the following define the constructs of financial literacy as they are used in this study:

1. **Financial attitude** is defined as “economic beliefs held by a decision-maker about the outcome of a certain behavior and are thus a key factor in the personal decision making process” (Grichnik, Kellermans, & Koropp, 2013).

2. **Financial behavior** is defined as “a positive or good behavior that is recommended by economists to improve financial well-being” (Shim, Tang, & Xiao, 2009).

3. **Financial knowledge** is defined as “understanding issues related to personal finance” (Robb & Woodyard, 2011, p. 60).
Assessing financial literacy. Although it has been addressed by a number of scholars, the largest barrier to understanding financial literacy is the difficulty assessing or measuring it (Alessie, Lusardi, & Van Rooij, 2011). For example, both Lusardi and Mitchell (2008) and Stango and Zinman (2009) used only a few questions to assess financial literacy. Based on their definition of financial literacy, Barber et al. (2010) developed a more extensive instrument that extended beyond financial knowledge to also measure learning, behaviors, and attitudes. Yet, without a consistent definition or assessment tool, it becomes difficult to appropriately compare data. The following sections integrate the existing research relative to this concept to build a better understanding of financial literacy and its constructs.

Research on financial literacy. Although the bulk of extant research on financial literacy reviewed began as qualitative in nature, the majority added quantitative elements, culminating in a mixed methods approach. The qualitative studies reviewed focused on specific groups. For example, Sprow (2010) focused on how six Latina single mothers, with differing experiences in education, learned from a financial literacy course, specifically examining how they were able to cope financially while supporting their families.

Extensive quantitative research focused on how the aspects of financial literacy affect individuals. Alessie et al. (2011) measured levels of financial literacy and financial sophistication by surveying 2,000 Dutch households to allow for a representative sample. Their data showed “that the majority of respondents display[ed] basic financial knowledge and [had] some grasp of concepts such as interest compounding, inflation, and the time value of money” (Alessie et al., 2011, p. 449). The researchers felt that their study went beyond simply studying a basic understanding of financial literacy. They determined that financial decision making skills were based on the amount of financial literacy a person demonstrated.
Agnew and Szykman (2005) studied a population of 398 individuals who were a representative sample of gender, age, marital status, occupation, and salary. The study found that the individuals have a tendency to believe that their financial knowledge is much higher than it actually is (Agnew & Szykman, 2005). Participants who self-report may present problems for researchers based on the fact that actual knowledge and understanding are completely different than an individual’s feelings or perceptions of their own knowledge and understanding. For example, if someone feels that they are already, overall, an educated person, that individual could make assumptions that they know more than they actually do, especially when it comes to finances (Collins & O’Rourke, 2010). Huzdik, Beres, and Nemeth (2014) studied young adults ranging in age from 18-25 who were studying various disciplines at Budapest University of Applied Science and the University of Szeged. Of the 38,000 students studied, 1,743 responded. Huzdik, et al. (2014) focused on how people could assume that they have greater financial knowledge compared to their actual knowledge. Huzdik, et al. (2014) found there was a significant difference in assumed versus actual knowledge. These findings informed this study by creating a basis for the research.

One of the largest mixed method studies reviewed was based on the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). The Dodd-Frank Act (2010) was signed by President Obama and requires the Security and Exchange Commission to study the level of financial literacy of retail investors so that they could review the effect of financial literacy on positive behavior. In the study leading to the Dodd-Franks Act, participants stated that there was a need for more financial education in schools, the workplace, in the community, and within families.
Another mixed methods approach reviewed was Eitel and Martin’s (2009), which focused on the barriers to degree completion for first generation female college students, including financial literacy. The study participants were 204 females from one university in Texas with an average age of 24.29 (Eitel & Martin, 2009). Eitel and Martin (2009) found that financial literacy was a hurdle for first generation female student’s degree completion.

Although much of the research has focused on the relationship between financial behaviors and financial knowledge, there are also relevant studies that focused on financial attitudes. Serido, Shim, and Tang (2013) focused on a longitudinal study of 1,511 college students who in the first round of the studied ranged in age from 18-23 then in the second round ranged in age from 21-26. Serido et al. (2013) found that changes in financial knowledge led to changes in financial attitude, which then led to changes in financial behavior. They found that financial attitudes were often a mediator between the relationship between financial knowledge and financial behaviors (Serido et al., 2013). Corney, Dowling, and Hoiles (2009) studied a sample of 400 male apprentices in the building and construction industry who had a mean age of 19.7. Corney et al. (2009) focused more directly on the relationship between money attitudes and behaviors, finding that money attitudes had a significant influence on how someone dealt with their finances and making decisions. If a person had dealt with any financial hardship in their lifetime, they experienced a high amount of stress and anxiety when it came to making financial decisions.

The majority of the research surrounding financial literacy before 2006 focused on high school students and adults (Jorgensen, 2007). Lewis Mandell (2008) created the Jump$tart Coalition Survey of Personal Financial Literacy Among Students in 1997 when the topic of financial literacy was less common in the literature. Mandell surveyed high school students in
1997, then every two years between 2000 and 2008. In 2008, the study expanded to 1,030 college students ranging in age from 18-23. Mandell’s 2009 discussion of Jump$tart’s survey showed that young adults struggled to possess financial knowledge and lacked behavioral competencies based on their level of knowledge. Their 2008 survey showed the lowest number of high school students who were financially literate, and this was the first year they included statistics on college students (Mandell, 2009).

Similarly, Princeton Survey Research Associates conducted a survey in 2008 of 1001 adults, who were over the age of 18, to determine their financial literacy. It showed that adults have low financial knowledge and may struggle to pay their mortgages or exhibit other poor financial behaviors (Princeton Survey Research Associates, 2008). According to Jorgensen (2007), both high school students and adults demonstrate low financial literacy.

Financial literacy and college students. The focus of this study, however, was the complex relationship between financial knowledge, financial attitudes, and financial behaviors within college student populations. Some studies related to financial literacy have focused exclusively on college students (Jorgensen, 2007; Eitel & Martin, 2009; Serido et al., 2013). The majority of this research centers on college students and their credit card usage (Bliss et al., 2012; Borden et al., 2007; Hancock, Jorgensen, & Swanson, 2012; Jorgensen, 2007; Murphy, 2005). There is also research on the different concepts of financial literacy and how they relate to each other (Alessie et al., 2011; Barber et al., 2009; Mundy, 2009). Others look at how the costs of higher education can affect students’ financial futures (Barber et al., 2010; Williams, 2013; Lu, 2013). This study approaches the topic from a holistic view, predicting that financial knowledge, financial attitudes, and financial behaviors may be related to the one another.


**Links between concepts of financial literacy.** The majority of the research between the concepts of financial literacy focused on the link between financial knowledge and financial behavior. In *Financial Socialization of First-year College Students: The Roles of Parents, Work, and Education*, Shim, Barber, Card, Xiao, and Serido (2010) studied a total of 2,098 full-time first-year students who attended a major, land-grant, public university. Shim et al. (2010) linked financial knowledge directly to financial behaviors through their study of financial socialization. Shim et al. (2010) found that financial knowledge predicted financial attitudes which in turn predicted positive financial behaviors. Grable et al. (2012) drew their study sample by administering a survey to 1970 sophomores in ten high schools in Korea with 1770 surveys included in the actual dataset. Grable et al. (2012) found that high levels of financial knowledge and associated positive financial skills of young adults were a foundation for financial behavior and well-being. Alessie et al. (2011) surveyed individuals about the link between financial knowledge and financial behaviors. Participants ranged in age from 20 to 90, with an average age of 49.6, and with 34.6% having acquired a college education (p. 252). They found that those who were not financially literate struggled with everyday financial concerns (Alessie et al., 2011). This study shows the importance of positive financial knowledge for individuals to be able to make smart financial behaviors.

Other studies reviewed the link between financial knowledge and financial behaviors by breaking financial knowledge into sub categories. Barber et al. (2010) believed there was a critical link between financial behaviors and financial knowledge that needed to be further studied. Barber et al. (2010) described financial knowledge as including both objective and subjective knowledge, as well as right and wrong behaviors, further building the relationship between financial knowledge and financial behavior.
Both objective and subjective knowledge allow for right and wrong answers, which then creates the bond between financial knowledge and financial behaviors (Barber et al., 2010). Barber et al. (2009) illustrated how financial attitudes and financial behaviors are influenced by objective knowledge of the facts. Collins (2012) studied 144 clients who were part of the nonprofit Community Development Corporation of Long Island, New York (CDCLI). Clients answered questions about bank account balances, credit reports, as well as self-reported questions which were a baseline used to then survey the client’s 12 months later (Collins, 2012). Collins (2012) found low levels of financial knowledge when observing the financial behaviors of savings and budgeting. Subjective and objective financial knowledge also correlated with credit behavior (Collins, 2012).

Although there is a link between financial knowledge and financial behaviors, financial attitudes have been shown to be a moderator between the knowledge and behaviors. Barber et al. (2009) sent a survey to 8,000 undergraduates and graduates enrolled at a large state university in the southwestern United States of which 1,197 students responded to the study. Barber et al. (2009) links financial knowledge to financial attitude and in turn to financial behavior. For a student to really understand their finances, they need to retain the financial knowledge as it appears to be a foundation for financial attitudes and financial behaviors. From these studies, it can be inferred that students who are financially illiterate struggle to understand the costs behind their financial decisions, which can lead to debt.

Along with financial knowledge and financial attitudes, some researchers found a direct link between financial attitudes and financial behaviors. Serido, Curran, Wilmarth, Ahn, Shim, and Ballard (2015) found that in first year college students’ parental attitudes influenced the attitudes college students had towards financial behaviors. Interestingly, once the student was
close to graduation, if they were in a significant relationship, their romantic partner was what would affect their financial attitudes (Ahn, 2015). The shift of influence shows how parental influence wavers as a college student starts to interact with other external influences.

Just as parental and peer relationships can be an influence, so can education. Borden, Lee, Serido, and Collins (2007) studied how students’ credit card usage changed once they had attended a seminar which focused on credit card usage. Their study consisted of 93 students with an average age of 20 years old and a breakdown of 64% female and 36% male (Borden et al., 2007). Borden et al. (2007) found that college students’ attitudes changed based on how they understood the seminar and with this attitude change led to positive behaviors such as a reduction in the number of credit cards that they applied for to make purchases.

Costs and affording higher education. Higher education costs are a significant part of the total debt that individuals may incur over the course of their lifetime (Mundy, 2009). College students often end up with loans equivalent to the cost of a new home. NSLP (2010) found that most young students do not understand the importance of financial responsibility. They spend their money on items that they want, but do not necessarily need (NSLP, 2010). NSLP (2010) reported that most students live in the ‘here and now’ and want to be able to buy the next big thing. According Chadd, Simpson, Smith, and Taylor (1995), college students struggle to understand how to manage their money, leading to poor financial decision making skills. Chadd et al. (1995)’s findings were based on survey responses from 144 first-year students who lived in a co-ed dormitory.

Students may be choosing a more cost effective college option, however, the price tag may not be a consideration in their choice. Williams (2013) conducted a qualitative study of twenty community college students asking why they made the decision to attend a community
college over a private four-year institution. The assumption was that students understood the cost differences, therefore made the decision to attend a less-expensive college. However, the topic of the cost difference was not a dominate concern for the majority of those students involved in the study (Williams, 2013). Most often, the topic of cost of education became an important issue after a student had already started attending the college. Upon enrollment, a student’s largest concern was unemployment and lower labor market availabilities (Williams, 2013). Students also did not seem to learn how to best utilize their finances, had a limited understanding of budgeting, and did not know how much money was in their checking account (Chad et al., 1995). There seemed to be an overall lack of awareness when it came to financial matters.

Loans have historically been the most widely used means to fund higher education (Seyedian & Yi, 2011). Lu (2013) interviewed fifty students who had incurred student loan debt ranging from $30,000 to $180,000 during their undergraduate career. Lu (2013) found that there were potential challenges for college students in repaying the loans that they incur during their college career. The results of Lu’s (2013) study showed how the cost of college can lead to unbalanced amounts of debt that borrowers incur based on their varying levels of cultural resources such as those students who have higher levels of cultural resources end up with access to higher paying jobs. These findings suggest that loans can serve as a form of social reproduction (Lu, 2013).

Beyond student loans, the use of credit cards impacts the amount of debt that college students incur. Frivolous purchases and cash advances at high interest rates add to the difficulties of repaying debt (Seyedian & Yi, 2011). In the past ten years, there has been a 96%
increase of 18 to 24-year olds declaring bankruptcy in the United States (Young Americans: Center for Financial Education, 2009).

**First year of college and financial future.** Ostensibly, the college years are when students develop a sense of autonomy and a start to build their financial future. Flores (2014) surveyed 117 students who participated in a federal program that serves first generation, low-income and students with disabilities called Student Support Services. Flores (2014) found that college students’ financial literacy becomes progressively higher as they advance from freshman to senior academic classes. However, the adjustment to living on their own for the first time can lead to unhealthy financial behaviors (Flores, 2014). Barber et al.’s (2009) model of Student Financial Well-being showed that college students with the ability to demonstrate positive financial behaviors and who had high levels of perceived control over finances were more satisfied and sustained less debt starting with first year college students. Financial well-being was positively associated with a variety of other aspects of college life, such as strong academic achievement and psychological health (Barber et al., 2010). Barber et al. (2009, 2010) found that financially illiterate students exhibited negative financial behaviors.

When students enter college, their first year can decide their financial future. Barber et al. (2010) described the first year of college as a transitional period of development where students were not quite ready to be financially independent from their families but were willing to learn. The study found this stage was an important part to college students achieving adulthood (Barber et al., 2010). They described college students as either literate or illiterate in financial situations. In their first year, those students who are financially illiterate are more likely to participate in risky financial behaviors such as overspending and accruing debt (Barber et al., 2010).
Mindfulness originated within the concept of the Dharma, teachings by Buddha within Buddhism. Hahn (2001) stated that mindfulness was at the root of Buddha’s lessons within his four noble truths. Dhammananda (1987) wrote that part of the eight-fold path within Buddha’s teachings is mental culture. Mindfulness is one of the ideals. The path is called right ‘mindfulness,’ which is not interpreted as “moral or ethically right,” but is an “indication of what is beneficial in a pragmatic sense” (Hyland, 2011, p. 26). Dhammananda (1987) also stated that mindfulness is a way to end suffering because it allows individuals to be aware of their surroundings and their own knowledge in order to make positive decisions.

**Definitions of mindfulness.** Mindfulness is a way to mediate between effects of mood and behavior, however, these techniques have not been fully studied, and mindfulness lacks an operational definition (Abbey et al., 2004). Baer et al. (2006) described five specific facets of mindfulness in their definition: nonreactivity to inner experience, observing, acting with awareness, describing, and nonjudging of inner experience. ‘Nonreactivity to inner experience’ refers to how an individual can have thoughts and feelings go back and forth without getting too involved in them. ‘Observing’ is how an individual looks at internal and external experiences. ‘Acting with awareness’ refers to how an individual reacts in the moment while focusing on different items. ‘Describing’ denotes to giving one’s own experiences words. Last, ‘nonjudging of inner experience’ takes a non-evaluative attitude towards thoughts and feelings. These definitions are summarized in Table 2.

Langer (1989) described ‘being in a mindful state’ as the creation of new categories, openness to new information, and awareness of more than one perspective. Robinson (2012) stated that cognitive mindfulness can be described as a conscious state of awareness where a
person is aware of the context and content of information. Shao and Skarlicki (2009) defined mindfulness as an “individuals’ propensity of being attentive to and aware of what is taking place in the present” (p. 195). Shao and Skarlicki (2009) described a person who understands mindfulness as someone who pays attention and has a large awareness of what is happening each moment of the day. Whereas a mindless person, pays little attention or low awareness to what is going on around them (Shao & Skarlicki, 2009). In Mindfulness: A Proposed Operational Definition, Abbey et al. (2004) defined mindfulness as a form of mental training that could lead to the reduction of cognitive vulnerability rather than mood management technique.

Table 2.

Definitions of Mindfulness

<table>
<thead>
<tr>
<th>Theorist</th>
<th>Definition</th>
<th>Taxonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Langer (1989)</td>
<td>Similarities in two different conceptualizations</td>
<td>Creation of new categories</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Openness to new information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Awareness of more than one perspective</td>
</tr>
<tr>
<td>Shao and Skarlicki</td>
<td>“individuals’ propensity of being attentive to and aware of what is taking place in the present” (p. 195)</td>
<td>Individual behavior level</td>
</tr>
<tr>
<td>(2009)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baer et al. (2006)</td>
<td>“bringing one’s complete attention to the experiences occurring in the present moment, in a nonjudgmental or accepting way” (p. 27)</td>
<td>Five facets: nonreactivity to inner experience, observing, acting with awareness, describing, and nonjudging of inner experience</td>
</tr>
<tr>
<td>Robinson (2012)</td>
<td>conscious state of awareness where a person is aware of the context and content of information</td>
<td>Self-identity</td>
</tr>
<tr>
<td>Abbey et al. (2004)</td>
<td>form of mental training that could lead to the reduction of cognitive vulnerability rather than mood management techniques</td>
<td>Mediation techniques and Buddhist spiritual practices</td>
</tr>
</tbody>
</table>
Research related to mindfulness. Current ideals of mindfulness stem from the original philosophies within Buddhism. For example, Kabat-Zinn (2005) described mindfulness as a reliance on the balance between therapeutic mindfulness, reflecting the origins of Buddhism’s four noble truths. Siegal (2007) stated that awareness (a part of mindfulness) involves of how we think, feel, and attend to stimuli. This stems from the Buddhist teachings of the mental culture (Siegal, 2007). Abbey et al. (2004) looked at meditation techniques and Buddhist spiritual practices to review mindfulness as one option of understanding the definition of mindfulness. Mindfulness as a Buddhist tradition centers on ending personal suffering (Abbey et al., 2004). By ending personal suffering, individuals become more aware of the world around them and knowing how to navigate it with positive behaviors.

Other researchers have taken Langer’s work and expanded on the topic of mindfulness. Robinson (2012) compared Western and Eastern mindfulness perspectives. Shao and Skarlicki (2009) found different outcomes of mindfulness, ranging from subjective well-being to performance failures, in their attempt to understand mindfulness compared to mindlessness. Shao and Skarlicki (2009) pointed out that research into mindfulness at the individual behavior level is more common in clinical research studies.

Many theorists have incorporated ideas related to cognitive mindfulness into their frameworks of mindfulness. For example, Langer (1989) described cognitive mindfulness as comprised of four features: greater sensitivity to one’s environment, openness to new information, creation of new categories of perception, and an enhanced awareness of different perspectives. Like Langer, Sternberg (2000) researched mindfulness as a cognitive style that allows for the use of one’s cognitive abilities, intelligence, and personality traits. On a cognitive level, this is best measured by parallels of personality and clusters of behavior (Langer &
Margolis, 1990). Participants can be trained to think about how conditioned stimuli can be understood in a different way (Langer & Margolis, 1990).

One aspect of the study of mindfulness is how it affects mood (attitudes) and behaviors. Abbey et al. (2004) stated there is a two-component model for mindfulness. The first factor examined how attention was utilized on immediate experiences, leading to increased recognition in the exact moment (Abbey et al., 2004). The second factor examines the orientation toward a person’s experiences in the exact moment which is “characterized by curiosity, openness and acceptance” (Abbey et al., 2004, p. 232). Utilizing these two components, Abbey et al. (2004) sought a conceptual and theoretical tool to measure mindfulness. Since mindfulness happens in the present, ideally, individuals become more aware of different thoughts, feelings, and sensation each moment (Abbey et al., 2004). Mindfulness allows for a way to turn emotions into behaviors so people understand why they behave in certain situations. In fact, Brown, Kasser, Ryan, Linley, and Orzech (2009) found that higher mindfulness led to lower amounts of financial frustrations when surveying 221 British undergraduates with an average age of 20.11 who were predominantly Caucasian females.

Within the study of mindfulness is a discussion of interventions on certain aspects of a person’s life. Mindfulness is often used as an intervention to enhance understanding, behaviors, or attitudes. These interventions vary from sitting meditation to movement based on mindfulness (Emory & Zhang, 2014). Emory and Zhang (2014) used mindfulness sessions to enhance mother’s mindfulness and lower stress on a candidate pool of 65 females who were selected based on their affiliation with either the Temporary Assistance for Needy Family program or had visited a large, urban, university-affiliated hospital for low-income, predominantly minority parents. Brown et al. (2009) utilized a variety of mindfulness techniques in their study, from
meditation based on mindfulness (10-12 hours per day) and moralizing instruction which focused on psychological states. Felver, Doerner, Jones, Kaye, and Merrell (2013) discussed more specific techniques such as Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), Soles of Feet (SOF), and Acceptance and Commitment Therapy (ACT) to enhance mindfulness. These techniques are typically done in structured time frames and sessions in order to allow for additional enhancement (Doerner et al., 2013).

**College students and mindfulness.** Over the years, studies have investigated how mindfulness affects college students (Mapel, 2012; Adams et al., 2010). They have centered on several themes within mindfulness, including personal regulation, a mindset, and behaviors (Jimenez et al., 2010; Grinnell et al., 2011; Monshat et al., 2013). While many of these studies do not relate to financial matters, they can give insight into mindfulness within the study’s population.

**Personal regulation and mindfulness.** The correlation between moods and mindfulness is important to the research into mindfulness. Jimenez, Niles, and Park (2010) studied mindfulness in 514 undergraduate college students enrolled in an Introductory Psychology course at a large university in the northeastern United States, examining emotional regulation, mood regulation, and self-regulation’s correlation to mindfulness. They found that mindfulness was an important tool to regulate depressive symptoms. Jimenez et al. (2010) also found that higher levels of mindfulness correlated with higher levels of positive emotions, mood regulation expectancies, and self-acceptance.

Similar to Jimenez et al.’s (2010) study, other researchers also studied how mindfulness could be developed in college students and how it effects their mood. Adams, Caldwell, Greeson, Harrison, and Quin (2010) reviewed movement-based courses to see how they effected
regulation of self, mood, stress and sleep quality. In the study, Adam et al. (2010) asked 166 college students to participate in either a Pilates, Taiji quan, or GYRKNESIS classes over a 15-week semester. They found that students who participated in the relaxation classes showed higher levels of mindfulness than the control group. Increases in mindfulness were associated with improved sleep, regulation of self, mood, and ideas of stress. However, the higher levels of mindfulness varied by the type of class that was taken. Greeson, Toohey, and Pearce (2015) studied how a four-week mind-body skills group could reduce stress and enhance self-care while increasing mindfulness in 44 college students at a large, southeastern medical school. Using meditation and guided imagery, Greeson et al. (2015) focused on reducing stress and increasing self-awareness.

Within the research of mindfulness, the idea of a mindset is important. Monshat, Khong, Hassed, Vella-Brodrick, Norrish, Burns, and Herrman (2013) observed how 11 young people, ranging in age from 16-24, utilized mindfulness. In their qualitative study, they sought to measure the effects of changing the perception of mindfulness from a “stress management technique” to a “mindset” (p. 576). The study suggested that participants took the relaxation techniques learned to the next level, making them part of their daily life (Monshat et al., 2013). Based on this work, it seems that mindfulness could be an important tool in the everyday life of a college student, increasing awareness of their knowledge and behaviors, and learning how best to utilize this information.

**Mindfulness and behaviors.** Some studies have researched the relationship between mindfulness and college students’ behaviors. Grinnell, Greene, Melanson, Blissmer, and Lofgren (2011) studied the relationship between an anthropometric, or measurement of individuals, behavioral measures, and mindfulness of 75 male and female first year college
students who were 18 or 19 years old. They found that the connection between mindfulness and anthropometric measures was very small (Grinnell et al., 2011). However, there was a larger relationship between behavioral measures and mindfulness in first year college students (Grinnell et al., 2011). Those students who had higher levels of mindfulness were less likely to partake in certain behaviors such as emotional eating, which in turn led to less weight gain (Grinnell et al., 2011).

Mapel (2012) studied the effects of mindfulness on teaching in the classroom of 49 students at a Polytechnic training program where ages ranged from under 20 to those in their 50s. He found that while the benefits of incorporating mindfulness into the classroom had been explored, the student’s perspective of being taught the mindfulness techniques was a gap in the literature. Based on Mapel’s (2012) research, students were able to focus and decrease stress, which helped students during their education experience, especially when preparing for tests and when writing assignments. Although this acceptance was not the case in all students, it was for the majority (Mapel, 2012).

The literature discusses mindfulness in college students, showing in many cases when students become more aware of their surroundings or teachings it leads to positive behaviors. The literature shows that college students tend to be open to mindfulness and relaxation techniques. They are also able to take these lessons outside of the classroom and apply them to understand their day to day lives (Grinnell et al., 2011; Greeson et al., 2015).

**Mindfulness and Financial Literacy**

The literature includes few explicit studies examining the connection between mindfulness and financial literacy. Stone (2012) noted that there was little to be found about the relationship between mindfulness and financial attitudes and behaviors, two components of
financial literacy. However, an important proponent of the study of the relationship between financial literacy and mindfulness is Daniel Stone. Stone (2012) suggested creating a dual process theory for financial mindfulness. Stone’s (2012) model describes financial attitudes and financial behaviors as two parallel competitive processes (reflexive and reflective) operating separately towards finances. These two systems are ultimately combined to review financial functionality (Stone, 2012). According to Stone (2012), “a higher level of mindfulness may result in a better balance of reflexive to reflective system influences on individual’s money attitudes and behaviors” (p. 22). Stone (2012) called for a continuation in the research between mindfulness and financial literacy.

Several sources link Buddhist practices of mindfulness to money and personal finance (Kinder, 1999; Kasser, 2009). Kinder’s (1999) model focuses on growing awareness, an important factor in mindfulness. He investigated how the cycle of how money changes incorporates mindfulness principals into money practices. Kinder (1999) described a transition of money maturity, starting in childhood and progressively changing into adulthood. This ‘cycle of understanding money changes’ could be applied to college students’ understanding financial attitudes, financial behaviors, and financial knowledge and linking them to mindfulness (Kinder, 1999). Whereas Ellen Langer (1989) took the study of mindfulness beyond the Buddhist beliefs. Langer (1989) suggested that being in a state of mindfulness can increase flexibility, productivity, innovation, leadership ability, and satisfaction. She found an increase of innovation can lead to positive financial decision making through people thinking outside the box and focusing on what they have learned. A state of mindfulness can change behaviors and create new opportunities. Mindfulness is a way to investigate different psychological processes effectively (Robinson, 2012).
According to the research, not understanding finances leads to negative consequences. Kasser (2009) examined how consumers understand greed and egotism, hoping to change these outlooks by increasing satisfaction and reducing insecurities regarding money with the addition of mindfulness practices. Kulananda and Houlder (2002) discussed how not understanding money, or its nature, leads to human suffering. Accordingly, the application of mindfulness to financial research is not novel, but also not well-explored overall.

**Conclusions**

Based on the literature, this study proposed that there is a relationship between financial literacy (behaviors, knowledge, and attitudes) and mindfulness in college students. Alessie et al. (2011) wrote that financial literacy should not be taken for granted and that many individuals in the population have very limited financial literacy skills. However, there seems to be a lack financially responsible behaviors among those that do. Despite the lack of a large body of literature combining mindfulness and financial literacy, there are clear linkages between the constructs. College students have been successful in utilizing the meditation and awareness techniques once given the tools to obtain mindfulness (Jimenez et al., 2010). Therefore, it could be used to increase financial literacy, as “[i]t is no longer acceptable to stand by and watch more generations of students graduate financially illiterate” (Kezar, 2009, p. 43).
Chapter III: Methodology

The purpose of this quantitative study was to examine the extent to which the three components of financial literacy (financial attitudes, financial behaviors, and financial knowledge) relate to each other and how mindfulness impacts these relationships in students at a private university in New England after completing their first year in college. Accordingly, the research sought to answer the following central research question: To what extent do the three components of financial literacy (financial attitudes, behavior, and knowledge) positively relate with each other and how does mindfulness impact the strength of these relationships in students at a private university in New England after completing their first year in college?

Research Propositions

Based on the theoretical framework and review of the literature, the work proposed that the three components of financial literacy (financial attitudes, financial behaviors, and financial knowledge) predict each other and mindfulness makes these relationships stronger. Specifically, the research is grounded in the following propositions:

1. Financial knowledge predicts financial behaviors.
2. Financial knowledge predicts financial behaviors and mindfulness makes this relationship stronger.
3. Financial attitudes predict financial behaviors.
4. Financial attitudes predict financial behaviors and mindfulness makes this relationship stronger.
5. Financial knowledge and financial attitudes predict financial behaviors.
6. Financial knowledge and financial attitudes predict financial behaviors and mindfulness will make those relationships stronger.
Research Question

The central research question guiding this study is: To what extent do the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) relate to each other and how mindfulness impacts these relationships in students at a private university in New England after completing their first year in college?

This was operationalized as the following sub-questions and hypotheses:

1. Is financial knowledge related to financial behaviors in students after completing their first year in college?

2. If there is a relationship between financial knowledge and their financial behavior, does mindfulness affect the strength of that relationship in students after completing their first year in college?

3. Are financial attitudes related to financial behaviors in students after completing their first year in college?

4. If there is a relationship between financial attitudes and their financial behaviors, does mindfulness affect the strength of that relationship in students after completing their first year in college?

5. Is financial knowledge and financial attitudes related to financial behaviors in students after completing their first year in college?

6. If there is a relationship between financial knowledge, financial attitudes, and their financial behavior, does mindfulness affect the strength of that relationship in students after completing their first year in college?
Hypotheses and null hypotheses.

H1: High financial knowledge is positively related to responsible financial behaviors in students after completing their first year in college.

H10: High financial knowledge is not positively related to responsible financial behaviors in students after completing their first year in college.

H2: High financial knowledge is positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.

H20: High financial knowledge is positively related to responsible financial behaviors but mindfulness does not influence the strength of the relationship in students after completing their first year in college.

H3: High financial attitudes are positively related to responsible financial behaviors in students after completing their first year in college.

H30: High financial attitudes are not positively related to responsible financial behaviors in students after completing their first year in college.

H4: High financial attitudes are positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.

H40: High financial attitudes are positively related to responsible financial behaviors but mindfulness does not influence the strength of that positive relationship in students after completing their first year in college.

H5: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors in students after completing their first year in college.
H50: Having both high financial knowledge and high financial attitudes does not predict responsible financial behaviors in students after completing their first year in college.

H6: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors and high mindfulness positively influences the strength of that relationship in students after completing their first year in college.

H60: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors but mindfulness does not positively influence the strength of that relationship in students after they complete their first year in college.

**Research Design**

The study was quantitative in nature, and was designed as an electronic survey administered to the student population that just completed their first year in college who are over the age of 18 at a private university in New England. The study utilized Jorgensen and Salva’s (2010) College Student Financial Literacy Survey and Baer, Smith, Hopkins, Krietemeyer, and Toney’s (2006) Five Facets of Mindfulness Questionnaire. Together, these instruments assigned scores for each individual in the following areas: financial attitudes, financial behaviors, financial knowledge, mindfulness, specifically the facets of acting with awareness, describing, and observing, and demographic information.

**Quantitative study.** Quantitative research is defined by Creswell (2009) as a way to test purposeful theories through relationships among variables. Quantitative research is best used for “the identification of factors that influence an outcome” (Creswell, 2009, p. 18). For this study’s research question, the researcher studied different independent variables to see how they influence a dependent variable. An independent variable is what influences an outcome and the dependent variable depends on the independent variable (Creswell, 2009).
One way to look at the relationships between aspects of financial literacy and mindfulness is by utilizing moderating variables. This was used to examine how the relationships may change based on the moderating variable. A moderating variable can be defined as the way effects occur between two different variables (Creswell, 2009). This can be either a quantitative or qualitative variable that will affect the strength of the relationship between the independent or dependent variables.

In this study, the independent variables were financial attitudes and financial knowledge. The dependent variable was financial behavior. The moderating variable was mindfulness. The moderating variable took the aspects of financial literacy and discover how introducing this variable with two characteristics will affect the relationship. The relationship between financial attitudes, financial knowledge and financial behaviors was studied using the moderating variable of mindfulness.

**Setting.** This study took place at a four-year private University in New England where the students pay approximately $50,000 a year for their education. The researcher had access to contact the students and work with different administers on campus in order to be able to work to ensure that students are aware of the study. The student body was also a representative sample of students who receive financial aid based on the fact that 88 percent receive some sort of financial aid.

**Population.** The study site’s population of students who recently completed their first year of college is about 1057 students who were over eighteen during the Fall 2014 semester. The stratified population varied in race/ethnicity, state or country of origin, and gender. There was approximately a 50/50 split in gender and there approximately 42% were from Connecticut. The study was limited to first- time college students who are 18, the majority
of whom may be living away from their home for the first time. Generally, the demographics of the college are there is nearly a 50-50 split between males and females, 49 percent of students identifying themselves as a minority and 252 with military veteran status. This study focused on first year college students because this is in most cases the first time a student is responsible for their own finances for example taking out their own loans.

**Sample.** The sample was opportunistic and the strategy is non-random convenience. The sample was considered opportunistic because access has been provided to a large number of students. The strategy was non-random because the sample already exists and all qualifying students will be invited to participate. Students may have opted out of participation at any point. The sample procedure was considered to be single data collection based on the fact that this researcher has access to the population to select only first year students from Fall 2014 who were now second year students. With an electronic distribution of to the sample, the level of participation was always a concern to assure a statistically significant sample. If the desired amount of students which, was 300 students, had not responded then the deadline may be extended up to two times to receive a valid amount of respondents to the survey (see Appendix A and B). Surveying at least 300 students would offer a variety of students that would be able to offer their answers to financial literacy and mindfulness questions. This would also allow for a variety of different perspectives and experiences. This would hopefully be a sample that would be diversified enough to have been able to participate or not participate in each component of financial literacy information.

**Data Collection: Instruments**

An overview of the research instruments is included in Table 3. Each instrument is also described in detail below. The researcher has received permission via email from Jorgensen and
Baer to utilize the surveys as long as the questions are not modified in any way.

Table 3. Study Instrumentation

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
<th>Data Collected in the Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>The College Student Financial</td>
<td>Measures each participant’s understanding of finances by looking at attitudes, behaviors, and knowledge</td>
<td>Financial Attitudes Score</td>
</tr>
<tr>
<td>Literacy Survey</td>
<td></td>
<td>Financial Behaviors Score</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Financial Knowledge Score</td>
</tr>
<tr>
<td>Five Facets of Mindfulness Questionnaire</td>
<td>Measures each participant’s mindfulness</td>
<td>Acting with Awareness Score</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Describing Score</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Observing Score</td>
</tr>
</tbody>
</table>

Financial literacy. The College Student Financial Literacy Survey (CSFLS) was created by Bryce Jorgensen in 2010 based on literature and feedback from different experts in the field of financial literacy (Jorgensen & Savla, 2010). The CSFLS has four different sections to address the components of financial literacy: financial knowledge, financial attitudes, financial behaviors, and perceived influences (Jorgensen & Savla, 2010). Jorgensen and Savla stated that the CSFLS was derived from other validated surveys, which were also considered for this study, including a survey by Chen and Volpe (1998), the Personal Survey by Jump$tart (2004), the College Student Consumer Knowledge Survey (Consumer Federation of America, 1993), and the Financial Management Survey (Micomonaco, 2003).

Validity. The CSFLS (Jorgensen & Salva, 2010) is a valid instrument. Four experts in the field reviewed the survey to ensure face validity, or the degree to which it appears that the instrument represents what it intends to measure. The clarity and readability of the instrument
were tested by six students, and their feedback was used to revise the survey to develop the current version of the instrument. Jorgensen and Salva (2010) found that the four constructs within their survey were highly correlated, suggesting good criterion validity which is the degree of effectiveness in real life.

The reliability for the survey was based on Cronbach’s Alpha which is a measure of internal consistency. For financial knowledge, the reliability was found to be 0.77 and for financial behaviors it was 0.75. The internal consistency for the financial behavioral component of the CSFLS is \( \alpha = .73 \) and \( \alpha = .75 \) for the financial knowledge scale (Jorgensen & Salva, 2010).

**Scales.** There are 44 content questions (the four constructs combined) and 18 demographic questions in the CSFLS. Financial literacy is measured by asking questions about financial behaviors, financial knowledge, and financial attitudes. There are 6 questions that address financial behaviors, using 23 items that are ranked on a scale of 1 to 5. These review general financial behaviors, as well as the behaviors behind saving, borrowing, insurance, and investment (Jorgensen & Salva, 2010). Financial knowledge is measured by 11 items, represented by questions about saving, borrowing, insurance, and investment. There are 25 items in 6 questions that measure a student’s perception of money and finances. The original survey includes 18 demographic questions, however, for the purpose of this research, only 5 were used. These items range from Likert scale, multiple choice or open ended questions.

**Strengths and weaknesses of the instrument.** This study is a great source to studying each component of financial literacy separately. It will help to view each component on its own to then compare when necessary. A weakness is that it does contain many questions which may not hold the attention of first year college students.

**Mindfulness.** This study utilized the concept mindfulness as a mediating variable. The
Five Facets of Mindfulness Questionnaire was created by Baer et al. (2006) combining five questionnaires that had previously been tested and reviewed to look at different aspects of mindfulness. The five questionnaires that were combined are the Mindfulness Attention Awareness Scale (MAAS) (Brown & Ryan, 2003), the Freiburg Mindfulness Inventory (FMI) (Buchheld, Grossman, & Walach, 2001), the Kentucky Inventory of Mindfulness Skills (KIMS) (Baer, Smith, & Allen, 2004), the Cognitive and Affective Mindfulness Scale (CAMS) (Feldman, Hayes, Kumar, & Greeson, 2004; S.C. Hayes & Feldman, 2004) and the Mindfulness Questionnaire (MQ) (Chadwick, Hember, Mead, Lilley, & Dagnan, 2005). These five surveys were combined and tested in a study by Baer et al. (2006). Although the surveys were combined, they were not duplicated (Baer et al., 2006). Together, the questions look at five facets of mindfulness: nonreactivity to inner experience, observing, acting with awareness, describing, and nonjudging of inner experience. This study only utilized the facets of acting with awareness, describing, and observing. Nonreactivity to inner experience evaluates how an individual can go back and forth within their thoughts or feelings without getting too involved in them. Observing describes how individuals look at internal and external experiences. Acting with awareness examines how individuals react in the moment while focusing on different items. Describing explores how individuals give their own experiences words. Nonjudging of inner experience looks at taking a non-evaluative attitude headed for thoughts and feelings.

**Validity.** The instrument has been found to have high validity. Baer et al. (2006) chose the five mindfulness facets based on their internal consistency. The alpha coefficients of the subscales that Baer et al. (2006) found and will be utilized in the current study is acting with awareness (.87), describing (.91), and observing (83). Baer et al. (2006) also found evidence that
the five facets within the Five Facets of Mindfulness Questionnaire (FFMQ) have substantial non-overlapping content to be measured separately based on these alpha coefficients.

Baer at al., (2006) studied 613 undergraduate psychology students to find the internal consistency and intercorrelation of the instrument (Baer et al., 2006). The alpha coefficients (a measure of internal consistency) found for the questionnaires were “MAAS = .86, FMI = .84, KIMS = .87, CAMS = .81 and MQ = .85” (Baer et al., 2006, p. 31). This shows that there is good internal consistency of the five scales. According to Baer and colleagues (2006), the questionnaires were shown to be “significantly positively correlated with each other, with \( r_s \) ranging from .31 (MAAS with FMI) to .67 (KIMS with CAMS) (Baer et al., 2006, p. 31). The internal consistency of the five facets that are derived from the FFMQ were also reviewed. The internal consistencies for these facets are “nonreactivity = .75, observing = .83, acting with awareness = .87, describing = .91, and nonjudging = .87” (Baer et al., 2006, p. 36). The facets were consistently correlated to each other which is valuable to future research that looks into utilizing these factors in a study (Baer et al., 2006). Baer, Button, Duggan, Krietemeyer, Lykins, Sauer, Smith, Walsh, and Williams (2008) studied the construct validity of the FFMQ. They found that the construct of the FFMQ was strong. Additionally, the FFMQ has been positively correlated in regard to psychometric properties in community members, mediators and students (Baer et al., 2006).

Baer, Lykins, and Samuel (2013) found that within the FFMQ, the subscales were worded differently. Observing is positively worded, acting with awareness is negatively worded, and describing is a combination of the two wordings. This proves that these subscales have distinctly different content which can be measured separately.
Scales. The Five Facets of Mindfulness Questionnaire (FFMQ) is made up of 39 items (Baer et al., 2006). The questions are asked on a Likert scale from one to five where one represents being never or very rarely true and five representing very often or always true.

Strengths and weaknesses of the instrument. This study is a great resource to the study of mindfulness because it is divided into five different facets that can be studied together or separately to fully understand the topic and/or be removed from the study if not applicable. The relevance to students makes it a strong match for the proposed study. A weakness is that the more the questions the longer the survey which may cause for some students to not complete the entire survey or just click an answer without actually reading the questions.

The other instruments that were considered were the Jump$tart Coalition® for Personal Financial Literacy (2008) The Financial Literacy of Young American Adults survey for financial literacy for financial literacy. For mindfulness, Ellen Langer’s Mindfulness Scales was also considered. The reason that neither of these survey instruments were used is because they do not go into as much detail about the constructs and cannot be broken down into different components as the two surveys that were decided upon for this study.

Data Collection: Procedures

Prior to the start of the study, IRB approval was obtained. Measures to protect human subjects are addressed later in the chapter. Data was collected from students who have just completed their first year of college. In order to keep the participants informed, they were sent an email with informed consent along with the online survey through Campus Labs Baseline to ensure that the participants knew that the survey was voluntary. Campus Labs Baseline is an outside of the University source that provides technology and resources to create a comprehensive assessment. The survey combined two different surveys (CFSLS and FFMQ).
The surveys were anonymously sent back to Campus Labs Baseline by completing the survey with a link in the email sent to students in order to ensure the results are kept private.

The sample list was obtained by running a report through the student database based on the age, international status, and first year class status. The researcher sent the participants the demographic and selected survey questions along with informed consent utilizing Campus Labs Baseline to their University email accounts. The current study was sent this email after October 12, 2015. The email discussed the length of time the survey took and an incentive of $100 to Best Buy for three students through a random drawing of participants who responded. The researcher gave the students four weeks to return the survey with three reminder emails in between. The desired amount of students which was 300 students did not respond so the deadline may be twice extended once to receive a valid amount of respondents to the survey (Appendix). Once the surveys were returned to Baseline, the data was compared and analyzed.

Data Analysis

SPSS version 22 was used to organize and analyze the data collected. Parametric techniques were utilized to review the data from the program. A scatter plot and regression lines was used to display data. A positive correlation was demonstrated if the correlation coefficient is .40 to .60. Once the results were completed, the hypotheses were tested via data analysis in order to be able to draw conclusions about the results of the study. Using factorial ANOVA, all of the relationships between the factors were reviewed in order to show the appropriate data and connections.

Analytic strategy: Linear and multiple regression. Based on the current research questions and hypotheses proposed, the most appropriate strategies to analyze the data collected was linear and multiple regression analyses. This choice was based on how each hypothesis
utilized either a single explanatory variables or a moderated causal model. A linear regression model has a single variable (x) that has a relationship with another variable (y) which then leads to a straight line (Montgomery, Peck, & Vining, 2012). For this model, financial knowledge and financial attitudes are independent variables and financial behaviors is the dependent variable.

In a moderated causal model, X₁ and X₂ are predictors Y (Warner, 2013). A moderation analysis is used to describe a relationship between one predictor variable and an outcome variable (X₁ & Y) when a second predictor variable is used as a control variable (X₂) (Warner, 2013). In the current study, the moderating variables would be mindfulness (Table 4). The independent variable or predictor variables are financial knowledge and financial attitudes. The outcome variable or dependent variable is financial behaviors (Table 4). Moderation analysis allows for the study to understand the correlation between the three variables (Warner, 2013). This is best analyzed by a scatter plot where the variables (X₁, X₂ and Y) are shown to be approximately linearly related (Warner, 2013).

\[ Y' = b_0 + b_1X + b_2X_2 \]

Table 4.
Linear and Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Description in the Current Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variable</td>
<td>An independent variable predicts one or more dependent variables (Warner, 2013).</td>
<td>Financial Knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Financial Attitudes</td>
</tr>
<tr>
<td>Dependent Variable</td>
<td>A dependent variable measures the outcome of a statistical analysis (Warner, 2013).</td>
<td>Financial Behaviors</td>
</tr>
<tr>
<td>Moderating Variable</td>
<td>A moderating variable moderates between the independent and dependent variables (Warner, 2013).</td>
<td>Mindfulness</td>
</tr>
</tbody>
</table>
Validity, Reliability, and Generalizability

It was important to ensure that all of the students were surveyed in a way that ensures that the information being requested would remain confidential. The instruments utilized in this study have been tested for validity and reliability which have been discussed in detail in the information about instruments in this chapter. There have also been steps taken to avoid threats to validity and generalization.

**Threats to validity.** There were two threats to external validity in this study. The first was that the survey was sent out in an email to only those students who have recently completed their first year at the university. Since the respondents remain anonymous, the person answering the questions may not be the student the survey was meant to reach such as parent filling out the survey for their student. The researcher sent the emails to the student’s university email address in the hopes that it will alleviate the issue because the email on file was issued directly to the student who is the only one who should have access to the username and password to log into the email system.

The second threat would be respondent fatigue. When a survey is too long, students may struggle to continue to read the questions which in many cases means they will randomly answer. Since the survey will have questions from two different instruments, this elongates the survey time to complete the survey. In order to avoid this, the researcher piloted to ensure that it is not longer than ten to fifteen minutes which the researcher will share with the students in the email to ensure they are prepared for the amount of time needed to complete the survey.

**Generalization.** The study was limited to the location of the study being a singular location that may not be a generalization to all students across the United States based on its location as well as per capita income. The University being studied was private and high in cost.
to it may not generalize to all schools across the nation. Although every study does have limitations, it is important to realize that this is also a way to start looking at the importance of mindfulness of financial literacy.

**Protection of Human Subjects**

In order to maintain confidentiality, the study ensured the safety of the participants and did not share information about specific participants. By using a large population and broad scope, it was effective to ensure that each participant was able to maintain confidentiality.

In order to receive informed consent, the survey started with a disclaimer to ensure that each participant was aware of the survey and how the results will be used. Since the survey was a general email sent out, students were able to voluntarily choose to participate in the study or not. This researcher sent emails and ensured that through Campus Labs Baseline the information was confidential and separate from the results.

**Summary**

Each year the cost of higher education rises, and with these increases, students incur more debt. It is critical to understand how aware students are of their financial literacy. Students who had completed their first year at college at a private college in New England were surveyed using Jorgensen and Salva’s (2010) and Baer et al.’s (2006) questionnaires. The two validated instruments were used to collect data electronically via a third party survey company and then analyzed to examine the relationships between the variables and address the research questions and hypotheses surrounding financial literacy and mindfulness.
Chapter VI: Reporting of the Findings

The purpose of this quantitative study was to examine the extent to which the three components of financial literacy (financial attitudes, financial behaviors, and financial knowledge) positively relates to each other and how mindfulness impacted these relationships in students at a private university in New England after completing their first year in college. The following chapter describes the results and the data analysis. The chapter discusses both the sample and how the data related to the research questions and hypotheses. Multiple regression was used to analyze the data based using the moderating variable of mindfulness. SPSS version 22 was used to organize and analyze the data collected. Parametric techniques were used to further review the data. The data is shown below in both scatter plots and regression lines to illustrate relationships within the data. Using factorial ANOVA, each of the relationships between the factors were reviewed in order to show the appropriate data and connections.

Description of Sample

Of the possible 1,057 first year students who received the email to participate in the study, only 125 students responded, a 7.95% response rate. In order to ensure that all students were older than 18 and were not international students, the participant responses were first filtered using selection criteria on the database utilized by the university for the study. The participants were asked demographic questions within the survey to ensure that only qualifying students were included. Other demographic question utilized in this survey were requests from the site location to aid in their development of a financial literacy program if warranted.
Hypothesis Analysis

**Hypothesis 1.** The first hypothesis reviews the relationship between financial knowledge and financial behaviors. It stated:

H1: High financial knowledge is positively related to responsible financial behaviors in students after completing their first year in college.

H10: High financial knowledge is not positively related to responsible financial behaviors in students after completing their first year in college.

**Scatterplot.** To assess the significance of the relationship between financial knowledge and financial behavior, a scatterplot graph was analyzed, included as Figure 6.

![Scatterplot](image)

Figure 6. Financial knowledge and financial behavior scatter plot.

**Correlations and significance.** In Figure 6, the scatter plot shows a positive correlation, however the data does not cluster clearly around the regression line. Using Pearson’s
Correlation (r) provided further evidence that the financial knowledge score and financial behaviors score were non-significant (r = .185; p = 0.120). The correlation and significance between financial attitudes and financial behaviors is described in Table 5.

Table 5.
Financial Knowledge and Financial Behavior Correlations and Significance.

<table>
<thead>
<tr>
<th>Correlation and Significance</th>
<th>Financial Behavior Score</th>
<th>Financial Knowledge Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>1.000</td>
<td>.185</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>.185</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>-</td>
<td>.120</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>.012</td>
<td>-</td>
</tr>
<tr>
<td>N</td>
<td>Financial Behavior Score</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Financial Knowledge Score</td>
<td>42</td>
</tr>
</tbody>
</table>

**Linear regression and ANOVA.** Next, linear regression and analysis of variance were run in reference to the relationship between financial knowledge and financial behaviors. This relationship was then calculated and is shown in Tables 6, 7, and 8.

Table 6 further explores the significance between financial knowledge and financial behaviors. This relationship is shown to not be significantly correlated (r = 0.185; p = 0.120; sig. F change = 0.240). In fact, only 3.4% of the variance of financial behaviors is explained by financial knowledge (r² = 0.034). This means that the relationship is not significant in terms of linear regression. According to Table 7, ANOVA Model 1 shows financial knowledge and financial behaviors are not significantly correlated (F = 1.421; p = 0.240). Further exploring the
non-significant ANOVA results for financial knowledge and financial behaviors in Table 8, we can see ANOVA Model 1 does not provide a significant predictive power.

Table 6.

*Linear Regression Results for Financial Knowledge and Financial Behaviors Model Summary* \(^a\)

<table>
<thead>
<tr>
<th>Linear Regression Results for</th>
<th>Financial Knowledge and Financial Behaviors Model Summary (^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>1</td>
</tr>
<tr>
<td>R</td>
<td>.185(^b)</td>
</tr>
<tr>
<td>R Square</td>
<td>.034</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>.010</td>
</tr>
<tr>
<td>Std. Error of the Estimate</td>
<td>7.48569</td>
</tr>
<tr>
<td>Change Statistics: R Square Change</td>
<td>.034</td>
</tr>
<tr>
<td>F Change</td>
<td>1.421</td>
</tr>
<tr>
<td>df 1</td>
<td>1</td>
</tr>
<tr>
<td>df 2</td>
<td>40</td>
</tr>
<tr>
<td>Sig. F Change</td>
<td>.240</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.066</td>
</tr>
</tbody>
</table>

\(^a\) Predictors: (Constant), Financial Knowledge Score

\(^b\) Dependent Variable: Financial Behavior Score
Table 7.
ANOVAa Results for Financial Knowledge and Financial Behaviors

<table>
<thead>
<tr>
<th>Model (1)</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>79.647</td>
<td>1</td>
<td>79.647</td>
<td>1.421</td>
<td>.240b</td>
</tr>
<tr>
<td>Residual</td>
<td>2241.424</td>
<td>40</td>
<td>56.036</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2321.071</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Behavior Score
b. Predictors (Constant): Financial Knowledge Score

Table 8.
ANOVA Coefficients for Financial Knowledge and Financial Behaviors.

<table>
<thead>
<tr>
<th>Model (1)</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95% Confidence Interval for B</th>
<th>Correlations</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td>Constant</td>
<td>57.394</td>
<td>3.861</td>
<td></td>
<td>14.866</td>
<td>.000</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>.375</td>
<td>.314</td>
<td>.185</td>
<td>1.192</td>
<td>.240</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Behavior Score

**Hypothesis 2.** The second hypothesis reviews the relationship between financial knowledge and financial behaviors with the influence of mindfulness:

H2: High financial knowledge is positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.
H2o: High financial knowledge is positively related to responsible financial behaviors but mindfulness does not influence the strength of the relationship in students after completing their first year in college.

*Scatterplot.* Given H2 tests the relationship between three variables, a scatterplot was not appropriate for this analysis.

*Correlations and significance.* In table 5, the Pearson’s Correlations (r) and significance are listed for the relationships between financial knowledge and financial behavior, financial knowledge and mindfulness, and financial behavior and mindfulness. The correlations and significance of these relationships are explained below.

*Financial knowledge and financial behaviors.* The relationship between financial knowledge and financial behaviors was not significant (r = 0.185; p = 0.120). The correlation and significance between financial attitudes and financial behaviors can be seen in Table 9.

*Financial knowledge and mindfulness.* The relationship between financial knowledge and mindfulness was not significant (r = 0.104; p = 0.256). The correlation and significance between financial attitudes and mindfulness can be seen in Table 9.

*Financial behavior and mindfulness.* The relationship between financial behavior and mindfulness was also not significant, though they are negatively correlated (r = -0.029; p = 0.428). The correlation and significance between financial behavior and mindfulness can be seen in Table 9.
Table 9.

Financial Knowledge and Financial Behaviors with the Influence of Mindfulness: Correlations and Significance

<table>
<thead>
<tr>
<th>Correlation and Significance</th>
<th>Financial Knowledge Score</th>
<th>Financial Behavior Score</th>
<th>Mindfulness Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>1.000</td>
<td>.185</td>
<td>.184</td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>.85</td>
<td>1.00</td>
<td>-.029</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>.104</td>
<td>-.029</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>--</td>
<td>.120</td>
<td>.256</td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>.120</td>
<td>--</td>
<td>.428</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>.256</td>
<td>.428</td>
<td>--</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>

*Linear regression and ANOVA.* The linear regression and analysis of variance of the relationship between financial knowledge and financial behaviors and the influence of mindfulness was calculated and presented in Tables 10, 11, and 12.
According to Table 10, financial knowledge and financial behaviors with the influence of mindfulness are not significantly correlated ($r = 0.215$; sig. F change = 0.397). In fact, only 4.6% of the variance of financial behaviors is explained by financial knowledge ($r^2 = 0.046$). This means that the relationship is not significant in terms of linear regression. Additionally, by adding mindfulness as a mediating variable into the multiple regression, the model only explains 1.2% more of the variance.

Table 10.

*Linear Regression Results for Financial Knowledge and Financial Behaviors with the Influence of Mindfulness*

<table>
<thead>
<tr>
<th>Model</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>.215$^b$</td>
</tr>
<tr>
<td>R Square</td>
<td>.046</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>-.033</td>
</tr>
<tr>
<td>Std. Error of the Estimate</td>
<td>3.72224</td>
</tr>
<tr>
<td>Change Statistics: R Square Change</td>
<td>.046</td>
</tr>
<tr>
<td>F Change</td>
<td>.946</td>
</tr>
<tr>
<td>df 1</td>
<td>2</td>
</tr>
<tr>
<td>df 2</td>
<td>39</td>
</tr>
<tr>
<td>Sig. F Change</td>
<td>.397</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.067</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Mindfulness, Financial Behavior Score  
b. Dependent Variable: Financial Knowledge Score
Table 11.

ANOVA Results for Financial Knowledge and Financial Behaviors with the Influence of Mindfulness

<table>
<thead>
<tr>
<th>Model (1)</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>26.224</td>
<td>2</td>
<td>13.12</td>
<td>.946</td>
<td>.397</td>
</tr>
<tr>
<td>Residual</td>
<td>540.348</td>
<td>39</td>
<td>13.855</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>566.571</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Knowledge Score
b. Predictors (Constant): Mindfulness Score, Financial Behavior Score

As Table 11 illustrates, Model 1 shows financial knowledge and financial behaviors with the influence of mindfulness is not significantly correlated ($F = 0.946; p = 0.397$).

Table 12.

ANOVA Coefficients for Financial Knowledge and Financial Behaviors

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95% Confidence Interval for B</th>
<th>Correlations</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior Score</td>
<td>.093</td>
<td>.077</td>
<td>.188</td>
<td>1.204</td>
<td>.236</td>
</tr>
<tr>
<td>Mindfulness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score</td>
<td>.041</td>
<td>.059</td>
<td>.109</td>
<td>.700</td>
<td>.488</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Knowledge Score
Further exploring the non-significant ANOVA results for financial knowledge and financial behaviors with the influence of mindfulness (Table 12) demonstrated that ANOVA Model 1 does not provide a significant predictive power.

**Hypothesis 3.** The third hypothesis analyzes the relationship between financial attitudes and financial behaviors:

H3: High financial attitudes are positively related to responsible financial behaviors in students after completing their first year in college.

H30: High financial attitudes are not positively related to responsible financial behaviors in students after completing their first year in college.

**Scatterplot.** Review of the scatter plot diagram was the first step in analyzing the relationship between financial attitudes and financial behaviors, shown in Figure 7.

![Scatter plot](image-url)

Figure 7. *Financial attitudes and financial behaviors scatter plot.*
Table 13.

Financial Behavior and Financial Attitudes: Correlations and Significance

<table>
<thead>
<tr>
<th>Correlation and Significance</th>
<th>Financial Behavior Score</th>
<th>Financial Attitudes Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>1.000</td>
<td>.449</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>.449</td>
<td>1.00</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>--</td>
<td>.001</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>.001</td>
<td>--</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>
Table 14.

Linear Regression Results for Financial Attitudes and Financial Behaviors.

Linear Regression Results for Financial Attitudes and Financial Behaviors Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>.449&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>R Square</td>
<td>.202</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>.182</td>
</tr>
<tr>
<td>Std. Error of the Estimate</td>
<td>6.80613</td>
</tr>
</tbody>
</table>

Change Statistics:

<table>
<thead>
<tr>
<th></th>
<th>R Square Change</th>
<th>.202</th>
</tr>
</thead>
<tbody>
<tr>
<td>F Change</td>
<td>10.106</td>
<td></td>
</tr>
<tr>
<td>df 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>df 2</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Sig. F Change</td>
<td>.003</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.840</td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant) Financial Attitudes Score
b. Dependent Variable: Financial Behavior Score

As Table 14 shows, financial attitudes and financial behaviors are significantly correlated (r = 0.449; p = 0.001). In fact, 20.2% of the variance of financial behaviors is explained by financial attitudes (r² = 0.202). This means that the relationship is significant in terms of linear regression. ANOVA Model 1 showed financial attitudes and financial behaviors are significantly correlated (F = 10.106; p = 0.000), as is presented in Table 15.
Table 15.

ANOVA\(^a\) Results for Financial Attitudes and Financial Behaviors

<table>
<thead>
<tr>
<th>Model (1)</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>468.135</td>
<td>1</td>
<td>468.135</td>
<td>10.106</td>
<td>.003(^b)</td>
</tr>
<tr>
<td>Residual</td>
<td>1852.936</td>
<td>40</td>
<td>46.323</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2324.071</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(a\). Dependent Variable: Financial Behavior Score  
\(b\). Predictors (Constant): Financial Attitudes Score

Table 16.

ANOVA Coefficients for Financial Attitudes and Financial Behaviors

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95% Confidence Interval for B</th>
<th>Correlations</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Constant</td>
<td>36.037</td>
<td>8.168</td>
<td>4.412</td>
<td>.000</td>
<td>19.528</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>.300</td>
<td>.094</td>
<td>.449</td>
<td>3.179</td>
<td>.003</td>
</tr>
</tbody>
</table>

\(a\). Dependent Variable: Financial Behavior Score

Further exploring the significant ANOVA results for financial attitudes and financial behaviors (Table 16), we can see Model 1 does provide a significant predictive power.

**Hypothesis 4.** The fourth hypothesis explored the relationship between financial attitudes and financial behaviors and the influence of mindfulness:
H4: High financial attitudes are positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.

H4₀: High financial attitudes are positively related to responsible financial behaviors but mindfulness does not influence the strength of that positive relationship in students after completing their first year in college.

**Scatterplot.** Given H4 tests the relationship between three variables, therefore a scatterplot was not appropriate for this analysis.

**Correlations and significance.** In Table 17, the Pearson’s Correlations (r) and significance of the relationships between financial attitudes and financial behavior, financial attitudes and mindfulness, and financial behavior and mindfulness are shown. These relationships are further explained below.

**Financial attitudes and financial behaviors.** This relationship was shown as significant (r = 0.442; p = 0.000). The correlation and significance between financial attitudes and financial behaviors can be seen in Table 17.

**Financial attitudes and mindfulness.** The relationship between financial attitudes and mindfulness was not significant (r = 0.333; p = 0.016). The correlation and significance between financial attitudes and mindfulness can be seen in Table 17.

**Financial behavior and mindfulness.** The relationship between financial behavior and mindfulness was negatively and weakly correlated and also not significant (r = -0.029; p = 0.428). The correlation and significance between financial behavior and mindfulness can be seen in Table 17.
**Linear regression and ANOVA.** The linear regression and analysis of variance of the relationship between financial attitudes and financial behaviors with the influence of mindfulness were calculated and is presented in Tables 18, 19, and 20.

According to Table 18, financial attitudes and financial behaviors with the influence of mindfulness are significantly correlated ($r = 0.567$; sig. F change = 0.001). In fact, 32.2% of the variance of financial attitudes is explained by financial behaviors with the influence of mindfulness ($r^2 = 0.322$). This means that the relationship is significant and adds good predictive value. Interestingly, the addition of mindfulness as a moderating variable accounted for an additional 12.0% in explaining the relationship between financial attitudes and financial behaviors.

**Table 17.**

*Financial Attitudes and Financial Behaviors with the Influence of Mindfulness: Correlations and Significance*

<table>
<thead>
<tr>
<th>Correlation and Significance</th>
<th>Financial Attitudes Score</th>
<th>Financial Behavior Score</th>
<th>Mindfulness Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>1.000</td>
<td>.449</td>
<td>.333</td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>.449</td>
<td>1.000</td>
<td>-.029</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>.333</td>
<td>-.029</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>--</td>
<td>.001</td>
<td>.016</td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>.001</td>
<td>--</td>
<td>.428</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>.016</td>
<td>.428</td>
<td>--</td>
</tr>
<tr>
<td>N</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>
Table 18.

Linear Regression Results for Financial Attitudes and Financial Behaviors with the Influence of Mindfulness

<table>
<thead>
<tr>
<th>Model</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>.567&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>R Square</td>
<td>.322</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>.287</td>
</tr>
<tr>
<td>Std. Error of the Estimate</td>
<td>9.51292</td>
</tr>
<tr>
<td>Change Statistics:</td>
<td>R Square Change</td>
</tr>
<tr>
<td></td>
<td>F Change</td>
</tr>
<tr>
<td></td>
<td>df 1</td>
</tr>
<tr>
<td></td>
<td>df 2</td>
</tr>
<tr>
<td></td>
<td>Sig. F Change</td>
</tr>
<tr>
<td></td>
<td>Durbin-Watson</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant) Mindfulness Score, Financial Behavior Score
b. Dependent Variable: Financial Attitudes Score
Table 19.

ANOVA Results for Financial Attitudes and Financial Behaviors with the Influence of Mindfulness

<table>
<thead>
<tr>
<th>Model (1)</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1672.500</td>
<td>2</td>
<td>836.250</td>
<td>9.241</td>
<td>.001</td>
</tr>
<tr>
<td>Residual</td>
<td>3529.334</td>
<td>39</td>
<td>90.469</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5201.833</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Attitudes Score
b. Predictors (Constant): Mindfulness Score, Financial Behavior Score

ANOVA Model 1 (presented in Table 19) shows financial attitudes and financial behaviors with the influence of mindfulness was significantly correlated ($F = 9.241; p = 0.001$).

Table 20.

ANOVA Coefficients for Financial Knowledge and Financial Behaviors

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95% Confidence Interval for B</th>
<th>Correlations</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t Sig.</td>
<td>Lower Bound</td>
<td>Upper Bound</td>
</tr>
<tr>
<td>Constant</td>
<td>15.698</td>
<td>16.423</td>
<td>.956</td>
<td>.345</td>
<td>.17520</td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>.687</td>
<td>.198</td>
<td>.459</td>
<td>3.479</td>
<td>.288</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>.397</td>
<td>.151</td>
<td>.346</td>
<td>2.625</td>
<td>.012</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Attitudes Score
Further exploring the significant ANOVA results for financial attitudes and financial behaviors with the influence of mindfulness (Table 20) reveals that ANOVA Model 1 provides significant predictive power.

**Hypothesis 5.** The fifth hypothesis sought to understand the relationship between financial knowledge, financial attitudes, and financial behaviors:

H5: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors in students after completing their first year in college.

H5₀: Having both high financial knowledge and high financial attitudes does not predict responsible financial behaviors in students after completing their first year in college.

**Scatterplot.** Given H5 tests the relationship between three variables, a scatterplot was not appropriate for this analysis.

**Correlations and significance.** In Table 21, the Pearson’s Correlations (r) and significance show the relationships between financial behaviors and financial attitudes, financial behaviors and financial knowledge, and financial attitudes and financial knowledge. The correlations and significance are shown below.

**Financial behaviors and financial attitudes.** This relationship between financial behaviors and financial attitudes was shown as significant \((r = 0.449; p = 0.001)\). The correlation and significance between financial attitudes and financial behaviors can be seen in Table 21.

**Financial behaviors and financial knowledge.** The relationship between financial behaviors and financial knowledge was shown as not significant \((r = 0.185; p = 0.185)\). The correlation and significance between financial behaviors and financial knowledge can be seen in Table 21.
Financial attitudes and financial knowledge. The relationship between financial attitudes and financial knowledge was shown as not significant ($r = 0.283; p = 0.035$). The correlation and significance between financial attitudes and financial knowledge can be seen in Table 21.

**Linear regression and ANOVA.** The linear regression and analysis of variance of the relationship between financial knowledge, financial attitudes, and financial behaviors was calculated and is shown in Tables 22, 23, and 24.

**Table 21.**

*Financial Behaviors, Financial Attitudes, and Financial Knowledge Correlations and Significance*

<table>
<thead>
<tr>
<th>Correlation and Significance</th>
<th>Financial Behavior Score</th>
<th>Financial Attitudes Score</th>
<th>Financial Knowledge Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>1.000</td>
<td>.449</td>
<td>.185</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>.449</td>
<td>1.000</td>
<td>.283</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>.185</td>
<td>.283</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>--</td>
<td>.001</td>
<td>.120</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>.001</td>
<td>--</td>
<td>.035</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>120</td>
<td>.035</td>
<td>--</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Behavior Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>
### Table 22.

**Linear Regression Results for Financial Knowledge, Financial Attitudes, and Financial Behaviors**

<table>
<thead>
<tr>
<th>Linear Regression Results for Financial Knowledge, Attitudes and Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model Summary</strong> a</td>
</tr>
<tr>
<td>Model</td>
</tr>
<tr>
<td>R</td>
</tr>
<tr>
<td>R Square</td>
</tr>
<tr>
<td>Adjusted R Square</td>
</tr>
<tr>
<td>Std. Error of the Estimate</td>
</tr>
<tr>
<td>Change Statistics:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant) Financial Knowledge, Financial Attitudes Score
b. Dependent Variable: Financial Behavior Score

Table 22 shows how financial knowledge, financial attitudes, and financial behaviors are not significantly correlated ($r = 0.453$; sig. F change = 0.011). However, 20.5% of the variance of financial behaviors is explained by financial knowledge ($r^2 = 0.205$). This means that the relationship is not significant in terms of linear regression.
### Table 23.

**ANOVA Results for Financial Knowledge, Financial Attitudes, and Financial Behaviors**

<table>
<thead>
<tr>
<th>Model (1)</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>476.728</td>
<td>2</td>
<td>238.364</td>
<td>5.040</td>
<td>.011</td>
</tr>
<tr>
<td>Residual</td>
<td>1844.343</td>
<td>39</td>
<td>47.291</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2321.71</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Behavior Score  
b. Predictors (Constant): Financial Attitudes Score, Financial Knowledge Score

Presented in Table 23, Model 1 showing financial knowledge, financial attitudes, and financial behaviors is not significantly correlated \((F = 5.040; \ p = 0.011)\).

Further exploring the significant ANOVA results for financial knowledge, financial attitudes, and financial behaviors (Table 24), we can see Model 1 does not provide significant predictive power. The relationship of financial attitudes and financial behaviors is significant within the ANOVA, however the ANOVA and the relationship between financial knowledge and financial behaviors are not significant.
Table 24.

ANOVA Coefficients for Financial Knowledge, Financial Attitudes, and Financial Behaviors

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Zero-Order</th>
<th>Partial</th>
<th>Part</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Constant</td>
<td>35.560</td>
<td>8.328</td>
<td>4.270</td>
<td>.000</td>
<td>18.715</td>
<td>52.405</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Financial Knowledge Score</td>
<td>.128</td>
<td>.301</td>
<td>.063</td>
<td>.426</td>
<td>.672</td>
<td>-.481</td>
<td>.738</td>
<td>.185</td>
<td>.068</td>
<td>.061</td>
<td>.920</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Behavior Score

**Hypothesis 6.** The sixth hypothesis analyzed the relationship between financial knowledge, financial attitudes, and financial behaviors along with the influence of mindfulness:

H6: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors and high mindfulness positively influences the strength of that relationship in students after completing their first year in college.

H60: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors but mindfulness does not positively influence the strength of that relationship in students after they complete their first year in college.

**Scatterplot.** Given H6 tests the relationship between four variables, a scatterplot was not appropriate for this analysis.

**Correlations and significance.** Table 25 lists the Pearson’s Correlation (r) and significance for the relationships between financial behaviors and financial attitudes, financial
behaviors and financial knowledge, financial behaviors and mindfulness, financial attitudes and financial knowledge, financial attitudes and mindfulness, and financial knowledge and mindfulness. These relationships are explained further below.

Financial behaviors and financial attitudes. This relationship between financial behaviors and financial attitudes was shown as significant ($r = 0.449; p = 0.001$). The correlation and significance between financial attitudes and financial behaviors can be seen in Table 25.

Financial behaviors and financial knowledge. The relationship between financial behaviors and financial knowledge was shown as not significant ($r = 0.185; p = 0.120$). The correlation and significance between financial behaviors and financial knowledge can be seen in Table 25.

Financial behaviors and mindfulness. The relationship between financial behaviors and mindfulness was shown as not significant and to be a weak negative correlation ($r = -0.029; p = 0.428$). The correlation and significance between financial behaviors and mindfulness can be seen in Table 25.

Financial attitudes and financial knowledge. The relationship between financial attitudes and financial knowledge was shown as not significant ($r = 0.283; p = 0.035$). The correlation and significance between financial attitudes and financial knowledge can be seen in Table 25.

Financial attitudes and mindfulness. The relationship between financial attitudes and mindfulness was not shown to be significant ($r = 0.333; p = 0.016$). The correlation and significance between financial attitudes and mindfulness can be seen in Table 25.

Financial knowledge and mindfulness. The relationship between financial knowledge and mindfulness was shown as not significant ($r = 0.104; p = 0.256$). The correlation and significance between financial knowledge and mindfulness can be seen in Table 25.
### Table 25.

**Financial Behaviors, Financial Attitudes, Financial Knowledge, and Mindfulness: Correlations and Significance**

<table>
<thead>
<tr>
<th>Correlation and Significance</th>
<th>Financial Behavior Score</th>
<th>Financial Attitudes Score</th>
<th>Financial Knowledge Score</th>
<th>Mindfulness Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation Financial Behavior Score</td>
<td>1.000</td>
<td>.449</td>
<td>.185</td>
<td>-.029</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>.449</td>
<td>1.000</td>
<td>.283</td>
<td>.333</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>.185</td>
<td>.283</td>
<td>1.000</td>
<td>.104</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>-.029</td>
<td>.333</td>
<td>.104</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed) Financial Behavior Score</td>
<td>--</td>
<td>.001</td>
<td>.120</td>
<td>.428</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>.001</td>
<td>--</td>
<td>.035</td>
<td>.016</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>.120</td>
<td>.035</td>
<td>--</td>
<td>.256</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>.428</td>
<td>.016</td>
<td>.256</td>
<td>--</td>
</tr>
<tr>
<td>N Financial Behavior Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Financial Attitudes Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>

**Linear regression and ANOVA.** The linear regression and analysis of variance of the relationship between financial knowledge, financial attitudes, and financial behaviors with the influence of mindfulness was calculated and is shown in Tables 26, 27, and 28.
Table 26.

Linear Regression Results for Financial Knowledge, Financial Attitudes, and Financial Behaviors with the Influence of Mindfulness

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.491&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.241</td>
<td>.182</td>
<td>6.80685</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change Statistics:</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df 1</th>
<th>df 2</th>
<th>Sig. F Change</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.241</td>
<td>4.032</td>
<td>3</td>
<td>38</td>
<td>.014</td>
<td>1.826</td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: (Constant) Mindfulness Score, Financial Attitudes Score, Financial Knowledge Score

<sup>b</sup> Dependent Variable: Financial Behavior Score

Table 26 demonstrates how financial knowledge, financial attitudes, and financial behaviors with the influence of mindfulness were not significantly correlated ($r = 0.491$; sig. F change = 0.014). However, 24.1% of the variance of financial behaviors is explained by financial knowledge and financial attitudes with mindfulness as a mediating variable ($r^2 = 0.241$). This means that the relationship is not significant in terms of linear regression.

Table 27 illustrates how ANOVA Model 1’s financial knowledge, financial attitudes, and financial behaviors with the influence of mindfulness is not significantly correlated ($F = 4.032$; p = 0.014).
### Table 27

**ANOVA Results for Financial Knowledge, Financial Attitudes, and Financial Behaviors with the Influence of Mindfulness**

<table>
<thead>
<tr>
<th>Model (1)</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>560.412</td>
<td>3</td>
<td>186.804</td>
<td>4.032</td>
<td>.014*</td>
</tr>
<tr>
<td>Residual</td>
<td>760.660</td>
<td>38</td>
<td>46.333</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2321.071</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Behavior Score  
b. Predictors (Constant): Mindfulness Score, Financial Attitudes Score, Financial Knowledge Score
Table 28.


<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95% Confidence Interval for B</th>
<th>Correlations</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>T</td>
<td>Sig.</td>
</tr>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>42.44</td>
<td>9.706</td>
<td></td>
<td>4.373</td>
<td>.000</td>
</tr>
<tr>
<td>Financial Attitudes</td>
<td>.332</td>
<td>.104</td>
<td>.498</td>
<td>3.203</td>
<td>.003</td>
</tr>
<tr>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Knowledge</td>
<td>.133</td>
<td>.298</td>
<td>.066</td>
<td>.445</td>
<td>.659</td>
</tr>
<tr>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mindfulness Score</td>
<td>-.154</td>
<td>.115</td>
<td>-.201</td>
<td>-1.344</td>
<td>.187</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Behavior Score

Further exploring the significant ANOVA results for financial knowledge, financial attitudes, and financial behaviors with the influence of mindfulness (Table 28), reveals ANOVA Model 1 provides significant predictive power.

Summary

This chapter presents the results found based on the hypotheses used in this study. The methodology was described to allow greater understanding of the study. The sample was described, showing the participants were in the study. Examining the different relationships between financial knowledge, financial attitudes, financial behaviors, and mindfulness, the
strongest pairing with the most significant relationship was how financial attitudes explain the variance in financial behaviors.

**Hypothesis 1.** The first hypothesis (and its corresponding null hypothesis) involved the relationship between financial knowledge and financial behavior:

H1: High financial knowledge is positively related to responsible financial behaviors in students after completing their first year in college.

H10: High financial knowledge is not positively related to responsible financial behaviors in students after completing their first year in college.

A positive correlation was predicted between financial knowledge and financial behaviors among in students after completing their first year in college. A scatterplot was created based on the data from the survey, showing a positive correlation. However, the data did not cluster clearly around the regression line, demonstrating that there was not a significant relationship between financial knowledge and financial behaviors. Using on Pearson’s Correlation (r), the relationship between financial knowledge and financial behaviors was shown to have a low, moderate relationship (r = 0.185).

ANOVA and linear regression were also used to determine whether the null hypotheses could be rejected. Only a 3.4% variance in financial behavior that could be explained by financial knowledge confirms a lack of a significant relationship between financial knowledge and financial behaviors with linear regression (r² = 0.034). ANOVA showed that there was not a significant correlation between financial knowledge and financial behaviors, and does not provide a significant predictive power (F = 1.421). The overall findings for the relationship between financial knowledge and financial behaviors showed no significance, supporting the null hypothesis.
**Hypothesis 2.** The second hypothesis concerned the relationship between financial knowledge and financial behavior and the influence of mindfulness. The null hypothesis suggests a lack of relationship:

H2: High financial knowledge is positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.

H20: High financial knowledge is positively related to responsible financial behaviors but mindfulness does not influence the strength of the relationship in students after completing their first year in college.

A positive correlation between financial knowledge and financial behaviors was predicted, as was the influence of mindfulness on the relationship in students after completing their first year in college. Based on the addition of the moderating variable of mindfulness, a scatterplot was not appropriate. Using Pearson’s Correlation (r), the relationship between financial knowledge and financial behaviors with mindfulness as a moderating variable was shown to have a weak relationship (r = 0.215).

As in the first hypothesis, ANOVA and linear regression were used to determine whether the null hypotheses could be rejected. Compared to Hypothesis 1, the variance increased to 4.6% when the moderating variable of mindfulness was added to test Hypothesis 2 ($r^2 = 0.049$). However, the addition of mindfulness only increased 1.2% in regards to variance. Using this linear regression, this relationship was not significant. ANOVA showed that there was not a significant correlation between financial knowledge and financial behaviors when moderated by mindfulness, and lacked a significant predictive power ($F = 0.946$). The overall findings for the
relationship between financial knowledge and financial behaviors were not significant, which means that the null hypothesis was not rejected.

**Hypothesis 3.** The third hypothesis and its corresponding null hypothesis involved the relationship between financial attitudes and financial behavior:

H3: High financial attitudes are positively related to responsible financial behaviors in students after completing their first year in college.

H30: High financial attitudes are not positively related to responsible financial behaviors in students after completing their first year in college.

A positive correlation between financial attitudes and financial behaviors in students after completing their first year in college was predicted. A scatterplot showed a positive correlation, however, there was not a high degree of data clustering around the regression line. Based on Pearson’s Correlation (r), the relationship between financial knowledge and financial behaviors had a high moderate relationship (r = 0.449). This moderate relationship and positive correlation makes a case for a significant relationship between financial attitudes and financial behaviors.

Furthermore, ANOVA and linear regression were used to determine whether or not the null hypotheses could be rejected. Financial attitudes and financial behaviors had a variance of 20.2%, confirming a significant relationship between financial attitudes and financial behaviors in terms of linear regression ($r^2 = 0.202$). For ANOVA, there was a significant correlation between financial attitudes and financial behaviors, providing a significant predictive power ($F = 10.106$). The overall findings for the relationship between financial attitudes and financial behaviors was significant, which means that the null hypothesis was rejected. This relationship was the strongest relationship in the study with the highest level of significance.
**Hypothesis 4.** The fourth hypothesis concerned the relationship between financial attitudes and financial behavior when influenced by mindfulness:

**H4:** High financial attitudes are positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.

**H40:** High financial attitudes are positively related to responsible financial behaviors but mindfulness does not influence the strength of that positive relationship in students after completing their first year in college.

A positive correlation was predicted between financial attitudes and financial behaviors with the moderating influence of mindfulness. A scatterplot was not an appropriate between the three variables of financial attitudes, financial behaviors, and mindfulness. Based on Pearson’s Correlation (r), the relationship between financial attitudes and financial behaviors with mindfulness varied when were compared to one another independently. Based on this finding, only the relationship between financial attitudes and financial behaviors had a significant relationship (r = 0.442). Financial attitudes and mindfulness (r = 0.333) and financial behaviors and mindfulness (r = -0.029) both had weak relationships.

Examining financial attitudes and financial behaviors with the influence of mindfulness as a whole, there is a high moderate relationship (r = 0.567). The variance for this hypothesis was 32.3%, which was 12.0% lower than without the moderating variable of mindfulness. This means that the addition of mindfulness to the relationship of financial attitudes and financial behaviors was increased. This did confirm an overall significant relationship between financial attitudes and financial behaviors with the influence of mindfulness during linear regression (r² = 0.322). ANOVA showed that there was a significant correlation between financial attitudes and
financial behaviors with the influence of mindfulness so this relationship provides a significant predictive power ($F = 9.241$). Overall, the relationship between financial attitudes and financial behaviors and the influence of mindfulness was significant, which means that the null hypothesis was rejected.

**Hypothesis 5.** The fifth hypothesis concerned the relationship between financial knowledge, financial attitudes, and financial behavior:

H5: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors in students after completing their first year in college.

H50: Having both high financial knowledge and high financial attitudes does not predict responsible financial behaviors in students after completing their first year in college.

A positive correlation was predicted between financial attitudes and financial behaviors with the influence of mindfulness in students after completing their first year in college. A scatterplot was not an appropriate based on the amount of variables. Based on Pearson’s Correlation ($r$), the relationship between financial knowledge, financial attitudes, and financial behaviors varied when each was compared to one another independently. Only the relationship between financial attitudes and financial behaviors had a strong relationship ($r = 0.449$). Financial knowledge and financial attitudes ($r = 0.283$) and financial knowledge and financial behaviors ($r = 0.185$) both had moderate relationships.

Financial knowledge, financial attitudes, and financial behaviors are not significantly correlated ($r = 0.453$). The variance testing this hypothesis was 20.5%, which is only 0.3% higher than without the addition of financial knowledge. This means that the addition of financial knowledge to the relationship of financial attitudes and financial behaviors does have an influence on the variables. In turn, this confirms an overall significant relationship between
financial attitudes and financial behaviors with the influence of mindfulness in linear regression ($r^2 = 0.205$). ANOVA showed a significant correlation between financial knowledge, financial attitudes, and financial behaviors, which provided a significant predictive power ($F = 5.040$). The overall findings were not significant, making it appropriate to accept the null hypothesis.

**Hypothesis 6.** The sixth hypothesis examined the relationship between financial knowledge, financial attitudes, and financial behavior when influenced by mindfulness:

$H_6$: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors and high mindfulness positively influences the strength of that relationship in students after completing their first year in college.

$H_{60}$: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors but mindfulness does not positively influence the strength of that relationship in students after they complete their first year in college.

A positive correlation was predicted between financial attitudes and financial behaviors with the influence of mindfulness in students after completing their first year in college. A scatterplot was not appropriate based on the number of variables. Pearson’s Correlation ($r$) suggested that the relationship between financial knowledge, financial attitudes, and financial behaviors with mindfulness varied when each was compared to one another independently. Only the relationship between financial attitudes and financial behaviors had a strong relationship ($r = 0.449$). The relationships between financial knowledge and financial attitudes ($r = 0.283$), financial knowledge and financial behaviors ($r = 0.185$), and financial attitudes and mindfulness ($r = 0.333$) had moderate relationships. Financial knowledge and mindfulness ($r = 0.104$), and financial behaviors and mindfulness ($r = -0.029$) all had weak relationships.
Looking at financial knowledge, financial attitudes, and financial behaviors with the influence of mindfulness as a whole, there was a not strong relationship nor a significant correlation ($r = 0.491$). The data revealed that 24.1% of the variance in financial behaviors is explained by financial knowledge and financial attitudes with the influence of mindfulness. Linear regression confirmed an overall significant relationship between financial knowledge, financial attitudes, and financial behaviors with the influence of mindfulness ($r^2 = 0.241$). ANOVA demonstrated a significant correlation between financial knowledge, financial attitudes, and financial behaviors with the influence of mindfulness and provided a significant predictive power ($F = 4.032$). Overall, these findings were not significant, which means that the null hypothesis was accepted.

**Research Question**

Each of the six hypotheses built toward an understanding of the main research question:

To what extent do the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) relate to each other and how mindfulness impacts these relationships in students at a private university in New England after completing their first year in college?

The findings suggest that the variable of financial attitudes alone and financial attitudes combined with mindfulness have a statistically significant positive correlation with financial behaviors ($p > .01$). The strength of the relationship is moderate to strong ($r = 0.449$ to $r = 0.567$). Combined, these three variables predict about 32.2% of the variability in financial behaviors.

These positive relationships align with the existing research on financial attitudes and financial behaviors. There is a lack of quantitative studies linking the relationship between
financial attitudes to financial behaviors and the influence of mindfulness.

This is an important next step in the literature, because it represents an opportunity to advance the study of financial literacy in a realistic manner. There are several reasons that lead to this research study. First, the variables in this study affect the financial future of college students which has in part been proven by previous research (Barber et al., 2010; Shim et al., 2010; Grable et al., 2012; Flores, 2014). This effect can be seen in different types of universities or colleges varying from public to private to for-profit to non-profit. This also shows how a student’s financial literacy can improve over time and this improvement is measurable. This shows that financial literacy is an important factor for college students in order to participate in positive financial behaviors which can be seen in previous research (Williams, 2013; Alessie et al., 2011; Eitel and Martin; 2009).

Based on the acceptance or rejection of the hypotheses, the following statements appear to be true:

1. Financial knowledge does not have an effect on financial behaviors.
2. Financial knowledge, influenced by mindfulness, does not have an effect on financial behaviors.
3. Financial attitudes positively affect financial behaviors.
4. Financial attitudes, influenced by mindfulness, positively affects financial behaviors.
5. Financial knowledge and financial attitudes do not positively affect financial behaviors.
6. Financial knowledge and financial attitudes, influenced by mindfulness, does not positively affect financial behaviors.
Based on the fact that these variables can be measured, improved upon, and have real-world potential within all types of colleges and universities, it was important to know how financial knowledge, financial attitudes, and mindfulness were actually associated with financial behaviors. This research fills an important gap in the literature by including the variables of financial literacy and the influence of mindfulness on these variables. Implications of these finding are discussed in the next section.
Chapter V: Conclusions

The purpose of this quantitative study was to fill a gap in literature by examining the extent to which the three components of financial literacy (financial attitudes, financial behaviors, and financial knowledge) were related to each other and investigate how mindfulness impacted these relationships in college students after completing their first year at a private university in New England.

This study sought to answer the following research question: To what extent do the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) relate to each other and how does mindfulness impact these relationships in students at a private university in New England after completing their first year in college? The following sub-questions were also developed:

1. Is financial knowledge related to financial behaviors in students after completing their first year in college?
2. If there is a relationship between financial knowledge and their financial behavior, does mindfulness affect the strength of that relationship in students after completing their first year in college?
3. Are financial attitudes related to financial behaviors in students after completing their first year in college?
4. If there is a relationship between financial attitudes and their financial behaviors, does mindfulness affect the strength of that relationship in students after completing their first year in college?
5. Is financial knowledge and financial attitudes related to financial behaviors in students after completing their first year in college?
If there is a relationship between financial knowledge, financial attitudes, and their financial behavior, does mindfulness affect the strength of that relationship in students after completing their first year in college?

Six hypotheses were generated for the questions.

H1: High financial knowledge is positively related to responsible financial behaviors in students after completing their first year in college.

H2: High financial knowledge is positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.

H3: High financial attitudes are positively related to responsible financial behaviors in students after completing their first year in college.

H4: High financial attitudes are positively related to responsible financial behaviors and high mindfulness influences the strength of that positive relationship in students after completing their first year in college.

H5: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors in students after completing their first year in college.

H6: Having both high financial knowledge and high financial attitudes will predict responsible financial behaviors and high mindfulness positively influences the strength of that relationship in students after completing their first year in college.

The previous chapters provided the reader with an understanding of the topics of financial literacy and mindfulness. Chapter one focused on the purpose of the study and discussed its importance. Chapter two reviewed the literature surrounding the concepts of financial literacy and mindfulness, examined financial knowledge, financial attitudes, financial
behaviors, and mindfulness within the qualitative and quantitative literature. The third chapter reviewed the methods that were used to conduct this research. The fourth chapter described survey results, including graphs and tables. This chapter draws conclusions from that data.

**Brief Summary of Findings**

While many factors were examined in this study, the only pairing of factors that had a significant relationship was financial attitudes and financial behaviors. The combination of financial attitudes and financial behaviors with financial knowledge, or both mindfulness and financial knowledge did not provide significant results. Although the combination of financial attitudes, financial knowledge, and financial behaviors with the influence of mindfulness are not significantly correlated, they do provide a significant predictive power. Interestingly, adding mindfulness alone to the relationship between financial attitudes and financial behaviors did affect the relationship. Based on these findings, four research hypotheses and two null hypotheses were rejected. Two research hypothesis (H3 and H4) and four null hypotheses (H10, H20, H5, and H6) were accepted.

**Implications**

This research began from the position that quantitative data can be used by higher education leaders to better understand financial literacy in college students. By becoming more aware of each of these factors by incorporating mindfulness and measuring them, present levels of financial literacy can be established, and programs can be created to improve upon them. The majority of the current studies have focused financial literacy in terms of how financial knowledge effects financial behaviors. However, the current study showed that financial attitudes had an effect financial behaviors, acknowledging that mindfulness also had an impact
on that relationship. Together, this leads to several implications and recommendations for practice.

**Standardized financial literacy program.** Within colleges and universities, a lot can be done to increase the financial literacy of college students. Previous research has shown that financial illiteracy is a problem for college students and that they need to be better educated to understand negative financial consequences (Princeton Survey Research Associates, 2008; Eitel & Martin, 2009; Jorgensen & Salva, 2010; Murphy, 2005). For example, in the study leading to the Dodd-Franks Act (2010), participants described a need for more financial education in schools, the workplace, in the community, and within families.

Based on the outcomes of the current study, this education should focus on positive financial attitudes and mindfulness techniques in order to lead to responsible financial behaviors. Since most financial literacy programs at colleges and university focus on gaining financial knowledge to affect financial behaviors (NSLP, 2010), this study shows that these programs should mainly focus on changing financial attitudes and enhancing mindfulness. Therefore, it is recommended to develop financial literacy programs that focus on enhancing mindfulness and financial attitudes.

Previous research found that to change students’ attitudes, programs should provide specific information that is both relevant to the student as well as taught in short increments (Borden et al., 2007). Examples to operationalize a financial literacy program include: a financial literacy course during the first semester of college focused on particular financial topics relevant to college students and a presentation at orientation that is quick and to the point. In order to enhance mindfulness, these financial literacy programs should include shorter sessions with a focus on key concepts and open communication to ensure that students understand and
participate in the program (Felver et al., 2013). These additional teachings should provide clarity as to the financial implications of specific actions of college students when they enroll or have just begun at a particular college or university.

**Personalized financial aid counseling.** A second recommendation is also set at the college and university level. Because this study revealed that financial attitudes influenced by mindfulness affect financial behaviors, personalized financial aid counseling prior to college acceptance is an appropriate course of action. Previous research suggested that college students are, in many cases, unaware of the financial effects of using loans to pay for college (Seyedian & Yi, 2011; Williams, 2013; Mundy, 2009). Personalized financial aid counseling is a way to increase their reactions to the process. Since Ahn et al. (2013) showed the effects parents have on the financial attitudes of students, the personalized counseling should also include parents. This personal counseling would allow students an alternative point of view from their parents to focus on what they are feeling or understanding based on their financial decisions.

Although there is currently entrance counseling completed prior to taking out loans, this type of counseling is standardized and typically completed via a computer. This focusing of financial knowledge might be a helpful first step. However, it is limited in its reach because based on the current survey results this may not be the most effective way to lead to responsible financial behaviors. It is important that students have a positive financial attitude toward their finances in order to make a responsible decision in regards to the financial aid package/payment plans that they are agreeing to pay for college. Many colleges and universities have ‘Accepted Students’ Days’ where students who are still wavering on their college decision come to get one last look at the campus. This would be a great time to implement personalized counseling for those who need the extra help in understanding the process. In order to promote positive
financial attitudes, the counseling session should give students information pertinent to their concerns and keep the meetings short in order to keep the students’ attention.

Personalized counseling should include mindfulness techniques in order to ensure that students actually absorb the information and are not just regurgitating it. Students need to understand the financial circumstances they are agreeing to at the college or university level. For example, Lu (2013) found that there are potential challenges for college students in repaying the loans that they incur during their college career. Yet students may not be aware of the long-term implications of their actions. To enhance mindfulness, counselors can work with students to incorporate time in the beginning of the session to ensure that the student is ready to learn and relaxed with techniques such as stretching or steadied breathing (Felver et al., 2013).

**Standardized college preparation course.** The final recommendation for practice is at the high school level. Because this study revealed that financial attitudes influenced by mindfulness affect financial behaviors, standardized college preparation courses are appropriate. Previous research has shown that high school students are unaware of the financial decisions inherent in the acceptance of a college or university financial aid package (Mandell, 2008; Chad et al., 1995). Additionally, NSLP (2010) found that most young students do not understand the importance of financial responsibility. Based on the current study’s findings, the focus needs to turn to creating positive financial attitudes.

Corney et al. (2009) found those who have experienced financial struggles had negative attitudes toward financial decisions. This attitude led to anxiety and stress over financial decisions. To help reduce the initial bouts of anxiety and stress, mindfulness could be enhanced by shorter sessions that focus on one key concept at a time in order to focus the conversations and understanding of the student (Felver et al., 2013). Since many students start their college
search during their junior year of high school, a college preparatory classes could show a student’s attitude towards their college search and work to focus either changing or encouraging that attitude to ultimately improve on their financial behaviors as well as alleviate any stress or anxiety. Ahn et al. (2013) found the importance of the parental role on financial attitudes during the first year of college. It would be appropriate to also include the parents in certain sessions with students and others on their own to ensure that the attitudes they are portraying to their student is based on an understanding of the process as a whole especially those that are first time parents.

In order to have positive financial attitudes towards the college decision process, students and parents need to first correlate the costs associated with each college they apply to, as well as how they will pay these costs, be it through grants, loans, scholarships, etc. as a positive experience. Students may not be aware of the large difference in cost between private and public institutions of higher learning. From this class, students could gain concrete examples of real world implementation of what the college process looks like, and in turn begin to gain a feeling of mindfulness towards their financial literacy. This could be a mandatory course broken into sessions during the course of the school day for students with optional parent and student sessions at night that complement those during the day the student is required to take to meet their graduation requirements. By gaining positive financial attitudes prior to leaving high school, students would develop responsible financial behaviors.

**Limitations**

This study had several limitations. First, low response rate needs to be addressed. The study was conducted towards the end of the fall semester and the students had survey fatigue. At the study site, students are surveyed multiple times throughout August and September. Thus, by
the end of the fall semester, many chose not to participate. This time of year is also around mid-
terms, which may have reduced participation. With the holiday season close by, students tend to
think about time off and family which also takes their focus away from participating in the study.
These reasons all could have led to a low number of students (less than 300) participating, which
may have impacted the results.

The next limitation was the self-reporting nature of the survey. Respondents were
expected to answer truthfully and in an unbiased manner. College students who have only
recently finished their first year may not have the self-awareness, specifically for questions
related to mindfulness, to answer in manner most reflective of their true selves. Since the
researcher was not with the students as they responded, it may be difficult know whether the
student took each question seriously. It is difficult to know whether the respondents used outside
materials or whether they relied on their own knowledge. For example, some of the financial
literacy questions could be skewed if the student looked up information to answer a question
they did not previously know.

The scope of the survey population is another limitation. The survey was sent only to
college students who had just completed their first year at one university in one state. The results
may not be reflective of all students at all universities in all states. However, it may be reflective
of other private universities in the same state based on the generalized demographics and high
cost of attendance. Based on this, it would be appropriate to broaden the study to other states
and universities to create a larger candidate pool.

This study included only the students who had just completed their first year at that
University as the sample. The population was not selected to be generalized to all college
students. This sample was chosen to understand how students who have completed their first
year of college understand their financial situation. In many instances, this is presumably the first time that they are making big financial decisions, such as taking out student loans or taking on larger amounts of debt, especially at a private four-year University.

**Future Research**

Based on this study, further research is recommended. First, replicating this study would allow for second look at data related to this current study to see if the results are also replicated between financial literacy and mindfulness. Future studies could take the current limitations and implement the survey at a more appropriate time to try to strengthen the respondent pool. It would also be appropriate to replicate this research at additional colleges and universities, both within the state and in other locations to compare the results.

Another opportunity for future research would be to utilize the study to understand how financial literacy and mindfulness change after the first year of college as a study of intervention effectiveness. This can be done by sending out the survey in August. Then include a financial literacy program focused on financial attitudes then include some mindfulness techniques. The survey could then be sent again to see how the course changes the financial attitudes, mindfulness, and financial behaviors of the students. Comparing results could document the specific effects of financial attitudes and mindfulness on financial behaviors. To get an even more in depth look at these effects, the qualitative approach of interviewing students before and after the course as well can show the specifics of change that occur in the students.

Future research could also include a longitudinal study of how enhancing financial attitudes and mindfulness over time leads to responsible financial behaviors. This could start with studying college students prior to their first year of college. During their college career, different techniques that enhance financial attitudes and mindfulness can be incorporated in their
standard course requirements. Then at the beginning of both their sophomore, junior, and senior year retest to understand how the college experience effects these relationships. It would be important to see if over time students become more responsible financially as they progress through their college career.

Further future research recommendations include looking at the different demographics of the respondents to see if there are differing results. For example, considerations of gender, SES, etc. may yield different results.

**Conclusions**

The purpose of this quantitative study was to examine the extent that the three components of financial literacy (financial attitudes, financial knowledge, and financial behaviors) related to each other and how mindfulness impacted these relationships in college students at a private university in New England who had completed their first year. This study found that there is a relationship between specific constructs of financial literacy with the influence of mindfulness on financial behavior, filling a critical gap in the literature, and most importantly, within the higher education system. Previously the majority of the studies about the aspects of financial literacy (financial knowledge, financial attitudes, and financial behaviors) suggested that a relationship between these concepts existed, however, there was little to no quantitative evidence supporting their relationship to mindfulness. This quantitative study has filled the significant gap in the literature by showing that there is a relationship between financial attitudes and financial behaviors. This relationship was also found to be strengthen with the addition of mindfulness. From an educator’s perspective, this research has the potential to bring academic discussions about the importance of teaching college students about financial literacy in order to help prepare them for their financial futures upon graduation from college. In
addition, the research also shows that the focus of financial literacy interventions should emphasize enhancing financial attitudes and mindfulness.


Federal Student Aid. (2014). *Understanding default*. Retrieved from:
https://studentaid.ed.gov/repay-loans/default#what


Hancock, A.M., Jorgesen, B.L., & Swanson, M.S. (2012). College students and credit card use: The role of parents, work experience, financial knowledge and credit card attitudes. *Financial Capability of Emerging Adults*.


NSLP. (2010). Financial literacy now: Why college students can’t wait.


U.S. Department of Education. (2014). Obama administration takes action to protect Americans from predatory, poor-performing career colleges. Retrieved from:


Appendix A: College Student Financial Literacy Survey (CSFLS)

College Student Financial Literacy Survey

Welcome!

Thank you for your participation in the College Student Financial Literacy Survey. If you are at least 18 years old and are an undergraduate or graduate college student, please read the information below about the study before taking the survey.

Information and Consent Form

I invite you to participate in my thesis research about the financial literacy of college students. The purpose of this project is to measure financial literacy and factors influencing financial behavior. There are questions about financial attitudes, financial behaviors, financial knowledge, influences on financial literacy, and demographic information. Please try to answer every question. If there is a question you do not feel comfortable answering, you may skip it.

There are 42 questions in this survey as well as some demographic questions at the end. It will take you about 10-20 minutes to complete the survey. At the end of the survey you will be given the opportunity to enter a drawing for a free iPod. It is my way of thanking you for participating in the survey.

No one but me and my research committee will see answers and you will not be asked to give your name or any information that tells us who you are during the survey. This survey is anonymous for all respondents with no link between your answers and you. Your decision to participate in this research is voluntary. You can stop at any time. You may skip questions you do not want to answer.

There are no risks in participating in this research beyond those experienced in everyday life. Many of the questions involve personal opinion.

You may ask questions about this research by contacting me at bljorge@vt.edu. In addition, you may contact Dr. David Moore, Assistant Vice Provost for Research Compliance at Virginia Tech (540) 231-4991 for questions about your rights as a research participant.

By continuing with the survey and submitting it, it means you have read this form and are consenting to take the survey under the conditions described above.

FINANCIAL ATTITUDES

1. How sure do you feel about your ability to manage your own finances?
   - 1. Not sure at all – I wish I knew a lot more about money management
   - 2. Not too sure – I wish I knew more about money management
   - 3. Somewhat sure – I understand most of what I’ll need to know
   - 4. Very sure – I understand money management very well

2. How interested are you in increasing your financial knowledge? Why?
   - 1. Very uninterested
   - 2. Somewhat uninterested
3. Not sure
☐ 4. Somewhat Interested
☐ 5. Very interested

Why?

3. Would you take a personal finance course as an elective if offered?
☐ yes  ☐ no

Why or why not?

4. Which topics would be of interest to you? (Check all that apply)
☐ Budgeting  ☐ Investing  ☐ Taxes  ☐ Credit  ☐ Wills  ☐ Life Insurance  ☐ Auto Insurance  ☐
☐ Loans/debt  ☐ Credit cards  ☐ Saving  ☐ Interest rates  ☐ other:

5. Using the scale given below, please rate the importance of items to you (1. not important, 2. somewhat unimportant, 3. not sure, 4. somewhat important, 5. very important)

a. Maintaining adequate financial records
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

b. Spending less than your income
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

c. Maintaining adequate insurance coverage
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

d. Planning and implementing a regular savings/investment program
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

6. Rate the following items on a scale of 1-5 (1 = not at all true of me and 5 = very true of me)

a. I feel in control of my financial situation
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

b. I feel capable of using my future income to achieve my financial goals
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

c. My finances are a significant source of worry or "hassle" for me
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

d. I am uncertain about where my money is spent
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

e. I feel credit cards are safe and risk free
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

f. Purchasing things is very important to my happiness
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

g. I feel capable of handling my financial future (e.g. buying insurance or investments)
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

h. I am afraid of handling and credit cards
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

i. I feel the cost of using a credit card is too high
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

j. I feel putting away money each month for savings or investments is important
☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

k. I feel having life insurance is an important way to protect loved ones
1. I feel it is important to understand apartment leases and loan agreements before I sign.
2. I enjoy thinking about and have interest in reading about money management.
3. I enjoy talking to my peers about money management issues (i.e. taxes, investing, credit cards).
4. I am comfortable with not paying my credit card bills in full each month as long as I make the minimum payment.
5. I feel disability insurance is less important than life insurance.
6. I feel being covered by homeowner's or renter's insurance is important.

**FINANCIAL BEHAVIORS**

7. Some people tend to be very thrifty, saving money whenever they have the chance while others are spending—oriented, buying whenever they can and even borrowing to consume more. How would you classify yourself?
   - Very thrifty, saving money whenever I can.
   - Somewhat thrifty, often saving money.
   - Neither thrifty nor spending oriented.
   - Somewhat spending-oriented, seldom saving money.
   - Very spending-oriented, hardly ever saving money.

8. What kind of financial accounts do you have? (Check all that apply)
   - Savings
   - Checking
   - Money market
   - Certificate of deposit (CD)
   - Stocks
   - Bonds
   - Mutual funds
   - IRA
   - Other: [ ]

9. How much do you estimate you owe on all debts including credit cards, student loans and other debts? (Do not include mortgage)
   - $0
   - $1 - $999
   - $1000 - $9999
   - $10,000 - $19,999
   - $20,000 - $39,999
   - $40,000 or more
   - Don’t know

10. Respond to the following questions on credit cards: (If you have no credit cards skip to question 11)

   a. How many credit cards do you have?
   - [ ]

   b. What is the combined total balance owed on your credit cards?
   - $0 - $99
   - $100 - $499
   - $500 - $1999
   - $2000 - $4999
   - $5000 or more
   - Don’t know

   c. How do you usually pay your monthly credit card bills?
   - I pay the minimum
   - I pay between the minimum and full amount
   - I pay credit bills in full
   - My parents pay my credit card bill

11. In what manner do you maintain financial records?
12. Rate the following items on a scale of 1-5 (1 = not at all true of me and 5 = very true of me)
   a. I budget and track spending.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   b. I compare my receipts of purchases to my monthly statement.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   c. I use credit cards to make purchases that I can’t afford and I don’t have the money in the bank to pay the bill.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   d. I get cash advances from my credit card.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   e. I have my parents “bail me out” of credit card debt.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   f. I work extra hours (in excess of 20 hours a week) to meet bills and expenses.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   g. I miss class to work extra hours to meet bills and expenses.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   h. I contribute to a savings account regularly.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   i. I find legal ways to lower my taxes.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   j. I compare prices when shopping for purchases.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   k. I have a life insurance policy.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   l. I read to increase my financial knowledge.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   m. I read over and understand apartment leases and loan agreements before I sign them.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   n. I contribute to an investment account.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   o. I have a disability insurance policy.
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
   p. I am covered by a homeowner’s or renter’s insurance policy
      ○ 1  ○ 2  ○ 3  ○ 4  ○ 5

INFLUENCES

13. Rate the following influences on a scale of 1-5 (1 = none, 2 = not much, 3 = not applicable, 4 = some, 5 = a lot). How much did you learn about managing your money from the following:
    Parents
    ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
    Friends
    ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
    School
    ○ 1  ○ 2  ○ 3  ○ 4  ○ 5
Books
- 1
- 2
- 3
- 4
- 5

Media
- 1
- 2
- 3
- 4
- 5

Job
- 1
- 2
- 3
- 4
- 5

Life experiences
- 1
- 2
- 3
- 4
- 5

Internet
- 1
- 2
- 3
- 4
- 5

Informal public seminar or class
- 1
- 2
- 3
- 4
- 5

Financial planner or counselor (professional)
- 1
- 2
- 3
- 4
- 5

14. Rate the following on a scale of 1-5 (1 = never, 2 = once per year, 3 = every few months, 4 = twice per month, 5 = weekly). How often were you influenced by or did you discuss finances with the following:

Parents
- 1
- 2
- 3
- 4
- 5

Friends
- 1
- 2
- 3
- 4
- 5

School
- 1
- 2
- 3
- 4
- 5

Books
- 1
- 2
- 3
- 4
- 5

Media
- 1
- 2
- 3
- 4
- 5

Job
- 1
- 2
- 3
- 4
- 5

Life experiences
- 1
- 2
- 3
- 4
- 5

Internet
- 1
- 2
- 3
- 4
- 5

Informal public seminar or class
- 1
- 2
- 3
- 4
- 5

Financial planner or counselor (professional)
- 1
- 2
- 3
- 4
- 5

15. Which of the following items did you learn about in your home while growing up? (Check all that apply)
- Budgeting
- Investing
- Taxes
- Credit
- Wills
- Life Insurance
- Disability Insurance
- Auto Insurance
- Renter's/Homeowner's Insurance
- Loans/debt
- Credit cards
- Saving
- Giving to charities
- Interest rates
- Keeping records
- Being honest in all dealings
- Work for what you receive
- Other:

16. Which of the following classes have you had? (check all that apply)
- 1. An entire course in money management or personal finance
- 2. A portion of a course where at least a week was focused on money management or personal finance
- 3. An entire course in economics
4. A portion of a course where at least a week was focused on economics
other:

17. Where do you expect to learn/increase your financial knowledge? (check all that apply)
☐ Parents  ☐ Friends  ☐ School  ☐ Books  ☐ Media  ☐ Job  ☐ Life experience  ☐ Financial
planner or counselor (professional)  other:

Explain.

18. How would you describe how finances were handled in your family? (check all that apply)
☐ 1. My parents usually argued about the finances
☐ 2. Within the family we openly discussed our finances
☐ 3. My parents explicitly taught me about finances (e.g., credit cards, debt, budgeting, savings)
☐ 4. We didn’t talk much about finances but I learned from their examples
☐ 5. My parents included me in various financial decisions
other:

19. Comparing yourself to your parents, would you say that you are:
☐ 1. Much more likely to save
☐ 2. Somewhat more likely to save
☐ 3. About as likely to save/spend
☐ 4. Somewhat more likely to spend
☐ 5. Much more likely to spend

FINANCIAL KNOWLEDGE

20. Net worth is:
☐ 1. The difference between expenditures and income
☐ 2. The difference between liabilities and assets
☐ 3. The difference between cash inflow and outflow
☐ 4. The difference between borrowings and savings
☐ 5. None of the above

21. In which year after a car is bought does it lose its value the fastest?
☐ 1. First Year
☐ 2. Second year
☐ 3. Fourth year
☐ 4. Seventh year

22. Which account usually pays the MOST interest?
☐ 1. Certificate of deposit (CD)
☐ 2. Savings account
☐ 3. Checking account
☐ 4. Money Market account

23. When a check bounces, who, if anyone, is usually charged a fee?
☐ 1. The check writer only
2. The person to whom the check is written only
3. Neither the check writer nor the person to whom the check is written
4. Both the check writer and the person to whom the check is written

24. Rob and Molly are the same age. At age 25 Rob began saving $2,000 a year for 10 years and then stopped at age 35. At age 35, Molly realized that she needed money for retirement and started saving $2,000 per year for 30 years and then stopped at age 65. Now they are both 65 years old. Who has the most money in his or her retirement account (assume both investments had the same interest rate)?
   1. Molly, because she saved more money overall
   2. Rob, because his money has grown for longer period of time
   3. They would each have about the same amount
   4. Unable to determine with information provided

25. If you signed a 12-month lease for $300/month but never occupied the apartment, you legally owe the landlord
   1. Your security deposit
   2. Your first month’s rent of $300
   3. Your twelve month’s rent of $3600
   4. Nothing
   5. Whatever the landlord wants

26. The MOST important factors that lender use when deciding whether to approve a loan are
   1. Marital status and number of children
   2. Education and occupation
   3. Age and gender
   4. Bill-paying record and income

27. If you co-sign a loan for a friend, then you
   1. Become eligible to receive part of the loan principal
   2. Vouch for the friend’s reliability but have no legal obligation for the loan
   3. Are responsible for repaying the loan if the friend defaults
   4. Are in a better position to get a personal loan

28. If a consumer fails to pay personal debts, a creditor is allowed to do all of the following EXCEPT
   1. Discuss the consumer’s debts with his or her employer
   2. Bring suit against the consumer
   3. Tell a credit bureau that the account is delinquent
   4. Turn the account over to a professional debt collector

29. All of the following are TRUE of bankruptcies except:
   1. It is more difficult to get a low interest rate loan
   2. It will stay on your credit for ten years
   3. Any loan you receive will have a higher interest rate due to the bankruptcy
   4. For all types of bankruptcies you are released from all your debt

30. What does a credit bureau do?
   1. Approves applications for credit
   2. Informs applicants of the reasons for denial of credit
   3. Extends credit to qualified applicants
4. Provides creditors with reports of consumers' bill-paying records

31. The owner of a credit card that is lost or stolen is legally responsible for
   1. Any unauthorized charges
   2. Any unauthorized charges until the loss or theft is reported
   3. Only the first $50 of any unauthorized charges
   4. Only the first $500 of any unauthorized charges
   5. No unauthorized charges

32. If a credit card account has a balance carried over from the previous month, when will interest charges usually begin on a new credit purchase?
   1. On the day of the purchase
   2. One month after the date of the purchase
   3. After a 2-week grace period
   4. After a 2-month grace period

33. Your take home pay for your job is less than the total amount you earn. Which of the following best describes what is taken out of your total pay?
   1. Federal income tax, property tax, and Medicare and social security contributions
   2. Social security and Medicare contributions
   3. Federal income tax, social security and Medicare contributions
   4. Federal income tax, sales tax, and social security contribution
   5. Federal income tax, social security, Medicare contributions, state and local taxes

34. Is a $500 tax credit or a $500 tax deduction more valuable to you?
   1. A $500 tax credit
   2. A $500 tax deduction
   3. They are the same
   4. Depends on your tax bracket

35. Assume you are in your early twenties and you would like to build up your nest egg for a secure retirement in 30 years. Which of the following approaches would best meet your needs?
   1. Start to build up your savings account gradually in an insured bank
   2. Save money in certificate of deposit accounts
   3. Put monthly savings in a diversified growth mutual fund
   4. Invest in long-term Treasury bonds
   5. Accumulate money in a safe-box rented from a local bank

36. Which of the following combinations of investments is most risky?
   1. A mutual fund containing 80% stocks and 20% bonds
   2. A mutual fund containing 80% bonds and 20% stocks
   3. An index fund (like the S&P 500)
   4. Stock in a single company

37. Hector and Maria 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?
   1. A U.S. Government savings bond
   2. Stocks and mutual funds
   3. A savings account
   4. A money market account
38. Many people put aside money to take care of unexpected expenses. If Susan and Joe 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?
   ☐ 1. Savings account
   ☐ 2. A house
   ☐ 3. Stocks
   ☐ 4. Checking account

39. If an auto insurance policy has bodily injury limits of $100,000/$300,000, the insured person is covered for
   ☐ 1. Up to $100,000 for each accident but no more than $300,000 for the life of the policy
   ☐ 2. Up to $100,000 for medical bills but no more than $300,000 for hospital costs
   ☐ 3. Up to $100,000 for each person injured but no more than $300,000 for each accident
   ☐ 4. Up to $100,000 for people in the insured auto but no more than $300,000 for people outside the insured auto

40. Choose the type of insurance coverage (1. liability, 2. comprehensive, 3. collision, 4. uninsured motorist) that pays for the following:
   a. The replacement of a stolen car
      ☐ 1. liability ☐ 2. comprehensive ☐ 3. collision ☐ 4. uninsured motorist
   b. A loss resulting from a lawsuit
      ☐ 1. liability ☐ 2. comprehensive ☐ 3. collision ☐ 4. uninsured motorist
   c. Damage to your own car from an accident caused by you
      ☐ 1. liability ☐ 2. comprehensive ☐ 3. collision ☐ 4. uninsured motorist

41. The main reason to purchase insurance is to
   ☐ 1. Protect you from a loss recently incurred
   ☐ 2. Provide you with excellent investment returns
   ☐ 3. Protect you from sustaining a catastrophic loss
   ☐ 4. Protect you from small incidental losses
   ☐ 5. Improve your standard of living by filing fraudulent claims

42. Assume you are in your twenties, don't have a lot of money, are married and have one child. Assuming you already have disability insurance through your employment, which of the following would you do regarding your life insurance?
   ☐ 1. You would buy a term insurance policy
   ☐ 2. You probably do not need to buy any life insurance policy
   ☐ 3. You would buy flight insurance each time you travel by air
   ☐ 4. You would buy a cash value insurance policy

43. The owner of a bank debit card that is lost or stolen is legally responsible for
   ☐ 1. Any unauthorized charges
   ☐ 2. Any unauthorized charges until the loss or theft is reported
   ☐ 3. Only the first $50 of any unauthorized charges
   ☐ 4. Only the first $500 of any unauthorized charges
   ☐ 5. No unauthorized charges

44. Which of the following can not legally access your credit report?
   ☐ 1. Creditors
   ☐ 2. Employers
   ☐ 3. Apartment rental agencies
Thank you for answering the financial questions. Please answer the final general questions below.

a. What is your gender?
   - Male
   - Female

b. What is your age?
   - 18-22
   - 23-29
   - 30-39
   - 40-59
   - 60 or older

c. What is your academic standing?
   - First-year (Freshman)
   - Sophomore
   - Junior
   - Senior
   - Masters student
   - Doctoral student

d. What is your race/ethnicity?
   - African American
   - Asian
   - Caucasian-not Hispanic
   - Hispanic
   - Multiracial
   - Native American/Pacific Islander
   - Other: ...

e. What is your marital status?
   - Never been married
   - Married
   - Divorced
   - Other: ...

f. What is your major field of study?
   - Business
   - Agriculture and Life Sciences
   - Education
   - Liberal Arts
   - Human Sciences
   - Science
   - Engineering
g. Which best describes your parents income last year?
- 0-$34,999
- $35,000-$49,999
- $50,000-$79,999
- $80,000 or more
- Don't Know

h. How many years of working experience do you have? (Include full or part-time experience, internships, co-ops, summer jobs, etc.)
- None
- Less than 2 years
- Two to less than 4 years
- Four to less than 6 years
- Six years or more

i. My father's primary occupation is

j. What is the highest level of schooling your father has completed?
- Less than high school
- High school or equivalent
- Associates/community college degree
- Bachelor's degree
- Masters, doctorate, or professional degree like medical doctor, veterinarian, or lawyer
- Other:

k. What is the highest level of schooling your mother has completed?
- Less than high school
- High school or equivalent
- Associates/community college degree
- Bachelor's degree
- Masters, doctorate, or professional degree like medical doctor, veterinarian, or lawyer
- Other:

l. My college education is paid by (including who will pay off student loans if applicable)
- Self (100%)
- Parents (100%)
- Mostly self (more than 50%)
- Mostly parents (more than 50%)
- 50% self, 50% parents
- Other:

m. What is your birth order?
n. Are you an international student?
- No
- Yes, less than 2 years in the US
- Yes, 2 to 4 years in the US
- Yes, 4 to 6 years in the US
- Yes, 6 years or more in the US

o. What is your housing arrangement?
- On-campus
- Off-campus rent
- Off-campus own
- Live with parents/relatives
- Other: 

p. Which best describes your income last year (not including student loans)?
- $0-$9,999
- $10,000-$19,999
- $20,000-$29,999
- $30,000-$39,999
- $40,000 or more

q. What is your overall grade point average (GPA)?

r. Where do you attend school?
Appendix B: The Five Facet Mindfulness Questionnaire (FFMQ)

Description:

This instrument is based on a factor analytic study of five independently developed mindfulness questionnaires. The analysis yielded five factors that appear to represent elements of mindfulness as it is currently conceptualized. The five facets are observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience.

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never or very rarely true</td>
<td>Rarely true</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Very often or always true</td>
<td></td>
</tr>
</tbody>
</table>

_____ 1. When I’m walking, I deliberately notice the sensations of my body moving.
_____ 2. I’m good at finding words to describe my feelings.
_____ 3. I criticize myself for having irrational or inappropriate emotions.
_____ 4. I perceive my feelings and emotions without having to react to them.
_____ 5. When I do things, my mind wanders off and I’m easily distracted.
_____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
_____ 7. I can easily put my beliefs, opinions, and expectations into words.
_____ 8. I don’t pay attention to what I’m doing because I’m daydreaming, worrying, or otherwise distracted.
_____ 9. I watch my feelings without getting lost in them.
_____ 10. I tell myself I shouldn’t be feeling the way I’m feeling.
_____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
_____ 12. It’s hard for me to find the words to describe what I’m thinking.
_____ 13. I am easily distracted.
_____ 14. I believe some of my thoughts are abnormal or bad and I shouldn’t think that way.
_____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
_____ 16. I have trouble thinking of the right words to express how I feel about things.
_____ 17. I make judgments about whether my thoughts are good or bad.
_____ 18. I find it difficult to stay focused on what’s happening in the present.
19. When I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it.

20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

21. In difficult situations, I can pause without immediately reacting.

22. When I have a sensation in my body, it’s difficult for me to describe it because I can’t find the right words.

23. It seems I am “running on automatic” without much awareness of what I’m doing.

24. When I have distressing thoughts or images, I feel calm soon after.

25. I tell myself that I shouldn’t be thinking the way I’m thinking.

26. I notice the smells and aromas of things.

27. Even when I’m feeling terribly upset, I can find a way to put it into words.

28. I rush through activities without being really attentive to them.

29. When I have distressing thoughts or images I am able just to notice them without reacting.

30. I think some of my emotions are bad or inappropriate and I shouldn’t feel them.

31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

32. My natural tendency is to put my experiences into words.

33. When I have distressing thoughts or images, I just notice them and let them go.

34. I do jobs or tasks automatically without being aware of what I’m doing.

35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.

36. I pay attention to how my emotions affect my thoughts and behavior.

37. I can usually describe how I feel at the moment in considerable detail.

38. I find myself doing things without paying attention.

39. I disapprove of myself when I have irrational ideas.