FINANCIAL EDUCATION AS A MODERATOR BETWEEN SOCIAL LEARNING AND SAVINGS INTENTION/BEHAVIOR AMONG COLLEGE STUDENTS

By

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OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
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To my family, especially my mother, Julie Rawlings, and my father, Charles Parker II

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This study utilizes the theory of planned behavior as the theoretical approach to explore whether financial education moderates the relationship between financial attitudes, subjective norms, and perceived behavioral controls, and savings intention/behavior among college students. Three research questions were proposed: 1) When controlling for other factors, will the antecedent constructs of TPB be significantly related to the likelihood that a student is saving/intending to save?; 2) Will the relationships between attitudes, subjective norms and perceived behavioral control (as blocks of variables) and savings/intention to save differ by whether the students have taken a personal finance course?; 3) Will the model that allows for financial education to be a moderator between attitudes, SN's, PBC's and savings behavior/intention be the most appropriate model? It was hypothesized that when controlling for other factors, 1) attitudinal factors, 2) subjective norm factors, and 3) perceived behavioral control factors (as individual blocks of variables) would be significantly related to the likelihood that a student is saving/intending to save; The relationship between 4) attitudes, 5) subjective norms, and 6) perceived behavioral controls (as a block of coefficients) and savings behavior/intention differ by whether the students have taken a personal finance

course; and 7) The model that allows for financial education to be a moderator between attitudes, subjective norms, and perceived behavioral controls and savings behavior/intention would be the most appropriate model.

Binary logistic regression analysis, using a forced hierarchical approach, was used to test all hypotheses. Specifically, the Omnibus Test of Model Coefficients was evaluated following each step of the regression to determine the significance level for each block of variables (hypotheses 1-6), as well as the overall significance of the statistical model (hypothesis 7). Results indicate that the antecedent constructs of the TPB were found to be significantly related to savings behavior/intention among college students. Additionally, financial education did not moderate the relationships between financial attitudes, subjective norms, or perceived behavioral controls (as blocks of coefficients) and savings behavior/intention. Finally, the reduced model (without the interaction effects) was found to be the most appropriate model. Important implications are presented for practitioners and researchers.

CHAPTER 1
INTRODUCTION

Most college students are at a fascinating and influential stage in life. This stage is known as emerging adulthood (Arnett, 2000). Emerging adulthood is a unique transitional period, from adolescence to young adulthood, and is characterized by a growing ability to make decisions autonomously, taking a greater responsibility for one's own actions, and becoming increasingly financially independent (Arnett, 2004).

According to the National Center for Education Statistics (2010), approximately 800,000 students will graduate with an Associate's degree, 1.7 million students will graduate with a Bachelor's degree, 700,000 students will graduate with a Master's degree, and 100,000 students will graduate with a Professional degree in 2011. Presumably, a large percentage of these graduates will be seeking employment, and thus, financial independence. While the economic conditions and employment outlook for college graduates are slowly improving, the current situation is still not good (NCES, 2010). With the unemployment rate hovering around nine percent (Bureau of Labor Statistics, 2011), these graduates will not only be competing for employment against fellow classmates, but also many former graduates that are still unemployed or under-employed, experienced workers that have been laid-off, and former retirees that may be in need of income to support their lifestyle. As of May, 2011, over two million of the unemployed population in the United States is college graduates (with a Bachelor's, Master's, or Professional Degree) 25 years of age and older (Bureau of Labor Statistics, 2011)

The uncertainty stemming from not having a job after graduation gives many student debt holders a justifiable reason for concern. For the 2007-2008 school year,

students graduating with a Bachelor's degree borrowed an average of $23,186, while the average amount borrowed by graduate and professional degree seekers was significantly higher (NCES, 2009). On top of having an exorbitant amount of student loan debt, the average college student has 4.6 credit cards and carries a balance of $3,173 (Sallie Mae's National Study of Usage Rates and Trends, 2009).

According to Modigliani and Brumberg's (1954) Life-Cycle Hypothesis (LCH), consumers want to smooth the marginal utility (happiness) of consumption over a lifetime. This marginal utility is dictated by the person's preferences and income. One assumption that the theory infers is that people are expected to borrow against expected future earnings while they are young, in order to smooth the marginal utility in a period where they earn less of an income. It is common to begin borrowing as college students (student loan debt), with the expectation of beginning a career, earning an income, and accumulating wealth upon graduation. Unfortunately, many students will not find a job right away that will provide them with the level of income they anticipated while incurring the debt, which will create challenges in reducing/repaying their debt. For this reason, a large number of college graduates are forced to move back in with their parents. These individuals are often referred to as boomerang children (Okimoto & Stegall, 1987).

One thing college students can do to help alleviate some of the stress associated with an uncertain job market is to begin saving money while still in school, just in case their plan to begin their career right away does not pan out. By having a sufficient amount of money in an emergency fund available a student can prevent having missed credit card payments, loan payments, and cover any other expenses that might arise.

This money can serve as a short term financial buffer, and have a powerful impact on a student's financial well-being. Financial well-being has been described in literature as the level of financial adequacy and security of an individual or family (Xiao, Sorhalndo, & Garman, 2006). Saving money in college has been found to increase financial satisfaction and positive academic performance (Xiao, Tang, & Shim, 2009), which, consequently, has been found to contribute to overall satisfaction of one's life.

So why are not all college students intentionally setting money aside for an emergency fund and saving for retirement? Previous research on this subject shows that students generally lack basic financial knowledge (Bakken, 1967; Chen & Volpe, 1998; Danes & Hira, 1987; Gutter, Garrison, & Copur, 2010; Jump$tart, 1997, 2002; Kim, 2000; Volpe, Chen, & Pavlicko, 1996). Despite this lack of knowledge, many college students will still come across opportunities to actively learn the skills needed to be financially independent (Shim, Barber, Card, Xiao, & Serido, 2009). Some of these occasions will come in the form of new financial challenges that require prudent decision-making and a high level of responsibility (Lyons, Scherpf, & Roberts, 2006). For example, many college students face challenges related to making their financial aid/student loan disbursement cover all of the expected and unexpected expenses that are associated with attending college and living away from home over the course of a semester. If the money falls short of the amount needed, students may be at risk of over-drafting their checking account, missing debt payments, being sent to collections, racking up penalties and fees, and having to drop out of school. Researchers have found that a higher rate of students drop out as a result of debt and financial pressures than for academic failure (United College Marketing Services, 2006). Students in this

undesirable financial position will either have to find a way to cut back their spending, supplement their income with a job, take out additional loans, ask their parents for financial support, and/or apply for a credit card(s). If they fail to manage their money efficiently and effectively, saving money will be a difficult task. If college students are indeed unable to save money while in school, it is still important for them to plan on saving after college.

Although many students do not save money while in school because of a lack of financial resources, others are not saving because of a classic self-control issue known as “myopia.” Myopia refers to short-sightedness, specifically in the field of consumer economics, Kivetz and Simonson (2002, p. 200) describe it as “a very high preference for the present at the expense of the future”. These students lack the amount of self-regulation necessary to intentionally put money aside for the future.

Where do college students learn savings behavior? There are several ways in which college students learn their behavior. For example, they may learn through personal experience (as mentioned previously); they may learn through self study; they may learn about savings by taking a personal finance class; they may learn through social learning opportunities (i.e. discussing financial management concepts with parents and/or peers; observing their parents and/or peers engaging in personal financial management activities) (Gutter, Copur, & Garrison, 2010). Without taking a formal class on financial education, individuals are at risk of learning false financial knowledge through social learning (Gutter, Copur, & Garrison, 2010). This could come as a result of witnessing friends or family member make unwise financial decisions or just being misinformed by the information they have seen and heard on financial

matters. In terms of saving money while in school, some students may be under the impression that if no one else (friends and peers usually) is doing it, it must not be important. So the question that arises from this potentially mixed flow of information via social learning and formal financial education is this: how does it affect a student's saving behavior?

This research aims to examine whether financial education is a moderator between the factors influencing savings behavior and actual savings behavior among college students. In some instances, saving money may not be feasible for some students. In fact, many students' financial situation may be in such a position that they need to take out additional loans or use a credit card to meet their financial obligations. For this reason, this study also looks at whether financial education is a moderator between the factors influencing savings behavior and the intention to save among college students.

CHAPTER TWO
LITERATURE REVIEW

Theoretical Perspectives of Savings Behavior

Different perspectives have been used to frame studies of savings behavior. One perspective researchers have applied to savings behavior is normative theory. Normative theories "characterize rational choice and are often derived by solving some kind of optimization problem" (Thaler & Benartzi, 2004, p. 3). The Life-Cycle Hypothesis (LCH), which examines factors like age/life-stage, perceptions of future (income and lifespan), and risk tolerance to predict savings behavior, is an example of a normative theory (Thaler & Benartzi, 2004). The optimization problem that the LCH attempts to solve is the problem of consumption smoothing over a lifetime. Another perspective is that of descriptive theories. These theories are used to describe "how people actually choose, often by stressing systematic departures from the normative theory" (Thaler & Benartzi, 2004, p. 3). These theories differ from normative theories in that they describe how things are, rather than how they ought to be. The descriptive perspective is more of a micro-approach, which integrates intrapersonal/psychological factors into the research methodology. An example of a descriptive theory is the behavioral life cycle hypothesis which is similar to the LCH but also incorporates factors like self-control and mental accounting (Shefrin & Thaler, 1988). Other examples of descriptive theories are the social learning theory (Bandura, 1977; Churchill & Moschis, 1979; Moschis & Moor, 1984; Valence, d'Astous, & Fourtier, 1988; Gutter, & Garrison, 2008; Gutter, Garrison, & Copur, 2010) and Theory of Planned Behavior (Xiao, 2008; Xiao & Wu, 2008). A third perspective that has been used to frame studies on savings behavior is through the lens of prescriptive theories. These theories are "attempts to offer advice on how people can

improve their decision-making and get closer to the normative ideal" (Thaler & Benartzi, 2004, p.3).

If the purpose of the study were to understand how college students are *supposed* to be saving, a normative theory would be appropriate. If the purpose of the study were to help *change* savings behavior, a prescriptive theoretical approach would be appropriate. However, the purpose of this study is to describe the relationship of financial education on actual savings behavior and intention of college students, which can assist in identifying factors and relationships that are moderated by financial education; for this reason, a descriptive theoretical approach is the best fit for answering the research question. Specifically, the constructs of the theory of planned behavior are operationalized in this study to examine whether formal financial education has a moderating effect on the relationship between the factors influencing savings and actual savings behavior among college students. The theory of planned behavior is a suitable theory for studying savings behavior for college students because it allows for the evaluation of the attitudes that may affect their savings behavior, their feelings about the social norm pressure, and the factors that increase or decrease the perceived level of difficulty in depositing money into a savings/investment account regularly.

The Theory of Planned Behavior (TPB) and Financial Behaviors

The theory of planned behavior (TPB) is an extension of the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975), which is used to predict and understand human behavior (Ajzen, 1991). While these behavioral theories have mostly been utilized in the field of health-related behaviors (Schifter & Ajzen, 1985; Sparks, 1994; Povey, Conner, Sparks, James, & Shepherd, 2000), as previously mentioned, it has also been used to frame studies on various forms of financial behavior, such as investment decision-

making, completing a debt management plan, risky and convenient credit card usage, and saving (East, 1993; Shim, Xiao, Barber, & Lyons, 2007; Rutherford & DeVaney, 2009; Xiao & Wu, 2006).

Behavior Formation and the TPB Model

In this chapter, the constructs of the TPB (as shown in Figure 2-1 below) are thoroughly discussed. In addition, an explanation is given of how this theory is utilized to in the context of this study to predict and understand savings behavior of college students. Finally, the research questions and hypotheses are presented in this chapter.

Intention

According to the TPB, a key determinant of a person's *actual* behavior is the person's *intention* to perform the behavior (Ajzen, 1991). Therefore, to understand and predict how a particular behavioral act manifests, it is important to understand how an individual develops the intention to perform the behavior. In terms of this study, it is important to understand how college students develop the intention to save money. The TPB identifies three independent factors that interact to formulate the behavioral intention: (1) attitude toward the behavior, (2) subjective norms, and (3) perceived behavioral control (Beck & Azjen, 1991).

The intention construct represents a person's desire to perform a behavior or "the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior" (Warshaw & Davis, 1985, p. 14). The likelihood of the occurrence of a specific behavioral act increases as a person's intention to perform the behavior gets stronger (Ajzen, 1991, p. 181). The intention construct is the immediate antecedent to a person's actual behavior (Ajzen, 1991).

Attitude

A person's attitude toward a behavior refers to the extent to which the individual feels that the particular behavior is favorable or unfavorable (Beck & Ajzen, 1991). But where do these attitudes stem from? According to Fishbein and Ajzen's (1975), expectancy-value model of attitudes, a person's attitude toward a behavior is generated by associating the behavior of interest with an anticipated outcome, or perhaps the cost of carrying out the behavior. By associating behaviors with expected consequences, people automatically develop an attitude toward a behavior. In doing so, favorable attitudes are formed for behaviors that have positive anticipated outcomes and unfavorable attitudes are formed for behaviors that have negative anticipated outcomes (Ajzen, 1991).

According to TPB, the extent that the person feels the attitude is favorable or unfavorable should influence the likelihood that the person performs the behavior. For example, in a study by Godin, Valois, Lepage, and Desharmais (1992), the researchers measured the participants' attitudes toward smoking cessation. Respondents who were found to have favorable views of smoking were more likely to smoke cigarettes, whereas respondents who had unfavorable views of smoking were less likely to smoke cigarettes.

However, in this study, specific financial dispositions are used examined to express a student's attitude towards savings. For example, in a study by Gutter, Copur, and Garrison (2010), a direct link was found between financial dispositions and financial behaviors of college students. The researchers examined how the students' willingness to take financial risks, compulsive buying, materialism, and future orientation influenced behaviors such as budgeting, saving, and risky credit behaviors. This study uses these

same attitudes to examine their relationship with the savings behavior of college students. Additionally, this study examines financial education has an impact on these relationships.

A student's willingness to take financial risk is defined as "the maximum amount of uncertainty that someone is willing to accept when making a financial decision" (Grable, 2000, p. 625). Dahlback (1991) studied the relationship between a person's propensity to take risks and savings behavior, using cross-sectional data. Participants were selected randomly from a list of Sweden's entire population. With a final sample size of 178 unmarried people between the ages of 22-64 years of age, the findings show that propensity to take financial risks does indeed influence savings. Specifically, Dahlback (1991) found a strong influence on the way people were invested in assets with differing degrees of risk (i.e. savings account vs. stocks). The risk tolerance variable used in Dahlback's (1991) study was comprised of 16 different items, which participants were supposed to read and respond to whether the item correctly describes them. However, Grable and Lytton (1999), provided a more useful measure of risk tolerance by identifying eight dimensions of willingness to take financial risk: "1) guaranteed versus probable gambles, 2) general risk choice, 3) choice between sure loss and sure gain, 4) risk as related to experience and knowledge, 5) risk as a level of comfort, 6) speculative risk, 7) prospect theory, and 8) investment risk" (p. 174). By combining these dimensions to measure willingness to take financial risk, Grable and Lytton's measurement method provided a more accurate measurement. Their measurement has been utilized extensively throughout consumer economic literature. It has been used on topics such as differences in financial behavior (Gilliam, Goetz, &

Hampton, 2008) and investment risk-taking behavior (Grable, Roszkowski, Joo, O'Neill, & Lytton, 2009). This disposition is relevant to savings behavior because typically, the less a person is willing to take financial risk, the less they will be willing to invest in assets that may yield higher returns.

Compulsive buying is defined as "chronic, repetitive purchasing that becomes a primary response to negative events or feelings" (O' Guinn & Faber, 1992, p. 459). This disposition may be more prevalent in consumers today due to the easily accessible lines of consumer credit (Roberts & Jones, 2001). In a study by Roberts and Jones (2001), credit card usage was found to exacerbate the problem of compulsive buying. When the average college student carrying 4.6 credit cards, this financial disposition can create havoc on a student's level of debt and overall financial well-being. In the study by Roberts and Jones, 2001), the researchers used a convenience sample of 406 college students from a small private college in Texas. The researchers used the Compulsive Buying Scale developed by O'Guinn and Faber (1992) which has been widely used in the literature consumer behavior. If not controlled, compulsive buying can lead to overspending, which can be a form of *dissaving,* or negative saving. Dissaving, can be any form of spending of an existing savings account or debt utilization. Compulsive buying is relevant to savings behavior because if a person is spending money as a response to negative events or feelings, they may lack the self-control that is necessary to intentionally put money into a savings or investment account. In the same vein, the person may be more tempted to utilize funds that have already been set aside to make compulsive purchases.

Materialism is a “set of centrally held beliefs about the importance of possessions in one’s life” (Richins & Dawson, 1992, p. 308). In the context of economic psychology and consumer research, Belk (1985, p. 265) defined materialism as “the importance a consumer attaches to worldly possessions.” Materialistic values are important when studying savings behavior because materialists are said to be “driven” to consume more and are also seen to focus on purchasing “status goods” (Fournier & Richins, 1991) or material products that are highly valued by a consumer. A materialistic lifestyle has become a relevant part of the culture in many developed countries. If materialists are, in fact, consuming more, they are likely to be saving less. In a study by Watson (2003), the purpose of the research was to find out how people with differing levels of materialism influence their propensity to spend and/or save. Using a sample of 322 households from two geographic areas of Pennsylvania (one urbanized, and one non-urbanized), Watson (2003) found that people that scored low on the Richins and Dawson (1992) materialism scale were more likely to invest in stocks, mutual funds, and bonds. Similarly, people with low levels of materialism were more likely to be savers, rather than spenders. This may be a testament to the suggestion that materialistic people would rather purchase status goods than to save for future consumption. These findings were generalizable to households across the United States.

Future orientation, the final disposition that is examined in this study, refers to “the extent to which individuals consider the potential distant outcomes of their current behaviors and the extent to which they are influenced by these potential outcomes” (Strathman, Gleicher, Boninger, & Edwards, 1994, p. 743). A person’s level of future orientation manifests in is expected to largely influence an individual’s financial planning

decisions (Howlett, Kees, & Kemp, 2008). In a study by Howlett, Kees, and Kemp (2008), researchers found that consumers who were rated with a high degree of consideration of future consequences (CFC) on the CFC scale (developed by Strathman, et al. (1994) were more likely to participate in a 401(k) plan. This finding showed that people who were future-oriented are more likely to save in a manner that is consistent with their long-term financial goals, which is highly consistent with the LCH model as well as other research on CFC (Joireman, Sprott, & Spangenberg, 2005; Modigliani & Brumberg, 1954; Strathman, Gleicher, Bonninger, & Edwards, 1994). The sample used was 89 graduating seniors from a public university in the south central United States.

Subjective Norms

Another construct of the theory is subjective norms. Subjective (or perceived) norms have been defined as "the perceived social pressure to perform or not to perform the behavior" (Azjen, 1991, p. 188). These perceived norms are directly linked to an individual's normative beliefs – perceived behavioral expectations of people the individual considers to be most important to them (i.e. parents, siblings, spouse, friends, supervisor, teachers, doctors, etc.). For example, in terms of this study, the perceived expectation to save money while in college by the referent groups in a student's life is the first component of this construct. The other component is a person's motivation to comply with the perceived behavioral expectations. For instance, if the referent groups in the student's life expect him or her to be saving, the degree to which the student is motivated to comply with this expectation influences the likelihood that the student is saving or intending to save money while in college. For this study, the referent groups that are included are the students' parents and peers. In sum, normative beliefs, along

with the individual's motivation to comply with each of the different perceived referent expectations, collaborate to form a subjective norm (Ajzen, 1991).

Perceived Behavioral Control

As mentioned early on in the chapter, the construct that is included in the TPB that distinguished it from the original TRA model, is perceived behavioral control. In assessing the limitations of the TRA, Ajzen (1985) found that it lacked the ability to account for non-motivational factors that influence behavior such as the availability of opportunity and resources. By adding the construct of perceived behavioral control and forming the new model, Ajzen (1991) showed that both motivation and ability interacted to influence a person's behavioral achievement. The resulting TPB model is now able to be utilized when predicting and understanding behaviors in which people lack complete volitional control. Perceived behavioral control is characterized by the extent to which a person perceives his or her ability to perform a behavior (Azjen, 1991). Not only does this factor reflect the ease to which a behavior can be performed, it is also assumed to include past experience and expected obstacles (Azjen, 1991). A person's confidence in their own ability to perform a task is affected by the control beliefs - the perceived occurrence of factors that either assist or hinder the performance of a behavior (Azjen, 1991). These beliefs are largely created by considering the amount of resources that are accessible and the number of barriers to performing the behavior that a person anticipates. These two factors together generate the control beliefs. The term "accessible resources" represents anything that is needed or desired to perform a specific behavior. This can include money, time, skills, cooperation of others, etc. (Azjen, 1991). It makes sense then that the more resources an individual believes he/she possesses that help facilitate behavioral achievement and the fewer number of

obstacles he/she anticipates, the more perceived control he/she has over the behavior (Azjen, 1991). Perry and Morris (2005), in a study on the role of self-perception and knowledge on consumer behavior of individuals between the ages of 20 and 40 with incomes below $75,000, found that a person's propensity to save depends partly on their perceived level of control over the behavior, their financial knowledge, and their financial resources. Their study used data from the 1999 Freddie Mac Consumer Credit Survey, with a sample size of 10,997, which cannot be generalized to individuals earning moderate and high incomes due to the income stipulation.

This study looks at the students' confidence in their own ability to save money. The perceived behavioral control construct is of utmost importance for this particular study for this reason: if students do not have enough money to cover their financial obligations while allowing for regular deposits into a savings/investment account, they may strongly desire to save money but yet they are unable to do so because of a lack of resources. In the same vein, if they have large amounts of debt, they may perceive this as an obstacle that inhibits them from saving in the future.

Other examples of factors that may hinder/assist a student's perceived ability to save are whether they are claimed as a dependent on their parent's tax return, his or her perceived self-efficacy, amount of monthly income, amount of debt, the student's overall perceived financial knowledge, and perceived knowledge of saving and investing. If students are listed as dependents on their parent's tax return, they may feel less of a need to save money because they are still legally considered dependent. Students with low levels of self-efficacy may not feel like they have the ability to manage their finances well, which could negatively influence savings behavior. Students with

lower levels of income may perceive it to be more difficult to save. Students may perceive having high levels of debt to be an obstacle that inhibits saving for the future.

The literature on actual financial knowledge shows that a lack of knowledge is related to debt (Norvilitis, Merwin, Osberg, Roehling, Young, & Kamas, 2006) and financial well-being (Lyons, 2008); However, objective and subjective financial knowledge may have unique effects on decision-making and financial behavior (Xiao, 2011), it is necessary to distinguish between the two. Because this construct measures the students' perceived control over a behavior, it is appropriate to include the students' perceived financial knowledge. In this study, perceived knowledge of saving and investing is also used as a perceived behavioral control variable. A student that does not feel they are competent enough to save/invest for the future may not feel confident enough to do so.

Demographic Variables

The developers of TPB assert that demographic factors do not have a direct impact on intention and actual behavior but they affect them indirectly through their impact on attitudes, subjective norms, and perceived behavioral control (Xiao, 2008, p. 32). In effect, the variances stemming from theses psychological variables reflect the variances of the demographic variables (Xiao, 2008, p. 32). Therefore, demographics are accounted for but not explicitly represented in the TPB model (Ajzen & Fishbein, 1980). However, in this study, demographics are represented as a separate block of control variables for the purpose of examining their individual relationship with savings behavior. Previous research on savings behavior shows that certain demographic variables significantly influence the likelihood that a person is saving money regularly. For example, race, gender, marital status, enrollment status, and number of financial

dependents have all been found to be significantly related to financial behavior (Gutter, Copur, & Garrison, 2010; Rutherford & DeVaney, 2009; Williams, 1991; Xiao & Noring, 1993).

If significant relationships exist between these demographic variables and savings behavior, this could provide major implications for financial educators and the indirect influences on intention and behavior through a person's attitudes, subjective norms, and perceived behavioral controls, which are products of the social learning process. The next section presents the antecedents of the TPB as products of social learning.

Attitudes, Subjective Norms, and Perceived Behavioral Control as Products of Social Learning

To this point in the chapter, the rationale for using the TPB has been discussed with respect to its ability to guide this study in answering the research question. Specifically, the constructs of this theory (attitudes, subjective norms, and perceived behavioral control) have been operationalized in the context of this study of savings intention and behavior of college students. The next section discusses how the three major constructs are formed: through the process of social learning.

According to Bandura's (1963, 1977) social learning theory, people learn their attitudes and behaviors by observing the behaviors and attitudes of important referent people in their lives and imitating or "modeling" these observations. This process of developing behaviors and attitudes is known as the process of socialization, which begins in childhood and may perhaps continue through the rest of an individual's life (McNeal, 1987; Moschis, 1985, 1987).

When discussing the notion of modeling, Bandura (1963, 1977) stated that there are four integral sub-processes or conditions that must be met for modeling to be

effective. The first condition is attention; it would be highly unlikely for an individual to imitate another individual without paying attention. The second condition is retention; this refers to the imitator's ability to retain the attitude or pattern of behavior for a long period of time. The third condition is reproduction, which refers to the ability of the imitator to reproduce the attitude of pattern of behavior. Lastly, a person must be motivated to acquire, retain, and execute a learned attitude or behavior. This motivation, as noted in Ajzen's (1991) theory of planned behavior, can be a direct result of the imitator's behavioral beliefs – the beliefs about the expected outcome.

The social learning theory has also been extended to the field of consumer finance. Ward (1974, p. 2) defined consumer socialization as "the process by which young people acquire the skills, knowledge, and attitudes relevant to their functioning in the marketplace." Consumer socialization in the literature has been expanded to include things, such as, acquiring and developing values, attitudes, norms, skills, behaviors, motives, and knowledge which are related to consumption and financial management (Rettig & Mortenson, 1986). As mentioned in Gutter and Garrison (2008, p. 74-75), empirical results by some of the leading researchers in the field of behavioral economics suggest that attitudes towards "financial behaviors are transmitted through peers, school, family, and the media with family being the primary socialization agent" (Fox, Bartholomae, & Gutter, 2000; Lee & Hogarth, 1999; Shim, Xiao, Barber, & Lyons, 2008; Xiao et al., 2007). It is important to note, however, that financial socialization is far more inclusive than just learning how to be an effective consumer; it is the "process of acquiring and developing values, attitudes norms, knowledge, and behaviors that

contribute to the financial viability and well-being of the individual" (Schuchardt, et al., 2009).

Aside from the social learning aspects that factor into a person's perceived behavioral control; this construct also includes features of endowments. For the purpose of this study, the term endowments refers not only to some demographic factors, but also factors such as whether or not students have a part time job, have enough money to save, are still dependent upon their parents for financial support, etc.

Financial Education and Savings Behavior

Financial education refers to "any program that addresses the knowledge, attitudes, and/or behavior of an individual toward financial topics and concepts" (Fox, Bartholomae, & Lee, 2005). Empirical results in the literature on financial education and savings shows a direct relationship between financial education and savings. For example, when evaluating the effectiveness of the High School Financial Planning Program (HSFPP), Danes, Huddleston-Casas, and Boyce (1999), found that upon completion of the curriculum, about 40% of the students began writing financial goals for saving money. Three months later, the researchers conducted a follow-up and found that 60% of the students had changed their savings patterns, with 80% reporting that they are saving for needs/wants, and 20% reporting that they save every time they receive money (Danes, Huddleston-Casas, & Boyce, 1999). This study used a sample of 418 high school student and the data was collected by contacting high school teachers who were interested in using the HSFPP curriculum. In another study, Lyons, (2008) used a sample of 29,759 college students from 10 campuses located in the Midwest to study the effects of financial education on risky financial behavior. The results indicated that college students were significantly less likely to engage in risky

financial behavior, such as accruing credit card debt and missing credit card payments, if they were currently enrolled in, or have already taken a formal course in personal finance (Lyons, 2008); Engaging in these risky financial behaviors can make depositing money into a savings/investment account difficult. Thus, financial education may reduce risky financial behaviors and improve positive financial behaviors, but other personality factors also influence these things.

Gutter and Renner (2006) conducted a study at a large Midwestern university to evaluate the immediate effects of a personal finance course on college students' beliefs, attitudes, and/or behaviors. The original intention of the study was to collect data right before the class began, immediately after the class had ended, and again, nine months after the class had ended. The researchers wanted to test for longitudinal effects of the financial education. Although they received survey data from 270 students, collected in fall of 2006, researchers were only able to collect all three surveys from 77 of the students. Although the results of the study showed that six percent of the students who completed the follow-up changed from having no intention in opening a retirement account to actually opening one, the results also showed that students were found to be less likely to save nine months after the study than they had been before taking the course. In Gutter and Renner's (2006) study, the sample was comprised of students who were required to take the course, as well as students who elected to take the course, although between-group comparisons were not made. Because of the small sample-size, conclusions and generalizations are limited.

Bernheim, Garrett, & Maki, (2001), in a study on state financial mandates and their affect on financial behavior, compared curriculum mandates on financial choices of

adults between ages 30 and 49. The goal of the study was to distinguish whether financial choices varied by whether the student was exposed to a state financial education mandate and the number of years since exposed to the mandate. Data used for the analysis was based on a cross-sectional survey of households from 1995. The respondent's age ranged between 30 and 49, which meant they presumably completed high school between 1964 and 1983. 2000 telephone surveys were completed. Surveys collected information on standard economic and demographic information, including self-reported rates of saving. The survey also asked respondents to name the state they graduated high school in, as well as other information regarding their exposure to financial education. The final sample showed significant discrepancies in single individuals, females, non-whites, and people who did not complete high school. Median household income was also much higher than the benchmark (approximately 35% higher). Results of the study found the first systematic evidence of long-term financial behavioral effects of the financial education curriculum mandates (Bernheim, Garrett, & Maki, 2000). Results also found that the mandates increased exposure to financial education, which ultimately elevates rates of savings and wealth accumulation during their adult lives (Bernheim, Garrett, & Maki, 2000). As with most studies of this nature, Bernheim, Garrett, and Maki (2000), discuss the self-report survey method as a potential concern. This study adds to the body of evidence that education may be a powerful tool for increasing personal savings.

Financial Education as a Moderator between Attitudes, Subjective Norms, and Perceived Behavioral Control on Savings Behavior

The most important question regarding this study is whether financial education acts as a moderator between psychological factors and financial behaviors. This

question was posed in Gutter and Garrison (2008) regarding the relationship between norms and personal financial behaviors (p. 85). Gutter, Copur, and Garrison (2010) found that financial education is significantly related to both actual and perceived financial knowledge. In the same study, the researchers found financial education to be significantly related to financial behaviors such as budgeting and saving (Gutter, Copur, & Garrison, 2010, p. 53). This study suggests that formal financial education, via classes in school or in the community, and informal education, via social learning have a significant effect on subjective norms, dispositions, and behavior. However, given the mixed information people may receive from the classroom versus their other agents of socialization, it is unclear how these forms of education work together to impact behavior. Thus, an important question to ask is whether financial education acts as a moderator between the products of socialization (attitudes and motivational factors) and savings behavior/intent among college students (as shown in figure 2-3). This study looks to evaluate all three of the main TPB constructs and how financial education might influence their relationships with behavioral intention, as well as actual behavior.

Research Questions and Hypotheses

Q1. When controlling for other factors, will the antecedent constructs of TPB be significantly related to the likelihood that a student is saving/intending to save?

H1. When controlling for other factors, attitudinal factors are significantly related to the likelihood that a student is saving/intending to save.

H2. When controlling for other factors, subjective norm factors are significantly related to the likelihood that a student is saving/intending to save.

H3. When controlling for other factors, perceived behavioral control factors are significantly related to the likelihood that a student is saving/intending to save.

Q2. Will the relationships between attitudes, subjective norms and perceived behavioral control (as blocks of variables) and savings/intention to save differ by whether the students have taken a personal finance course (as shown in figure 2-3)?

H4. The relationship between attitudes (as a block of coefficients) and savings or intent to save differs by whether the students have taken a personal finance course.

H5. The relationship between subjective norms (as a block of coefficients) and savings or intent to save differs by whether the students have taken a personal finance course.

H6. The relationship perceived behavioral controls (as a block of coefficients) and savings or intent to save differs by whether the students have taken a personal finance course.

Q3. Will the model that allows for financial education to be a moderator between attitudes, subjective norms, and perceived behavioral controls and savings behavior/intention be the most appropriate model?

H7. The model that allows for financial education to be a moderator between attitudes, subjective norms, and perceived behavioral controls and savings behavior/intention will be the most appropriate model.

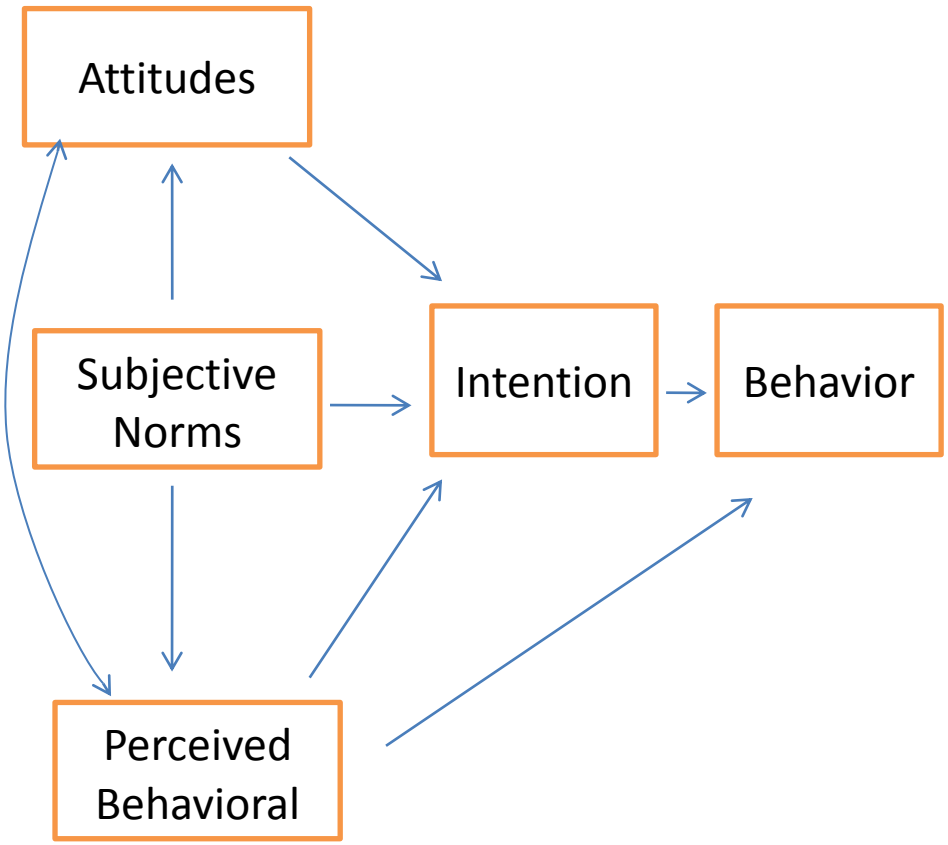

Figure 2-1. Ajzen's Theory of Planned Behavior (TPB)

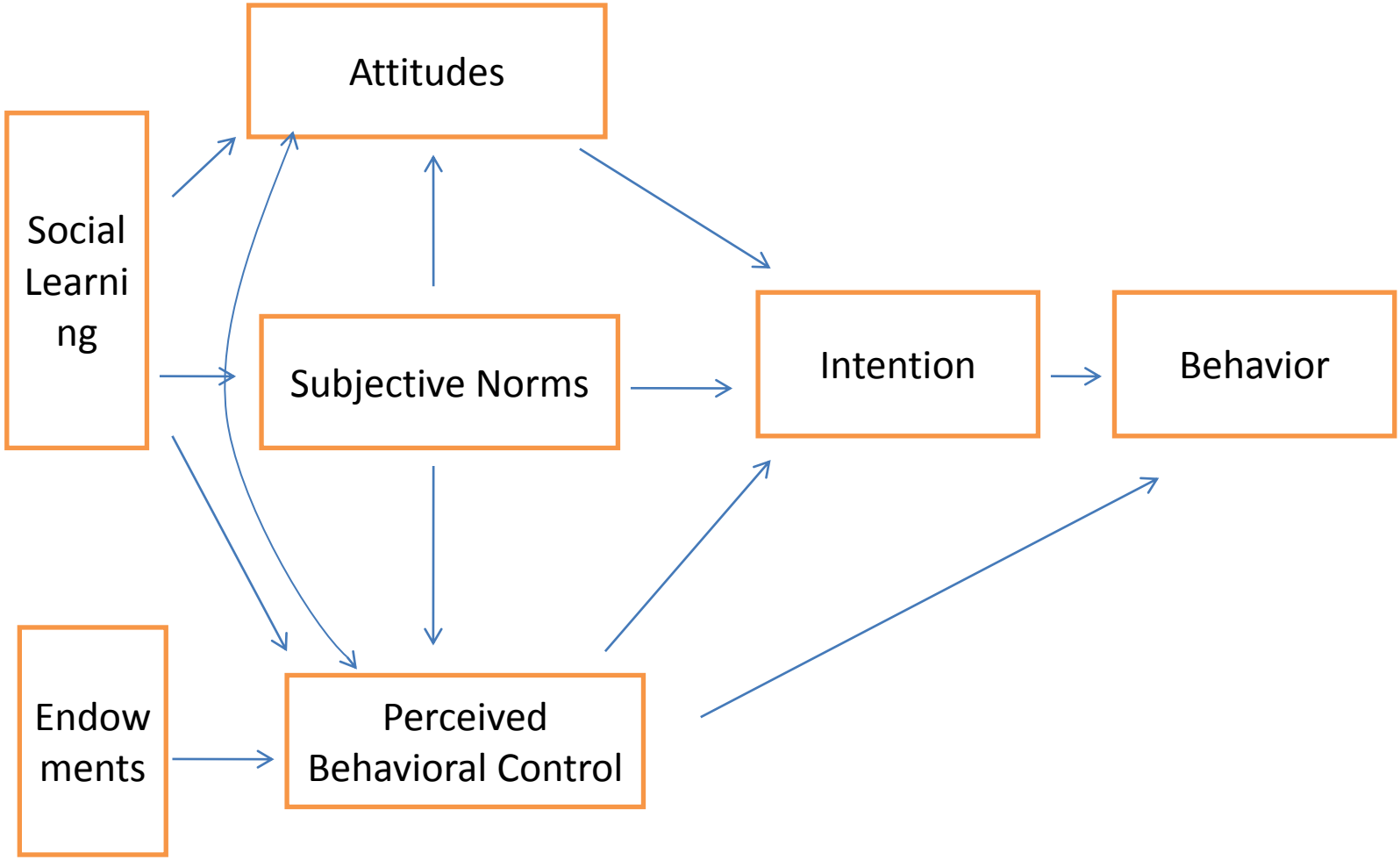

Figure 2-2. Antecedents of TPB as products of social learning

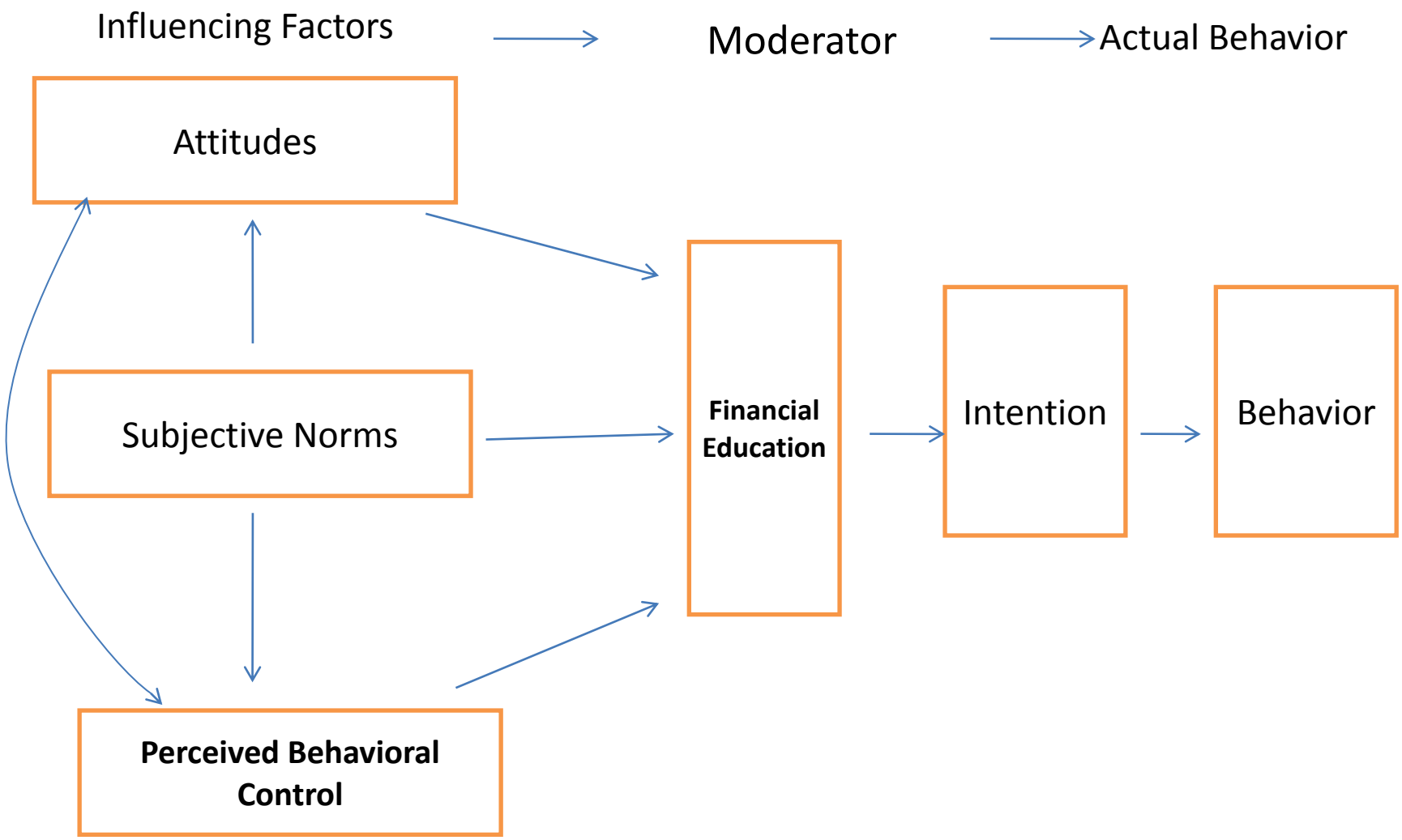

Figure 2-3. TPB model including moderator effect

CHAPTER 3
METHODS

Sampling and Data Collection

The data used in this study was collected during the spring and fall semesters of 2008 as part of a larger research project, which examined the impact of financial education on financial behaviors on college students. The sample population for this study is college students above the age of 18 that received their diploma from a high school located within the United States. A total of 15 universities from across the United States were chosen at random from the six policy categories identified by Gutter, Copur, and Garrison, (2010) based on the 2004 National Council on Economic Education report; the researchers used a stratified sampling technique. Randomized lists of student email addresses were obtained from each one of the universities selected, and occasionally, complete lists of email addresses for student populations were given to the researchers for use in their study.

A cross-sectional research design was utilized through the use of an online survey. Participation in the study was requested via the students' email addresses three times over the span of one month. These three emails contained information regarding a chance for an incentive (every one thousandth survey that was completed would receive a $100 gift card), as well as an informed consent document. The emails also contained a link to the survey. Before the participants began the survey, they had to once again confirm their consent on the informed consent document. In all, 172,412 students received the three emails, with 16,876 students responding to the survey, which yields a response rate of approximately 9.79%. Respondents who did not attend high school in the United States, recipients of a GED, students who were home

schooled, and students who failed to indicate which state they graduated high school were removed from the sample, resulting in a sample size of 15,797 students. From this sample, cases with missing values for the dependent and independent variables were removed, leaving a final sample size of 10,006.

Dependent Variables

Savings. There is only one dependent variable for this study: saving/intention to save. It is comprised of actual savings behavior and savings intention. In other words, it is made up of students who are saving and students who are not saving but intend to save at some point in the near future. Two questions were combined to create this variable. The first question was “Are you currently depositing/investing money on a regular basis into some sort of account (includes employer plans, mutual funds, individual retirement accounts (IRA), savings, CD’s)?” This was a yes or no question, designed to measure actual savings behavior. The second question was “Do you plan on saving in the future?” Responses for this question included “plan to next month,” “plan to next six months,” “plan to after I graduate,” and “I have no plan”. This portion of the variable was then coded to show whether a student planned to save (“1”) or had no plan at all (“0”). Students who answered yes to either question were included in this category. In other words, students who identified themselves as saving regularly and students who were planning on saving (next month, in six months, or upon graduation) were identified as “1”, whereas students who were not saving and had no intention to save were identified with a “0” for this variable.

Independent Variables

Following the TPB model, the independent variables for this study represent students’ attitudes towards saving, subjective norms on savings, and their perceived

behavioral control on saving. Other independent factors include whether students have taken financial education, as well as the interaction of the attitudes, subjective norms, and perceived behavioral control variables by whether the students have taken financial education.

Attitudes. Four financial dispositions were measured in this study. These attitudinal variables make up Block 1 of the variables in Table 4-1.

The first, financial risk tolerance, was measured by asking the question “Which of the statements on this page comes closest to the amount of financial risk that you are willing to take when you save or make investments?” Answer choices for this question were as follows: “take substantial financial risks expecting to earn substantial returns,” “take above average financial risks to earn above average returns,” “take average financial risks expecting to earn average returns”, and “not willing to take any financial risks.” These were both statements, whereas the next three dispositions were measured using scales.

The second disposition, compulsive buying, was measured using the Compulsive Buying Scale (CBS). The CBS, developed by Faber and O’ Guinn (1992), consists of seven statements that represent specific feelings and behaviors related to compulsive buying. The data collectors used six of the seven statements, leaving off the item that read “If I have any money left at the end of the pay period, I just have to spend it”, because of a lack of student responses to this item. (Gutter, Copur, & Garrison, 2010, p. 27). Responses to the items ranged from 1= very often, to 5=never. More severe compulsive buying feelings and behaviors will result in lower scores on the scale.

Cronbach's Alpha was calculated to be .80, which showed the internal consistency reliability was reasonable.

The third disposition, materialism, was measured using Richins' & Dawson's (1992) Materialism Scale. The scale analyzes the concepts of centrality, happiness, and success, the three factors related to materialism. The researchers used 15 of the original 18 items on the scale, all ranging from 1=strongly agree, to 5=strongly disagree. The items left off ("I don't pay much attention to the material objects other people own," "I usually buy only things I need," and "I enjoy spending money on things that aren't practical") due to unfit student responses. Cumulative scores on the scale could range from 15 to 75, with lower scores representing lower levels of materialism and higher scores representing higher levels of materialism. The inter-item reliability was found to be relatively high among college students (alpha = .86).

Future orientation was the final financial disposition measured. Researchers utilized the Consideration of Future Consequences (CFC) scale, developed by Strathman et al. (1994). This 12-item scale examined the students' consideration of distant versus immediate consequences of possible behaviors. Answer choices ranged from 1=doesn't describe me at all, to 5=describes me very well. Cronbach's Alpha was calculated to be .78.

Subjective Norms. Three subjective norm variables were measured in this study. The first subjective norm variable, perceived norms of parents, was measured by asking the question "Do you think your parents are saving/investing in stocks/bonds/mutual funds?" Answers for this question were "yes," "no," or "not sure." This variable was recoded into a "yes" or "other" variable. The second subjective norm variable, perceived

norms of peers, was measured by asking the question “Do you think your friends are saving/investing in stocks/bonds/mutual funds?” Answers for this question were “yes”, “no”, or “not sure”. This variable was recoded into a “yes” or “other” variable. The third variable, the perceived norm of a typical student, was measured by asking the question “Do you think the typical student at your school is saving/investing in stocks/bonds/mutual funds?” This variable was recoded into a “yes” or “other” variable. These variables were intentionally coded in this way for comparison purposes. If students did not believe their friends, parents, and or the typical student was saving/investing, they were expected to select “no” or “not sure.” These responses were combined and coded as a ”0” for comparison against those who were sure their friends, parents, and/or the typical student was saving/investing, which were coded as “1.”

Perceived Behavioral Control. Six perceive behavioral control variables were measured in this study. These six variables make up block three of the analysis. The first perceived behavioral control variable, financial self-efficacy, was assessed using six items. Two of the items were adopted from the Money Ethic Scale’s (MES) “budget” factor, which was developed by Tang (1992). Responses were on a 7-point, Likert-type scale (1=strongly disagree, 7=strongly agree). Higher perceptions of self-efficacy will result in higher scores on the scale. Results from the six items were combined to create an overall self-efficacy score. Cronbach’s alpha was calculated to be .96.The second perceived behavioral control variable, dependent on parent’s tax return, was measured by asking the question “Do your parents claim you as a dependent on their tax return?” Answers for this question consisted of “yes”, “no”, or “not sure”. This variable was coded into yes=1 and no or unsure=0. The third perceived behavioral control variable, debt,

was measured by asking the students several questions related to the amount of debt they are currently carrying (i. e. credit card debt, student loan debt, car loan, mortgage, etc). The totals from these questions were combined to form overall debt levels. The answer options for this question were in these ranges: $0, $1 - $999; $1,000 - $4999; $5,000 +; Not sure. Another perceived behavioral control variable, income, was measured by asking the students how much they receive in monthly income. Answer choices for this question were: $0; $1 - $499; $500 - $999; $1,000 +. Perceived knowledge of savings/investing was also measured as a perceived behavioral control variable. It was measured by asking “How would you rate your knowledge of saving/investing compared to the typical student at your school?” Answer choices were better, the same, and worse. This variable was coded to compare students who rated their savings/investing knowledge to be better or worse than the typical student. The final perceived behavioral control variable measured in this study is perceived overall financial knowledge. This was measure by asking students to rate their own level of financial knowledge, compared to the typical student at their school: “How would you rate your financial knowledge compared to the typical student at your school?” Answer choices were better, the same, and worse. This variable was coded to compare students who rated their overall financial knowledge to be better or worse than the typical student

Demographic Variables

The demographic variables used in this study are race, sex, marital status, financial dependents, and enrollment status. Race was measured by asking the students to choose the race/ethnicity that best describes them. Answer choices included: “White (non-Hispanic),” “African American/Black (non-Hispanic),” “Hispanic,”

“Asian-American,” “Native American,” or “Other.” The reference variable for this was White (non-Hispanic). Sex was measured by asking students to identify whether they were “Male” or “Female.” The variable was coded to represent males=1 and female-0. Marital status was measured by asking whether students to choose the option that best described their household. Answer choices consisted of “married,” “single,” “divorced/separated/widowed”. This variable was coded to represent single=1 and other=0. The financial dependents variable was measured by asking the students how many financial dependents they are responsible for. This variable was coded to represent whether a student was responsible for at least one person other than themselves “1” and if they had no financial dependents “0”. Enrollment status was measured by asking the students if they were enrolled full-time or part-time. This variable was coded: full-time=1, part-time=0.

Interaction Variable

Financial Education. Students were asked whether they “were…taught about personal finances in high school” or if they had “ever taken a course, program, or seminar on personal finance issues in [the] community, religious institute, or 4H – in other words not through school.” Both were yes or no questions. In this study, students that answered “yes” to either question were considered to have taken a financial education course and coded as a “1”; Students who answered “no” to both financial education questions were coded as a “0”. Each financial education variable is controlled for on its own, and, if significant, is multiplied by all of the other variables to form the interaction variables.

Analysis

To find out if each block of predictor variables described by the constructs of TPB (attitudes, subjective norms, perceived behavioral control) are significantly related to the likelihood that a student is saving/intending to save, ceteris paribus (Hypothesis 1, 2, 3), a binary logistic regression is utilized using a forced hierarchical regression technique. The significance of the blocks of variables is examined. The order and content of the blocks of coefficients is based on the constructs of the TRA and TPB model, with the addition of the financial education variable, demographics block of variables, and the interaction block, which are added for the purpose of this study. The only part of the block entry order that can be interchangeable is the attitude block and the subjective norm block. Analyses will be ran for each order to ensure the order of these blocks do not change the outcome of the statistical equation.

To find out if the relationship between attitudes, subjective norms, and perceived behavioral controls (as blocks of coefficients) and savings or intent to save differs by whether the students have taken a financial education course, ceteris paribus (Hypothesis 4, 5, 6), the interaction block of variables are tested for significance.

In order to determine whether the model that allows for financial education to be a moderator is the most appropriate model (Hypothesis 7), the full model is compared to the reduced model. In the reduced model, the relationship between the predictor variables and the dependent variable (savings/intention to save) is examined, controlling for each additional block of variables. The full model, which includes all of the reduced model blocks of variables, also includes the interaction effect of the independent variables on whether they have taken a course on personal finance. This is done by including interaction terms between the independent variables and the

independent variable, indicating that financial education has a moderating effect on the predictor variables.

Table 3-1. Variables included in hierarchical regression blocks

Block 0	Block 1	Block 2	Block 3	Block 4	Block 5
Demographics	Attitudes	Subjective Norms	Perceived Behavioral Control	Financial Education	Moderator Variable
Race	Financial Risk Tolerance	Parents Save Norm	Financial Self-efficacy	Financial Education in High School	Attitudes x Financial Education
Gender	Materialism	Peers Save Norm	Listed as dependent on parents' tax return	Financial Education in the Community	SN's x Financial Education
Marital Status	Compulsive Buying	Typical Student Save Norm	Perceived Financial Knowledge		PBC's x Financial Education
Have financial dependent(s)	Future Orientation		Perceived Savings Knowledge		
Enrollment Status			Debt		
			Income		

CHAPTER 4
ANALYSIS

Sample Description

Demographic Variables:

Upon running the descriptive statistics for this sample (as shown in Table 4-1 and Table 4-2) of college students used in this study, the results showed that this nationally representative sample is reasonable when compared to national demographic averages of college students (NASPA, 2008). The majority of students were enrolled full-time (93.2%, national average 90.58%). Most students were white (82.79%, national average 69.8% white), most were female (67.4%, national average 62.7%), and the majority were unmarried (83.13%, national average, 58.1% single). 7.97% of the sample had one or more financial dependents. Another characteristic of this sample is that 41.2% were taught a personal finance, either through a course in high school or in the community: 35% took a course in high school and 7.2% took a course in the community.

All of these demographic variables have been identified in the literature as being related to financial behaviors, and specifically savings behavior. For that reason, these variables are controlled for in this study. Other variables that can be considered demographic in nature are included in the analysis in the perceived behavioral control block of variables due to their effects on a person's perceived ability to save money regularly.

Dependent Variable

Saving and intending to save. The results of the cross tab analysis using χ^2 distribution showed that there were overall significant differences in whether students were saving or intending to save by whether students have taken a personal finance

course (χ^2 = 8.634, p<.01). This finding was expected due to the previous literature on financial education and its effects on savings behavior.

Independent Variables

Attitude variables. The results of the χ^2 test showed that there are significant differences in certain financial dispositions by whether students have taken a course on personal finance. For example, there was a significant difference in students that were not willing to take financial risk (χ^2=8.537, p<.01), overall compulsive buying (χ^2=42.367, p<.05), and overall future orientation (χ^2=24.217, p<.05).

All of these attitudinal variables have been identified in the literature as being related to financial behaviors, and specifically savings behavior. Thus, they are controlled for in the regression analysis.

Subjective norm variables. The results of the χ^2 test show that there are significant differences in the subjective norm variables by whether students have taken a course on personal finance. The first subjective norm variable, perceived parents saving norm, significantly differs by financial education (χ^2=15.367, p<.001). Another subjective norm variable, peers saving norm, significantly differs by financial education as well (χ^2=10.293, p<.01). Lastly, typical student savings norm was also found to significantly differs by financial education (χ2=16.729, p<.001).

Perceived behavioral control variables. The results of the χ^2 test showed significant differences in perceived behavioral control variables by whether students have taken a course on personal finance. Of the perceived behavioral control variables, significant differences were found among students that perceived their overall financial knowledge as being better than a typical student (χ^2=40.669, p<.001), and worse than a typical student (χ^2=84.058, p<.001), by financial education. Significant differences were

also found among students that had more than $5,000 of debt ($\chi 2=5.567$, $p<.05$), students who made $500-$999 of income every month ($\chi 2=21.022$, $p<.001$), students who made more than $1,000 of income every month ($\chi 2=17.615$, $p<.001$), and for students who were listed as a dependent on their parents' tax return ($\chi 2=46.107$, $p<.001$). Lastly, overall financial self-efficacy was found to significantly differ by financial education.

Procedural Summary

The remaining portion of this chapter presents the results of the statistical tests that were used to examine the proposed hypotheses. Hypotheses 1, 2, and 3, were tested by using a binary logistic regression, through a forced hierarchical approach to find out if the blocks of predictor variables significantly influence the likelihood that a student is saving or intending to save, ceteris paribus. Hypotheses 4, 5, and 6, were tested by using the same binary logistic regression through a forced hierarchical approach to find out whether the relationship between savings or intent to save differed by whether students have taken a personal finance course in the community. Finally, hypothesis 7 was tested by comparing the full and reduced models using the Omnibus Tests of Model Coefficients, which showed the significance of the overall model after each step of the regression.

The Omnibus Tests of Model Coefficients presented the χ^2 statistic, degrees of freedom, and the p-value for the block of variables and the complete model for each step of the regression. Overall this model was a good fit for this study. The significance level for block entries remains a $p<.001$ significance level until the Block 4 entry, the financial education variables. The significance of the overall model remains a $p<.001$

significance level until Block 5 (the moderator variables) is entered into the regression. The following paragraphs discuss the results of these statistical tests.

Binary Logistic Regression Analysis

As mentioned previously, a binary logistic regression, through a forced hierarchical approach, was used to examine all three of research questions - either by proving or disproving the hypotheses. In essence, six different binary logistic regressions were completed in order to predict the probability that a college student is saving, given each set of predictor variables, but this was done in a single, hierarchical process. Blocks of variables were entered as groups that were entered into the regression in successive stages. As each block was subsequently added to the model, the previous block(s) remained in the model as control factors. The blocks of variables that were included in the regression include: Block 1 = Demographic variables; Block 2 = Attitude variables; Block 3 = Subjective norm variables; Block 4 = Perceived behavioral control variables; Block 5 = Financial education variables; and Block 6 = Interaction variables. These variables are listed in (Table 3-1). The order that the blocks were entered into the model was determined by the constructs of the TRA and TPB models, with the other blocks being added in a way that made the most logical sense for this study. The only part of the block entry order that can be interchangeable is the attitude block and the subjective norm block. Upon running the analysis, the order in which these blocks were entered did not change any of the results. Therefore, the attitude block was entered into the statistical equation before the subjective norm block.

Block 0: Demographics

Demographic factors were added first in order to control for these variables for each of the regressions. As a whole, Block 0 was found to be a significant predictor of

savings behavior/intention (χ^2=37.05, p<.001), thus, leaving the entire model to be significant (χ^2 = 37.05, p<.001). Both the model and block were positively related to savings behavior/intention. Of the variables in this block, only race (p<.001) and the constant (p<.001) were found to be significant and positively related to saving/intention to save. This means that students who reported they were “white” were found to be more likely to be saving or intending to save.

Block 1: Attitudes

The next block added to the regression was one of the constructs from the original TRA model, attitudes, while controlling for demographics. When added, Block 1 was found to be significant (χ^2=129.122, p<.001), keeping the entire model significant as well (χ^2=166.172, p<.001). Both the model and block were positively related to savings behavior/intention. Of the variables contained in this block, compulsive buying (p<.001), risk tolerance (willing to take no risk) (p<.001), and the constant (p<.001) were all found to be significant predictors of saving/intending to save. The risk tolerance variable (no risk) was found to have a negative relationship with savings/intention to save. This means that the more likely a student is unwilling to take any financial risk, the more likely the student will be saving or intend to save. The compulsive buying variable, which is reverse-scored on the CBS scale but positively related to savings behavior/intention, shows that students who score lower on the scale are more likely to be saving or intending to save.

Block 2: Subjective Norms

The subjective norms block, which is also a construct in the original TRA, was added to the model next. When added, Block 2 was found to be significant (χ^2=92.791, p<.001), keeping the entire model significant (χ^2=258.963, p<.001). Both the model and

block were positively related to savings behavior/intention. Of the variables contained in this block, perceived parents saving ($p<.001$), perceived friends saving ($p<.001$), and the constant ($p<.001$) were found to be significant predictors of saving/intending to save. This means that students who perceived their parents and/or peers to be saving were more likely to be saving or intending to save.

Block 3: Perceived Behavioral Controls

Next the TPB construct of perceived behavioral controls was added into the equation. When added, Block 3 was found to be significant ((χ^2=88.601, $p<.001$), keeping the entire model significant as well (χ^2=347.576, $p<.001$). Both the model and block were positively related to savings behavior/intention. The 13 predictors that were added into the model with this block doubled the degrees of freedom from 13 to 26. Of the variables contained in this block, overall financial knowledge (better than typical student) ($p<.001$), perceived saving knowledge (better than typical student) ($p<.01$), and the constant ($p<.01$) were found to be significant predictors of savings behavior/intention. Having a better overall financial knowledge than the typical student was positively related to savings behavior/intention, indicating that students who perceived their overall financial knowledge as being better than the typical student's were found to be more likely to be saving/intending to save. The perceived savings knowledge variable has a negative Beta, indicating an inverse relationship with savings behavior/intention. This means that students who perceived their savings knowledge to be better than the typical student's savings knowledge were found to be less likely to be saving.

Block 4: Financial Education

The next group of variables added to the model was the financial education block. This was the last step of the reduced model. When added to the model, the block was not found to be significant; However, the model remained significant (χ^2=353.07, p<.001) and positively related to savings behavior/intention. Of the two variables in this block, personal finance taught in the community was found to be a significant predictor (p<.05) and positively related to savings behavior/intention. The constant remained significant as well (p<.01).

Block 5: Interactions

The last block that was added to the regression was the interaction block. This block represents all of the variables that were added to the reduced model to create the full regression model. This block added all 26 variables, multiplied by the moderator variable, personal finance in the community. This was done because personal finance in the community was found to be significant and personal finance in school was not, which also caused Block 4 to not be significant. When this block was added to the model, it was not found to be significant; In addition, the model was no longer significant (χ^2=383.489, p<.084). None of the variables added to this group were found to be significant predictors of saving/intention to save.

Accept/Reject Hypotheses

Question 1

When controlling for other factors, will the antecedent constructs of TPB be significantly related to the likelihood that a student is saving/intending to save?

Attitudes and savings behavior/intention

Hypothesis 1 stated that when controlling for other factors, the block of attitudinal factors is significantly related to the likelihood that a student is saving/intending to save.

When controlling for other factors, the block of attitudinal factors was found to be significantly related to the likelihood that a student is saving/intending to save (χ^2=129.122, p<.001). Thus, accept H1.

Subjective norms and savings behavior/intention

Hypothesis 2 stated that when controlling for other factors, the block of subjective norm factors is significantly related to the likelihood that a student is saving/intending to save.

When controlling for other factors, the block of subjective norm factors was found to be significantly related to the likelihood that a student is saving/intending to save (χ^2=92.791, p<.001). Thus, accept H2.

Perceived behavioral controls and savings behavior/Intention

Hypothesis 3 stated that when controlling for other factors, the block of perceived behavioral control factors is significantly related to the likelihood that a student is saving/intending to save.

When controlling for other factors, the block of perceived behavioral control factors was found to be significantly related to the likelihood that a student is saving/intending to save (χ^2=88.613, p<.001). Thus, accept H3.

Question 2

Will the relationships between attitudes, subjective norms and perceived behavioral control (as blocks of variables) and savings/intention to save differ by whether the students have taken a personal finance course, ceteris paribus?

Attitudes moderated by financial education

Hypothesis 4 stated the relationship between attitudes (as a block of coefficients) and savings or intent to save differs by whether the students have taken a personal finance course.

Reject H4 (see explanation below)

Subjective norms moderated by financial education

Hypothesis 5 stated that the relationship between subjective norms (as a block of coefficients) and savings or intent to save differs by whether the students have taken a personal finance course.

Reject H5 (see explanation below)

Perceived behavioral control moderated by financial education

Hypothesis 6 stated that the relationship perceived behavioral controls (as a block of coefficients) and savings or intent to save differs by whether the students have taken a personal finance course.

Reject H6 (see explanation below)

Explanation for H4, 5, 6: When added to the model, Block 5 (the financial education block) was not found to be a significant predictor. In this block, the personal finance in the community variable was found to be significant ($p<.001$), but the personal finance in school variable was not. Because of this, the personal finance in the community variable was used as the moderating variable with all of the other predictor variables that were used in the reduced model, forming interaction variables. None of the interaction variables were found to be significant, so H4, H5, and H6, are all rejected.

Question 3

Will the model that allows for financial education to be a moderator between attitudes, subjective norms, and perceived behavioral controls and savings behavior/intention be the most appropriate model?

Appropriate model. Hypothesis 7 stated that the model that allows for financial education to be a moderator between attitudes, subjective norms, and perceived behavioral controls and savings behavior/intention will be the most appropriate model.

The model that allows for financial education to be a moderator between attitudes, subjective norms, and perceived behavioral controls and savings behavior/intention was not found to be the most appropriate model. The reduced model (and all of the individual blocks within the reduced model) was found to be significant. After the final block of variables, Block 6 – interaction variables, was added, the model lost its significance. Thus, H7 is rejected.

Table 4-1. Sample descriptive statistics

Variable	Mean	St. Dev
Dependent		
Saving or Intent	96.86%	.17444
Independent		
Fin. Risk Tolerance		
No Risk	16.51%	.37130
Above avg. and substantial risk	25.57%	.43625
Materialism	43.23	5.83857
Compulsive Buying	24.47	3.97800
Future Orientation	16.51	.37130
Parents save norm	71.59%	.45101
Peers save norm	23.73%	.42542
Typical student save norm	6.47%	.24592
Perceived Saving Knowledge		
Better than typical student	17.16%	.37709
Worse than typical student	52.20%	.49954
Overall Financial Knowledge		
Better than typical student	12.30%	.32843
Worse than typical student	59.51%	.49090
Financial Self-efficacy	30.11	7.84701
Debt		
$1 - $999	6.08%	.23897
$1,000 - $4999	5.10%	.22001
$5,000 +	10.57%	.30747
Not sure	1.87%	.13534
Income	34.98%	10823
$1 - $499	16.22%	10823
$500 - $999	11.71%	10823
$1,000 +	34.98%	10823
Listed as a dependent on parents' tax return	66.38%	.47244
Race	82.79%	.37751
Sex	32.60%	.46876
Marital Status	83.13%	.37452
Financial dependents	7.97%	.27089
Enrolled Full Time	93.20%	.25176
Financial Education	41.20%	.478

Table 4-2. Sample profile by whether students have taken a financial education course

Variable	Mean/Prop: Have taken a class	Mean/Prop: Have not taken a class	Significance Test
Dependent			
Saving or Intent			χ2=8.634**
Yes	97.5%	96.50%	
No	2.5%	3.50%	
Independent			
Fin. Risk Tolerance			
No Risk	15.1%	17.30%	χ2=8.537**
Other	84.9%	82.70%	
Above avg. and substantial risk	25.6%	25.60%	χ2=.000
Other	74.4%	74.40%	
Materialism			χ2=73.265
Minimum (15), Maximum (75)	43.38	43.14	t=2.017*
Compulsive Buying			χ2=42.367*
Minimum (6), Maximum (30)	24.62	24.42	
Future Orientation			χ2=24.217*
Minimum (13), Maximum (25)	22.64	22.57	
Parents save norm			χ2=15.367***
Yes	73.9%	70.30%	
Other	26.1%	29.70%	
Peers save norm			χ2=10.293**
Yes	25.5%	22.80%	
Other	74.5%	77.20%	
Typical student save norm			χ2=16.729***
Yes	7.5%	5.80%	
Other	92.2%	94.20%	
Perceived Saving Knowledge			
Better than typical student	59.0%	48.50%	χ2=107.100***
Other	41.0%	51.50%	
Worse than typical student	12.8%	19.60%	χ2=80.286***
Other	87.2%	80.40%	
Financial Self-Efficacy			85.191***
Minimum (6), Maximum (42)	30.11	29.04	
Fin. Knowledge			
Better than typical student	63.6%	57.30%	χ2=40.669***
Other	36.4%	42.70%	
Worse than typical student	8.4%	14.40%	χ2=84.058***
Other	91.6%	85.60%	

Table 4-2. Continued

	Mean/Prop		Significance Test
Debt			
$1 - $999	5.9%	6.20%	χ2=.297
Other	94.1%	93.80%	
$1,000 - $4999	4.9%	5.20%	χ2=.468
Other	95.1%	94.80%	
$5,000 +	9.6%	11.10%	χ2=5.567*
Other	90.4%	88.90%	
Not sure	2.0%	1.80%	χ2=1.032
Other	98.0%	98.20%	
Income			
$1 - $499	35.5%	34.70%	χ2=.609
Other	64.5%	65.30%	
$500 - $999	14.0%	17.40%	χ2=21.022***
Other	86.0%	82.60%	
$1,000 +	9.9%	12.7%.	χ2=17.615***
Other	90.1%	87.30%	
Listed as a dependent on parents' tax return	70.6%	64.10%	χ2=46.107***
Other (no, unsure)	29.4%	35.90%	
Race			
White	85.3%	81.40%	χ2=25.846***
Other	14.7%	18.60%	
Sex			
Male	36.3%	30.60%	χ2=36.004***
Female	63.7%	69.40%	
Marital Status			
Single	86.8%	81.10%	χ2=56.858***
Other	13.2%	18.90%	
Financial dependents			
None	93.1%	91.40%	χ2=9.285**
One or more	6.9%	8.60%	
Enrollment Status			
Full-time	94.2%	92.60%	χ2=9.374**
Part-time	5.8%	7.40%	

Table 4-3. Block 0: Omnibus tests of model coefficients

		Chi-square	Df	Sig.
Step 1	Step	37.050	5	.000
	Block	37.050	5	.000
	Model	37.050	5	.000

Table 4-4. Block 0: Variables in the equation

		B	Sig.	Exp(B)
Step 1a	Financial dependent	-.384	.067	.681
	race	.720	.000	2.055
	sex	.210	.098	1.234
	Marital status	-.019	.911	.981
	Enrollment status	.063	.774	1.065
	Constant	2.800	.000	16.445

Table 4-5. Block 1:

		Chi-square	Df	Sig.
Step 1	Step	129.122	5	.000
	Block	129.122	5	.000
	Model	166.172	10	.000

Table 4-6. Block 1:

		B	Sig.	Exp(B)
Step 1a	Financial dependent	-.327	.122	.721
	race	.556	.000	1.743
	sex	-.030	.820	.970
	Marital status	-.031	.858	.970
	Enrollment status	-.003	.990	.997
	materialism	-.004	.712	.996
	Compulsive buying	.069	.000	1.071
	Future orientation	-.067	.039	.936
	Willingness to take financial Risk (No risk)	-1.269	.000	.281
	(Above Average/Substantial)	-.052	.743	.949

Table 4-7. Block 2

		Chi-square	Df	Sig.
Step 1	Step	92.791	3	.000
	Block	92.791	3	.000
	Model	258.963	13	.000

Table 4-8. Block 2

		B	Sig.	Exp(B)
Step 1a	Financial dependent	-.315	.141	.730
	race	.351	.008	1.421
	sex	-.045	.736	.956
	Marital status	-.114	.513	.893
	Enrollment status	.058	.795	1.060
	materialism	-.002	.803	.998
	Compulsive buying	.055	.000	1.056
	Future orientation	-.063	.052	.939
	Willingness to take financial Risk (No risk)	-1.103	.000	.332
	(Above Average/Substantial)	-.153	.336	.858
	Parents Save Norm	1.009	.000	2.742
	Friend Save Norm	.654	.001	1.924
	Typical Student Save Norm	.169	.554	1.185

Table 4-9. Block 3

		Chi-square	Df	Sig.
Step 1	Step	88.613	13	.000
	Block	88.613	13	.000
	Model	347.576	26	.000

Table 4-10. Block 3

		B	Sig.	Exp(B)
Step 1a	Financial dependent	-.362	.099	.696
	race	.326	.016	1.385
	sex	-.091	.506	.913
	Marital status	.023	.900	1.023
	Enrollment status	.132	.574	1.141
	materialism	-.004	.673	.996
	Compulsive buying	.013	.436	1.014
	Future orientation	-.032	.320	.968
	Willingness to take financial Risk (No risk)	-1.007	.000	.365
	(Above Average/Substantial)	-.234	.146	.792
	Parents Save Norm	.920	.000	2.510
	Friend Save Norm	.601	.002	1.823
	Typical Student Save Norm	.219	.448	1.245
	Listed as a dependent on parents' tax return	-.139	.332	.870
	Overall Financial Knowledge (better than average student)	-.078	.620	.925
	(Worse than average student)	.510	.001	1.665
	Monthly Income ($1-499)	.189	.171	1.208
	($500-999)	.192	.298	1.212
	($1,000 +)	.036	.876	1.036
	Debt ($1-999)	.249	.301	1.283
	($1,000-4,999)	.161	.550	1.175
	($5,000+)	.201	.371	1.223
	(Not Sure)	-.425	.166	.654
	Financial Self-efficacy	.016	.104	1.016
	Perceived Saving Knowledge (Worse than average student)	.289	.068	1.335
	(Better than average student)	-.465	.002	.628

Table 4-11. Block 4

		Chi-square	Df	Sig.
Step 1	Step	5.494	2	.064
	Block	5.494	2	.064
	Model	353.070	28	.000

Table 4-12. Block 4

		B	Sig.	Exp(B)
Step 1a	Financial dependent	-.383	.081	.682
	race	.334	.014	1.397
	sex	-.114	.406	.892
	Marital status	.026	.886	1.027
	Enrollment status	.138	.555	1.148
	materialism	-.004	.683	.996
	Compulsive buying	.014	.419	1.014
	Future orientation	-.033	.317	.968
	Willingness to take financial Risk (No risk)	-1.005	.000	.366
	(Above Average/Substantial)	-.240	.136	.787
	Parents Save Norm	.920	.000	2.509
	Friend Save Norm	.584	.002	1.793
	Typical Student Save Norm	.211	.466	1.235
	Listed as a dependent on parents' tax return	-.134	.349	.875
	Overall Financial Knowledge (better than average student)	-.066	.675	.936
	(Worse than average student)	.191	.167	1.211
	Monthly Income ($1-499)	.199	.283	1.220
	($500-999)	.039	.865	1.040
	($1,000 +)	.234	.333	1.263
	Debt ($1-999)	.147	.585	1.158
	($1,000-4,999)	.191	.395	1.211
	($5,000+)	-.448	.144	.639
	(Not Sure)	.505	.001	1.658
	Financial Self-efficacy	.016	.110	1.016
	Perceived Saving Knowledge (Worse than average student)	.266	.093	1.305
	(Better than average student)	-.460	.002	.631
	High school personal finance	.130	.329	1.139
	Community personal finance	.528	.048	1.695
	Constant	2.613	.010	13.640

Table 4-13. Block 5

		Chi-square	Df	Sig.
Step 1	Step	30.419	26	.251
	Block	30.419	26	.251
	Model	383.489	54	.084

Table 4-14. Block 5

		B	Sig.	Exp(B)
Step 1a	Financial dependent	-.316	.173	.729
	race	.372	.008	1.450
	sex	-.111	.430	.895
	Marital status	.005	.978	1.005
	Enrollment status	.184	.441	1.202
	materialism	-.004	.734	.996
	Compulsive buying	.015	.395	1.015
	Future orientation	-.024	.477	.977
	Willingness to take financial Risk (No risk)	-.993	.000	.370
	(Above Average/Substantial)	-.310	.058	.733
	Parents Save Norm	.937	.000	2.552
	Friend Save Norm	.524	.007	1.689
	Typical Student Save Norm	.160	.583	1.173
	Listed as a dependent on parents' tax return	-.136	.356	.873
	Overall Financial Knowledge (better than average student)	-.056	.726	.945
	(Worse than average student)	.213	.134	1.237
	Monthly Income ($1-499)	.214	.262	1.238
	($500-999)	.005	.982	1.005
	($1,000 +)	.147	.546	1.158
	Debt ($1-999)	.196	.493	1.216
	($1,000-4,999)	.195	.404	1.216
	($5,000+)	-.551	.073	.576
	(Not Sure)	.523	.001	1.686
	Financial Self-efficacy	.014	.156	1.014
	Perceived Saving Knowledge (Worse than average student)	.308	.058	1.360
	(Better than average student)	-.402	.009	.669
	High school financial education	.113	.396	1.120

Table 4-14. Continued

	B	Sig.	Exp(B)
Community financial education	10.463	.095	1.674
Community financial education * raceDUM	-.529	.474	.589
Community financial education * INsexDUM	.012	.986	1.012
Community financial education * INstatusDUM	1.313	.155	3.718
Community financial education * Financial dependents	-.437	.603	.646
Community financial education * Enrollment status	-.862	.488	.422
Community financial education * risk tolerance (no risk)	-.316	.636	.729
Community financial education * risk tolerance (above average/substantial)	1.503	.192	4.493
Community financial education * materialism	-.028	.554	.972
Community financial education * compulsive buying	-.041	.663	.960
Community financial education * Future orientation	-.282	.162	.754
Community financial education * parents saving	-.253	.696	.777
Community financial education * friends saving	1.411	.237	4.098
Community financial education * typical student saving	16.829	.997	5.263
Community financial education * Financial self-efficacy	.038	.401	1.039
Community financial education * financial knowledge (better)	-.490	.516	.612
Community financial education * Overall financial knowledge (worse)	-.262	.763	.770
Community financial education * Saving Knowledge (better)	-1.306	.256	.271
Community financial education * Saving knowledge (worse)	-2.244	.057	.106
Community financial education * listed as dependent on parents' tax return	-.111	.888	.895
Community financial education * ($1-999)	17.997	.997	6.313

Table 4-14. Continued

	B	Sig.	Exp(B)
Community financial education * ($1,000-4,999)	-.704	.488	.495
Community financial education * Debt ($5,000+)	.509	.612	1.664
Community financial education * Debt (not sure)	18.849	.998	4.351
Community financial education * Income ($1-499)	-1.161	.124	.313
Community financial education * Income ($500-999)	-.660	.459	.517
Community financial education * Income ($1,000+)	.013	.991	1.013
Constant	2.306	.027	10.038

CHAPTER 5
CONCLUSIONS AND IMPLICATIONS

Conclusions

This study examined financial education as a potential moderator between the products of social learning and savings intention/behavior among college students. The study was based on data collected in 2008 via an online survey. The sample population consisted of college students from across the United States that graduated from high schools within the United States. Logistic regression analysis was used to identify whether financial education moderated the relationships between blocks of variables representing financial attitudes, subject norms, and perceived behavioral control and savings behavior. The results of this research present several important conclusions.

Attitudes and Savings Behavior/Intention

Hypothesis 1 stated that when controlling for other factors, the block of attitudinal factors is significantly related to the likelihood that a student is saving/intending to save. The results of the binary logistic regression showed that the block of attitudinal variables (Block 1) is significantly related to the likelihood that a student is saving/intending to save (χ^2=129.122, p<.001). For this reason, hypothesis 1 was accepted. Although compulsive buying and willingness to take financial risk (no risk variable; negative relationship on savings behavior/intention) were the only variables found to be significant as individual factors, they were significant enough to cause the group of attitudes as a whole to be significantly related to savings behavior/intention. It can be concluded, then, that overall, attitudinal factors are significantly related to the likelihood that a student is saving or intending to save. Additionally, students who rated low in compulsive buying and students who were not willing to take financial risk were found to

be more likely to be saving or intending to save. These findings were consistent with Gutter, Copur, and Garrison, (2010), who found compulsive buying and no willingness to take financial risk to be significant predictors of savings behavior. The findings were also consistent with the theory of planned behavior model (Ajzen, 1991), as shown in chapter two.

Subjective Norms and Savings Behavior/Intention

Hypothesis 2 stated that when controlling for other factors, the block of subjective norm factors is significantly related to the likelihood that a student is saving/intending to save. The results of the binary logistic regression showed that the block of subjective norm variables (Block 2) is significantly related to the likelihood that a student is saving/intending to save (χ^2=258.963, p<.001). For this reason, hypothesis 2 was accepted. The two variables that were shown to be significant predictors of savings/intention to save, individually, were parents saving norm and peers saving norm. It can be concluded, then, that overall, students who perceive their parents and peers to be saving/investing regularly are more likely to be saving/intend to save. The results are consistent with Gutter and Garrison's (2008) findings on perceived norm influences and social norm pressure. This conclusion is also supported by Ajzen's theory of planned behavior model (1991).

Perceived Behavioral Controls and Savings Behavior/Intention

Hypothesis 3 stated that when controlling for other factors, the block of perceived behavioral control factors is significantly related to the likelihood that a student is saving/intending to save. The results of the binary logistic regression showed that the block of perceived behavioral control variables (Block 3) is significantly related to the likelihood that a student is saving/intending to save (χ^2=88.601, p<.001). For this

reason, hypothesis 3 was accepted. Individual perceived behavioral control factors that were found to be significant predictors of savings behavior/intention were overall financial knowledge (better than typical student), and perceived savings knowledge (better than typical student; negatively related to savings behavior/intention). Although these were the only two coefficients found to be significant factors, they were significant enough to make the entire block of perceived behavioral control factors, significantly related to the likelihood that a student is saving or intending to save .It can be concluded, then, that overall, that students who believe their overall financial knowledge to be better than the typical student's financial knowledge are more likely to be saving or intending to save. Alternatively, students who view their saving/investing knowledge to be better than the average student's saving/investing knowledge are less likely to be saving or intending to save.

The finding regarding overall perceived financial knowledge is consistent with the literature on financial knowledge (Perry & Morris, 2005; Xiao, 2011), which states that financial knowledge (as part of an individual's perceived control in performing a behavior, is significantly related to savings behavior. Further, this study found that students who perceive their financial knowledge to be better than the typical student's financial knowledge were more likely to be saving or intending to save, which is consistent with the findings in Gutter, Copur, and Garrison, (2010).

Students who perceive their knowledge of savings/investing may be less likely to be saving in college because of their confidence in receiving a high rate of return in future years may make saving during college seem unnecessary. These findings are consistent with LCH model (Modilgliani & Brumberg, 1954), which suggests that the

amount of savings is largely influenced by a person's expected rate of return. The results of these three hypotheses answer the first research question, that when controlling for other factors, the antecedent constructs of TPB are significantly related to the likelihood that a student is saving or intending to save.

Attitudes Moderated by Financial Education

Hypothesis 4 stated the relationship between attitudes (as a block of coefficients) and savings or intent to save differs by whether the students have taken a personal finance course. This hypothesis was rejected. The results of the binary logistic regression showed that financial education (as a block of variables) is not a significant predictor of savings behavior/intention. Of the two variables in this block, personal finance taught in school was not found to be a significant predictor; however, personal finance taught in the community was found to be a significant predictor. For this reason, personal finance taught in the community was used as the moderating variable. When multiplied by each independent attitudinal variable, none of the resulting interaction variables were found to be significant predictors of savings behavior/intention. Therefore, while financial education in the community is not significant moderator on the relationship between attitudes, as a block of coefficients (or as individual variables), and savings behavior/intention, it does increase the likelihood of savings/intention to save among college students.

Subjective Norms Moderated by Financial Education

Hypothesis 5 stated that the relationship between subjective norms (as a block of coefficients) and savings or intent to save differs by whether the students have taken a personal finance course. This hypothesis was rejected. The results of the binary logistic regression showed that financial education in the community was found to be a

significant predictor of savings behavior/intention. However, when multiplied by each independent subjective norm variable, none of the resulting interaction variables were found to be significant. Therefore, while financial education in the community is not significant moderator on the relationship between subjective norms, as a block of coefficients (or as individual variables), and savings behavior/intention, it does increase the likelihood of savings/intention to save among college students.

Perceived Behavioral Control Moderated by Financial Education

Hypothesis 6 stated that the relationship perceived behavioral controls (as a block of coefficients) and savings or intent to save differs by whether the students have taken a personal finance course. This hypothesis was rejected. The results of the binary logistic regression showed that financial education in the community was found to be a significant predictor of savings behavior/intention. However, when multiplied by each independent perceived behavioral control variable, none of the resulting interaction variables were found to be significant. Therefore, while financial education in the community is not significant moderator on the relationship between perceived behavioral control, as a block of coefficients (or as individual variables), and savings behavior/intention, it does increase the likelihood of savings/intention to save among college students.

The results of hypotheses 4, 5, and 6 answer the second research question, that when controlling for other factors, the relationships between attitudes, subjective norms, and perceived behavioral controls (as blocks of variables) and savings/intention to save, does not differ by whether the students take a personal finance course. This was the main research question and the primary purpose of this study. However, one point of concern arises with the results of this research question and the rejection of these

hypotheses: the financial education in the community variable is full of heterogeneity. The item used on the survey that was used to collect data asks students if they have " ever taken a course, program, or seminar on personal finance issues in [the] community, religious institute, or 4H – in other words not through school." Students who answered yes to this question could have attended a broad range of personal finance events, ranging from one 30-minute presentation to a course or program that spans over several months. The sheer amount of heterogeneity that likely exists in this variable could possibly be the reason why there were no significant relationships between the interaction variables and savings behavior/intention. This is discussed further in the limitations section.

Financial Education as a Moderator

Hypothesis 7 stated that the model that allows for financial education to be a moderator between attitudes, subjective norms, and perceived behavioral controls and savings behavior/intention will be the most appropriate model. The results of the binary logistic regression showed that each block of variables in the reduced model were significant; thus, indicating the model was a good fit for the study. When the last block of variables (Block 5, the interaction variables) was added to the reduced model to create the full/interaction model, the model was no longer significant. It can be concluded, then, that the model that allows for financial education to be a moderator between attitudes, subjective norms, and perceived behavioral controls and savings behavior/intention is not the most appropriate model – the reduced model is a better fit. For this reason, hypothesis 7 was rejected.

Implications

Several important implications come about as a result of this study. For parents, it is important to understand how much their financial behavior influences their children's financial behavior. They should be mindful of their financial decision-making, not just for their own well-being, but for the future financial well-being of their children. Also, parents should also take note that personal financial education through the community was found to be a significant predictor of savings behavior/intention. They may wish to send their children to a money camp or other community event that focuses on personal finance.

For practitioners, while this study was not successful in proving that a financial education moderates the relationship between products of social learning and savings behavior/intention, it did reveal many other significant relationships. For example, financial education taught in the community was found to be a significant predictor of savings behavior/intention. Thus practitioners that work in communities, such as county extension agents, 4H agents/volunteers, and other community professionals/volunteers, should feel encouraged, and know their work is paying off. If these community practitioners are looking for programs or workshops that have been found to encourage positive financial behaviors, they may look to starting a personal finance program/event. Also, practitioners should use the findings to re-evaluate their teaching-style, the material they are using, and the overall effectiveness of their program.

For policy makers, an important implication from this study is for them to potentially increase funding for community-based financial education outreach. They may decide to hire more community professionals and provide them with larger budgets in order to implement more personal finance programs.

For researchers, future research on financial education should be more specific when operationalizing a financial education variable. To further research this topic or to improve upon this study, researchers should look at some of the aspects of these community-based financial programs. For example, they should narrow their search by inquiring about the topics covered in the program, as well as the length and/or intensity of the program. As mentioned previously, programs implemented in the community can consist of a 30-minute presentation on saving for financial goals to a program with higher intensity that covers concepts like savings vehicles and compounding interest over the course of a few months. Simply asking if the students have attended a course/program/seminar on personal finance just allows for too much heterogeneity in the variable. Additionally, the content, intensity, standards, and/or the educational methods used to teach personal finance to students in high school may need to be reconsidered to improve effectiveness, as suggested by Mandell and Klein (2009). Researchers should determine which methods get the best results (i.e. online stock market interaction game instead of or in addition to a traditional lecture on stock market.) Making a class relevant, interactive, and fun, may increase the students' motivation to learn the material, which may be a factor that is offered more in the community setting more so than in the classroom.

Another implication for researchers is the need to investigate the issue of financial education as a moderator between the products of social learning and savings behavior longitudinal data. While financial education in school was not found to be a significant factor, it may become significant over time as the students move on in life, becoming more responsible for their own financial behavior. In other words, as suggested by

Mandell and Klein (2009), the information learned in a high school personal finance class in school may lie dormant in students' minds until later in life when they are in a position, financially, to utilize what they have learned.

A further concept to investigate in the context of the study of savings behavior is motivation. Are students who attend financial education events in the community going to these events because they desire the information being presented (as opposed to students who take a class in school)? This idea has been supported in literature in a study by Mandell and Klein (2007), who found motivation to be a factor in increasing financial literacy in adults.

Limitations

As mentioned previously, the way in which the financial education in the community variable is defined could be a reason for concern. By asking whether or not a student has attended a financial educational event outside of school without inquiring further about specific details such as which topics were covered, the intensity of the program, and the duration of the program, this allows for a fair amount of heterogeneity. By the way the item on the survey was described, students could answer "yes" to a broad range of financial programs and events.

One of the major limitations of the study stems from the use of a self-report survey as the data-collection instrument. With self-reported data, it can be difficult at times to determine whether the data is representing whether financial education affects actual behavior or just the way people answer questions regarding financial behavior. In this study, it is a possibility that students who have taken a course in financial education may feel like they should be saving, so they may feel the need to portray that they know more about saving or are acting on the knowledge, regardless of their actual

knowledge/behavior. Self-report can also lead to students over-estimating their abilities, when comparing themselves to others. For example, when reporting their knowledge of savings/investing, students may not want to admit that they are average or below average compared to their peers or the typical college student. It can be a difficult task for some to willingly classify their self, or even to perceive their self, as being less than average at something

Another limitation of this study stems from the sample demographics. The sample is comprised of 82.79% white students, which is approximately 13% more than the national average of 69.8% (NASPA, 2008). Another demographic discrepancy that may have affected the implications is the high proportion of students who are unmarried. There were 83.13% in this sample, compared to the national average, which is 58.1%. This means the results of the analyses may be biased towards white students as well as single students.

Furthermore, while a large dataset was utilized for the analysis, upon breaking down the race variable into African American, Hispanic, Asian, and other, and using White as the reference variable, the results showed that there were very few respondents from each category that had taken a class in the community (see Appendix A). If these numbers were larger, comparisons could be made using four different racial/ethnic categories; however, because the purpose of this study was to first and foremost address whether financial education was a moderator between products of social learning and savings behavior/intention, the variable was coded dichotomously (White=1, other=0) to include more students in the sample that have taken financial education in the community.

APPENDIX
EXPLANATION OF RACE VARIABLE

Findings

This appendix will present the cross tabs analysis of the race variables. In the analysis, the race variable was coded as White=1, other=0. When race was broken down further into African American, Hispanic, Asian, and Other, while using White as the reference variable, there were not enough from each group that had taken a personal finance course in the community to provide meaningful results that are relevant to this study.

Have you ever taken a course, program, or seminar on personal finance issues in your community, religious institution, or 4H -- in other words not through school. * Other Race Cross tabulation

Table A-1. Other race cross tab

Count		Other Race		
		.00	1.00	Total
Have you ever taken a course, program, or seminar on personal finance issues in your community, religious institution, or 4H -- in other words not through school.	0	9466	311	9777
	1	969	39	1008
Total		10435	350	10785

Have you ever taken a course, program, or seminar on personal finance issues in your community, religious institution, or 4H -- in other words not through school. * Asian Cross tabulation

Table A-2. Asian

Count		Asian		Total
		.00	1.00	
Have you ever taken a course, program, or seminar on personal finance issues in your community, religious institution, or 4H -- in other words not through school.	0	9283	494	9777
	1	956	52	1008
Total		10239	546	10785

Have you ever taken a course, program, or seminar on personal finance issues in your community, religious institution, or 4H -- in other words not through school. * African American Cross tabulation

Table A-3. African American

Count		African American		Total
		.00	1.00	
Have you ever taken a course, program, or seminar on personal finance issues in your community, religious institution, or 4H -- in other words not through school.	0	9457	320	9777
	1	918	90	1008
Total		10375	410	10785

Have you ever taken a course, program, or seminar on personal finance issues in your community, religious institution, or 4H -- in other words not through school. * Hispanic Cross tabulation

Table A-4. Hispanic

Count		Hispanic		Total
		.00	1.00	
Have you ever taken a course, program, or seminar on personal finance issues in your community, religious institution, or 4H -- in other words not through school.	0	9303	474	9777
	1	958	50	1008
Total		10261	524	10785

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