

Financial Literacy of College Students: Parental and Peer Influences

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Abstract

A current national concern is the low financial literacy of college students. College students are not receiving the financial knowledge necessary to be successful in today's fast paced economy. Due to an increasingly complex marketplace, college students need greater knowledge about their personal finances and the economy. The financial decisions made early in life create habits difficult to break and affect students' ability to become financially secure adults. Most recent studies show average personal financial scores declining with average scores close to a failing grade.

The College Student Financial Literacy Survey (CSFLS) was created to collect data specifically for this study. The purpose of this descriptive, cross-sectional, on-line survey design study is three fold. First, I investigated the personal financial literacy (knowledge, attitudes and behavior) of a sample of undergraduate and graduate college students using the personal characteristics of gender, class rank, and socioeconomic status (SES). Second, I examined parental and peer influences on the level of financial literacy of college students. Finally, I examined how college students' financial knowledge and attitudes correlated with their financial behavior.

The study found that financial knowledge, attitude, and behavior scores were low but that they significantly increased each year from freshman to masters. Further, students who were financially influenced by their parents had higher financial knowledge, attitude, and behavior scores. Finally, students with higher financial knowledge also had higher financial attitude and behavior scores.

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CHAPTER ONE

Introduction

Statement of Problem

Our nation's economic system and society's well-being depends in part on knowledgeable consumers. Family financial difficulties, influenced to some extent by low financial knowledge among our citizens, are reducing productivity in the work place (Fletcher, Beebout, & Mendenhall, 1997; Grable & Joo, 1998; Wechsler, 1997), affecting the health of the individual and their family physically (Allen, Edwards, Hayhoe, & Leach, 2007; Norvilitis, Szablicki, & Wilson, 2003), economically (Alhabeeb, 1999; Grable & Joo, 1998; Hayhoe, Leach, & Turner, 1999), and psychologically (Huston et al., 2003; Knapp, 1991; Norvilitis et al., 2003), and putting a tremendous burden on society (Alhabeeb, 1999; Norvilitis et al., 2003; National Endowment for Financial Education [NEFE], 2002). This burden can be seen through increased debt and bankruptcies (Alhabeeb, 1999; Klemme, 2002), lower savings and investments for retirement (Alhabeeb, 1999; Grable & Joo, 1998), unwise economic decisions (Miller, 2002; National Council on Economic Education [NCEE], 2003; NEFE, 2002), and dependency on government assistance (Bauer, Braun, & Olson, 2000; Blalock, Tiller, & Monroe, 2004; Huston et al., 2003).

One problem may be that many individuals and families do not have the knowledge or skills to handle basic, let alone complex, financial decisions (Alhabeeb, 1999; Klemme, 2002; NEFE, 2002). Many might say, "I learned how to get a job and make money, but no one ever taught me how to manage money." Learning how to manage money is as important as earning it (Danes & Hira, 1987; Lachance & Choquette-Bernier, 2004). The U.S. has the lowest individual savings rate in the industrialized world, with rates continuing to drop. Between 1970 and 2000,

consumer debt among U.S. families increased by 152% whereas median family income only increased 13% (*Economic Report of the President*, 2006). Bankruptcies have risen by nearly 400% over the last two decades affecting 1,759,503 U.S. households in 2006 (U.S. Courts Bankruptcy Filings, 2006). Social Security is on a path towards bankruptcy. There are currently 3.3 workers per beneficiary. By 2031 there will only be 2.1 workers per beneficiary. Social Security will be paying out more than it takes in by 2017, and the Social Security trust funds are anticipated to be depleted by 2041 (Century Foundation Inc., 2005).

Significance of the Study

With these negative trends happening in the U.S., it is even more important for young adults to have the basic knowledge and skills needed to make important personal financial decisions (Chen & Volpe, 1998; Danes & Hira, 1987; Henry, Weber & Yarbrough, 2001; National Institute for Consumer Education [NICE], 1994). At present, few do. Based on surveys by the Consumer Federation of America (1993) and Jump\$tart Coalition (2004), coalitions for Personal Financial Literacy, American high school and college students have little consumer knowledge. This deficiency is important to understand because college students have access to and spend a lot of money - \$182 billion in 2006 (Cause Marketing Forum, 2006), and they will be the financial leaders of tomorrow.

The financial decisions made early in life create habits difficult to break which affect students' ability to become financially secure adults (Martin & Oliva, 2001). The most recent Jump\$tart (2004) study shows average personal financial scores declining since the first survey of 1997. In 2004, the average score of high school seniors was 52.3% – a failing grade. Only 18% of students surveyed recognized the importance of the annual percentage rate.

Due to an increasingly complex marketplace (Martin & Oliva, 2001), college students need greater knowledge about their personal finances and the economy as well as “real life” skills (e.g., balancing a check book, budgeting, reducing debt, understanding credit cards, saving, having good credit, paying interest, investing, and purchasing a car or a home). Where should they learn these financial skills? Their families are an option yet studies have found that most parents do not have these skills themselves (Moschis, 1985; NEFE, 2002; Pauley, 1996; Varcoe et al., 2001). Many students learn basic financial knowledge through trial and error, yet this knowledge may not be sufficient for them to become smart consumers in today’s society (Lachance & Choquette-Bernier, 2004). Lyons and Hunt (2003) found that college students want to receive financial education and become responsible consumers, yet TIAA-CREF Institute’s (2001) Youth and Money Survey found that although 65% of surveyed college students had an opportunity to schedule a money management course, only 21% of them took the course, even though they thought it would help them make better financial decisions.

Approximately 83% of full-time undergraduate students own at least one credit card with an average outstanding balance of \$2,327 (Nellie Mae, 2002). Such bad financial habits could stay with them far into the future (Kendrick, 1999). These facts lead to the following questions: What is the level of financial knowledge of today’s college students? What are their attitudes towards personal financial issues? Are they financially prepared to live on their own, get married, or start their own family? These and other similar questions are what led me to research this topic.

Purpose of the Study

This study had three purposes. First, I investigated the personal financial literacy (knowledge, attitudes and behavior) of a sample of undergraduate and graduate college students by gender, class rank, and socioeconomic status (SES). Second, I examined parental and peer influences on the level of financial literacy of college students. Finally, I examined how college students' financial knowledge and attitudes correlated with their financial behavior.

Research Questions

To investigate the three areas of concern, the following research questions guided the study:

1. Are there differences in financial knowledge based on gender, class rank, and SES?
2. Are there differences in financial attitudes based on gender, class rank, and SES?
3. Are there differences in financial behavior based on gender, class rank, and SES?
4. Are there differences in financial knowledge, attitudes, and behaviors based on level of parental and/or peer influences?
5. Are college students' financial behaviors correlated with their financial knowledge and attitudes?

CHAPTER TWO

Literature Review

The purpose of this literature review is to provide a context for the study through identifying, evaluating, and interpreting the existing body of work on the financial literacy of college students, noting gaps in the literature, the benefits of being financially literate, and influences shaping college students' financial literacy. Family resource management and social learning theory as guiding theoretical frameworks are also reviewed.

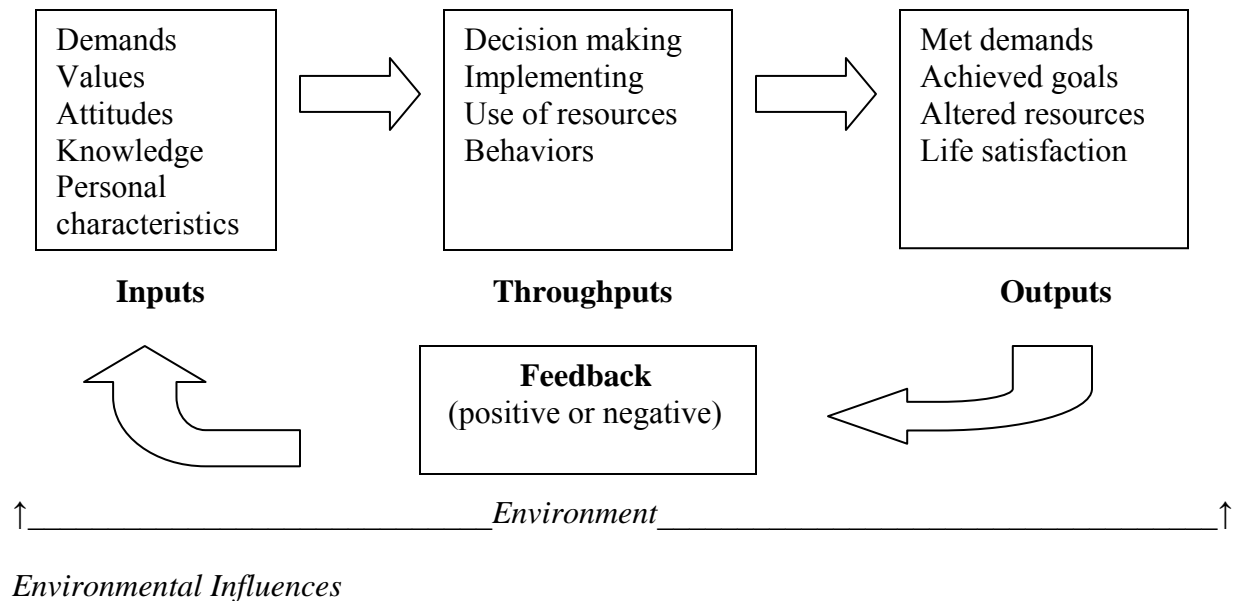
Theoretical Framework

The theoretical construct predominantly used when studying financial decisions and resource management practice is systems theory (Goldsmith, 2005). Systems theory is self-reflexive and is a cybernetic input-throughput-output-feedback model (Maloch & Deacon, 1966). Bubolz and Sontag (1993) discuss financial management as a concept grounded in human ecology theory and utility theory. The present research used family resource management theory, based in systems theory, to understand the financial management practices of college students. I also examined the data through the lens of Social Learning Theory. Deacon and Firebaugh (1981) developed family resource management theory as a management process with a systems orientation where management is “the process of using resources to achieve goals” (Goldsmith, 2005, p. 24).

The four stages in the family resource management model, as developed by Deacon and Firebaugh (1981), explain how people make financial decisions and develop financial behaviors. The stages are inputs, throughputs, outputs, and feedback loop (see Figure 1). For this study, I only examined the inputs and throughputs sections of the model and added the environmental influences of parents and peers (see Figure 2). The outputs and feedback sections of the model

were beyond the scope of this study. To measure outputs and feedback requires longitudinal data, which the researcher did not gather for this study.

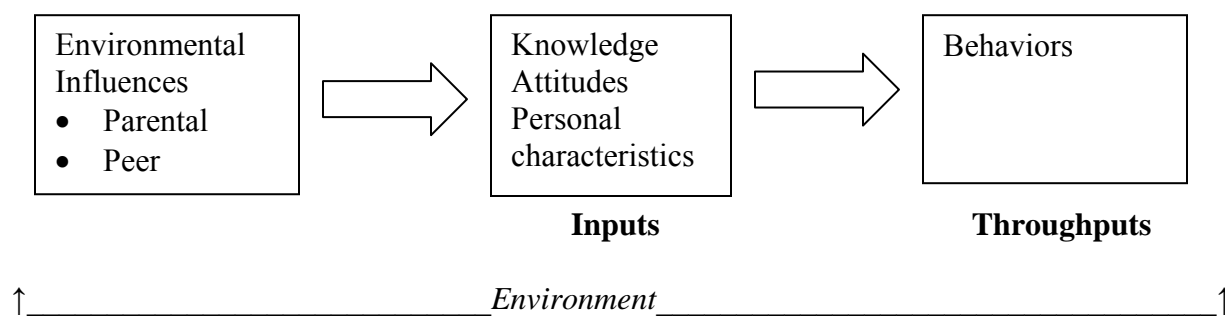
Figure 1. Family Resource Management Model



Social learning theory helps explain the environmental influences college students have had over the years shaping them into who they are today. The financial attitudes and values college students have about money come from their home environment (see Figure 1). As students learn over the years (Bandura, 1977; John, 1999) through social interaction (Bandura, 1986), they begin to understand and form their values, knowledge, and attitudes about finances. Family, friends, community, nation, school, church and media all shape college students' knowledge and attitudes over time (Bubolz & Sontag, 1993).

This study combines social learning theory and family resource management theory in a way that considers environmental influences that shape where a person currently is in regards to their knowledge, attitudes, and personal characteristics (see Figure 2).

Figure 2. Model of Study



The focus of this study is the financial knowledge, attitudes, and behaviors of college students along with the two key environmental influences of parents and peers that help shape students current status. The environmental influences of parents and peers were focused on for this study because of the great influence they have on college students' financial knowledge, attitudes, and behaviors (Alhabeeb, 1999; John, 1999). Parents tend to have a greater influence on students at a younger age (Brown, Mounts, Lamborn, & Steinberg, 1993; Clark, Heaton, Israelsen, & Eggett, 2005) while peer influence increases as the student becomes older and especially after becoming a college student (Harris, 1995; John, 1999). The addition of these environmental influences to our understanding of college students' financial knowledge, attitudes, and behavior is a major contribution of this study.

Inputs

Inputs, the first stage of the family resource management model (see figure 1), are the resources and demands the individual has at any given time (Goldsmith, 2005; Hayhoe, Leach, Allen, & Edwards, 2005; Rice & Tucker, 1986). The resources students have developed come through their interaction with the environment and are the means to satisfy the demands. The resources the present study will examine are financial knowledge, financial attitudes, and personal characteristics (Figure 2). Demands might be major life goals, marriage, education, finances, or relationships.

Throughputs

The throughput section is the second stage of the model and is where decisions are made based on the individual's demands and available resources. Throughputs include planning, implementing, decision making, communicating, and use of resources (Goldsmith, 2005). Simply put, throughput is a person's behavior; it is the process by which a person uses resources to meet demands (Rice & Tucker, 1986). In the present study, the throughput was viewed as students' financial behavior because it represents the decision making or use of resources found in the inputs section.

Outputs

The third stage is output. Outputs are whether the desired goal was reached or whether demands were met. They are the realized end result that comes based on the decisions made by the individual. Outputs include met demands, achieved goals, altered resources, and level of life satisfaction. As Rice and Tucker (1986) explain, resource inputs enter the system of throughputs and emerge as increased knowledge, better attitudes, or met goals. "The final output is the satisfaction or dissatisfaction with the quality of life produced by the solutions generated in response to demands and resource inputs" (Rice & Tucker, 1986, p. 106). The current study did not measure outputs as it is a cross-sectional rather than a longitudinal study and the focus was on the use of resources and financial behavior of college students found in the input and throughput stages of the Family Resource Management Model.

Feedback

The fourth stage is the feedback loop. Feedback is continuously used in all stages of the resource management system (Rice & Tucker, 1986). Feedback happens when there is disequilibrium in the individual's life (Goldsmith, 2005; Hayhoe et al., 2005). This could be due

to having demands not met or goals not achieved. Positive or negative feedback informs input by means of increased knowledge or changed attitude. The new resources available allow the process to happen again as the individual uses new resources to again implement and make decisions in hopes for a better output that will return equilibrium, which comes from a changed system and satisfaction with the output (Goldsmith, 2005). A theoretical assumption is made that all beings are rational and would therefore choose to be in equilibrium.

An example of the process might be as follows: A student is confronted with a financial demand such as college tuition. The student uses his/her resources to meet the demand, creates options to choose from based on his/her knowledge, values, and attitudes, and decides on one of the options to implement. If the desired outcome of having college tuition is not achieved, the input section receives feedback through acquiring new knowledge or the shifting of attitudes. The student then has increased resources (knowledge) to help make better choices to achieve the financial goal.

Another example could be a student who uses credit cards for most purchases and only makes a partial payment each month. He/she gains new knowledge about the real cost of a purchase due to interest accruing each month. This leads to an adjustment in credit card use behavior as well as a change in attitude about the usefulness of credit cards.

The present study combined social learning theory with the theoretical framework of family resource management. The study used a survey to measure parental and peer influences, personal characteristics, financial knowledge, financial attitudes, and financial behavior. According to family resource management theory, students' financial behavior is influenced by their demands and available resources (i.e., values, attitudes, knowledge, and personal characteristics). Social learning theory explains that available resources increase from learning

developmentally through interaction with the environment (Bandura, 1977), which have been identified as parental and peer influences. For behavioral change to take place and be significant, knowledge and attitudes must change (Hayhoe et al., 2005; Miller & C'de Baca, 2001).

Benefits of Financial Literacy

Research has shown that financial literacy is beneficial for individuals and families (Blalock et al., 2004; Danes & Hira, 1987; Grable & Joo, 1998; Hibbert & Beutler, 2001; Kerkmann, Lee, Lown, & Allgood, 2000). It increases students' chances for saving and investing, getting out of debt, spending less than they earn, and living on a budget. It also decreases their chances for bankruptcy, receiving government assistance (Bauer et al., 2000; Blalock et al, 2004; Huston et al., 2003), and making poor consumer decisions (Grable & Joo, 1998; Hayhoe, Leach, Turner, Bruin, & Lawrence, 2000). Students who lack financial knowledge have increased financial difficulties that continue into later years (Danes & Hira, 1987; Hibbert & Beutler, 2001; Hira, 2002). Chen and Volpe (1998) found that students with less financial knowledge had more negative opinions about finances and made more incorrect financial decisions. They point out that having a low level of financial knowledge limits students' ability to make informed decisions. Danes and Hira related students' financial behavior to their future earning capacity. Danes (1994) mentioned that a higher level of financial knowledge was positively correlated to a higher level and regular source of income as well as a higher savings rate. The financial habits students have while in college tend to carry on into adult life. The better their financial literacy is when they leave college, the fewer financial hardships they may have in life (Grable & Joo, 1998).

Financial education influences financial knowledge, attitudes, and behaviors (Ajzen & Fishbein, 1980; Grable & Joo, 1998; Varcoe & Wright, 1991). Financial education increases financial knowledge and affects financial attitudes (DeVaney, Gorham, Bechman, & Haldeman, 1996; Grable & Joo, 1998; NEFE, 1998). For example, Fletcher et al. (1997) completed a pre- and post-assessment of financial knowledge, attitudes, and behaviors to evaluate the effectiveness of Iowa State's personal finance workshops and found that participants had improved knowledge, attitudes, and behaviors. Increased financial knowledge was also found to influence students' attitudes positively toward business in general and their ability to be wise consumers in society (Langrehr, 1979). Lyons and Hunt (2003) found that college students want to receive financial information and have a preference about how financial education is taught, who teaches it, and what the content is. Also, although perceived economic well-being may differ by gender (Leach, Hayhoe, & Turner, 1999), Grable and Joo found that financial education "levels the playing field" in regards to gender differences and "is effective in changing knowledge, attitudes, and behaviors" (p. 213). Increasing financial knowledge through education was found to be significantly related to risk tolerance, financial attitudes, and saving and investing behavior.

There are several specific benefits of financial literacy. Increasing financial literacy is a way to increase empowerment and improve the quality of life (Knapp, 1991; Voydanoff, 1990). Energy, thought, and time are spent pursuing money and limiting the unnecessary waste of money. Thus, when students gain more knowledge and more positive attitudes toward money, they make better decisions, which saves resources and improves their situation (Knapp, 1991). Financial literacy also promotes self-confidence, control, and independence (Allen et al., 2007; Conger, Jewsbury, Matthews, & Elder, 1999). This comes by feeling in control and knowing

how to function in a complex marketplace. When consumers feel they are in control of their finances, they are more likely to participate in the marketplace (Knapp, 1991).

Another benefit of financial literacy is increased physical, emotional, and psychological well-being. Norvilitis et al. (2003) found that perceived financial well-being in college students appeared to be related to psychological well-being, an ability to be more in control of their lives, and having lower levels of dysfunctional attributes. Economic stress is associated with depression, anxiety, and psychological distress (Voydanoff, 1990) as well as emotional distress and internalizing problems (Conger et al., 1999). Sobolewski and Amato (2005) found that economic hardship negatively affects the parent-teen relationship, student's educational attainment, and student's earned income. Financial literacy goes beyond knowledge about money; it includes being a wise consumer of foods (increasing one's health) and other purchases such as cars (affecting their safety and the environment) (Knapp, 1991). Thus, increasing financial literacy can affect students' physical health and safety as well as their psychological well-being.

The financial literacy of students can also affect their current and future family relationships. Hibbert and Beutler (2001) confirmed previous studies that found financial issues to be a common source of conflict in personal, marital, and family relationships. These authors also found that the quality of family life was perceived to be greater where financial self-reliance was more highly valued. Families who spent less than they earned, paid bills on time, and avoided unnecessary debt had fewer family tensions and an increased sense of self-worth. Families who were poor managers of their finances experienced more unkindness, less communication, and a lower quality of life (Hibbert & Beutler, 2001). Voydanoff (1990) noted that economic stress is associated with low levels of family satisfaction and that higher levels of

income are modestly associated with greater marital and family satisfaction. Student's sense of control and self-mastery are also lower when they experience economic distress (Conger et al., 1999). Thus, as financial literacy is increased, quality of life should improve.

Another benefit of increased financial literacy is an increase in marital satisfaction. Kerkmann et al. (2000) found that behaviors and perceptions of finances as well as problems and their perceived magnitude were significantly related to marital satisfaction. Some have suggested that financial problems are one of the leading causes of marital conflict and divorce (Amato & Rogers, 1997; Cleek & Pearson, 1985). Oggins (2003) found that in both the first and third years of marriage the top reason for marital disagreement was finances. Conger et al. (1990) found that economic difficulties affected family relationships through increased hostility in marital interactions while limiting warm and supportive behaviors expressed by the couple. Financial behaviors are important in marriage because good financial behaviors such as budgeting, paying down debt, saving, and spending less than one earns increase marital satisfaction more than just what one earns (Kerkmann et al., 2000). For example, Kerkmann et al. found that when couples argue about finances, they tend to disagree more about how available finances should be managed or spent rather than about how much or how little they have. Financial literacy is beneficial for individuals and families through making better financial decisions, increased physical and psychological well-being, and enhanced family and marital relationships, improving their overall quality of life.

Financial Literacy Studies

Financial literacy has been defined as “knowing the facts and vocabulary necessary to manage one’s personal finances successfully” (Garman & Forgue, 2000, p 2). Vitt et al. (2000) defines financial literacy as:

The ability to read, analyze, manage, and communicate about the personal financial conditions that affect material well being. Financial literacy includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy (p. xii).

Combining and categorizing the essence of these definitions into this study, financial literacy will contain the constructs of financial knowledge, financial attitudes, and financial behaviors.

A review of the literature on financial literacy from 1979 to 2006 found the majority of comprehensive research studies focused on high school students (Alhabeeb, 1999; Jump\$Start, 2004; Moschis, 1985; NEFE, 2002; O’Neill, 1992) or adults (Princeton Survey Research Associates, 1997; Varcoe et al., 2001). Researchers concluded that neither high school students nor adults have the financial literacy to adapt well in today’s society. Jump\$Start reported that students are graduating from high school without the ability to make wise financial decisions. Princeton Survey Research Associates found similar results with adults only scoring 42% correct on their personal finance survey. TIAA-CREF Institute’s (2001) Parents Survey shows that parents are not great financial educators for their children nor do parents think it is their sole responsibility to teach finance to their children. If parents do not have the financial knowledge to teach their children and these teens are entering college without this knowledge (Jump\$Start,

2004), where, when, and how do college students receive their financial knowledge? What other influences help increase their financial knowledge?

Most studies in this review that focused on college students and financial issues dealt with credit cards. The ability to apply for and receive a credit card has become more and more accessible on college campuses today (Hayhoe et al., 2000; Lyons, 2004; Miller, 2002). Miller even equates receiving a credit card as a freshman, a “rite of passage” (p. 1). Credit card companies pay schools thousands of dollars to be able to solicit credit card applications from students while offering rewards such as free T-shirts or food (Lyons, 2004; Miller, 2002). These companies target college students because most new credit card holders use and keep their first card (Hayhoe et al., 2000; Hayhoe et al., 2005; Joo, Grable, & Bagwell, 2003). Students with credit cards from on-campus solicitation have higher debt-to-income ratios than students with credit cards from other sources (Norvilitis et al., 2003) and are more financially at risk (Lyons, 2004). Approximately 80% of full-time undergraduate students own credit cards, having an average outstanding balance of \$2,226; 10% of these students have an outstanding balance of over \$7,000 (Kendrick, 1999). Markovich and DeVaney (1997) found that 40% of students did not know when credit card interest charges on a new purchase would begin. They also found that 43.2% of students had four or more credit cards, 50.4% had three or fewer cards, and only 6.3% of students owned no credit card. Bell, Grayson, and Stowe (2001) found that students who view debt positively or have a positive view of borrowing tend to borrow more money. Students’ attitude toward borrowing is positively related to their behavior (Bell et al., 2001; Hayhoe et al., 2005). Credit cards can be convenient for college students but unwise use can lead to financial problems now and in the future.

Only five comprehensive empirical studies on the financial literacy of college students, which dated from 1987 to 2001, were found in the reviewed literature. Researchers from these studies suggested further research with a comprehensive look at money management practices was needed to understand the financial literacy of college students (Henry et al., 2001). The first reported study (Danes & Hira, 1987) found no previous studies on college students and financial literacy. Danes and Hira surveyed 323 college students from Iowa State University using a questionnaire of 51 items to measure college students' knowledge of credit cards, insurance, personal loans, record keeping, and overall financial management. Their findings indicate that males know more than females in most areas, married students know more than unmarried students, and upper classman know more than lower classman. Their overall finding was that college students have low financial knowledge.

The second study (Volpe, Chen, & Pavlicko, 1996) surveyed 454 undergraduate business students from only one university using an instrument of 23 items that focused primarily on investment knowledge. They had similar overall findings to previous studies showing students achieving a low average literacy score of 44%, with those who majored in business being more knowledgeable on investments than those who did not major in business.

A third study by Henry et al. (2001) surveyed 126 undergraduate education majors at the University of Louisiana at Lafayette using a 13-item questionnaire on income, debt, and budgeting practices. They found a majority of the students did not have or use a written budget. Of those who did, women, married students, and older students were most likely to follow their budgets.

A fourth study by Markovich and DeVaney (1997) surveyed 236 randomly selected undergraduate seniors from Purdue University to measure financial knowledge and behavior

using an instrument with 34 items. Although their study included financial behavior, they only measured the level of students' knowledge and behavior, with no measure to determine whether knowledge impacted or correlated with behavior. They similarly found that the overall financial knowledge of seniors was low and that there was little difference between the college majors represented, although business did have the highest knowledge scores. They also found that students believed college students should take a personal finance course and that taking a course would help them financially.

These four studies measured the level of financial knowledge of college students across various student characteristics but leave gaps in our understanding of the comprehensive financial picture of college students. For example, these studies, with the exception of Danes and Hira (1987), only surveyed undergraduate students, they limited their generalizability by only sampling students from one university, many of the surveys lacked a comprehensive range of financial issues or student characteristics, assessed at the knowledge level but did not analyze if knowledge and behavior were correlated, often failed to measure the financial attitudes of students, and none of the studies explicitly included theory.

A fifth study was the only one found that began to address some of the missing information. Chen and Volpe (1998) surveyed 924 undergraduate and graduate students at multiple universities, covered a more complete range of financial issues and student characteristics, and took into consideration how this more comprehensive look influenced some college students to be more knowledgeable than others. Furthermore, they measured how this knowledge influenced the financial opinions and decisions of college students.

Chen and Volpe (1998) had comparable overall findings to the previous four studies, concluding the financial knowledge of college students to be generally low. Similar to the other

studies they found that non-business majors, women, lower class ranked students, those under age 30, and those with little work experience demonstrated lower levels of financial knowledge. They also found that college students who had higher financial knowledge had better financial behaviors such as budgeting, spending less than their income, were more likely to invest regularly and have adequate insurance. Chen and Volpe found that students' positive financial attitudes and behaviors were significantly related to having a higher level of financial knowledge and that those with less knowledge made poor financial decisions. In general, their survey concluded that college students are not knowledgeable about their personal finances.

While these five studies begin to give a comprehensive view of the financial literacy of college students, gaps exist. The current study is designed to address these gaps. For example, this study included other influences (e.g., parents and peers) that may affect financial literacy and analyzed how these characteristics relate to financial behavior. This study also was guided by theory; an important aspect the other studies are lacking. Finally, this study diversified its sample by including, as Chen and Volpe (1998) suggested, multiple universities across various states, undergraduate and graduate students, multiple departments and majors, as well as other student characteristics such as gender, race, and income. The real question should not simply be what level of financial knowledge a college student has but how that knowledge, as well as attitudes, correlate with the student's financial behavior. This study will contribute to the literature by duplicating, in some ways, the most comprehensive study done on the financial literacy of college students (i.e., Chen & Volpe, 1998) completed almost a decade ago as well as being guided by theory, looking at influences, and using a multi-site sample.

Influences Shaping Financial Literacy

Parental Influences

Having children acquire competence in financial literacy is important if they are to function effectively in today's society (Martin & Oliva, 2001). Literature suggests parents have the most influence on the consumer socialization of their children (Alhabeeb, 1999; Brown et al., 1993; Clark et al., 2005; Danes, 1994; John, 1999; Moschis, 1985). TIAA-CREF Institute's (2001) Youth and Money Survey found that 94% of students turn to their parents for financial education yet parents are not great financial educators for their children nor do parents think it is their sole responsibility to teach finance to their children. Strong parenting practices such as modeling and teaching can influence financial literacy from a young age through the teen years (Clarke et al., 2005) and can have more influence than their child's peers (Brown et al., 1993). Often times, children follow the poor financial patterns of their parents repeating the financial difficulties faced by their parents (Clarke et al., 2005). Alhabeeb (1999) quotes Robert Fulghum saying, "Do not worry that your children never listen to you; worry that they are always watching you" (p. 2). Helping children achieve awareness of financial principles early is important because it will affect their financial competency as adults (O'Neill & Brennan, 1997).

Danes (1994) mentions the need for parents to realize when children are ready to become involved in various financial decisions so they can take advantage of these windows of opportunity by creating purposive learning experiences. According to Walstad (1996) the "effective process of making sense of the economic world and its complex and wide-ranging economic issues starts at an early age and continues throughout the years of formal schooling over a lifetime" (p. 162). John (1999) concurs and proposes that consumer socialization is a developmental process that proceeds through a series of stages as children get older. John points

out that the various stages are characterized by knowledge development, decision-making skills (i.e., financial behaviors), and influences (i.e., financial attitudes). These stages contain important changes in what children know, how they think, and how they express themselves as consumers. Harris (1995) states that children are a source of their own development and that over time, they select the environments in which they spend time.

Parents teach children how to act by relying on their values, beliefs, and knowledge (Bandura, 1986; Clarke et al., 2005). Clarke et al. found a relationship between how prepared adolescents felt to perform financial tasks to how frequently the financial tasks were modeled in the home. The financial tasks taught more frequently in the home were those most prevalent during the young adult years (goals, values, careers, budgeting, and savings). These tasks are listed here in descending order: savings, values, goals, budgeting, career, credit, taxes, insurance, homeownership, and investments.

Social learning theory is one of the theoretical frameworks by which this study is guided; particularly as it relates to the environmental influences as described in Figure 2. Children learn about finances through observations, positive reinforcement, practice and participation, and deliberate instruction by parents (Alhabeeb, 1999; Bowen, 1996; Danes, 1994; Lachance & Choquette-Bernier, 2004). Direct influences such as family discussions and keeping track of allowance could consist of an increase in knowledge and formation of attitudes, values, and behaviors (Allen et al., 2007; Moore & Stephens, 1975; Moschis, 1985; Moschis, Prahasto, & Mitchell, 1986). Hayhoe et al. (1999) found that if parents used money as a reward, the student was more likely to have four or more credit cards. Allen et al. found that students face more problematic conversations about money when coming from a home where parents argued about money. Clarke et al. (2005) found that for some, older siblings also played a role in consumer

socialization and that consumer learning took place more frequently when the financial tasks were considered the responsibility of the entire family.

Along with the influence parents can directly have on children, indirect influences may also affect consumer behavior. Previous research has found that purposive consumer training at home is rare (Ward, Wackman, & Wartella, 1977), suggesting that most of consumer learning comes from indirect family communication (Lachance & Choquette-Bernier, 2004). Consumer learning may take place as children are exposed to the mass media their parents decide to bring into the home (e.g., television, magazines and newspapers, and radio) (Moore & Moschis, 1981). Thus, what parents choose to watch or listen to indirectly teaches their children, both by seeing or hearing the information as well as noticing the emphasis parents give certain subjects (e.g., listening to a talk radio show on being financially savvy). Therefore, it is important for parents to teach financial matters in the home by communicating their financial knowledge, attitudes, and behaviors explicitly as well as implicitly. According to Danes (1994), financial socialization is:

much more inclusive than learning to effectively function in the marketplace. It is the process of acquiring and developing values, attitudes, standards, norms, knowledge, and behaviors that contribute to the financial viability and well-being of the individual” (p. 128).

Peer Influences

Alhabeeb (1999) points out that the influence of each socialization agent (family, school, media, or peer group) is determined by the extent to which the child is exposed to each. This point is one reason it is important parents start early in teaching their children knowledge, attitudes, and behaviors along with the benefits and consequences of handling money and that

they repeat these teachings often (Walstad, 1996). John (1999) gives a warning for parents to start early by pointing out that although parents are more influential at the information-gathering stage, peers become more influential at the product evaluation stage. Increased peer influence might be because youth spend more time with peers as they get older, thus being influenced more by this environment (Harris, 1995). Brown et al. (1993) found that parents do not lose their influence as more time is spent with peers but that parents retain indirect influence over their child's peers. John states materialistic attitudes are positively related to susceptibility to peer group influences, influenced by weak family communication and unstable family environments. Therefore, the positive financial communication that happens in the home, especially by parents, will affect how influential peers will be on their children.

Personal Characteristics

Previous studies have identified personal student characteristics as factors that influence consumer socialization (Chen & Volpe, 1998; Danes & Hira, 1987; Grable & Joo, 1998; Henry et al., 2001; Hayhoe et al., 2005; Markovich & DeVaney, 1997; Volpe et al., 1996). These studies have identified class rank, gender, major, age, ethnicity, social economic status, education, employment history, marital status, and life experiences as important student characteristics. For example, Danes and Hira (1987) found that being married created a necessity for learning financial issues that many students who were single may not confront (e.g., health and life insurance, budgeting, investing, and wills). Married students also have to discuss the issue of money and work out how each thinks money should be handled. Chen and Volpe (1998) point out that students are more knowledgeable and score higher on what they are familiar with like credit cards, bank accounts, and rental leases, and have lower scores in areas they haven't thought much about yet such as life insurance and investing. Lachance and

Choquette-Bernier (2004) call these life experiences trial and error. The more consumer related items (e.g., owning a credit card, having a bank account, purchasing insurance, leasing an apartment) students experience the more they should know and the more shaped their attitudes should be. Henry et al. (2001) found that of the students who used a written budget, women, married students, and older students were most likely to follow them. These findings support the proposition that “financial literacy is a process that occurs over the entire life cycle” (O’Neill & Brennan, 1997, p. 32). The consumer socialization of college students is influenced by personal student characteristics such as life experiences, social economic status, gender, and age. Each personal student characteristic can influence students’ consumer socialization and therefore their financial knowledge, attitudes, and behaviors.

In this study, the personal student characteristics of gender, class rank, and SES are employed. Gender was used in all previous studies and although not significant in each study, it was used in this study to see if gender differences would be found. Class rank was also used in most previous studies and correlates strongly with age. Differences between class rank were found in other studies (Chen & Volpe, 1998; Danes & Hira, 1987) and is an essential characteristic for the student population. Similar to other studies, the researcher used SES to see if there were any differences between financial knowledge, attitudes, and behaviors. Parental income was used as a proxy for SES because the sample was made up of college students (76% between the ages of 18-22) and parental income may best represent the construct of SES and the influence of parents across the sample. Lachance and Choquette-Bernier (2004) report that social economic status influences the level of consumer knowledge by forcing the young adult with limited resources to develop more knowledge so they do not make costly mistakes. This finding differs from Davies and Lea’s (1995) study on credit card use which states that students

with more resources (i.e., credit cards) had more knowledge because of their increased familiarity and use of them. Both could be true depending on each student's personality and attitudes toward finances (Hayhoe, 2002). Hayhoe et al. (1999) and Norvilitis et al. (2003) found that students' credit card use was related to their attitudes toward money. These findings suggest that knowledge, attitude, and behavior can be influenced by the personal characteristics of gender, class rank and SES.

Summary

This literature review has provided an overview of the theoretical framework that guides this research, the benefits of financial literacy, previous studies on the financial literacy of college students, and the parental and peer influences and personal characteristics that shape the financial knowledge, attitudes, and behaviors of college students. The review also identified gaps in our understanding of the financial literacy and behavior of college students. This study expanded this understanding by addressing these gaps.

CHAPTER THREE

Methods

Research Design

The purpose of this descriptive cross sectional on-line survey design study was three fold. First, I investigated the personal financial literacy (knowledge, attitudes and behavior) of a sample of undergraduate and graduate college students using the personal characteristics of gender, class rank, and SES. Second, I examined parental and peer influences on the level of financial literacy of college students. Finally, I examined how college students' financial knowledge and attitudes correlate with their financial behavior.

Participant Recruitment

The research procedures began by obtaining approval of the Virginia Tech (VT) Institutional Review Board (IRB) for research involving human subjects. Once IRB approval was obtained the study was initiated. Each university involved in the study (see Appendix A) was called to ask if they would accept the VT IRB. All universities with the exception of the University of Tennessee agreed to accept the VT IRB. Approval was obtained from the University of Tennessee IRB separately.

Participants in this study were undergraduate and graduate college students, 18-35 years of age, recruited as a convenience sample from the following states: Tennessee, Nevada, Oklahoma, South Dakota, Idaho, and Virginia. Public, private, land-grant, research, liberal arts, and undergraduate universities are included in the sample. A snow balling technique was used to obtain universities (Pedhazur & Schmelkin, 1991). Professors from Virginia Tech as well as other universities were asked for their assistance in nominating colleagues who might invite their students to participate in my study. A list of participating faculty and their universities can be

found in Appendix A. Each professor was contacted by an email discussing the study, its value, what would be needed from them, and what would be required of their students; the survey length and time, IRB approval, time of the year the survey would be available, and the type of students needed was explained. I also provided each professor a packet containing a cover letter explaining the purpose of the study, its significance, and a copy of the instrument which included risk factors, informed consent, and confidentiality. The sample cover letter and email can be found in Appendix B. Once I received their permission for participation and had IRB approval for each school, I informed them the survey was available.

The professors teach at a variety of public, private, research, and non-research universities across six different states (see Appendix A). Class ranking of the participants ranged from freshman (first year students) to masters and doctoral students. There was also a wide range of majors represented from human development to science, engineering, and business. One thousand eighty-four students were invited to complete surveys with 462 students responding for an overall response rate of 43%. For university name and type, student class rank and major, and response rate from each university, see Appendix A.

Each professor agreed to invite their students to participate in the on-line survey. At three of the universities (i.e., University of Tennessee, University of South Dakota, and University of Nevada Las Vegas) the professors had a research participation requirement as part of the class. Participation in the study was one way to fulfill this requirement and was completely voluntary. For the other universities, the professors informed students of the study and asked for their voluntary participation. To motivate students to participate, each student had the opportunity of entering a drawing for an iPod. Using Excel's random generator program, a

winner was chosen from all who participated. A student from BYU Idaho was contacted by email on June 6, 2006 informing him that he had won the iPod; the iPod was sent a week later.

Survey Instrument

The College Student Financial Literacy Survey (CSFLS) was created to collect data specifically for this study. The CSFLS (Appendix D), created using Survey.vt.edu, measures financial knowledge, financial attitudes, financial behavior, influences (e.g., parental and peer), and personal characteristics that affect financial literacy. The survey consists of 44 content questions as well as 18 personal characteristic items and took 10-20 minutes to complete.

The CSFLS addresses one of the gaps identified in the literature review by adding a specific section on influences that may affect financial literacy. The Table of Specifications (Table 9) for the CSFLS can be found in Appendix D. Some of the items on financial literacy come from the quantitative survey created by Chen and Volpe (1998). The authors were contacted and permission was received by email to use their survey. In addition, I selected relevant questions from the Personal Financial Survey (Jump\$tart, 2004), the College Student Consumer Knowledge Survey (Consumer Federation of America, 1993), and the Financial Management Survey (Micomonaco, 2003).

After selecting all relevant questions from each survey I grouped them into categories (i.e., knowledge, attitudes, behaviors, influences, and student characteristics) and removed less relevant questions until each category had multiple questions with no duplication of topics. I created various questions from the literature because there were gaps in the available surveys, none of them having questions useful for my study about parental or peer influences on student's financial literacy. Appendix C contains a Survey Questions Matrix (Table 8) depicting which survey questions correlate with each research question as well as the source of each question.

The financial knowledge section has 23 questions on general financial knowledge, saving and borrowing, insurance, and investments. For example, participants were asked which factors lenders use when deciding whether to approve a loan. These questions will measure the participants' level of financial knowledge.

The financial attitudes section has 6 questions regarding students' perception of money and finances. Participants were asked to rate the importance of various items using a scale of 1-5 (1-not important, 2-somewhat unimportant, 3-not sure, 4-somewhat important, 5-very important). For example, students rated items such as: maintaining adequate financial records, spending less than your income, and planning and implementing a regular savings and investment program. These questions will measure the participants' financial attitudes.

The financial behaviors section has 6 questions regarding the current financial behaviors of the participants. Participants were asked to rate items using a scale of 1-5 (1-not at all true of me to 5-very true of me). For example, students were asked if they budget and track spending, contribute to a savings account regularly, and read over and understand apartment leases and loan agreements before they sign. These questions will measure the participants' financial behaviors.

The parental and peer influences section contains 6 questions. Participants were asked to rate items using a scale of 1-5 (1-none to 5-a lot). For example, students were asked: How much did you learn about managing your money from the following: parents and peers. These questions will measure the influences of parents and peers on participants' financial literacy.

In the final section, students provided personal characteristics. Some personal characteristics have been found to correlate with financial knowledge, attitudes, and behaviors (Chen & Volpe, 1998; Danes & Hira, 1987).

Psychometric Properties of the CSFLS: Validity and Reliability

The validity of an instrument is how well the instrument measures what it is supposed to measure (Crocker & Algina, 1986). To remove systematic error and enhance the content and face validity of the College Student Financial Literacy Survey, I used four experts to independently assess the items (Crocker & Algina, 1986). These experts are faculty members who have expertise in financial management as well as survey design. They were asked to provide feedback on whether the instrument would provide the data necessary to answer the research questions, whether the questions were a good measure of the constructs, and whether anything needed to be added to the survey in order to provide the desired data.

After incorporating the feedback from these four experts, the clarity and readability of the instrument was tested and refined further (Crocker & Algina, 1986) by having six diverse (e.g., gender, class rank, and family income) students take the on-line survey. The participants were asked about wording and clarity of instructions and survey items, difficulties in filling out the on-line survey, the length and completion time of the survey, if there were any technical errors or problems, and if any questions were confusing. The feedback received from these participants was used to revise the instrument again for the main research.

Reliability is the extent to which an instrument is consistent in its measurement over time and across situations (Crocker & Algina, 1986). In other words, if someone were to take the survey various times, the individual's score should remain relatively consistent with little deviation. Systematic and random error can make scores unreliable. A high reliability coefficient signifies that there is consistency of exam scores but it does not signify the test measured the construct correctly (Crocker & Algina, 1986). Thus, an instrument can be reliable without being valid but it cannot be valid unless it is reliable (Pedhazur & Schmelkin, 1991).

The reliability of my survey was assessed using Cronbach's Alpha. This allowed me to measure the overall reliability and consistency of the scales from my survey (Crocker & Algina, 1986). The reliability for the financial knowledge section of the survey (questions 20-44) is 0.77. The reliability for the financial attitudes section (questions 1, 5, and 6) is 0.78. The reliability for the financial behavior section (questions 7, 11-12) is 0.75. These are acceptable alpha levels showing the survey has good reliability.

Data Collection

The College Student Financial Literacy Survey (CSFLS) was conducted on-line. There are pros and cons to using an online survey. According to Dillman (2000), "There is no other method of collecting survey data that offers so much potential for so little cost as Web surveys" (p. 400). Using an online survey allowed me to increase the diversity of my sample by going outside the Virginia Tech campus and recruiting students from five other states and five other universities. Students at these universities come from all parts of the country and all socioeconomic levels. The cost of paper survey duplication and mailing would have been unreasonable for this project. Collecting data on-line reduced the time and costs of paper, postage, mail out, and data entry.

There are some concerns about using on-line surveys. The percentage of people without Internet access, in particular the more vulnerable populations (e.g., elderly and poor), is still fairly large (Dillman, 2000; Eysenbach, 2004). Also, many who have access to a computer and Internet may have a slower Internet connection or an older computer model that will not handle the website user specifications (Dillman, 2000; Eysenbach, 2004). Because everyone in the convenience sample were college students with easy access to up-to-date computers with Internet

capacity and were knowledgeable on how on-line surveys work, these limitations had less impact on the study.

Another concern about using on-line surveys is that the design and display of the survey might be different (Dillman, 2000) depending on the operation system (e.g., PC versus Mac) or specific Web browser (e.g., Internet Explorer versus Netscape). To correct for this, I checked the display of the survey on PC and Mac as well as Internet Explorer, Netscape, and Firefox prior to administration.

Another limitation of using on-line surveys is knowing who has participated and if they only participated once. According to Dillman (2000), if the survey is open to a large population, the response rate is usually very small and those who do participate might do so multiple times. The way I verified that students only participated once in my survey is by separating the incentive (chance to win an iPod) from the actual survey. Students had to take my survey and finish before they could continue on to the follow-up survey where they entered personal information in order to enter the iPod drawing. Their answers from the main survey were not connected in any way with their personal information for the iPod drawing. Since my survey took 10-20 minutes to complete and because the iPod drawing was a separate survey, included their personal information, and could only be accessed by completing the first survey, students only took my survey one time.

In conclusion, if research is conducted within a sample having access to and being comfortable with computers and the Internet (e.g., college students), on-line surveys have been found to be as good as, and in some instances, better (e.g., less expensive) than a paper and pencil survey (Carini, Hayek, Kuh, Kennedy, & Ouimet, 2003; Dillman, 2000).

The online survey was made available mid April, 2006. When the professors were notified the instrument was ready they forwarded an email I sent them to their students (Appendix B) and added an invitation of their own to encourage participation. They also followed up with students to remind them the survey was available. I followed up with the professors by either contacting them once I received some submissions from their university or a week after I notified them the survey was available if I hadn't received any submissions from their university. This was more difficult to do for the professors at Virginia Tech because I had no way of knowing in which class the Tech students participated. I therefore verified with each Virginia Tech professor a week after the notification that they had indeed invited their students to participate in the survey.

The survey was open from mid April through the end of the semester (mid May at some universities), allowing sufficient time for the students to participate. Informed consent was received from each student as they participated in the survey. The first page of the survey (see Appendix B) included the informed consent, which states that by completing and submitting the survey, consent was implied. Each professor provided me with the total number of students in each of the invited classes allowing me to calculate the response rate (see Appendix A). The goal for this project was to recruit a sample of 500 undergraduate and graduate college student participants. The larger sample size was desired because it yields smaller degrees of bias in the statistical analyses (Bollen, 1989) and provides the opportunity to have a more diverse sample. Out of 1,084 students invited, 478 total students completed the survey with 462 usable entries, giving a 43% response/completion rate.

Data Analysis

The purpose of this study was to investigate the personal financial literacy (knowledge, attitudes and behavior) of a sample of undergraduate and graduate college students using the personal characteristics of gender, class rank, and SES; examine parental and peer influences on their level of financial literacy; and examine correlations between financial knowledge and attitudes and financial behavior. The methods of analysis described in this chapter were sufficient to respond to the research questions proposed in this study.

Data Preparation

The data analysis process for this research study was conducted in two phases. In the first phase, data preparation, the data were cleaned and organized for analysis. Survey.vt.edu was used to conduct the on-line survey. The data from Survey.vt.edu were downloaded to Excel where I changed all responses to numeric answers. Once all answers were numeric, the data were uploaded from Excel to SPSS where I further cleaned the data by removing 14 incomplete surveys. All 12 surveys by PhD students were also eliminated as outliers, leaving 450 total surveys for analysis. A code book was created describing how the data were cleaned and coded.

For the financial knowledge questions (20-44), incorrect answers were coded as 0 and correct answers were coded as 1. Financial knowledge was tested in four main areas: general knowledge, saving and borrowing, investments, and insurance. A financial knowledge sum score was also created for each student.

The financial attitude mean score was created using questions 1, 5, and 6. These questions were coded on a Likert-type scale of 1-5. For question 1 (How sure do you feel about your ability to manage your own finances) there were four answers (1 = not sure at all, 2 = not too sure, 3 = somewhat sure, and 4 = very sure) coded 1=1, 2=2, 3=4, and 4=5. Question 5 had 4

items (a-d; for example, rate the importance of spending less than your income) and 5 possible answers (1 = not important, 2 = somewhat unimportant, 3 = not sure, 4 = somewhat important, 5 = very important), coded 1-5 to match their answer. Question 6 had multiple items (a-q; for example, my finances are a significant source of worry or “hassle” for me) which also used a scale of 1-5 (1 = not at all true of me and 5 = very true of me) coded 1-5 to match their answer. Items c, d, e, f, h, and o were negatively worded and were therefore reverse coded. Items i and p were not used in the analysis because they were neither positive nor negative and might skew the attitude score.

The financial behavior mean score was created using questions 7, 11, and 12. These questions were coded on a Likert-type scale of 1-5. Question 7 used a scale of 1-5 asking about being either thrifty or spending-oriented. Question 11 asked about maintaining financial records and only had 3 possible answers (1 = maintain no records, 2 = maintain minimal records, and 3 = maintain very detailed records), coded 1 = 1, 2 = 3, and 3 = 5 to be consistent with the other financial behavior questions. Question 12 had multiple items (a-p; for example, I budget and track spending) which used a scale of 1-5 (1 = not at all true of me and 5 = very true of me) coded 1-5 to match their answer. Items c, d, e, and g were negatively worded and were therefore reverse coded. Item f was not used in the analysis because it was neither positive nor negative and might skew the behavior score.

The personal characteristics of gender, class rank, and SES were used. I coded gender (female = 0, male = 1), class rank (Freshman = 1, Sophomore = 2, Junior = 3, Senior = 4, Masters = 5), and SES (0-\$34,999 = 1, \$35,000 - \$49,999 = 2, \$50,000 - \$79,999 = 3, \$80,000 or more = 4). For parental and peer influences question 13 (how much did you learn about managing your money from the following) was used. Answers were on a Likert-type scale of 1-

5 (1 = none, 2 = not much, 3 = not applicable, 4 = some, 5 = a lot). In order to analyze the financial knowledge, attitudes, and behavior of students by level of parental or peer influence they received, I coded options 1-3 = 0 (low), and 4-5 = 1 (high).

Analysis by Research Question

The second data analysis phase consisted of analyzing the cleaned and coded data using the SPSS program. In all significance tests, 0.05 was the minimum criterion used. Results from these statistical analyses are presented in Chapter Four.

Question One: Are there differences in financial knowledge based on gender, class rank, and SES was analyzed by creating a financial knowledge sum score, using 26 items (questions 20-44). T-Tests and ANOVAs were used to find mean differences in gender, class rank, and SES and differences between groups.

Question Two: Are there differences in financial attitudes based on gender, class rank, and SES was analyzed by creating a financial attitude mean score, using 20 items (questions 1, 5 and 6). T-Tests and ANOVAs were used to find mean differences in gender, class rank, and SES and differences between groups.

Question Three: Are there differences in financial behaviors based on gender, class rank, and SES was analyzed by creating a financial behavior mean score, using 17 items (questions 7, 11 and 12). T-Tests and ANOVAs were used to find mean differences in gender, class rank, and SES and differences between groups.

Question Four: Are there differences in financial knowledge, attitudes, and behaviors based on level of parental and/or peer influences was analyzed by using T-Tests to find the mean differences in level of parent influence and level of peer influence, using 2 items (question 13).

Question Five: Are college students' financial behaviors correlated with their financial knowledge and attitudes was analyzed by using the financial knowledge sum score and the financial attitude and behavior mean scores (as explained above). Pearson's correlation was used to find the correlation.

CHAPTER FOUR

Results

The purpose of this chapter is to report the results of the data analysis. The chapter is organized into two sections. The first section provides a description of the demographic characteristics of the sample. The second section reports the results of the study and is organized around the research questions.

Description of the Sample

Out of 1,084 students invited, 478 total students completed the survey with 462 usable entries, giving a 43% response/completion rate. Surveys completed by PhD students ($n=12$) were outliers and were deleted, leaving 450 entries for data analysis. The demographic characteristics of the sample are summarized in Table 1. Forty-one percent of the participants ($n=190$) identified themselves as male. Fifty-nine percent of the participants ($n=267$) identified themselves as female. A majority of participants, 87%, ($n=390$) identified themselves as Caucasian-not Hispanic. Other ethnicities participants identified are: 4% ($n=17$) Asian, 3% ($n=15$) African American, 2% ($n=8$) Hispanic, 1% ($n=5$) Multiracial, 2% ($n=8$) other, with 1% ($n=5$) not responding. This sample is representative of the overall population at the six universities.

A majority of the participants, 80%, ($n=366$) were between the ages of 18 and 22. Other age ranges and participant percentages were: 16% ($n=71$) between 23 and 29, and 4% ($n=16$) between 30 and 39. For academic rankings 30% ($n=137$) indicated they were first-year freshmen and 30% ($n=135$) were seniors. Other rankings were 17% ($n=78$) sophomores, 16% ($n=72$) were juniors, and 6% ($n=25$) were master's students. Family income was relatively high with 39% ($n=181$) of the participants reporting \$80,000 or more. Twenty-four percent ($n=107$) reported a

family income of \$50,000-\$79,999. Only 14% ($n=60$) of participants indicated an annual family income of less than \$35,000 and 10% of \$35,000-\$49,999, making my sample largely from affluent families. College expenses were handled fully by 21% ($n=96$) of the participants while 27% ($n=123$) had college paid fully by parents.

Education level of parents was also relatively high with 34% ($n=156$) of fathers earning a bachelor's degree and 37% ($n=167$) of mothers. Twenty-one percent ($n=94$) of fathers and 13% ($n=59$) of mothers received an advanced degree. Only 3% ($n=11$) of fathers and 2% ($n=7$) of mothers had completed less than high school with 29% ($n=132$) of fathers and 29% ($n=134$) of mothers completing high school or equivalent.

Not all of the demographic characteristics of the sample, summarized in Table 1, are used in the analysis, but are included here to provide a better picture of my sample. For example, schooling of father or mother is not analyzed for this study but it may provide more understanding of the analysis that was done on the influence parents had on their children.

Table 1

Demographic Characteristics of the Sample (N = 450)

	Characteristics	n	%
Gender	Female	267	59
	Male	190	41
Race	Caucasian-not Hispanic	390	87
	Asian	17	4
	African American	15	3
	Hispanic	8	2
	Multiracial	5	1
	Other	8	2
	No response	5	1
Age	18-22	366	80
	23-29	71	16
	30-39	16	4
Academic Ranking	First-year Freshmen	137	30
	Sophomore	78	17
	Junior	72	16
	Senior	135	30
	Masters	25	6
Socioeconomic Status	<\$35,000	60	14
	\$35,000-\$49,999	48	10
	\$50,000-\$79,999	107	24
	>\$80,000	181	39
	Don't Know	62	13
College Education Paid	Self (100%)	96	21
	Parents (100%)	123	27
Level of Schooling (Father)	Less than High School	11	3
	High School or Equivalent	132	29
	Associates	45	10
	Bachelor	156	34
	Advanced Degree	94	21
	Other	15	3
Level of Schooling (Mother)	Less than High School	7	2
	High School or Equivalent	134	29
	Associates	78	17
	Bachelor	167	37
	Advanced Degree	59	13
	Other	9	2

Results Reported by Research Question

Question One: Are there differences in financial knowledge based on gender, class rank, and SES?

Question one was analyzed using a T-test to look at the differences between the dichotomous personal characteristic of gender and the continuous financial knowledge sum score. ANOVA was used to look at the differences between the categorical personal characteristics of class rank and SES and the continuous financial knowledge sum score.

Table 2

Differences in Financial Knowledge by Gender, Class Rank and SES (N=450)

Characteristics	N	Mean	s.d.	df	F	p
Gender				1	3.23	.073
Male	183	16.12	5.14			
Female	262	16.22	4.53			
Class Rank				4	35.13	.000*
Freshmen	137	13.09	4.52			
Sophomore	78	15.32	4.55			
Junior	72	17.65	3.55			
Senior	135	18.24	3.84			
Masters	25	20.04	4.64			
SES				3	1.62	.169
<\$35,000	60	16.38	4.95			
\$35,000-\$49,999	45	16.22	4.69			
\$50,000-\$79,999	106	15.73	5.16			
>\$80,000	174	16.74	4.12			

*p < .001.

No differences were found in level of financial knowledge between males and females.

Differences were found in level of financial knowledge between class ranks. Financial knowledge increases incrementally from first-year freshmen to masters students; being significant at the p<.001 level. No differences were found in level of financial knowledge between SES levels.

Question Two: Are there differences in financial attitudes based on gender, class rank, and SES?

Question two was analyzed using a T-test to look at the differences between the dichotomous personal characteristic of gender and the continuous financial attitude mean score. ANOVA was used to look at the differences between the categorical personal characteristics of class rank and SES and the continuous financial attitude mean score.

Table 3

Differences in Financial Attitudes by Gender, Class Rank and SES (N=450)

Characteristics	N	Mean	s.d.	df	F	p
Gender				1	.126	.723
Male	183	3.75	.45			
Female	262	3.75	.45			
Class Rank				4	10.11	.000*
Freshmen	137	3.60	.44			
Sophomore	78	3.69	.40			
Junior	72	3.79	.39			
Senior	135	3.85	.43			
Masters	25	4.09	.57			
SES				3	1.10	.358
<\$35,000	60	3.68	.49			
\$35,000-\$49,999	45	3.73	.38			
\$50,000-\$79,999	106	3.78	.45			
>\$80,000	174	3.76	.46			

*p < .001.

No differences were found in level of financial attitudes between males and females.

Differences were found in level of financial attitudes between class ranks. Financial attitude increases incrementally from first-year freshmen to masters students; being significant at the p<.001 level. No differences were found in level of financial attitudes between SES levels.

Question Three: Are there differences in financial behavior based on gender, class rank, and SES?

Question three was analyzed using a T-test to look at the differences between the dichotomous personal characteristic of gender and the continuous financial behavior mean score. ANOVA was used to look at the differences between the categorical personal characteristics of class rank and SES and the continuous financial behavior mean score.

Table 4

Differences in Financial Behavior by Gender, Class Rank and SES (N=450)

Characteristics	N	Mean	s.d.	df	F	p
Gender				1	.084	.772
Male	182	3.24	.55			
Female	262	3.25	.56			
Class Rank				4	12.39	.000*
Freshmen	136	3.08	.54			
Sophomore	78	3.12	.48			
Junior	72	3.33	.45			
Senior	135	3.32	.57			
Masters	25	3.81	.65			
SES				3	1.66	.160
<\$35,000	60	3.20	.63			
\$35,000-\$49,999	44	3.10	.41			
\$50,000-\$79,999	106	3.26	.55			
>\$80,000	174	3.29	.56			

*p < .001.

No differences were found in level of financial behavior between males and females.

Differences were found in level of financial behavior between class ranks. Financial behavior increases incrementally from first-year freshmen to masters students; being significant at the p<.001 level. No differences were found in level of financial behavior between SES levels.

Question Four: Are there differences in financial knowledge, attitudes, and behaviors based on level of parental and/or peer influences?

Question four was analyzed using a T-test to find the relationship between the dichotomous independent variables of parental and peer influences and the continuous dependent variables of financial knowledge, attitude, and behavior scores.

Table 5

Differences in Financial Knowledge, Attitude and Behavior by Level of Parental and Peer Influences (N=450)

Characteristics	N	Mean	s.d.	F	p
Parental Influences					
High Influence	373				
Knowledge		16.21	4.38	29.09	.000**
Attitude		3.76	.42	10.49	.001**
Behavior		3.24	.53	3.78	.052*
Low Influences	72				
Knowledge		15.96	6.37		
Attitude		3.69	.56		
Behavior		3.23	.66		
Peer Influences					
High Influence	118				
Knowledge		15.56	4.90	.07	.79
Attitude		3.69	.47	1.27	.26
Behavior		3.21	.55	.01	.93
Low Influences	329				
Knowledge		16.39	4.68		
Attitude		3.77	.44		
Behavior		3.25	.56		

*p < .05. **p < .001.

Differences were found in financial knowledge (p<.001), attitudes (p<.001), and behaviors (p<.05) based on level of parental influence. Students who reported they learned either some or a lot about managing their money from parents had higher financial knowledge, attitude, and

behavior scores than students who reported learning none or not much about managing their money from their parents. Differences were not found in financial knowledge, attitudes, and behaviors based on level of peer influence.

Question Five: Are College students' financial behaviors correlated with their financial knowledge and attitudes?

Question five was analyzed using Pearson's Correlation with the continuous variables of knowledge sum score, attitude mean score, and behavior mean score. Pearson's Correlation was used to determine if students with a higher knowledge score or a higher attitude score had a higher financial behavior score.

Table 6

Correlations Between Financial Knowledge, Attitude and Behavior (N=450)

Subscale	Knowledge	Attitude	Behavior
Knowledge	—	.351*	.275*
Attitude		—	.649*
Behavior			—

* $p < .01$ (2-tailed).

A correlation was found between financial knowledge, financial attitudes, and financial behavior. Students who had a higher financial knowledge score also had a higher financial behavior score. Students with a higher financial attitude score also had a higher financial behavior score. Also, students with a higher financial knowledge score had a higher financial attitude score. Each variable was correlated with the other two variables at $p < .01$ significance level.

The results reported in this chapter show students having a low level of financial literacy which is influenced by parents and class rank but not gender, SES, or peers. The findings and implications of these data are discussed in chapter five.

CHAPTER FIVE

Discussion and Implications

The study examined the personal financial literacy (knowledge, attitudes and behavior) of a sample of undergraduate and graduate college students using the personal characteristics of gender, class rank, and SES. In addition, the study examined parental and peer influences on the level of financial literacy of college students. Finally, the study examined how college students' financial knowledge and attitudes correlated with their financial behavior.

This chapter describes the results of the study in four sections. The first section discusses the findings of the study reported by the research questions. The next section compares the results of this study to findings from previous research. The third section discusses implications of the findings for future research, practice and policy and discusses the limitations of the study. Finally, some conclusions are drawn.

Discussion

The first research question examined the differences in college students' financial knowledge based on gender, class rank and SES. No differences were found in level of financial knowledge between males and females. This finding is not surprising because my participants had similar previous financial education through the school system, regardless of gender. Differences were found in the level of financial knowledge between class ranks. Financial knowledge increased incrementally from first-year freshmen to masters' students. This suggests that students gained financial knowledge as they grew older over time; this may be due to education or trial and error through life experiences. Older students may be motivated to learn more because they have more financial decisions to make as they get older (e.g., changing apartments, acquiring more credit cards or loans, getting married). No differences were found in

level of financial knowledge between SES levels. This finding suggests that whether the students' parents' household income was \$35,000 or \$80,000, SES had no effect on students' financial knowledge. This is surprising because it would seem that students living in more affluent households would have more experience with money; of course, it may be that students in households with less money had to learn to be frugal.

The second research question examined the differences in college students financial attitudes based on gender, class rank and SES. No differences were found in level of financial attitudes between males and females. Similar to findings about financial knowledge, because similar financial education tends to level the playing field among male and female college students in my sample, having similar attitudes across gender makes sense. Although parents may financially socialize their children differently depending on gender. Differences, however, were found in the level of financial attitudes between class ranks. Comparable to financial knowledge, financial attitude scores increased incrementally from first-year freshmen to masters students. This suggests that students' attitudes may change as they gain more financial knowledge. Again, this may be due to education or trial and error through life experiences; this would be a good topic for future research. No differences were found in level of financial attitude between SES levels. This finding suggests that no matter what the students' parents' household income was, financial attitudes were not affected. This is surprising because students living in households with higher incomes could have the attitude that money comes easily and they can have whatever they want; on the other hand, they may have learned that to have money one needs to budget, save, and invest. The same may be true for students in households with less money; they may have had to learn to be frugal with their money. Also, the use of parental income as the only variable for SES may be problematic. Wealth of the family may be another

variable that could be combined with income to create a better construct of SES. Wealth may be a better determinant than income of financial attitudes and behaviors because of possible explicit or implicit modeling that may occur in homes with more wealth.

The third research question examined the differences in college students' financial behavior based on gender, class rank and SES. No differences were found in level of financial behavior between males and females. This finding was originally surprising but parallels the finding of no differences between gender in financial knowledge and attitudes. Differences were found, however, in the level of financial behavior between class ranks. Similar to financial knowledge and attitudes, financial behavior increased incrementally from first-year freshmen to masters' students. This suggests that as students' knowledge and attitudes change over time, their behavior changes as well. Financial behavior may change due to increased education from school or their job or trial and error through life experiences. No differences were found in level of financial behavior between SES levels. This finding suggests that if neither financial knowledge nor financial attitudes change across SES levels, financial behavior is not likely to change.

The fourth research question looked at differences in financial knowledge, attitudes, and behaviors based on level of parental and/or peer influences. This question is different from questions asked in previous studies of financial literacy. Measuring differences in financial knowledge, attitudes, and behaviors based on the influence of parents and/or peers is new in the literature. Social learning theory would suggest that individuals learn through their interactions with their environment, especially where they spend the most time and where they spent time in the early years of life. Parents have been found to influence their children in a myriad of ways, developmentally and socially. In this study, differences were found in financial knowledge

($p < .001$), attitudes ($p < .001$), and behaviors ($p < .05$) based on level of parental influence. This means that parents in this study influenced what their children knew financially, as well as their financial attitudes and behaviors. This could be a positive or negative influence depending on what their parents know, their attitude toward money, and how they act with their money.

Differences were not found in financial knowledge, attitudes, and behaviors based on level of peer influence. This finding was surprising as my population consisted of students living away from parents, some for the first time, and possibly desiring to fit in and be accepted. The finding of no significant peer influence financially is interesting. This may be due to the increased connection to parents and their influence through cell phones and the Internet that we see today. It may be because 27% of the parents of participants in my study were totally paying for their college education and conceivably exerting control. It may be due to the influence they have received from their parents over time in the home environment versus the limited amount of time spent discussing finances with college peers. Whatever the reason, in this study, parents influenced the financial knowledge, attitudes, and behaviors of their students and peers did not.

The final research question examined the correlation between students' financial knowledge, attitudes, and behaviors. A correlation was found ($p < .01$) between financial knowledge, financial attitudes, and financial behavior. Having each variable correlated with the other two was an interesting analysis that helped explain some of the other findings. For example, if a variable was significant (e.g., class rank or parental influence), it was significant across all three variables of knowledge, attitude, and behavior. The same was true for variables that were not significant (e.g., gender, SES, peer influence). This finding supports the idea that financial education can change knowledge, leading to a change in attitude as well as behavior.

The key findings that stood out from this research were the significant differences found in students' financial literacy due to class rank and parental influence. Gender, SES and peer influence were not found significant in college students' financial literacy. Another interesting finding was that the correlations found were consistent across financial knowledge, attitudes, and behaviors.

Relationship of the Findings to Prior Research

Past research on financial knowledge, attitudes, and behavior has mixed results. The results of this study support and challenge the literature. Comparisons with previous studies are discussed in five sections: (a) differences in knowledge by gender, class rank, and SES, (b) differences in attitudes by gender, class rank, and SES, (c) differences in behavior by gender, class rank, and SES, (d) differences based on parental or peer influences and (e) the correlation between students' financial knowledge, attitudes, and behaviors.

Differences in Knowledge by Gender, Class Rank, and SES

Based on surveys by the Consumer Federation of America (1993) and Jump\$tart Coalition (2004), American high school and college students have little consumer knowledge. Chen and Volpe (1998) had comparable overall findings concluding the financial knowledge of college students (53%) to be generally low. Volpe et al. (1996), focused primarily on investment knowledge and had similar overall findings to previous studies showing students achieving a low average literacy score of 44%. Markovich and DeVaney (1997) similarly found that the overall financial knowledge of seniors was low. The current study also found the financial knowledge of college students to be low with an overall knowledge score of 57.6%.

Gender

Markovich and DeVaney (1997) found that males had more financial knowledge than females as measured by the total knowledge score from their survey. Similarly, Chen and Volpe (1998) also found women in their study demonstrated lower levels of financial knowledge. An earlier study by Danes and Hira (1987) found mixed results indicating that males know more than females in most areas (i.e., insurance and personal loans) but that females knew more about general financial management.

This study, which measured overall knowledge, found no difference in financial knowledge by gender. An analysis of the topical areas may find gender differences, as was found by Danes and Hira (1987). The sample of college students in this study came from classes whose professors were asked to help with the study instead of being randomly selected across the various campuses. Some students even came from classes where financial management was taught. Because a good number of students, both male and female, were in these financial management classes, they may have similar financial education to the other students in their classes. As was stated earlier, Grable and Joo (1998) found that financial education “leveled the playing field” in regards to gender differences. The similar level of financial knowledge between males and females in these classes may have impacted the gender knowledge scores.

Class Rank

Danes and Hira (1987) found that upper classmen knew more than lower classmen (i.e., seniors and grad students knew more than freshmen) yet when a regression analysis was done, class rank was not significant. Chen and Volpe (1998) also found that lower class ranked students demonstrated lower levels of financial knowledge. The current study corroborated this

finding with a significant linear effect where Freshmen scored lowest on the financial knowledge scale and master's students scored the highest.

SES

Lachance and Choquette-Bernier (2004) report that SES influences the level of consumer knowledge by forcing the young adult with limited resources to develop more knowledge so they do not make costly mistakes. This finding differs from Davies and Lea's (1995) study on credit card use which states that students with more resources (i.e., credit cards) had more knowledge because of their increased familiarity and use of them. Both could be true depending on each student's personality and attitudes toward finances (Hayhoe, 2002).

Chen and Volpe (1998) found significant difference in knowledge across SES ($p < .05$) when using one-way ANOVA but SES lost any significant impact when a logistic regression was used to explain level of knowledge. Danes and Hira (1987) also found SES not significant when a regression analysis was used. The present study had similar findings, showing no difference between financial knowledge and level of SES.

Differences in Attitudes by Gender, Class Rank, and SES

Previous studies often failed to measure the financial attitudes of students. Although there have been multiple studies on financial management and college students' attitudes, none of these findings directly related to the present study. Measurements of attitude in the previous studies was used in relation to financial knowledge only and not gender, class rank, or SES. For example, Chen and Volpe (1998) measured financial attitude as it related to financial knowledge but not by gender, class rank, or SES. They found that students' positive financial attitudes and behaviors were significantly related to having a higher level of financial knowledge and that those with less knowledge held negative opinions (i.e., poor attitudes) and made poor financial decisions.

The present study, therefore, is unique in measuring the differences in college students' attitudes by gender, class rank and SES. Similar to financial knowledge, no differences were found for attitude by gender or SES; significant differences ($p < .001$) were found however, for class rank. Also, similar to the financial knowledge finding, a significant linear effect was found where Freshmen scored lowest on the financial attitude scale and master's students scored the highest.

Differences in Behavior by Gender, Class Rank, and SES

Henry et al. (2001) found a majority of the students did not have or use a written budget (i.e., poor financial behavior). Of those who did, women and older students were most likely to follow their budgets. JumpStart (2004) found that students are graduating from high school without the ability to make wise financial decisions, which looking at the linearity of class rank from the present study, makes complete sense.

Chen and Volpe (1998) found that college students who had higher financial knowledge had better financial behaviors such as budgeting, spending less than their income, were more likely to invest regularly and have adequate insurance, yet did not relate behavior to gender, class rank, or SES.

The present study did look at differences in behavior by gender, class rank, and SES. Although there may be some significant differences when individual questions or areas are examined, overall there were no significant behavior differences by gender or SES. Significant differences were found by class rank. This means that as students in this study progressed through college, got older, and gained more experience and education, they also made better financial decisions and had better financial behavior.

Differences Based on Parental or Peer Influences

Literature suggests parents have the most influence on the consumer socialization of their children (Alhabeeb, 1999; Brown et al., 1993; Clark et al., 2005; Danes, 1994; John, 1999; Moschis, 1985). TIAA-CREF Institute's (2001) Youth and Money Survey found that 94% of students turn to their parents for financial education. This study found this to be the case, finding that parents significantly influenced their children's financial knowledge ($p < .001$), attitudes ($p < .001$), and behavior ($p < .05$).

This can be a positive or negative influence depending on what parents know, what their attitudes toward money are, and the financial decisions they make. According to Princeton Survey Research Associates, parents only scored 42% correct on their personal finance survey. Often times, children follow the poor financial patterns of their parents repeating the financial difficulties faced by their parents (Clarke et al., 2005).

Clarke et al. (2005) found a relationship between how prepared adolescents felt to perform financial tasks to how frequently the financial tasks were modeled in the home. The financial goals and values taught more frequently in the home were those most prevalent during the young adult years.

Strong parenting practices such as modeling and teaching can influence financial literacy from a young age through the teen years (Clarke et al., 2005) and can have more influence than their child's peers (Brown et al., 1993). Brown et al. found that parents do not lose their influence as more time is spent with peers but that parents retain indirect influence over their child's peers. John states materialistic attitudes are positively related to susceptibility to peer group influences, influenced by weak family communication and unstable family environments. In the present study parents had more influence than peers. Peers had no significant influence on

the financial literacy of students. This study is unique in investigating parental and peer influences with the financial knowledge, attitudes, and behaviors of college students.

Correlation Between Students' Financial Knowledge, Attitudes, and Behaviors

Financial education influences financial knowledge, attitudes, and behaviors (Ajzen & Fishbein, 1980; Grable & Joo, 1998; Varcoe & Wright, 1991). Financial education increases financial knowledge and affects financial attitudes (DeVaney et al., 1996; Grable & Joo, 1998; National Endowment for Financial Education [NEFE], 1998). Increased financial knowledge was also found to influence students' attitudes positively toward business in general and their ability to be wise consumers in society (Langrehr, 1979). Hayhoe et al. (1999) and Norvilitis et al. (2003) found that students' credit card use (i.e., behavior) was related to their attitudes toward money. Students who felt inadequate and less secure more heavily used credit cards.

Chen and Volpe (1998) found that students with less financial knowledge had more negative opinions about finances and made poorer financial decisions. Conversely, they found that college students who had higher financial knowledge had better financial behaviors such as budgeting, spending less than their income, were more likely to invest regularly and have adequate insurance. Chen and Volpe found that students' positive financial attitudes and behaviors were significantly related to having a higher level of financial knowledge.

These findings were corroborated in the present study. Financial knowledge, attitudes, and behavior were all found to be significantly correlated ($p < .01$). Students who had higher financial knowledge had more positive financial attitudes and made better financial decisions. Although this study did not measure the relationship of financial education to financial knowledge, previous studies (DeVaney et al., 1996; Grable & Joo, 1998; NEFE, 1998) are clear that education does increase and influence financial knowledge.

As mentioned, previous literature on financial knowledge, attitudes, and behavior has mixed results. The results of this study support and challenge previous findings in the literature. This study supports the findings of previous research showing that college students have overall low financial knowledge, attitudes, and behaviors. This study supports the literature that states there is a difference in the financial literacy of college students by class rank but not necessarily SES. Also, although this study did not find a difference in financial knowledge, attitudes, and behavior by gender, as some previous studies had, it does support the notion that financial education “levels the playing field” in regards to gender differences. Finally, this study supports Chen and Volpe (1998) in their finding that the financial knowledge, attitudes, and behaviors of college students are indeed correlated, also supporting their conclusion that financial behaviors will likely improve as financial knowledge is increased.

Implications for Future Research, Practice and Policy

While the present study supports several findings in previous research it has also made some unique contributions to the literature. One such contribution is the College Student Financial Literacy Survey (CSFLS) which was developed specifically for this study and which has comprehensive measurements of financial knowledge, attitudes, and behavior. It is also the first survey to include and measure environmental influences. Another uniqueness is the data collection method which involved an online survey used across multiple universities. There were 450 usable student responses with a fair representation, by race and gender, of student body across the six universities in 2006. This study also used a more complete scale to measure financial attitudes and behaviors than had been used previously. Finally, this is the only study other than Chen and Volpe (1998) that has correlated the financial knowledge, attitudes, and behaviors of college students.

Not only has this study been guided by theory, something that other studies lacked, but it combined family resource management theory with social learning theory to better understand the financial literacy of college students. This study added to the family resource management model by assessing environmental influences prior to inputs, specifically examining parental and peer influences. Social learning theory was used to better understand parental and peer influences on college students. All of these unique contributions provide implications for future research, practice and policy.

Implications for Research

Implications for research include using the CSFLS to identify prospective students for qualitative interviews in order to gather more detailed data. Qualitative data could provide improved information on why there were no changes in financial knowledge, attitude, or behavior across gender and SES and why there were changes across class rank. Qualitative data could also increase understanding of which influences (e.g., parent, peer, life experiences, school) impact students the most and why. Do certain life experiences correlate with class rank, explaining why class rank was the only significant variable? Data could be gathered specifically on how parents influence their students. For example, did students learn by discussing financial matters with their parents (explicitly) or by the modeling (implicitly) of financial principles by their parents? The CSFLS could also be used in a master's thesis to replicate this study with other populations to examine differences in financial literacy by gender or SES.

Further research could continue the investigation of combining Social Learning Theory and Family Resource Management Theory. How does looking at the person contextually, using Social Learning Theory, help researchers understand financial literacy better?

Also, knowing that college students have low financial knowledge and poor financial attitudes and behaviors, what needs to be done to increase financial literacy? How can the university play a role in increasing students' financial literacy? Are there positive models we can look to? Various states have mandated financial literacy courses; would students from these states score higher than students from other states? What would it mean to our students, our state, and our country if we took financial education seriously? Would parents' financial literacy need to be addressed if students' literacy is to be addressed? Using these questions, researchers, politicians, and other stake holders could collaborate to increase financial literacy.

The CSFLS could be used to gather data on a non- college student population of similarly aged young adults (18-22 years old) and then a comparison could be made between the college student and non-college student samples. This would be interesting because non-students usually have more work experience and may be less dependent on parents, which could have an effect on financial knowledge, attitudes, and behaviors.

Influences other than parents and peers should also be examined. For example, what influence does school, job, or life experiences have on students' financial literacy? Data collected for this study showed that 78% of students were influenced by life experiences and that 45% were influenced by school. These are interesting findings that were not explored in this study but could be explored in future research.

A more advanced statistical analysis could be performed to see if findings change. Previous research (Chen & Volpe, 1998; Danes & Hira, 1987) found that some of the differences between gender became insignificant after using regression instead of ANOVA for the analysis. Future research might perform a regression or path analysis to see if findings change.

The outputs and feedback sections of the family resource management model were not measured because they were beyond the scope of this study. To measure outputs and feedback would require longitudinal data, which was not gathered for this study. This research lays the groundwork for a further examination of the outputs and feedback sections of the model through a longitudinal design.

Future research might also investigate the point at which financial attitudes and behavior stop correlating with increased financial knowledge. For example, once a student has gained a certain level of financial knowledge (e.g., 90%), will their financial attitudes or behavior still correlate with this increased knowledge? An interesting question might be a study of the relationship between knowledge, attitudes, and behavior diminishes as knowledge increases.

Implications for Practice

There are several implications for future practice by financial aid offices, student affairs professionals, administrators, and Cooperative Extension and other educators. The college offices of financial aid may benefit from the findings of this study. Being aware of the amount of debt each student takes out in loans and the low financial literacy of college students, financial aid personnel can help to increase awareness of the need for opportunities and for increased financial education to students taking out loans. For example, they could offer a financial literacy and debt management program for students and parents. Financial aid might also offer counseling sessions with students on how to manage their loans and other financial affairs.

Student affairs professionals are also in a position to increase awareness of the financial illiteracy of college students by focusing their efforts on programs that address these deficits. Banks are usually more than happy to offer seminars on financial management to college students. Administrators working together on a comprehensive plan to increase financial literacy

among their students is a practice that could benefit many students and could take place at every institution of higher learning.

Cooperative Extension and other educators may benefit from the findings of this study. Both Cooperative Extension and other educators work with parents and youth in a variety of settings. Cooperative Extension and other educators could use the findings to programs that draw on this research, create flyers and information sheets they could use with parents and students about the influence parents have in the consumer socialization of their children, how and where to obtain more financial knowledge for both college students and parents, and in educating them through seminars and workshops.

Implications for Policy

There are implications from this study for policy on the community level and the state level. Parents do influence their children financially, for better or for worse. Because many parents may be financially illiterate themselves, any work on educating the student financially might consider offering a component to financially educate the parents. Financial education could come from schools, community centers, banks, and other means. Increasing financial literacy among parents will help them better be able to teach and model positive financial principles in the home, which will not only benefit the lives of the individuals and families but also the communities and the nation.

At the K-16 level, policy makers may want to consider implementing financial literacy into their core curriculum. Some states already mandate financial literacy to be taught at the high school level. Recognizing that college students have low financial knowledge scores, that financial knowledge is correlated with financial attitudes and behaviors, and that financial education increases these scores, administrators may choose to do more in this area. For

example, they may decide to include choices of taking a personal finance course as a core curriculum course or they may even mandate it. By requiring a course in financial management, administrators and faculty help students at their high schools and universities have a better chance at succeeding in today's increasingly complicated economy. College administrators may also decide not to allow credit card companies to come onto campus where unknowledgeable students sign up for a free t-shirt and end up with even more debt when they graduate.

Limitations

Similar to other research, the present study had limitations. One possible limitation concerns the solicitation of student participants. Students were only asked in classes of certain professors instead of randomly selecting students from the whole university. It is likely that more students participated from the universities where fulfillment of a project for a course may have influenced them. However, all student participation was voluntary. Student participants were self-selected and may have entered only to either get credit for an assignment or for the chance to win an iPod, perhaps causing them not to spend the necessary time to correctly fill out the survey. Also, universities were not randomly selected. This study was also conducted online where there are multiple limitations. These limitations were already addressed previously. Finally, this study was a cross-sectional study with data taken at one point in time and all generalizations drawn should be limited to the populations sampled or cautiously applied to groups and settings that closely resemble those included in this study.

Conclusion

Despite the limitations described earlier, the present study has made some unique contributions to the literature. This study attempted to expand the understanding of the environmental influences of parental and peer influences on the financial literacy of college

students by combining social learning theory and family resource management theory, as depicted in the Model of the Study (Figure 2). In addition, this study examined the differences in financial literacy (financial knowledge, attitudes, and behavior) based on gender, class rank, and SES. A new survey, the College Student Financial Literacy Survey (CSFLS), was created and used online to gather the most up to date, comprehensive data on this topic. Although the study is a cross-sectional study with data taken at one point in time, it does provide a better understanding of the individual factors of financial knowledge, attitudes, and behavior as well as the influence of parents and peers.

The present study provides insight into the state of financial literacy among a sample of college students today. Parents did significantly influence their children's financial knowledge ($p < .001$), attitudes ($p < .001$), and behavior ($p < .05$). College students continue to score low in financial knowledge, attitudes, and behavior. Although levels of knowledge increased by class rank, college students may lack the necessary knowledge to handle financial responsibility in and after college. Without an appropriate understanding of their personal finances, they may be more likely to mismanage their finances now and in the future, contributing to the poor financial behaviors that are reflected in today's society. Therefore, college students need to receive more financial education during this important time of their life so they can be better financial consumers in today's increasingly complex marketplace. The ability to make important personal financial decisions will affect them for the rest of their lives.

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Appendix A
University Diversity Grid

Table 7

University Diversity Grid

University	Type	Course content	Class/rank	Majors	Response Rate
Virginia Tech	Public/Research	Ag. Econ., Resource Mngt., Human Develop.	Freshman, Sophomore, Junior, Senior, Masters, Doctoral	Liberal Arts, Agriculture and Life Sciences, Natural Resources, Horticulture, Science, Engineering, Medicine, Human Sciences, Math, University Studies, Business, Education, Communication, Interior Design, Property Management, Computer Science, Architecture, Psychology, Wildlife Sciences, Nutrition, Wood Science, Statistics,	234/580 40%
University of South Dakota	Public/Research	Communi cation	Freshman (most), Sophomore, Junior, Senior,	Medicine, Criminal Justice, Public Relations, Political Science, Communication, Business, Music, Math, Education, Fine Arts, Spanish, Science, Law, Psychology, Nursing, Architecture, Journalism, Vocal Performance, Social Work, Human Sciences, Engineering, Graphic Design, General,	148/250 59%
University of Oklahoma	Public/Research	Communi cations	Senior	Journalism, Liberal Arts, Broadcasting, Mass Communications	27/60 45%
BYU – Idaho	Private/undergrad	Construct. Mgt.	Junior, Senior	Construction Mgt., Education	18/50 36%
University of Memphis	Public/Research	Business	Senior, Masters	Business, Accounting, English,	14/60 23%
UNLV	Public/Research	Human Sciences	Masters	Human Sciences, Liberal Arts, Community Couns.	13/32 41%
Overall Response Rate					462/1084 43%

Appendix B

Cover Letter to Professors

Beginning of survey

Welcome!

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

Information and Consent Form

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

There are 44 questions in this survey as well as some demographic questions at the end. It will take you about 10-20 minutes to complete the survey. At the end of the survey you will be given the opportunity to enter a drawing for a free iPod. It is my way of thanking you for participating in the survey.

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

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

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

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

In email to students

Dear fellow college students,

I invite you to participate in the College Student Financial Literacy Survey I have created. I am gathering data for my master's thesis and would very much appreciate your participation.

By participating, you may enter a drawing to win a free iPod.

You must be at least 18 years of age and an undergraduate or graduate student in order to participate in the study. If you desire to participate, please click on the URL below, read the consent form and continue with the survey.

Thank you in advance for your participation.

Sincerely,

Bryce Jorgensen

At the end of the survey, in the message after hitting the submit button:

Thank you for participating in the Financial Literacy Survey!

If you would like to be entered into the drawing for the free iPod, please copy and past the following URL and provide your name, phone number, email, and school. This is to ensure that your financial literacy survey answers will not be linked or connected to your personal information.

2nd Survey/personal information for gift certificates

Thank you for participating in this study. If you would like to enter the drawing for the free iPod please provide your contact information below. This information is NOT linked to your survey responses nor will it be shared with any other party.

1. Name _____
2. Phone Number _____
3. Email _____
4. School _____

Once the winner is selected, all participants that enter will be notified that the drawing is complete.

Thank you again for your participation in this study!

Background, significance, and purpose of study

Many young adults lack the basic knowledge and skills needed to make important personal financial decisions (Chen & Volpe, 1998; Danes & Hira, 1987; Henry, Weber & Yarbrough, 2001; National Institute for Consumer Education [NICE], 1994). This lack of basic financial information begins at a young age. Based on surveys by the Consumer Federation of America (1993) and Jump\$tart Coalition (2004), American high school and college students have little consumer know-how. This deficiency is important because young adults today have access to and spend a lot of money - \$141 billion in 1998 (Varcoe et al., 2001).

The financial decisions made early in life create habits difficult to break and affect students ability to become financially secure adults (Martin & Oliva, 2001). The most recent National Endowment for Financial Education [NEFE] (2002) study shows average personal financial scores declining since the first survey of 1997. In 2002, the average score of high school teens who took the survey was 50.2 percent –a failing grade, with 79 percent scoring a D or below. Only 18 percent of students surveyed recognized the importance of the annual percentage rate. More and more college students are using credit cards and creating bad financial habits with the mentality of “buy now and pay later.” Premature affluence, from use of credit cards, has consequences that could stay with them far into the future.

College students need greater knowledge about their personal finances and the economy, which requires a greater range of ‘real life’ skills (e.g., balancing a check book, budgeting, reducing debt, saving, having good credit, paying interest, investing, and purchasing a car or a home) due to an increasingly complex marketplace (Martin & Oliva, 2001). If students need these ‘real life’ skills to better survive in our economy today the question could be asked, “Where do they learn these financial skills?” The home might be an ideal place yet studies have found that most adults do not have these skills to be able to teach their children (Moschis, 1985; NEFE, 2002; Pauley, 1996; Varcoe et al., 2001). Many students learn the basic knowledge through trial and error, yet this does not allow them to get ahead or become smart consumers in today’s society (Lachance & Choquette-Bernier, 2004). TIAA-CREF Institute’s (2001) Youth and Money Survey found that even though 65% of surveyed college students had an opportunity to schedule a money management course, only 21% of them took the course even though they thought it would help them make better financial decisions. These facts lead to the following questions: What is the level of financial knowledge of today’s college students? What are their attitudes towards personal financial issues? Are they financially prepared to live on their own, get married, or start their own family?

This study has three purposes. First, it will investigate the personal financial literacy of undergraduate and graduate college students. Second, it will examine possible reasons why some college students have a greater level of financial knowledge and more positive attitudes than other students. Third, it will examine how students’ financial knowledge and attitudes correlate with their financial behavior.

Appendix C

Research Questions / Survey Questions Matrix

Table 8

Survey Questions Matrix

Research Question	Survey Questions	Analysis
1. Are there differences in financial knowledge based on gender, class rank, and SES? <ul style="list-style-type: none"> • Differences in knowledge by gender • Differences in knowledge by class rank • Differences in knowledge by SES 	<ul style="list-style-type: none"> • Questions 20-44 	<ul style="list-style-type: none"> • Score percentage correct for total sample = knowledge sum score. • Sum score – T-test • Sum score – Anova • Sum score - Anova
2. Are there differences in financial attitudes based on gender, class rank, and SES? <ul style="list-style-type: none"> • Differences in attitude by gender • Differences in attitude by class rank • Differences in attitude by SES 	<ul style="list-style-type: none"> • Questions 1, 5, 6 	<ul style="list-style-type: none"> • Attitude mean score. • Mean score – T-test • Mean score – Anova • Mean score - Anova
3. Are there differences in financial behaviors based on gender, class rank, and SES? <ul style="list-style-type: none"> • Differences in behavior by gender • Differences in behavior by class rank • Differences in behavior by SES 	<ul style="list-style-type: none"> • Questions 7, 11, 12 	<ul style="list-style-type: none"> • Behavior mean score • Mean score – T-test • Mean score – Anova • Mean score - Anova

-
4. Are there differences in financial knowledge, attitudes, and behaviors based on level of parental and/or peer influences?
- Difference in knowledge by level of parent influences
 - Difference in knowledge by level of peer influences
 - Difference in attitude by level of parent influences
 - Difference in attitude by level of peer influences
 - Difference in behavior by level of parent influences
 - Difference in behavior by level of peer influences
- Question 13 – Parents
 - Questions 20-44
 - Question 13 – Peers
 - Questions 20-44
 - Question 13 – Parents
 - Questions 1, 5, 6
 - Question 13 – Peers
 - Questions 1, 5, 6
 - Question 13 – Parents
 - Questions 7, 11, 12
 - Question 13 – Peers
 - Questions 7, 11, 12
- Parental and peer influences (Q. 13; 4 or 5=high, 1, 2, or 3=low)
 - T-test
 - T-test
 - T-test
 - T-test
 - T-test
5. Are college students' financial behaviors correlated with their financial knowledge and attitudes?
- Correlation between behavior and level of financial knowledge
 - Correlation between behavior and level of financial attitudes
- Questions 20-44
 - Questions 7, 11, 12
 - Questions 20-44
 - Questions 1, 5, 6
- Pearson's Correlation using knowledge sum scores, attitude mean scores, and behavior mean scores.
-

Table 9

Table of Specifications for the College Student Financial Literacy Survey (CSFLS)

Section	Source
<i>Financial Attitudes</i>	
• Question 1	Jump \$tart
• Questions 2-4, 6 (e, i-n, p-q)	Self Developed
• Question 5	Chen and Volpe
• Question 6 (a-d, f-h, o)	Micomonaco
<i>Financial Behaviors</i>	
• Question 7	Jump \$tart
• Questions 8, 10 (a, c), 12 (h-p)	Self Developed
• Questions 9, 10 (b), 12 (a-g)	Micomonaco
• Question 11	Chen and Volpe
<i>Influences</i>	
• Questions 13, 19	Self Developed [J.S.]
• Questions 14-15, 17-18	Self Developed
• Question 16	Jump \$tart
<i>Financial Knowledge</i>	
• Questions 20, 25, 35, 41-42	Chen and Volpe
• Questions 21, 23, 26, 28, 30-32, 39, 40 (a-b)	Consumer Federation of America
• Questions 22, 27, 44	Self Developed [CFA]
• Questions 24, 33, 37, 40 (c)	Self Developed [J.S.]
• Questions 29, 36, 43	Self Developed
• Question 34	Self Developed [C & V]
• Question 38	Jump \$tart
<i>Personal Characteristics</i>	
• Questions a, c, e, g, i, l, m, o-r	Self Developed
• Questions b, d, h, n	Chen and Volpe
• Question f	Self Developed [C & V]
• Questions j, k	Jump \$tart

*Brackets [] mean influenced by or adapted from

Appendix D

College Student Financial Literacy Survey

(Please see the second pdf of this ETD, Survey_CSFLS.pdf, for a copy of the survey)