

THE EFFECTS OF GENDER AND GENDER ROLE
ON THE FINANCIAL LITERACY OF COLLEGE
STUDENTS

By

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Abstract: The present study used Bem's Gender Schema Theory (1973) as a framework to examine whether and if so how the gender roles of college students affects their financial literacy. A financial knowledge survey was used to measure the personal financial literacy levels (knowledge) of a sample of undergraduate college students. These variables, combined with self-reported gender, were all part of a two by four analysis of variance with gender and gender role as independent variables and financial literacy as the dependent variable.

The analysis of variance yielded no relationship between gender or gender role and the financial literacy of college students. Correlation analysis yielded significant relationships between the year in school of a college student and their financial literacy level. Additionally, a significant relationship existed between the age of the participants and their financial literacy levels. The two by four ANOVA analyses found no relationships between the categories of the BSRI in masculine, feminine, androgynous, and undifferentiated in the financial literacy levels of students. Analysis of the data did reveal a low financial literacy level of the convenience sample chosen for the study.

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CHAPTER I

INTRODUCTION

Financial literacy among college students has been studied for many years (Chen & Volpe, 1998; Cude, Lawrence, Lyons, Metzger, LeJeune, Marks, & Machtmes, 2006; Cudmore, Patton, Ng, & McClure, 2010; Manton, English, Avard, & Walker, 2006). A national survey conducted in 1997 concluded that many adults in the American public were not well informed about certain financial matters like insurance, health care, and social security (Cutler, 1997). Cutler's (1997) survey may have been predicting an ignored area of national concern as members of President Barack Obama's cabinet (2010) are quoted as saying, "the lack of financial literacy among America's youth is the next major crisis that will plague the economy in the future if we don't act now as a nation" (Aldo, 2010, p. 1). Current Secretary of Education, Arne Duncan, states, "The reality is that all children don't know the basics of saving and investing. It's a skill they need to be successful in our economy" (Aldo, 2010, p. 1). Even over a decade ago, Cutler (1997) explicitly warned, "Despite a few false alarms, as a society we cannot afford financially or socially-to be deaf to the true alarms and sirens that signal a substantial need for more, earlier, and more widespread financial education and literacy" (p. 1).

This need for earlier and more widespread financial education may be indicated by the number of young adults filing for bankruptcy. In the United States, individuals under the age of twenty-five are responsible for filing a quarter of all bankruptcies in the country (Shryk, 2008).

The aforementioned concerns begin to raise questions as to whether or not students graduating from college are receiving any education on personal financial management or financial literacy (Cudmore, Patton, Ng, & McClure, 2010). There have been many research studies that take a look at the financial literacy levels of young adults, including high school students. The National Council on Economic Education (NCEE) (2005) and the Jump\$tart Coalition (2005, 2006) looked at the financial literacy among high school students and showed that they lacked personal finance skills and knowledge (Marcolin & Abraham, 2006, p. 6).

As students go through college, they will assume responsibility for many different financial decisions. These choices can have an important influence on what their financial situation yields after they graduate (Cude, Lawrence, Lyons, Metzger, LeJeune, Marks, & Machtmes, 2006). These obligations can include buying a home, deciding how they are going to fund their children's education, and also planning for retirement (The National Business Education Association, 2003). The problem arises when young adults are left to learn how to manage their finances by trial and error, and then are expected to join the workforce without being able to balance a checkbook or control their credit (Bodnar, 2005).

Teenagers and young adults are exposed to environmental messaging by the media, and their peers, concerning the roles of males and females within households. These messages could play a critical role in their development (Witt, 2000).

These messages within their own respective households could be influencing their perception of how the responsibilities within a familial setting should be arranged; and as to what roles men and women should assume. Societies categorize their members by sex, and one of the primary manifestations of sex differentiation in activities, is the sexual division of labor (Reskin & Bielby, 2005). According to Reskin & Bielby (2005), "In the broadest sense, men specialize in and are primarily responsible for market work, and women specialize in and are primarily

responsible for domestic work” (p. 73). These assumed masculine and feminine roles could very well be a cause of the differences in the financial literacy levels of college students when focusing on gender. If fewer women than men received some form of financial knowledge from their parents, then this may hint at the idea that college students see financial matters as masculine roles more so than feminine. How students associate themselves with traditional societal messages about what it means to be masculine or feminine could predict how they view their responsibilities in a household setting.

However, there should be a high importance placed on women and their financial education to prepare them to handle these various situations effectively. There are a multitude of reasons as to why this is important. An initial area of concern is age because older women are more vulnerable to old-age poverty due to their longevity (Lusardi & Mitchell, 2008). Women also have shorter work experiences, lower earnings and levels of pension or survivors’ benefits (Weir & Willis, 2000).

Additionally, Chen & Volpe (2002) found that women have been known to generally have less knowledge about personal finance topics, have less enthusiasm for being educated about finances, have lower confidence in gaining financial knowledge and less willingness to learn topics related to personal finance. These differences between the two genders may hint at the reason for many females being involved in a higher level of financial problems due to a lack of instruction and teaching concerning financial skills and literacy (Falahati & Paim, 2011). Reasons for why these variables are inhibiting women’s financial literacy may point to the gender roles that are placed on women from a young age within our society.

One promising theory for studying gender in society is Sandra Bem’s Gender Schema Theory (1983). The Bem Sex Role Inventory (BSRI) was developed by Sandra Bem (1973) over three decades ago as a way to treat masculinity and femininity as two distinct, independent

dimensions (Bem, 1973). According to Bem (1973), the BSRI made it “possible to characterize a person as masculine, feminine, or ‘androgynous’ as a function of the difference between his or her endorsement of masculine and feminine personality characteristics” (p. 1).

Males and females may be inclined to adhere to certain expectations and pressures as they go through college. Environmental factors can form the expectations that students have about relationships and gender roles. A possible reason why women are not as knowledgeable as men concerning financial literacy can likely be attributed to how students grow through this social identity domain. The following study will build a knowledge base about the lack of financial literacy among college students and college women, determine if the BSRI is still applicable to today’s college student, and then examine how that outcome may be affected by a college student’s development.

Purpose of Study

Many relevant studies have been conducted that explore a relationship between gender and personal financial literacy among college students (Chen & Volpe, 2002; Donohue, 2011; Lusardi & Mitchell, 2008; Fonseca, Mullen, Zamarro, & Zissimopoulos, 2010), as well as what college students know and what they need to know concerning personal finance (Cude et al., 2006).

The purpose of this study is to determine whether college students’ gender, their gender role, or some interaction between the two has an effect on their financial literacy levels. The current research has laid the foundation for what to expect concerning the financial literacy of college students.

Research Questions

The primary research questions of this study are as follows:

Q1: Is there a difference in the financial literacy levels of traditionally aged male and female college students?

Q2: Is there a difference between masculine, feminine, androgynous, and undifferentiated students regarding their financial literacy?

Q3: Is there an interaction between gender and gender role regarding financial literacy?

These research questions were formulated in order to test and build upon prior research that college women are less knowledgeable about personal finance than college men. Gender role types may explain differences in financial literacy levels of male and female college students. Using the gender schema theory as a foundation, the results of this study may introduce an alternative lens to attribute the differences in financial literacy levels of college men and women.

Hypothesis

The data from the present study will be used for the analysis of the following hypotheses:

H₁₁: There is a difference in the financial literacy levels between traditionally aged male and female college students.

H₁₀: There is no difference in the financial literacy levels between traditionally aged male and female college students.

H₂₁: There is a difference between masculine, feminine, androgynous, and undifferentiated students in their financial literacy.

H₂₀: There is no difference between masculine, feminine, androgynous, and undifferentiated students in their financial literacy.

and

H3₁: There is an interaction between gender and gender role in college students' financial literacy

H3₀: There is no interaction between gender and gender role in college students' financial literacy.

Significance of Study

Financial literacy and financial responsibility is a very important subject of discussion, especially for the youth of America. In the United States, the legal age for work is sixteen, however many teenagers younger than that are still participating in work and earning some type of income (Cudmore et al., 2010). With such a wide open opportunity for teenagers to begin earning money, it should be in the best interest of public schools, colleges, and universities to provide an opportunity for young adults to receive an education about personal finance. An interesting finding from a study performed in 2006 looking at college students overall financial management practices concluded that not only are students not adopting the recommended practices that are directed at college aged students, but that these recommended practices concerning responsible financial management should be modified to fit the daily lives of college students (Cude et al., 2006).

The experiences that college students have had are an important factor in determining their financial literacy level. For many students, college represents the first time in their lives that they are assuming a new level of independence. Having a higher level of financial literacy is important in order for them to deal with the sometimes complex and expensive financial decisions that must be made as bad decisions can cause a great deal of misery to an already stressed student (Mandell, 2006). College students should not be expected to understand how to necessarily finance a mortgage on a home or be an expert of the stock market and its tendencies. However, being able to understand basic rules regarding student loan payments, credit cards, and financial management should not be out of the question. These topics can be viewed as the building blocks

to understanding more complex topics such as mortgages and the stock market. It is important because during the financial crisis of 2008, the sub-prime mortgages were being marketed to those with less income, education, and presumably less financial literacy than those eligible for prime mortgages (Mandell, 2008). Looking at the big picture, the macroeconomics of a society can clearly be affected by the financial literacy levels of a culture (Mandell, 2008).

Understanding the reason for the gender differences concerning personal finance and financial literacy is not as easy to understand. In a survey of 1,132 American teens between the ages of 16 and 18 about money behavior and knowledge, investment company Charles Schwab (2011) found that women expected to earn \$36,000 less than their male counterparts when established in their careers (Charles Schwab & Co., Inc., 2011). Additionally, only 13% of women reported that they have received knowledge of the importance of investing from their parents compared to 23% of men (Charles Schwab & Co., Inc., 2011). If educators are given a reason as to why these differences are so abundant between the genders, then they may be able to slightly alter their teaching methods to focus on the critical area more specifically.

How students are defining what masculine and feminine mean to them could influence the decision-making skills that they have regarding financial management practices. If they grew up in an environment where their father, or someone that assumed many masculine traits, was responsible for the financial matters of the family, then there might be a chance that the subtle messaging they were receiving stuck with them and they have now internalized that type of responsibility as a trait that is more representative of masculinity rather than femininity as Sandra Bem (1981) defines. These contextual differences can be very important to educators of financial literacy as this can be one of the first obstacles in being able to raise the financial literacy levels of women to that of men. If there is some evidence or proof showing that low financial literacy levels in women can be attributed to their psychological development in what they deem as masculine versus feminine, then perhaps more attention can be made to breaking those

fundamental stereotypes that being financially responsible is not viewed as a masculinity trait, but rather a human trait.

Limitations of Study

The limitations of this study will revolve around the scope of the population being analyzed at Oklahoma State University. The scale used to measure the financial literacy levels of students will be limited because there are many different scales that have been implemented and used in various studies of students' personal financial literacy levels. There is not a universal scale that can accurately measure and determine the financial literacy level of an individual due to the plethora of knowledge available in the financial world. A measure of financial literacy will be used from a previous study in order to determine the financial literacy levels of the participants. Due to the age of Bem's gender schema theory (1973), there could be some generational differences between the participants, the gender schema theory, and the BSRI.

Definition of Terms

Student Development Theory – a collection of theories and research within the cognitive, intrapersonal, and interpersonal domains that attempts to describe the developmental challenges facing students going through postsecondary educational environments.

Personal Finance - the financial decisions that are made by an individual or family unit in order to budget, save, and spend monetary resources over time while taking into account various financial circumstances and future life events.

Literacy – ability to use printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential (United States Department of Education, 2003).

Financial Literacy – having the ability to use printed and written personal finance-related information to make financial decisions.

Summary

Many researchers have investigated the financial literacy levels of college students (Bartley, 2011; Bodnar, 2005; Chen & Volpe, 2002; Mckenzie, 2010). Of the college students who graduate and decide to become working members of society, there can be a lot of financial challenges that they may or may not be ready for like paying student loans, health insurance, or being able to budget an entry level salary. Specifically speaking, the gender differences that have been found concerning the financial literacy levels have been relatively limited in its research and exploration. There have not been any connections made or possible reasoning for the common differences between men and women when it comes to financial literacy. This study, through an examination of literature both relevant to student development theory and financial literacy, as well as a study utilizing the Bem Sex-Role Inventory (BSRI) will seek to create a connection between these two areas of study. The information from this study might be able to be used by students and educators to explain an interesting area of psychological development among men and women that may affect their financial decision making skills.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

Introduction

The following chapter provides an integrative review of the current literature that will be used to create a context for the research to be completed. This review is comprised of literature that is related to the conceptual definitions of financial literacy, the financial literacy of college students, the gender differences found within, relevant college student development theory, and a summary to combine the sections.

Conceptual Definitions of Financial Literacy

What makes financial literacy such a difficult factor to measure is that there is not yet an operational definition that has been clearly established; as an operational definition takes an abstract concept and makes it measurable in tangible ways (Remind, 2010). With that being said, there are many conceptual definitions of financial literacy presented by different authors who closely study the impact financial literacy has on college students and the American populous. Before discussing the impact that financial literacy has among college students and the literacy levels between men and women, it is pertinent that a clear definition be established about what is meant when the term financial literacy is used.

The Networks Financial institute (2007) defines financial literacy as the ability to make informed judgments and effective decisions regarding the use and management of money (Gavigan, 2010, p. 24). Unfortunately, due to the amount of definitions in the literature, there is not a universally accepted meaning for financial literacy (Huston, 2010). Conceptual definitions help to explain those abstract concepts in concrete terms (Remund, 2010). According to Remund (2010), conceptual definitions that have been proposed since 2000 fall into five different categories:

Knowledge of Financial Concepts

At the core of financial literacy is a basic foundation and understanding of various financial concepts and constructs. In recent years, different organizations, national banks, government agencies, and policymakers have been concerned that consumers lack a working knowledge of many different financial concepts (Braunstein & Welch, 2002). The problem may not just lie with how individuals go about assessing the knowledge that they possess about different financial ideas, but rather with having any working knowledge at all. As Remund (2010) states, “to effectively manage money, one must first know something about money” (p. 279). The need for a functioning structure of financial knowledge can not only improve an individual’s groundwork on financial literacy, but it can also lead to that individual making the most use of their situations and taking the steps that are most advantageous to their economic well-being (Braunstein & Welch, 2002).

Ability to Communicate about Financial Concepts

Another conceptual definition regarding financial literacy is one’s ability to convey financial concepts. Establishing a foundation of financial knowledge still leaves room for addressing how one can successfully communicate their understanding about various financial concepts. There are those scholars that do not emphasize the importance of a working knowledge

base to be considered labeled as financially literate. Instead many scholars see that the understanding of those ideas leads to effective consumer financial decision-making (Fox, Bartholomae, & Lee, 2005). Currently, the knowledge that is available should be enough for individuals to make those informed decisions regarding their personal finances. However, evidence from research suggests that the information that is available is used ineffectively to make those necessary decisions about diverse financial products (Mason & Wilson, 2000). This idea that decision-making is considered most important to being financially educated presents financial literacy as a more comprehensive application of knowledge (Remund, 2010).

Aptitude in Managing Personal Finances

There have been references made about the aptitude or ability of individuals to manage their personal finances. These references can be as brief as “American’s have little knowledge about personal finance and consequently have managed their finances poorly” (Chen & Volpe, 2002, p.289). There are also those references that are very detailed. Financial literacy can include the ability to keep track of how much money one is spending, payment obligations, the experience of opening an account for retirement or savings, basic understanding of health insurance and life insurance, the ability to compare between competing offers, and also plan for any future financial needs (Emmons, 2005).

The definition that is provided by Emmons elaborates on specific responsibilities that are required of an individual to be considered financially literate. These descriptions can move financial literacy away from a conceptual definition to an operational definition; which allows for financial literacy to be measured. Above all else, these definitions point to the fact that literacy can mean more than just having knowledge. Having financial literacy aids in one’s ability to prepare for retirement, protect themselves from unexpected situations, and spend their money wisely.

Skill in Making Appropriate Financial Decisions

Similar to having an aptitude for financial literacy, decision-making skills are just as much a necessity to effectively manage one's personal finances. Those decision-making skills are critical to effective money management. There are scholars who describe financially literate people as those who "successfully manage debt" while making decisions that take into account their personal values (Stone, Weir, & Bryant. 2008, p.12). In a paper that examines the hypothesis that low financial literacy level scores among young adults still remain even after they have taken a personal finance course, Mandell & Klein (2007) found that the two most conventional responses "(buying too much on credit and not following a financial plan) relate to poor decision making and clearly indicate that financial difficulty is because of actions or inaction by the consumer" (p. 110).

The aforementioned examples bring forth the ideals of ethics and integrity into the conceptual definitions of financial literacy. One pair of scholars presents an even more practical definition of financial literacy. According to Kozup & Hogarth (2008) financial literacy is "also a set of critical thinking skills, to weigh and assess the pros and cons of a particular decision relative to one's own personal needs, values, and goals" (p. 131). Kozup & Hogarth not only see the importance of having critical thinking ability as an essential component of effective decision making related to financial decisions, but it also sets decision-making up as a core competency for financial literacy.

Confidence to Plan Effectively for Future Financial Needs

One of the more noticeable advantages that scholars talk about when it comes to personal financial literacy is the ability to plan for future unexpected scenarios, and planning for retirement. However, when scholars do talk of these advantages, they are only implying one of

the many benefits of becoming financially literate. One exception is from WiSe Up (2008), which is a financial literacy program created by the U.S. Department of Labor that targets generation X and Y women. The program talks of responsible saving habits being essential for the development of future retirement. Some contributors recognize the importance that financial planning can have on financial literacy. David Bach (2008) discusses how the first fact of financial life to understand is that planning ahead is important (p. 17). Even though these scholars highlight the importance of future planning, some of these conceptual definitions do work off of one another.

One way to view these definitions relates to long-term financial management just as decision-making skills are synonymous with short-term financial management. It is certainly possible for an individual to plan without making any drastic life changes or immediate decisions, just as it is possible for an individual to make abrupt decisions without effectively planning. Nevertheless, both skills are essential in the development of financial literacy (Remund, 2010). When looking through the financial literacy lens and focusing on college students, much of the focus usually centers on the knowledge of financial concepts that individuals possess, their ability to manage their personal finances, and the aptitude in making the appropriate financial decisions as these decisions are viewed as the early responsibilities of college students (Remund, 2010).

Other Conceptual Definitions

According to the National Council on Economic Education (NCEE) (2005), their conceptual definition of financial literacy assumes having “basic economic principles, knowledge about the U.S. economy, and *understanding* of some key economic terms” (p. 3). The President of the United States has an advisory council on financial literacy which convened to define financial literacy. The President’s Advisory Council on Financial Literacy (PACFL) (2008), which convenes to help improve the overall financial education of Americans, defines financial

literacy as, “the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being” (PACFL, 2008, p.35). From these two conceptual definitions, one can see that the word knowledge is an essential component of being financially literate.

There may not be an agreed-upon definition of what it means to be financially literate; however, having knowledge is an essential piece in working towards a concrete definition. According to the Financial Services Authority (1999) they suggest that people need to learn various skills, including “the consequences of financial decisions and about consumer rights and responsibilities” (p. 7). With all signs pointing to having knowledge of some type, college students must be aware of the responsibilities that they have as young adults, but also of the consequences of their illiteracy. An interesting finding presented by Donohue (2011) found that monetary capital can be a critical component of the definition of financial literacy. She also concluded that because women have a lower access to capital, then they face lower opportunity costs, which results in a redefined concept of rational action when talking about financial management. Given the plethora of unique findings on financial literacy and financial education, the conceptual definitions presented above could contain some deeper gender-related issues (Donohue, 2011, p. 82).

Societal Messaging and the Impact of the Household

The roles that members of a society are expected to perform can be shaped heavily by the subtle societal messaging that is passed down from generation to generation. The financial literacy levels of college students may have been predetermined according to an individual’s environment, how they are raised, or perhaps even more importantly, the household structures from which they came. It is unfair to assume that women are solely responsible for the traditional household duties such as keeping a home tidy, caring for the children, and providing home cooked meals. According to Coltrane (2000), studies have shown that men do more of the typical

housework before they are married than they do after. Perhaps the autonomous nature of these men prior to their days with a spouse forced them to not only learn how to take care of themselves and their environment, but also develop their financial literacy and thus increase their financial autonomy.

Thompson & Walker's (1989) focus on gender in families, examining the responsibilities of men and women, explained that the roles men play in families are heavily focused on economic support, whereas women's family roles are more so based on emotional support and nurturance. With the rise of capitalism, economic production gradually left the home and started to become separated from personal relationships (Cancian, 1986). Husbands were working out of factories and shops for wages while the women would stay at home to care for the family. This division of labor would give women much more experience with close relationships, but would in turn intensify their economic dependence on men (Cancian, 1986). This idea is known as the economic dependency model; that focuses on the marital exchanges in the context of gender and class inequalities. The model explains that women enter into a "contract" wherein they exchange household labor in return for economic support from their husbands (Coltrane, 2000). Men have traditionally been responsible for the financial support of families, and this has allowed them to be exempt from many of the responsibilities of day-to-day maintenance of the family and home (Steil, 1997).

Erickson (2005) performed a qualitative study designed to investigate the relationships between work, family, and health among a sample of dual-earner, married parents. Survey data was collected from 335 employed, married parents and examined the relative influence that gender ideology, sex, and gender had on the performance of housework, childcare, and emotion work. She discovered that men were not only older than women, but they held more traditional gender ideologies, and spent more time in the labor force. In comparison, women were

significantly more dependent on their husbands than men were on their wives, and women also reported more emotional work than did men (Erickson, 2005).

Research on the family has shown that employed wives are more likely than employed husbands to experience role conflicts and certain feelings of guilt because of the combination of work and family (Simon, 1995). The traditional roles that women assume are witnessed and observed by their children that in time, will grow into their own identities. However, subconsciously, they might have perceptions of what it already means to be a woman or a man. In addition to holding feelings of guilt, women will also evaluate themselves as being less successful parents and spouses (Simon, 1995). Simon (1995) continues to explain that, “insofar as work and family roles continue to be interdependent for males and dependent for females, we could expect that combining these roles will continue to be stressful and less protective for women relative to men” (p. 183). The pressures that women may feel to take on various roles as a parent could automatically yield other responsibilities to the male or husband in the household.

A qualitative and quantitative study was administered in 1988 and 1990 with over 700 respondents to assess men and women’s beliefs about gender roles (Simon, 1995). What was interesting was that for almost all of the men, providing economic support was held as being synonymous with being a father and husband. In addition, only 25 percent of the wives believed that they had an economic obligation to their families, 40 percent were ambivalent on the subject, and the remaining 35 percent believed that their roles did not include the provision of economic support with the wives emphasizing “the traditional non-economic ways in which a woman could be a good wife and mother” (Simon, 1995, p.186). These views on what it means to be a woman or a man in a household may or may not still be true with how college students view their own identities. However, traditional values have placed the financial obligations with the male of the household. Perhaps these values are still important in society today by college students. As Daniel

Yankelovich (1977) states, “there is a masculine style of love. Except for romanticism, men’s style fits the popularly conceived masculine role of being the powerful provider” (p. 98).

Gender Differences and Women’s Lack of Financial Literacy

All of the conceptual definitions of financial literacy and the gender roles that have been formed in our society play a significant role. The gap between men and women within the United States seems to be better explained by the household decision-making roles allocated by the more relative levels of education than by gender (Fonseca, Mullen, Zamarro, & Zissimopoulos, 2012). Within the United States, gender roles might have an even greater impact on financial literacy levels of men and women than previously expected with men usually making the household financial decisions and thereby acquiring the necessary knowledge earlier, while women usually specialize in other household functions (Fonseca et al., 2012).

As mentioned earlier with Chen and Volpe being pioneers in this area, they also were some of the first to make the observation that there were noticeable differences between the financial literacy levels of male and female college students. In their survey of 924 students, female participants scored 51% of correct responses whereas male participants scored 57% on the survey covering various financial topics. This pattern of male participants scoring higher than female participants also continued through all categories and even in the overall results, and they found that the differences were statistically significant. (Chen and Volpe, 2002). Chen and Volpe (1998) suggest that because these irregularities between scores occur throughout the entire student population, women’s deficiency in personal financial knowledge needs to be addressed.

Given that women live longer than men, and more women than ever are joining the workforce, this could be an increasing area of concern (Chen and Volpe, 1998, p. 121). David Bach (2003) discusses the fact that women live longer than men and therefore need to be able to make their retirement benefits go further. In a study performed by Lusardi & Mitchell (2008) a

sample of 785 women aged 50+ was asked about retirement planning. Less than one-third of the women respondents (30.9%) said that they had never attempted to determine how much money they would need to calculate for retirement. Lusardi & Mitchell (2008) stress that older women in the U.S. have very low levels of financial literacy and the majority have not considered the planning that goes into retirement. Poor financial management and planning can have detrimental effects on an individual later in life. When it comes to retirement planning, the earlier an individual is able to get started and gain knowledge on retirement planning the better. Additionally, because of their life expectancy, the financial burden of caring for elderly parents can also fall on their shoulders (Bach, 2003).

In Chen and Volpe's study, they were able to control for factors such as a participants class rank, age, and work experience, but they still found that gender differences were statistically significant. The pattern continued to show up in other studies as well. In a study done by Lusardi, Mitchell, and Curto (2010) where they tested what individuals knew and did not know based off of a financial literacy questionnaire, there were noticeable differences between women and men even after accounting for many demographic characteristics, family background characteristics, and peer characteristics. The most important fact of financial life to understand is that planning ahead is important for both males and females, but it is much more important for women (Bach, 2003, p. 17). This statement can be supported by the fact that women today are living longer than they ever were before, and are active longer. Both of these factors can be attributed to advances in both technology and public attitudes. However, what is most important to pay attention to is the fact that in the United States in 2011, women still typically earn 23% less than men in the workforce which is 77% of what men earned (American Association of University Women, 2011). Part of this may be due to discrimination, but with many responsibilities that include child rearing and even taking care of older parents, women have a tendency to move in and out of the workforce much more than men. On average over a woman's working lifetime, a woman can

spend a total of eleven and a half years off the job versus only sixteen months for a man (Bach, 2003).

As mentioned earlier, Chen and Volpe (2002) reasoned that women generally have less enthusiasm for and are less inclined to become involved with personal finance based on the statistically significant differences between men and women. What is interesting is that personal finance is mostly number oriented, and this has lead researchers to suggest that the subject matter may not be as attractive to women as it is to men. Chen & Volpe (2002) found that women have less interest in finance, so their preparation for the subject may not be appropriate. This may be due to the fact that after examining the participants' college education, Chen and Volpe (2002) found that men rated Mathematics and other number-oriented science subjects important, while female participants ranked English and word-oriented liberal arts education subjects more important (p. 306). An interesting component that Chen and Volpe analyzed was the source of knowledge that both and men get their financial education from. From their 924 person survey, 74% of women and 68% of men answered that they received their financial knowledge from their parents and 70% of women and 63% of men learn from their own mistakes. These findings suggest that women learn most of their knowledge from their parents and from the mistakes that they make (Chen & Volpe, 2002, p. 301). Unfortunately, when women make these mistakes, it may be at a much later age than when men are making these mistakes, thus leading to untimely personal financial knowledge gains that should have been learned at an earlier age.

How men and women view their futures may also play an important role in how their financial literacy levels are formed. These foundations may be formed as early as high school, as students are really beginning to form their own thoughts and ideas concerning financial management and some students are even given access to their first debit card and introduced to the idea of credit. In a study done by Danes and Haberman (2007), they found that females were more likely than males to believe that managing money affects their future, whereas males were

actually more confident presently about money making decisions. (p. 57). It may be that females do not put as much importance associated with gaining financial knowledge earlier in their lives as males do, which can have negative effects later in their lives. In the book Smart Women Finish Rich by David Bach (2003), he states that “most women never receive even a basic education in finance until it’s too late - which is to say after they get divorced or widowed” (p. 4).

College Students’ Familiarity and Financial Experiences

There are numerous financial topics that could be considered important in order to be viewed as having a high level of financial literacy, but when it comes to college students, not everything is going to relate to them. Chen and Volpe (1998) found in their survey study of 924 college students that the scores of students on individual questions categorized by general questions, savings and borrowing, insurance, and investing were higher with areas in which they were more familiar. Students had high scores with questions related to auto insurance because many college students own a vehicle and have multiple responsibilities associated with that car. They may have monthly car payments, and they also might be held responsible for the insurance payments on the vehicle. Not surprisingly, students also scored higher on questions concerning apartment leases. As students reach upper class status, many might move off campus and thus incur the responsibilities of renting an apartment and all of the bills that are associated with that. Despite their knowledge of apartment leases and car insurance, lower proficiency in the areas of taxes, term life insurance, and investment existed (Chen & Volpe, 1998, p. 114). As college students, life insurance is usually not an area that they will be familiar with unless they have their own family to take care of and/or have thought about purchasing insurance.

Bartley (2011) argues that the most effective way to increase financial literacy among young people is to focus on the relationship between the experiences that they have with finances and their knowledge base. He concluded that there is a link between experience and knowledge

when it comes to students' financial literacy levels. It is suggested that the true solution to solving low financial literacy levels among college students is to ask parents to allow students to be more involved in the financial decisions that they make (Bartley, 2011, p. 13). What is also interesting is that findings from Borden, Lee, Serido, & Collins (2008) suggest that a seminar based class would help to increase students' knowledge and attitudes toward credit and would also help to decrease the issues that students tend to avoid when dealing with credit. Having a seminar based discussion about financial literacy would also allow for the experiences of students to come out and be shared openly. Bartley's findings connecting experience and knowledge are important and a seminar type discussion would support this idea. The type of relationship that is built between parents and children could help to produce a more financially literate young adult, and those shared experiences among students could facilitate healthier discussion towards a more financially literate college student.

Future Consequences

Financial literacy among college students is a growing concern in the political arena because of the implications financially illiterate students can have on the future of the country. Many times, the youth in America have been targeted as the primary contributors to the creation of debt by various financial institutions (Cudmore, Patten, Ng, & McClure, 2010, p. 11). Currently, Americans between the ages of 18 and 29 are considered to be undereducated when it comes to finances because they tend to have the lowest levels of financial literacy out of all other age groups (Bartley, 2011, p. 1).

A lack of personal financial knowledge can lead to a financial crisis. Even though college students are more susceptible to borrowing money to fund their college education, they can experience financial crises such as poor credit ratings, bankruptcy, and unanticipated money shortages (Gutter & Copur, 2011). In 2009, the average student loan debt was \$23,186 with most

students accruing about \$4,100 in credit card debt (Shryk, 2008). Higher education may be unfairly targeted as a potential problem area given the amount of individuals who carry a considerable amount of student loan debt. College students are inevitably going to be considered a high-risk group when it comes to economic stability given their propensity to access student loans in order to pay for their college education (Gutter & Copur, 2011).

In 2010, Charles Schwab & Co., Inc. performed a study of 1,000 individuals who are parents of at least one child, age 23-28, and found that 41% still are providing financial support for their adult child and only 52% say their children are financially independent citing college debt, unemployment, overspending, and consumer debt as popular reasons for financial dependence (Charles Schwab & Co., Inc., 2010).

These numbers reflect the importance of educating students concerning personal finance. Giving students large amounts of money to pay for tuition and school costs expecting them to have high levels of financial literacy is a risky endeavor. Institutions of higher learning have a duty to provide financial counseling to students and also to assess the need for additional courses dealing with financial management (Allen & Kinchen, 2009, p. 1). Not only should it be the responsibility of institutions to mandate general education courses to include personal finance courses, but it is also important to take a look at the experiences of students before they take over such a large responsibility as Bartley suggested earlier. As one student is quoted as saying in a qualitative and quantitative study done assessing college students overall financial management practices, financial literacy is “not part of your bachelor’s program, it is part of your life. You need to know this” (Cude et al., 2006, p. 107).

The initial lack of personal financial knowledge may not be the sole responsibility of the student, but also of the higher education institutions in which they attend. Over the years, there have been many financial education professionals who know more about implementation of

programs, design, success, and the next steps in the field of adult financial education, but not in the field of youth financial education (McCormick, 2009). Even though higher education institutions are not solely responsible for the financial experiences that students go through, not having a system in place to help foster the financial literacy of students might only further increase the issue.

Young adults, specifically between the ages of 18 and 25, go through many developmental and transitional changes (Arnett, 2000). During those years, young adults will be exposed to greater responsibility with money and the credit system. These areas will play a role in shaping their attitudes, and behaviors that they adopt; not just towards being financially literate, but also towards life in general (Xiao et al., 2007). The lack of financial literacy students can possess can greatly affect their financial well-being. As important as it is for an individual to have financial knowledge (objective), it can be equally as important for someone to possess financial confidence (subjective) (Robb & Woodyard, 2011). Robb & Woodyard (2011) used data from the National Financial Capability Study of 2009 that sampled 1,488 individuals. They found that being financially literate may not be enough to improve behavior, but that improved financial behavior can exist when good decisions are made easier (Robb & Woodyard, 2011). There should not be a question that many students can be very financially literate, however, if they have not had certain experiences then they may not know what advantages are available to them.

The Gender Schema Theory and Sex Typing

The Gender Schema Theory

The societal messages and psychological development of women can begin to influence how they think at a young age and lead to the decisions that they make later in life. Danes & Haberman (2007) suggest it could be from the responsibilities that women feel that they may have as family care members and other societal messages that they will be cared for financially as

long as they can manage their money well to a certain point. (p. 57). This idea is very similar to Sandra Bem's Gender Schema Theory (1983). Human cultures around the world have used the differences between men and women to serve as a fundamental organizing principle. Bem explains that most societies associate adult roles based on sex and also anticipate this allocation with how their children are socialized (Bem, 1981). As children grow, they begin to "process information in terms of an evolving gender schema" and this also leads to sex typing (Bem, 1981, p. 355). The theory also assumes that a child plays an active role in their individual gender development and leads to active construction of the individual versus just a passive copy of the environment (Martin, Ruble, & Szkrybalo, 2002).

By definition, a schema is "a cognitive structure, a network of associations that organizes and guides an individual's perception." Additionally, "a schema functions as an anticipatory structure, a readiness to search for and to assimilate incoming information in schema-relevant terms" (Bem, 1981, p. 355). Danes & Haberman's (2007) suggestion that women feel they have a certain responsibility coincides with the gender schema theory. To clarify, the theory is not a definitive concept. This means that children do not just categorize themselves as "I am a girl" or "I am a boy" and thus proceed to behave with that specific schema in all situations and activities (Bussey & Bandura, 1999, p. 679). Instead, they actually vary in their gender behavior.

The schema theory does not just end with children either; as there can be considerable variability with adults. For example, a woman might be a very driven manager in the workplace but a traditionalist when it comes to the role she plays at home (Bussey & Bandura, 1999). Once individuals recognize their membership in a gender category, children then begin to seek details and certain scripts for same-sex activities and become more aware of differences between boys and girls (Martin et al., 2002). The gender schema theory serves as a standard that becomes an adopted driving force that signals an individual to regulate her or his attitudes and behaviors so as to conform to what society and culture deem as masculine and feminine (Bem, 1981).

Sex Typing

The gender schema theory is a concept that explains how men and women might respond to certain societal messages about what it means to be masculine and feminine. This specific process by which a society alters male and female into those masculine and feminine characteristics is known as sex typing (Bem, 1981). People who are sex-typed can be seen as differing from other individuals based on their own self-concepts and behaviors that are organized by gender (Bem, 1981). Sandra Bem developed a way to measure this process with what is known as the Bem Sex-Role Inventory (BSRI). Based off of respondents' own self-ratings from a list of different personality traits, the BSRI is able to classify individuals into four distinct groups: androgynous (high masculine/high feminine), masculine (high masculine/low feminine), feminine (high feminine/low masculine), or undifferentiated (low masculine/low feminine) (Auster & Ohm, 2000).

The BSRI was developed by Bem back in 1972 after she had given a list of approximately 400 personality traits to 100 Stanford University undergraduate students. The respondents were asked to determine how desirable it was in American society for a man/woman to possess a specific characteristic, and it was made clear that they were to reflect desirability rather than the personal responders' own personal opinions (Bem, 1981). The traits were organized into a seven-point likert scale and based upon the data, traits were labeled masculine, feminine, or neither (Bem, 1981).

Various researchers have used the BSRI in many different ways. One study investigates the effects of gender and sex role orientation (masculinity and femininity) on attitudes towards seeking professional psychological help (Ang, Kim, Tan, & Yau, 2004). Another study looks at the sex role group differences (androgynous, masculine, feminine, and undifferentiated) within three different levels of self-efficacy (general, academic, and course specific) (Choi, 2010). What

is interesting are that the results of this study pointed to a multivariate significance among the sex role groups in the three levels of self-efficacy, and that both masculine and androgynous groups had significantly higher general and academic efficacy means than the undifferentiated or feminine groups (Choi, 2010). The BSRI has also been used to assess participants' gender role by examining the relationships among femininity and masculinity, depressive symptomatology, levels of stress, and the types of coping strategies used by college freshmen. The study found that masculinity and femininity significantly predicted problem-focused coping, and femininity significantly predicted emotion-focused coping (Dyson & Renk, 2006).

With such studies focusing in on specific traits to attempt to explain variations between genders within different contexts, then there may be a possible correlation between the financial literacy levels of men and women and how they score on the BSRI.

Summary and Relationships of Literature Reviewed

The literature within this paper brings forth the ideas revolving around the financial literacy levels of college students and the potential impact of how students' gender identity roles could impact those levels. It is evident that there is a problem with the lack of education that is being provided and made available to college students. The experiences that many college students have had can be an indicator as to why their financial literacy levels are not high. Also, if they were raised in an environment where most of their responsibilities are being taken care of by their parents or caretakers, then there will not be much of a need for their individual contributions. These environments might also play a role in student's perceptions of what gender roles they should be required to fulfill; especially if a male or father figure in their respective households is responsible for the financial situations in a family.

There are those college students who know just enough to ensure their survival through the collegiate years. For example, being knowledgeable on rent payments, car insurance

payments, and having the knowledge to manage a budget may be simply enough for certain college students. However, problems begin to arise when these students have graduated college without the knowledge base to deal with other financial management responsibilities such as student loan payments, becoming financially independent, paying taxes, and dealing with insurance.

What makes the topic of financial literacy such a difficult area to research is the fact that there is not a universally accepted definition. The field is comprised of a multitude of conceptual definitions. The literature expands upon a few of the main conceptual definitions that are used by researchers. When dealing with college students, however, the definition of financial literacy tends to focus on the knowledge that they possess, as well as their ability to manage their personal finances and how capable they are of making those appropriate financial decisions (Remund, 2010).

The literature discusses the future consequences that college students with low financial literacy levels can have in various realms. Nationally, this group of Americans has been targeted as main contributors when it comes to the debt issues in the country. This has lead researchers to cite higher education institutions as problem areas where students are not receiving the knowledge that is necessary to contribute to the national economy (Shryk, 2008). Allen & Kinchen (2009) state that “institutions of higher learning have a duty to provide financial counseling to students and assess the need for additional financial management courses and requirements” (p. 105). It may not be the sole responsibility of institutions of higher learning to provide these educational opportunities to students, but if they are not, then financial illiteracy can place an individual at a disadvantage in the American financial system that can potentially lead to a lifetime of financial hardship (Llewellyn, 2012).

As Donohue (2011) mentions, the definitions of financial literacy may lay a foundation that gives a disadvantage to women. She concludes that because women have lower access to monetary capital, they already face lower opportunity costs and this can lead to a different degree of rational action when talking about personal finance. Opportunity cost in this study refers to the opportunities that are passed over in the choice of one expenditure over others (Mirriam-Webster, 2013). With women earning roughly 23% less than men in the workforce, this is clearly an area of concern (American Association of University Women, 2011). These gender differences are highlighted throughout the literature when the focus is on the differences of men and women. Gender differences in financial literacy can have long term effects, particularly with regard to retirement planning. An individual can only truly benefit from retirement planning by starting at an early age (Bach, 2003). This age is tending to be at a time when women are going through college and exhibiting these lower financial literacy levels. Women, on average, live longer than men and therefore should be better equipped to deal with retirement (Bach, 2003). Unfortunately, this is not always the case, and the literature discusses the consequences of having low levels of financial literacy be prevalent among women.

Fonseca et al. (2012) brings forth the idea that the financial literacy gap between men and women might be better explained by the household decision-making roles that are assumed by parents. Bringing in the ideas of Bem's Gender Schema Theory (1983), this social identity theory becomes quite relevant. With its focus on the sex typing of individuals and determining what traits might be deemed masculine or feminine, the theory can bring justification to the discrepancy of financial literacy levels of college men and women. Based off of the opinions of students and what traits they classify as being masculine or feminine from the Bem Sex Role Inventory (BSRI), they may view some traits as being more in charge of the financial obligations within a familial setting and the household decision-making roles that are assigned to parents. With the BSRI being used for various studies regarding the influence of gender roles and their

interactions with how individuals operate automobiles, and also the unique and interactive effects of sexual orientation and gender role in regards to suicide ideation, related psychopathology, and measures of coping (Ozkan & Lajunen, 2006; Fitzpatrick, Euton, Jones, & Schmidt, 2005), then it makes sense to consider the BSRI for a study regarding the financial literacy levels of college students. Societal messages of what it means to be masculine or feminine are still very much alive; these messages might be influencing the aptitude of college women when it comes to financial decision making.

CHAPTER III

METHODOLOGIES

Introduction

This study sought to determine what effects, if any, that gender and gender role have on student's personal financial literacy levels. Gender role was measured using the BSRI, which yields four categories masculinity, femininity, androgynous, or undifferentiated. Bem's Gender Schema theory (1973) and the survey used to measure it, were developed 30 to 40 years ago (Bem, 1973; BSRI, 1981). In the meantime, the meanings of masculinity and femininity have likely modified. The present study provides a current look at gender, gender roles, and their relationship to financial literacy.

Type of Research and Subtype

This study was developed to examine the financial literacy levels of college students and determine if those levels are influenced by how they identify themselves on the BSRI. A short financial knowledge questionnaire that covers questions about credit, insurance, investing, savings and checking accounts, and interest rates was used to assess the financial literacy levels of students. In addition to this questionnaire, the BSRI was also utilized to determine whether or not students identify themselves with the traditional definitions of masculinity or femininity. A causal comparative design was used to explore whether gender and gender roles effects financial

literacy. Causal-comparative research attempts to determine reasons, or causes, for the existing condition. This particular study focused on the financial literacy levels of college students and exploring a potential cause for these levels. This type of research is known as retrospective causal-comparative research (Gay, Mills, & Airasian, 2009).

Many students gain their financial knowledge from family members. In particular, students often speak of the financial responsibilities being handled by only one of their parents. The BSRI was created during a time when masculinity and femininity traits were seemingly assigned to specific tasks and heavily based off of the gender roles of the time. The study sought to gain an idea of how students today view those ideas of masculinity and femininity that are proposed by the BSRI and if those views are impacted by their financial literacy levels and decision making capabilities.

The design used for the study was a 2x4 analysis of variance with gender (male/female), gender role (masculine, feminine, androgynous, undifferentiated) as independent variables and financial literacy as the dependent variable.

Research Question 1

Is there a difference in the financial literacy levels of traditionally aged male and female college students?

Research Question 2

Is there a difference between masculine, feminine, androgynous, and undifferentiated students regarding their financial literacy?

Research Question 3

Is there an interaction between gender and gender role regarding financial literacy?

Data Analysis

Concerning the financial knowledge survey, incorrect answers were coded as 0, and correct answers were coded as 1. Subsequently, a financial knowledge sum score was created for each student. Analysis of the BSRI was scored determinant of the participant's responses to the 30 attributes presented that were scaled using a seven-point likert scale. The four areas where students could potentially be categorized are masculine, feminine, androgynous, or undifferentiated.

The sample size for this study consisted of 100 participants. From this sample size, the analysis of variance (ANOVA) was utilized, and the ratio known as *F* since it was testing for multiple group comparisons. A parametric test of significance was used to determine whether the scores from males and females, or the four levels of the BSRI differed from one another based on the dependent variable of the student's financial literacy level. If the variance between the groups was much greater than the variance within the groups, the *F* ratio would be large, and a significant effect would be apparent. The independent variables were measured for their significant differences at a selected probability level of $p < .05$. ANOVA was calculated with the post hoc multiple comparison tests using SPSS.

Participants

The study implemented a convenience sample and surveyed 100 students who are represented by various groups and organizations found on Oklahoma State University's (OSU) campus. The College of Education Human Subjects research pool (SONA system) was originally planned for use in the present study; however this population was not used because the target sample population was reached through the convenience sample. The sample was constructed from the 90 student tutors who are employed through the Learning and Student Success

Opportunity Center (LASSO) and two groups of students who are enrolled in the LASSO section of the University Academic Services Freshman Orientation course (UAS).

The LASSO Center's policy for hiring undergraduate students is that students must have taken at minimum of 30 hours of OSU course credit. This policy prevents the entire freshman population from being eligible to be employed by the LASSO Center. In order for some representation to be present in this study from the freshman class, a section of the UAS course will also be sampled. The student enrollments for these courses typically range from 20-25 freshman students. The participants will be treated in accordance with the IRB for Human Subjects at OSU with statements of informed consent being provided to participants before they take part in the study.

Materials

The materials used in the study were divided into three sections. The first section consists of identifying and demographic type questions that included age, academic major, race, class rank, and gender. In the second section, students were presented with the financial knowledge survey that is part of the College Student Financial Literacy Survey (CSFLS).

A sample question from the survey consists of the following:

20. Net worth is:

- a. The difference between expenditures and income
- b. The difference between liabilities and assets
- c. The difference between cash inflow and outflow
- d. The difference between borrowings and savings
- e. None of the above

This served to measure the financial literacy levels of the participants. Students were asked to answer the questions to the best of their ability. The survey consists of 25 multiple-choice application questions that cover the financial topics of credit, debit cards, insurance, checking and savings accounts, investing, retirement, taxes, debts, loans, net worth, and

depreciation value. To assess the internal validity, four faculty members who are experts in the field of financial management and survey design assessed the content of the survey. Feedback was given on whether the instrument would provide the necessary data, whether the questions were a good measure of constructs, and any additions that needed to be made to the survey to produce the necessary data (Jorgensen, B.L., 2007). To refine the clarity and readability of the survey, six diverse (gender, class rank, and family income) students took the survey and their responses to specific clarity questions was used to refine the instrument again (Jorgensen, B.L., 2007). Cronbach's alpha was used to determine the reliability of the financial knowledge section and yielded a 0.77 and was deemed an acceptable alpha level for the survey (Jorgensen, B.L., 2007). The alpha for the convenience sample was .50. George and Mallery (2003) identify an alpha of .50 as poor. Therefore, the internal consistency reliability of this measure in the present study was seriously problematic.

The third and final section included an abbreviated version of Bem's Sex Role Inventory (BSRI). This abbreviated version of the BSRI is an instrument that identifies sex-typed individuals on the basis of their own self-concepts of their personal attributes. The original BSRI was designed by Sandra Bem (1974) and consists of 60 attributes that can be used to describe an individual based on a 7-point Likert scale. 20 of the attributes are reflections of the culture's definition of masculinity and 20 of the attributes are the culture's definitions of femininity based from the era that the model was created. The remaining attributes are seen as filler. The abbreviated version contains 10 masculine characteristics, 10 feminine characteristics, and 10 characteristics, originally developed to measure social desirability, are filler items (Choi, Fuqua, & Newman, 2009). The feminine and masculine items for the short form were selected to maximize the internal consistency of both the femininity and masculinity scales (Bem, 1981). Students were instructed to answer the survey based on their own opinions as to how our society today evaluates each of these characteristics in a man or woman and not based off of how

desirable it is in American society for a man or woman to possess each of the 30 characteristics. The four different areas that the BSRI can yield are masculine, feminine, androgynous, or undifferentiated.

The validity of the BSRI was reassessed in 1998 (Holt and Ellis) and they mention that the “gender-role perceptions have changed over the years, but not enough to invalidate the BSRI at this time” (p.939). They also conclude that the masculine and feminine adjectives used in the BSRI were rated as being significantly more desirable for a man or a woman and suggests that the BSRI is still a valid measure for the perceptions of gender roles (Holt & Ellis, 1998). Additionally, Sandra Bem (1974) “reported high internal consistency and test-retest reliability of the BSRI” with the coefficient alphas for masculinity (0.86) and femininity (0.82) both being high from a sample of 28 males and 28 female students (Holt & Ellis, 1998). The reliability of the short form of the BSRI was tested by Campbell, Gillaspay, & Thompson (1997) based on 791 graduate and undergraduate student responses. They reported reliability coefficients that were comparable or higher than those obtained using the original form of the BSRI. Campbell et al. (1997) also concluded that scores on the short form of the BSRI may have more utility for the purposes of future research (Choi et al., 2009). In the present study, the coefficient alphas reported for masculinity was 0.86 and the alpha for femininity was 0.87; both good levels for the survey.

The independent variables for the study will be the four areas of the BSRI (masculinity, femininity, androgynous, and undifferentiated), and gender (male and female). The dependent variable for this study will be the financial literacy levels of the students.

Procedure

The data was administered under normal testing procedures. Hard copies of the survey were administered to the UAS students and an online version of the survey was made available

for the student tutors. There were consent forms in the beginning of the surveys and students were allowed sufficient time to complete the surveys. The data was collected in two different ways. Once times have been scheduled to present the surveys to two UAS courses, the surveys were administered and collected within the same day. For the sample made up of LASSO tutors, links to the survey were emailed to all student staff and they had been given ample time to complete the survey if they chose to participate. Those who participated in the hard copy version of the questionnaire had their completed surveys placed in a common envelope as a way to protect their confidentiality.

CHAPTER IV

FINDINGS

Introduction

The following chapter will include a discussion of the results given from the methodologies section that are outlined in Chapter III. A two (gender) x four (sex-typing) analysis of variance was performed for this study. First, an overview of the exceptions and omissions from the final results will be presented. The data will be represented through the research questions addressed in chapter I. Discussion of the results will be examined more thoroughly with the review of relevant literature in Chapter V.

Exceptions and Omissions

Shafer and Graham (2002) note that ipsative mean imputation (IMI) is a satisfactory method for treating missing data. IMI can be used in situations where there are multiple items that comprise a unidimensional scale. If a respondent has partial missing data for such a scale, then the missing items can be replaced by the mean of the respondent's nonmissing items. In this study, two respondents were candidates for IMI because their missing data accounted for less than 10% of the items on the given scale. For the paper submissions of the survey, IMI was used

for 2 of the 50 respondents after the data was entered into the Statistical Product and Service Solutions (SPSS).

There were 112 responses. There were 50 submissions from the paper and pencil format, and 62 submissions from the online survey tool known as Qualtrics. The amount of incomplete submissions totaled 12. These submissions were removed from the final sample leaving a total of $N=100$.

Number 22 of the 25 question Financial Literature Survey portion of the survey was removed due to complications with Qualtrics; which was used to administer the online portion of the survey. The application incorrectly allowed for users to respond to more than one answer on the question, which led to multiple responses from respondents on the question. This invalidated the responses; therefore, the question had to be removed.

Use of the SONA system was proposed within the Methodologies prior to the start of collecting data, however, it became unnecessary given that there was an adequate number of participants gathered through the other data collecting methods for participant recruitment. Because of the circumstances, SONA was not used to gather responses.

There are three subscales created from the short form of the Bem Sex Role Inventory. They are masculinity, femininity, and social desirability. 2 respondents were not considered when computing the mean for the social desirability subscale because they did not answer more than 2 of the designed social desirability questions out of the 10 that were associated with the subscale.

Research question one: Differences in financial literacy levels of traditionally aged male and female college students

The first research question posed in this study was:

Is there a difference in the financial literacy levels of traditionally aged male and female college students?

The question is answered through the calculation of the mean (M) scores of the female and male respondents. As shown in Table 1.1., a total of 54 male respondents yielded a mean of 10.41 (SD=3.18) on the financial literacy scale. The mean value for females was 10.89 (SD=2.80). The difference between these means was not statistically significant $F(7, 99) = .27, p = .60$, with the p value not being less than .05. Thus, the null hypothesis is not rejected. The null hypothesis states:

H_{10} : There is no difference in the financial literacy levels between traditionally aged male and female college students.

Table 1.1

Financial Literacy Level Mean Scores According to Gender

Gender	Mean	N	SD
Male	10.41	54	3.18
Female	10.89	46	2.80
Total	10.63	100	3.01

Research question two: Differences between masculine, feminine, androgynous, and undifferentiated students regarding financial literacy

The second research question is:

Is there a difference between masculine, feminine, androgynous and undifferentiated students regarding their financial literacy?

Based on the results of $F(7, 99) = .55, p = .65$, there was no significance at the $p < .05$ level and there was no difference in the financial literacy levels between respondents categorized as masculine, feminine, androgynous, or undifferentiated, as shown in table 1.2. Much like the means between traditionally aged male and female college students between similar, so were the means between the four categories of the short form of the BSRI. The means were: Masculine (M) = 11.00 (SD=2.94), Feminine (M) = 11.03 (SD=3.44), Androgynous (M) = 10.35 (SD=2.57) and Undifferentiated (M) = 9.95 (SD=2.95) (see table 1.3).

From the given calculations, the null hypothesis failed to be rejected. The null hypothesis states:

H₂₀: There is no difference between masculine, feminine, androgynous, and undifferentiated students in their financial literacy.

Table 1.2

Distribution of Gender and BSRI

Gender	N	Percentage (%)
Male	54	54%
Female	46	46%

Sex Type	N	Percentage (%)
Androgynous	23	23%
Feminine	29	29%
Masculine	26	26%
Undifferentiated	22	22%

Gender	Androgynous	Feminine	Masculine	Undifferentiated
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Male	15	9	17	13
Female	8	20	9	9

Table 1.3

Mean Scores of Students in Relation to the BSRI

Sex Types	Mean	N	SD
Androgynous	10.35	23	2.57
Feminine	11.03	29	3.44
Masculine	11.00	26	2.94
Undifferentiated	9.95	22	2.95
Total	10.63	100	3.01

Research question three: Interactions between gender and gender role in college student's financial literacy

The final research question takes a look at the interactions between the gender of students and the gender roles that are yielded from the short form of the BSRI in determining financial literacy. More importantly, the study seeks to identify any relationships between a respondent's gender, and what actually is their perceived gender role and whether or not those identified genders correspond with a designated gender role from the short form of the BSRI. Based on the results, where $F(7, 99) = .66$, $p = .58$ ratio, the p value is no less than .05, and there was no interaction between gender and gender role in college student's financial literacy (see table 1.4).

Once again, the null hypothesis is not rejected. The null hypothesis states:

H3₀: There is no interaction between gender and gender role in college students' financial literacy.

Table 1.4

Univariate Analysis of Variance of Gender and Gender Roles

Dependent Variable = Financial Literacy

Type	<i>df</i>	<i>F</i>	Significance
Corrected Model	7	.647	.716
Gender	1	.277	.600
Gender Roles	3	.548	.651
Gender * Gender Roles	3	.659	.579

In summary, in all three instances, we fail to reject the null hypothesis.

Other Results

Based on N=100, the highest financial literacy score possible was 24 out of 24. There were a few outliers in the data, with one male respondent getting 3 out of 24, and another male respondent getting 5 out of 24 correct responses. The other outliers had one female respondent getting 16 out of 24 correct responses, and two male respondents achieving 17 out of 24 correct responses. The data also yielded a mean for financial literacy of 10.63 for N=100 (SD=3.00).

Based on N=100, according to the BSRI, there is also a fairly even split among the gender roles that resulted from the study. There were 23 respondents classified as androgynous, 29 respondents were deemed feminine, 26 respondents were deemed masculine, and the final 22 respondents were considered undifferentiated. Given the data, it is interesting that more

respondents identified as being male (54) than female (46), yet more of the sample were considered feminine (29) than masculine (26). Also, more men than women considered themselves to be androgynous (15), masculine (17), and undifferentiated (13, which is high masculinity/high femininity). The only area where women outnumbered men was in the feminine category (20).

Analyzing Other Demographics

The class rank of the respondent, parent income, and parent’s highest education, were all measured and were analyzed to see if there was a significant relationship with the financial literacy levels of the respondents. Using an analysis of variance with various levels of parents highest education level as an independent variable and financial literacy as a dependent variable, there was no significant difference at the $p < .05$ level, $F(35, 99) = .77, p = .60$. For parent’s income level, using various levels of parental income as an independent variable and financial literacy as a dependent variable, there was no significant difference at the $.05$ level, $F(35, 99) = .50, p = .833$ (see table 1.5).

Table 1.5

Univariate Analysis of Variance of Parent’s Education and Parent’s Income

Dependent Variable = Financial Literacy

Source	<i>df</i>	<i>F</i>	Significance
Parent’s Education (PE)	6	.765	.600
Parent’s Income (PI)	7	.497	.833
PE * PI	22	.883	.616

A Pearson r was computed to determine the correlation between financial literacy and participant's age and year in school. In both cases, correlations were significant. As shown in table 1.6, the correlation between financial literacy and age was ($r=.25$, $p < .05$). The correlation between financial literacy and year in school was ($r = .32$, $p < .01$). For $N=96$, the p-value for age is .013 and is significant at the $p < .05$ level. Additionally, year in school also deemed to be significant with a p value of .001 and is significant at $p < .01$ level. This supports other findings from studies on the influence of year in school and the financial behaviors or attitudes of students (Jorgensen, 2007; Bartley, 2011; Chen & Volpe, 1998).

The results reported in this chapter show that the majority of students have a low level of financial literacy which is only influenced by their age and year in school. Respondent's gender, and their perceived gender roles, based on their score on the BSRI, does not have an effect on predicting the financial literacy levels of students. The findings and implications from this study will be discussed in chapter five.

Table 1.6

Correlations

	Literacy	Age	Year in School	Parent's Education (PE)	Parent's Income (PI)
Literacy					
<i>Pearson Correlation</i>	1	.252*	.322**	.124	-.074
Age					
<i>Pearson Correlation</i>	.252*	1	.785**	.071	.083
Year in School					
<i>Pearson Correlation</i>	.322**	.785**	1	.184	-.050
PE					
<i>Pearson Correlation</i>	.124	.071	.184	1	.286**

PI					
<i>Pearson Correlation</i>	-.074	.083	-.050	.286**	1

*Correlation is significant at the 0.05 level (2-tailed)
 **Correlation is significant at the 0.01 level (2-tailed)

CHAPTER V

DISCUSSION

Introduction

The purpose of this study was to examine college students' personal financial literacy levels and whether those levels differed significantly by gender and gender role. Gender role was measured by the short form of Bem's Sex Role Inventory (BSRI). The BSRI was developed by Sandra Bem over 40 years ago (Bem, 1973; BSRI, 1981) and was created to gauge the sex type of individuals into masculine, feminine, androgynous (high masculine/high feminine), or undifferentiated (low masculine/low feminine).

In the present study participants were asked various questions regarding their financial literacy levels. These levels were examined in light of participants' gender, male and female, and gender role identity, masculine, feminine, androgynous, and undifferentiated.

The following chapter contains the discussion of the results as it relates to the review of relevant literature, as well as the implications that these findings might have on financial literacy, college education, and the implications and recommendations for Student Affairs practice and future research. The first section will discuss the findings of the study as they were reported by the research questions in relation to the review of literature and how they might be interpreted.

The second section will look at the implications and recommendations for Student Affairs practice along with the limitations of the study. Lastly, the final section will discuss the recommendations for future research and a conclusion.

Research Question One Discussion

Men and women did not significantly differ in their financial literacy. The literature proposed that women tend to be less knowledgeable about personal financial topics than men in various studies (Chen & Volpe, 2002; Fonseca et al., 2010; Gutter & Copur, 2011). However, the problem with these reports is that while there were statistically significant differences found between men and women, these differences were small in value, and over specific financial topics (Chen & Volpe, 1998; Lusardi & Mitchell, 2008). Additionally, large sample sizes were used in previous studies that could have produced an increase in varied responses, more generalizable results, or they might have had random samples.

In relation to the literature, Fonseca et al., (2010) used a financial literacy index that is based on 23 questions on basic financial concepts, investing, life insurance, and annuities. They found that women performed almost 0.7 standard deviations lower than men on the index, and the differences they found were highly significant (Fonseca et al., 2010). The significance however, is explained by the decision-making capabilities within couples in relation to their education level, and less about them just being a man or a woman. This is contradictory to the ideas of differences in financial literacy levels between men and women being based solely on gender, and moving towards the idea that the roles that men and women have within households is a factor. In fact, Fonseca et al., (2010) concluded that men and women just have different ways of understanding and processing financial literacy. This does not mean that there will be differences in their financial literacy levels as the authors state that they did not find strong support for “specialization by gender” for the different financial decisions they studied (p. 12). They found

that women and men that have similar education levels, in relation to their partner, actually assume the same number of financial responsibilities. In addition, they become even more responsible for financial activities as their education increases in relation to their spouse or partner (Fonseca et al., 2010).

Perhaps the large focus on these differences between men and women may be the idea that women in heterosexual relationships tend to outlive their male counterparts (Bach, 2003). Because of this, researchers could be concerned with any financial literacy level gaps between the two genders because they believe it is vital that women prepare themselves for when they have to assume all of the responsibilities of the household versus just sharing them with their spouse. Also, there is still the underlying fact that women still typically earn 23% less than men in the workforce (American Association of University Women, 2011). Preparing women to assume all financial responsibility is what educators and researchers concern themselves with most if they should notice any differences between the financial literacy levels of men and women.

Research Question Two Discussion

Participants did not differ in their financial literacy when their gender role was examined. This may be due to the fact that the BSRI was created when societal conception of gender roles differed. It may not have been socially acceptable for men to exhibit feminine qualities or vice versa. Males are assuming more characteristics that are typical of androgyny and are possessing those qualities that traditionally may have only been associated with what it means to be female (Guastello & Guastello, 2003). Characteristics such as: gentle, understanding, caring, or even sensitive to others' needs can be seen being adopted by males.

What is made relevant by both reviewed literature (Bussy & Bandura, 1999; Choi & Fuqua, 2003; Choi, Fuqua, & Newman, 2009) and the results of this study is that not only do

individuals vary in their gender behavior, but that the social desirability of masculine or instrumental traits in women has certainly increased over time and vice versa.

Looking at the literature review, Bem (1974) noted that when she was developing the BSRI, it was created based on 200 different personality characteristics that seemed to her and other students to be both positive in value and also holding a certain masculine or feminine tone to each characteristic. Those 200 personality characteristics were constructed in a different era. A likely reason that the resultant means for the respondents in the survey were all related could very well be because of the increased social acceptance of feminine and masculine characteristics from non-traditional genders. According to Choi & Fuqua (2003), the BSRI was originally created from undergraduates' and used as a self-report measure. They conclude that the BSRI may not be as complex as the true structure of masculinity/femininity and also may not capture its true nature. The 30-item short form used within this study is not theoretically or conceptually different than the regular 60-item BSRI (Brems & Johnson, 1990). The study done by Choi & Fuqua (2003) indicates that even though the BSRI is the most widely used measure of masculinity and femininity in many different empirical studies, there can be great value in the reanalysis of the psychological constructs related to sex role orientation; these constructs of course include the BSRI.

Research Question Three Discussion

The final research question explored whether or not there are any interactions between gender and perceived gender role when examining college students' financial literacy level. As mentioned earlier, the 200 personality characteristics were created based from what Bem and her students labeled as positive in value and also holding a certain masculine or feminine tone (Bem, 1974). The study did not yield a significant relationship between gender and gender role in college student's financial literacy levels.

Thompson & Walker's (1989) description of the traditional family structure might be an outdated phenomenon. They explain that men focus on economic support and women focus on the emotional support and nurturance of the family. Instead, the idea that women are the emotional supporters and nurturers of a family may just be acceptable qualities for men to adopt. The views on what it might mean to be a woman or man within a societal construct may not match the population used within this study. Even though it is only a small fraction of the population at Oklahoma State University, the results of this study provide us with a valuable perspective about some students' financial knowledge and its relationship to gender and gender role. The findings of this study suggest that there is no relation with gender, gender role, or the financial literacy levels of college students.

Additional Discussion

Two variables significantly correlated with financial literacy in this study: participant age ($r = .25, p < .05$) and year in school ($r = .32, p < .01$). One possible reason for these correlations is the basic idea that as an individual gets older, they may have a higher chance of encountering areas that will require them to be more financially literate. An example of this would be that college students can have a greater chance of living on campus during their first year in school versus other years, and those students that decide to live off campus can anticipate having to deal with apartment bills and other utilities that otherwise would have been handled by an institution. This would require an individual to understand how paying those bills work, and also the repercussions of not paying those bills. These results are certainly in line with other research concerning the financial literacy of college students (Chen & Volpe, 1998; Cude et al., 2006; Gutter & Copur, 2011). As Gutter & Coper (2011) mention, their study results suggest that to become financially healthy, students need to have those desirable behaviors associated with cash and credit card management. Additionally, the financial well-being of students can be seen as "high" when individuals have certain positive financial attitudes and also exhibit healthy financial

behavior. This coincides with the suggestions of Bartley (2011) where it is argued that the most effective way to increase the financial literacy among young people is to pay attention to the relationship between their experiences that they have with finances and their knowledge base. Instead of studies attempting to find differences between the genders or gender roles, it could be more important to focus on the experiences of students have as they get older, especially with college student's today.

Parental income, or parent's highest education might sometimes act as a predictor for the financial literacy levels of college students, but it may not be as efficient as paying attention to the personal experiences of college students. The present study did not find any relationships between those demographic aspects and financial literacy. This lack of significant relationship may point to the importance of the personal experiences of students. The literature emphasizes that the connection that individuals make with their parents (or caregivers) can be a positive influence for increasing the low financial literacy levels among college students. Having students talk with their parents and ask them to be more involved in the financial decisions that they make could be the necessary steps taken to increase the financial literacy of college students (Bartley, 2011).

Limitations

The study was designed from a convenience sample at Oklahoma State University (OSU). OSU is a large public institution located in the Midwest. The intentional selection of the sample was made to fairly represent the student population with the selection of University Academic Services (UAS) students that was comprised of mostly first-year students, and the selection of LASSO student tutors who ranged from sophomores to graduate level students. Many of the students are involved in other aspects of campus life; however, it was nonetheless still a convenience sample. Also, a sample size of 100 drawn from a convenience sample is limited in

its generalizability. Even though the majority of results were not significant, the research design is only causal-comparative and should be interpreted with this in mind.

The participants in this study are essentially broken down into two different groups. The LASSO tutors range from sophomores to juniors in year in school, and the students that enrolled in the UAS courses are primarily comprised of freshmen students who have at one point or another, been advised through the LASSO center. This makes them LASSO students. The LASSO center is designed to assist students as they become acclimated to Oklahoma State University. The center advises many undeclared students as well, but the ultimate goal of the center is to help students “graduate” from the LASSO center and declare a major.

Given these circumstances, there might be differences between the LASSO students and the tutors which would have yielded the present studies results. The tutors may be seen as higher achieving and more path-driven from the beginning than LASSO students since a majority of them come to college with an academic major already in mind. This still does not necessarily highlight possible differences between the financial literacy levels of the LASSO students and tutors. Many of the LASSO students may be involved in more situations that require them to have financial literacy skills than tutors. This may also be said for the tutors in relation to the LASSO students. This may be because very few of the tutor population have any background in finance or business courses. A majority of the tutors specialize in the sciences.

Another potential limitation is the age of the BSRI. The version of the BSRI used was written in 1981 (Bem, 1981) and may reflect norms about gender that are not as relevant in the present day. The intended purpose of using the BSRI was to determine whether the gender roles that were present decades ago are still applicable to college students today and if those sex type roles relate to the financial literacy levels of students. If there was another scale, that reflected more current gender roles, the results of the present study may have turned out differently.

The financial knowledge survey that is part of the College Student Financial Literacy Survey (CSFLS) is a much more relevant survey (Jorgensen, 2007); however it too may still have had limitations within itself as many of the questions may not have been answered by students simply because of their experience level with various financial topics. Future financial literacy surveys should seek to determine first what experiences many college students are going to be encountering. As students progress through an undergraduate education, many experiences they have are not going to be as generalizable as others.

Additionally, question number 22 of the financial knowledge survey that is part of the CSFLS had to be omitted. There were complications with the online survey tool, Qualtrics, which did not allow for respondents to successfully answer the question, and thus invalidated that question response for the 62 respondents that participated in the online survey. Omitting that question then invalidated the questionnaire, which poses another limitation to the study.

Probably the largest limitation within this study is the lack of reliability for the financial knowledge questionnaire that is used for the convenience sample chosen for this study. In the world of finance, there is such a large plethora of measures of financial literacy that it can be very difficult to narrow down a scale that can possibly measure all aspects of an individual's financial literacy. One can only hope that a financial literacy measurement used will be a reliable measure of one's financial literacy level. The measure used this study had an acceptable alpha of 0.77 in previous research. However, in the present study, its internal consistency was only .50. This renders the reliability of the scale poor. Thus, one can only have very weak confidence in the findings. This may explain why the present study had results that differed from prior research in the area of gender differences. The alpha of .50 could indicate that participants did not put much thought into their answers on the financial literacy questionnaire, and began to give random responses. Such behavior can lead to lower alpha levels. In the future, providing an incentive to

complete the survey may help increase participant motivation to take the measure more seriously, and potentially raise the alpha level.

Implications and Recommendations for Student Affairs Practice

The interesting findings in this study that a college students' age and year in school have an influence on their financial literacy level do have some implications for student affairs practice. A lot of synergy will need to be created between student affairs professionals and faculty to develop an effective way to reach college students on the topic of personal financial management. Researchers have concluded that men and women get a lot of their financial knowledge from their parents (Lusardi et al., 2010; Chen & Volpe, 2002) and in those instances, starting as early as high school in terms of teaching basic financial concepts may benefit students that are coming into college and increase their experiences dealing with personal finance before entering college. It would be especially beneficial to provide this education to those students that have parents that do not have college degrees (Lusardi et al., 2010).

An easy way to reach the most students at once would be to target those courses that are heavily dominated by first year students. Additionally, another way to implement financial education and still target young men and women would be to implement building programs for residents to attend at their own convenience. Looking at it from this angle, students will not need to feel as if they are being singled out or approached solely based on their gender. Rather it can stand as an opportunity to allow individuals to be non-committal in a very supportive environment.

Continuing the discussion of implications for all students, findings from Borden, Lee, Serido, & Collins (2008) suggest that a seminar based class would help to increase students' knowledge and attitudes toward credit and would also help to decrease the issues that students tend to avoid when dealing with credit. In one scenario, courses would cover basic financial

management knowledge that every first year student beginning college should know and this could be achieved not only through seminars, but through workshops, and even peer education (Cudmore et al., 2006, p. 108). According to Cudmore et al. (2006), some college financial education programs have been developed by students and consequently taught by students to ensure that the content and concepts remain relevant (p. 108). Having a seminar based discussion would also allow for the experiences of students to come out and be shared openly. Bartley's (2011) findings connecting experience and knowledge are important and a seminar type discussion would support this idea. The type of relationship that is built between parents and children could help to produce a more financially literate young adult, and those shared experiences among students could facilitate healthier discussion towards a more financially literate college student.

According to Maurer and Lee (2011), prior research on this topic has not identified a single "best" method for delivering this financial education and responsible financial management to college students (p. 685). Comparing a seminar led class style versus a semester long course on financial management may not be an area of concern as Maurer and Lee (2011) found in their study that having peer financial counseling with students actually "yields comparable financial literacy learning gains to semester-long classes when covering the same material" (p. 685). The important thing is that some type of education be developed as a basic studies course for college students that they are all required to take. Low levels of financial literacy among women is definitely an area of concern, but an even bigger attention seeker is the low financial literacy levels of college students overall.

There could be deeper hidden barriers to achieving respectable levels of financial literacy among women and men in college. As was mentioned, Donohue (2011) suggested that certain conceptual definitions of financial literacy might actually be gender influenced. If this is the case, institutions should identify the presumptions that many students could come to college with and

create a habit of helping students to eliminate these factors that might inhibit their learning experience. Once again, the financial experiences that students have as they get older should be the focus and less about their gender or perceived gender role since there was no relationship found.

Implications for Future Research and Conclusion

This study provides some indications for future research. One important implication must be the sample size. This study's sample size may have limited there being any significance found between the various variables tested. The convenience sample chosen for this study, rather than using a random sample, also limits its generalizability. Other studies (Chen & Volpe, 1998; Fonseca et al., 2010; Bartley, 2011; Jorgensen, 2007; Manton et al., 2006) prove that large sample sizes can yield interesting results.

Given that age and year in school were found to significantly correlate with financial literacy, future research on this topic should consider these variables as covariates or mediators in more complex designs. Generally speaking, students who were earlier into their college career and were younger had lower financial literacy. Future research may want to focus exclusively on students before they attend college to assess their exposure and experience when dealing with personal finance. A few studies have been done that focus exclusively on the high school population (Scott III, 2010; Cameron, 2013; Mandell, 2008); however, some of these studies focus on specific financial topics like credit card behavior instead of an assessment of their understanding of personal finance and what influences their behavior.

The financial knowledge section that is part of the CSFSL used for this survey is effective in measuring the financial knowledge of participants on very specific topics such as credit, debts, taxes, net worth, checking and savings accounts, investing, retirement, and a few others. While these areas of personal finance are important, it could be more beneficial to focus

on the experiences of college students as many of them may not have had much exposure to these topics. The survey used by Manton et al. (2006) gauges what students perceive to be the reasoning for personal finance by introducing a question of the same tone. This can be a great way to determine not only the motives of students as to why personal finance is important, but also give the researcher an idea of where students are coming from. Providing a question that asks the purpose of financial planning, and then also providing a designated space for students to write their own perception can be a start.

The BSRI used within this study is dated (Bem, 1981), however, the purpose of such use was to gauge whether students still associated themselves with the sex-typing characteristics of the era that the BSRI was created and if those categorizations had any impact on their financial literacy. Although there was no significance found between whether a respondent was labeled masculine, feminine, androgynous, or undifferentiated and their financial literacy, it does not necessarily mean that financial literacy is unrelated to gender roles as a variable. It may be how gender roles was measured was imprecise. Additionally, obtaining a larger sample size can also vary the results of any future study. It still might bode well for new ways of measuring individuals as suggested by Choi & Fuqua (2003). The way individuals perceive their gender and its associated characteristics are certainly changing. Seeking to find a new sex role orientation scale or developing one's own could prove to be beneficial in a future study dealing with gender and financial literacy.

A final consideration for future research is to focus on improving the overall financial literacy of high school students and college students. There is a lot of importance in having a sound financial understanding of various topics that can help a student along their journey to independence. Perhaps studies designed around introducing students to the advantages and disadvantages of financial literacy could help to improve those levels among students. Furthermore, college student loans and debt are going to only increase in the coming years and it

is vital that students are aware of the risks associated with borrowing money. Studies on “student debt” or the “benefits and risks of borrowing money” can be conducted to analyze if students are aware of such risks and if they are not, then the focus should shift from what they know and do not know, to sound education on their associated responsibility with that area of personal financial management.

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APPENDICES

APPENDIX A

Financial Topics

The purpose of this project is to measure financial literacy. These are questions about financial knowledge. Please try to answer every question. If there is a question you do not feel comfortable answering, you may skip it.

1. Net worth is:
 - a. The difference between expenditures and income
 - b. The difference between liabilities and assets
 - c. The difference between cash inflow and outflow
 - d. The difference between borrowings and savings
 - e. None of the above

2. In which year after a car is bought does it lose its value the fastest?
 - a. First Year
 - b. Second year
 - c. Fourth year
 - d. Seventh year

3. Which account usually pays the MOST interest?
 - a. Certificate of deposit (CD)
 - b. Savings account
 - c. Checking account
 - d. Money Market account

4. When a check bounces, who, if anyone, is usually charged a fee?
 - a. The check writer only
 - b. The person to whom the check is written only
 - c. Neither the check writer nor the person to whom the check is written
 - d. Both the check writer and the person to whom the check is written

5. 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)?
- Molly, because she saved more money overall
 - Rob, because his money has grown for longer period of time
 - They would each have about the same amount
 - Unable to determine with information provided
6. If you signed a 12-month lease for \$300 /month but never occupied the apartment, you legally owe the landlord:
- Your security deposit
 - Your first month's rent of \$300
 - Your twelve month's rent of \$3600
 - Nothing
 - Whatever the landlord wants
7. The MOST important factors that lender use when deciding whether to approve a loan are:
- Marital status and number of children
 - Education and occupation
 - Age and gender
 - Bill-paying record and income
8. If you co-sign a loan for a friend, then you:
- Become eligible to receive part of the loan principal
 - Vouch for the friend's reliability but have no legal obligation for the loan
 - Are responsible for repaying the loan if the friend defaults
 - Are in a better position to get a personal loan
9. If a consumer fails to pay personal debts, a creditor is allowed to do all of the following EXCEPT:
- Discuss the consumer's debts with his or her employer
 - Bring suit against the consumer
 - Tell a credit bureau that the account is delinquent
 - Turn the account over to a professional debt collector
10. All of the following are TRUE of bankruptcies except:
- It is more difficult to get a low interest rate loan
 - It will stay on your credit for ten years
 - Any loan you receive will have a higher interest rate due to the bankruptcy
 - For all types of bankruptcies you are released for all your debt
11. What does a credit bureau do?
- Approves applications for credit
 - Informs applicants of the reasons for denial of credit
 - Extends credit to qualified applicants
 - Provides creditors with reports of consumers' bill-paying records

12. The owner of a credit card that is lost or stolen is legally responsible for:
- Any unauthorized charges
 - Any unauthorized charges until the loss or theft is reported
 - Only the first \$50 of any unauthorized charges
 - Only the first \$500 of any unauthorized charges
 - No unauthorized charges
13. 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?
- On the day of the purchase
 - One month after the date of the purchase
 - After a 2-week grace period
 - After a 2-month grace period
14. 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?
- Federal income tax, property tax, and Medicare and social security contributions
 - Social security and Medicare contributions
 - Federal income tax, social security and Medicare contributions
 - Federal income tax, sales tax, and social security contribution
 - Federal income tax, social security, Medicare contributions, state and local taxes
15. Is a \$500 tax credit or a \$500 tax deduction more valuable to you?
- A \$500 tax credit
 - A \$500 tax deduction
 - They are the same
 - Depends on your tax bracket
16. 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?
- Start to build up your savings account gradually in an insured bank
 - Save money in certificate of deposit accounts
 - Put monthly savings in a diversified growth mutual fund
 - Invest in long-term Treasury bonds
 - Accumulate money in a safe-box rented from a local bank
17. Which of the following combination of investments is most risky?
- A mutual fund containing 80% stocks and 20% bonds
 - A mutual fund containing 80% bonds and 20% stocks
 - An index fund (like the S&P 500)
 - Stock in a single company
18. 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?
- A U.S. Government savings bond
 - Stocks and mutual funds
 - A savings account
 - A money market account

19. 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?
- Savings account
 - A house
 - Stocks
 - Checking account
20. If an auto insurance policy has bodily injury limits of \$100,000/\$300,000, the insured person is covered for:
- Up to \$100,000 for each accident but no more than \$300,000 for the life of the policy
 - Up to \$100,000 for medical bills but no more than \$300,000 for hospital costs
 - Up to \$100,000 for each person injured but no more than \$300,000 for each accident
 - Up to \$100,000 for people in the insured auto but no more than \$300,000 for people outside the insured auto
21. Choose the type of insurance coverage (1. liability, 2. comprehensive, 3. collision, 4. uninsured motorist) that pays for the following:
- The replacement of a stolen car
1. liability 2. comprehensive 3. collision 4. uninsured motorist
 - A loss resulting from a lawsuit
1. liability 2. comprehensive 3. collision 4. uninsured motorist
 - Damage to our own car from an accident caused by you
1. liability 2. comprehensive 3. collision 4. uninsured motorist
22. The main reason to purchase insurance is to:
- Protect you from a loss recently incurred
 - Provide you with excellent investment returns
 - Protect you from sustaining a catastrophic loss
 - Protect your from small incidental losses
 - Improve your standard of living by filing fraudulent claims
23. 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?
- You would buy a term insurance policy
 - You probably do not need to buy any life insurance policy
 - You would buy flight insurance each time you travel by air
 - You would buy a cash value insurance policy
24. The owner of a bank debit card that is lost or stolen is legally responsible for:
- Any unauthorized charges
 - Any unauthorized charges until the loss or theft is reported
 - Only the first \$50 of any unauthorized charges
 - Only the first \$500 of any unauthorized charges
 - No unauthorized charges
25. Which of the following cannot legally access your credit report?
- Creditors

- b. Employers
- c. Apartment rental agencies
- d. Insurance companies
- e. All of the above can access your credit report

APPENDIX B

Bem Sex Role Inventory (Short Form)

Rate yourself by circling each item, on a scale from 1 (never to almost never true) to 7 (almost always true)

1. Gentle

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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2. Aggressive

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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3. Willing to take a stand

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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4. Sensitive to others' needs

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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5. Understanding

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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6. Sympathetic

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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7. Strong personality

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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8. Willing to take risk

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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9. Eager to soothe feelings

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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10. Affectionate

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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11. Loves children

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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12. Dominant

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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13. Forceful

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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14. Compassionate

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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15. Assertive

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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16. Warm

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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17. Defends own beliefs

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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18. Makes decisions easily

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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19. Has leadership ability

Never	Almost	Occasionally	Neutral	Often	Almost	Always
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	Never				Always	
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20. Independent

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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21. Conscientious

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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22. Moody

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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23. Reliable

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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24. Jealous

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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25. Truthful

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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26. Secretive

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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27. Adaptable

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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28. Conceited

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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29. Tactful

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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30. Conventional

Never	Almost Never	Occasionally	Neutral	Often	Almost Always	Always
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APPENDIX C

Demographics (**Circle One**)

Gender:

- Male
- Female
- Neither (Please specify)

Age: _____

Class Standing:

- Freshman
- Sophomore
- Junior
- Senior
- Other (Please Specify):

Please specify your ethnicity (Not required):

- Hispanic or Latino
- Not Hispanic or Latino

Please specify your race (Not required):

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other (Please Specify): _____

Please select the highest level of education attained by the parent (or caregiver) who you grew up with who had the most education:

- Not a High School Graduate
- High School Graduate
- Some College, No Degree
- Associate Degree Completed
- Bachelor's Degree Completed
- Masters Degree Completed
- Doctoral Degree Completed
- Professional Degree Completed
- Not Sure

What is the annual income of your parents (or caregiver(s))?

- Less than \$20,000 per year
- \$20,000-\$40,000
- \$40,000-\$60,000
- \$60,000-\$80,000
- \$80,000-\$100,000
- \$100,000-\$150,000
- Over \$150,000 per year
- Not Sure

APPENDIX D

Oklahoma State University Institutional Review Board

Date: Thursday, April 04, 2013
IRB Application No: ED1345
Proposal Title: The Effects of Gender and Gender Role on the Financial Literacy of College Students

Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 4/3/2014

Principal Investigator(s):

Titus Adeleke	John Foubert
214 SU	314 Willard
Stillwater, OK 74078	Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI, advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Cordell North (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,



Shelia Kennison, Chair
Institutional Review Board

VITA

TITUS ADELEKE

Candidate for the Degree of

Master of Science

Thesis: THE EFFECTS OF GENDER AND GENDER ROLE ON THE FINANCIAL LITERACY OF COLLEGE STUDENTS

Major Field: Educational Leadership Studies-College Student Development

Biographical:

Education: Graduated from Chapel Hill High School, Chapel Hill, North Carolina in May 2007

Completed the requirements for the Master of Science in Educational Leadership Specializing in College Student Development at Oklahoma State University, Stillwater, Oklahoma in July, 2013

Completed the requirements for the Bachelor of Arts in Communication Studies at The University of North Carolina Wilmington, Wilmington, North Carolina in 2011

Experience: Employed as an Orientation Leader from 2007-2008 and Founding Father of the 1 in 4 Sexual Assault Education chapter at The University of North Carolina Wilmington from 2007-2011, and Graduate Teaching Assistant in the Learning and Student Success Opportunity Center at Oklahoma State University from 2011-2013

Professional Memberships: National Association of Student Personnel Administrators and American College Personnel Association