A MODEL OF FINANCIAL SATISFACTION

by

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(Under the Direction of Joseph Goetz)

ABSTRACT

Financial satisfaction is an important factor in financial decision making, particularly with regard to guiding financial behavior through goal setting. Financial satisfaction has been discussed in literature for some time; however, little has been written about the measurement of financial satisfaction and the factors associated with financial satisfaction. This study utilized data from the National Financial Capability Study State-by-State survey to build upon previous attempts to model financial satisfaction. Findings largely supported previous research in that financial satisfaction was significantly correlated with socioeconomic factors, financial knowledge, risk tolerance, financial stressors, and financial behaviors. Additionally, having an emergency fund was one of the strongest behavioral correlates with financial satisfaction.

INDEX WORDS: Financial satisfaction, financial well-being, financial planning, and emergency fund

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DEDICATION

To my wife, without whose support this would not have been possible.

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CHAPTER 1

INTRODUCTION

Financial satisfaction is an important factor in personal financial decision making, with applications in the professional practice of financial planning, as well as personal finance, financial education, and public policy. Although financial satisfaction has been discussed in the literature for some time, there has been relatively little scholarly research about the personal characteristics and behaviors that correlate with personal financial satisfaction; however, two previous studies (i.e., Joo & Grable, 2004; Porter & Garman, 1993) suggested general frameworks depicting factors that may be correlated with financial satisfaction. Further development and validation of previous model frameworks can provide guidance for future research, as well as theoretical support for practical and policy applications.

The importance of research on financial satisfaction, in some studies termed financial well-being, is generally tied to the improvement of quality of life (Joo & Grable, 2004; Porter & Garman, 1993), where financial satisfaction is a general self-perception of one's financial circumstances. The results of such research have broad implications in public policy. However, the literature also suggests that financial satisfaction may have an effect on personal financial decision making. The process of financial decision making is of immediate concern to professional financial planners and all members of society.

A personal financial decision can be any personal life choice that may impact a person's financial resources, presently or in the future. In the course of their daily lives people make many financial decisions, some of which will not lead them to financial satisfaction. This is obviously a situation to be avoided.

The financial planning industry specializes in helping people make all manner of personal financial decisions. The Certified Financial Planner Board of Standards, Inc. (CFP Board, 2012), the leading financial planning regulatory organization, prescribes a six step financial planning process that, like any planning process, includes goal development as a fundamental component. However, neither the CFP Board nor the growing body of financial planning research literature, provides evidence-based best practices for setting goals or which financial behaviors to encourage.

Goal setting theory provides an important link between behavior and satisfaction; goal setting theory states that human action is purposeful, goals play a role in motivating action, and people anticipate satisfaction from goal attainment (Latham & Locke, 1991), i.e., the literature suggests that people use goals to modify behavior in pursuit of satisfaction. Satisfaction, meanwhile, is suggested to be a construct of satisfaction domains, one of which is financial satisfaction (Campbell, Converse, & Rogers, 1976). Therefore, goal theory suggests that financial satisfaction may guide behavior. It is expected, then, that financial behaviors will be correlating variables in a model of financial satisfaction.

Several researchers have operationalized financial satisfaction on a scale (Joo & Grable, 2004; Plagnol, 2011; Porter & Garman, 1993; Traut-Mattausch & Jonas, 2011) and found a host of socioeconomic, demographic, stress, and other correlating factors. Financial behaviors, however, unlike gender, age, or income are possible to readily modify. Therefore, the

correlation of financial behaviors with financial satisfaction is of particular interest. There is a gap in the literature about the relative importance of specific financial behaviors to financial satisfaction.

The concept of financial satisfaction, a scale of feeling fulfillment with one's finances, is of interest to the financial planning profession, financial educators, and public policy makers because it can be used as an instrument to gauge the relative correlation of behaviors and characteristics on financial satisfaction. However, the existing body of research about the factors correlating with financial satisfaction has two common limitations: sample size and a limited number of independent variables used to describe financial satisfaction (Joo & Grable, 2004; Porter & Garman, 1993).

The present study will add to the literature with two major objectives: (1) review the literature and test a general model for the correlates of financial satisfaction, and 2) identify the relative impact of specific financial behaviors on a model of financial satisfaction. Additionally, this research adds to the literature by linking the concept of goal setting to financial behaviors and financial satisfaction, an area in need of further research.

The data analyzed in the present study are from the FINRA National Financial Capability Survey 2009 (NFCS) State-by-State survey, a survey of more than 28,000 American households. The NFCS data contain many variables used by Joo and Grable (2004) and others to describe their model frameworks of factors associated with financial satisfaction.

Framework

Financial satisfaction has been operationalized in a robust framework by Porter and Garman (1993) and Joo and Grable (2004). Porter and Garman (1993) constructed a framework composed of objective attributes (measurable characteristics, i.e., income), perceived attributes

(perception of measurable attributes), evaluated attributes (judged relative to some standard), and personal characteristics. All four variables were found to be important in explaining the variance in a model of financial satisfaction. The Joo and Grable (2004) framework was a more robust framework composed of demographic characteristics, financial stressors, financial knowledge, solvency, financial behaviors, risk tolerance, and financial stress. Subsequent research on financial satisfaction did not utilize a robust framework; however, it suggested that age (Plagnol, 2011), attitude (Traut-Mattausch & Jonas, 2011), savings behavior (Traut-Mattausch & Jonas, 2011), and gender (Alessie, Crossley & Hildebrand, 2006) also correlate with financial satisfaction.

The present research will utilize the NFCS data to test a model of financial satisfaction. The Joo and Grable (2004) framework is used for comparison because it is the most comprehensive model framework for financial satisfaction published to date. Subsequent research focused on smaller number of variables. The Joo and Grable (2004) framework suggested that financial satisfaction correlates with financial stress, risk tolerance, financial behaviors, solvency, financial knowledge, financial stressors, and demographic and socioeconomic characteristics. Limitations in the NFCS data force some adaptation of the framework in constructing a model; primarily, the NFCS data lack a solvency variable, and a financial stress variable.

Summary

Goal setting plays a central role in the practice of financial planning, as it provides a guide for making financial decisions. It is assumed that people set goals and make financial decisions in pursuit of financial satisfaction, and to maximize utility or satisfaction, in general. Therefore, the desire for financial satisfaction may be an important driver of motivation to act in

the pursuit of goals, and an understanding of the principles behind personal financial satisfaction may be of importance to financial planning practitioners seeking to guide their clients toward making good decisions.

The implications of financial satisfaction extend beyond individual financial decisions, because in aggregate, personal financial decisions have macro-economic and public policy implications. The financial recession of 2008-2011 is partially blamed on a mortgage crisis which resulted, in part, from many people being overleveraged in real estate investments and lacking the financial capacity to withstand economic shocks. If financial decisions are made in pursuit of financial satisfaction, then an understanding of the true determinants of financial satisfaction could help consumers to modify behavior toward behavior leading to more positive outcomes, thus potentially dampening the effects of future recessions. In a similar fashion financial satisfaction could inform the work of educators and policy makers as they develop more effective financial literacy curricula designed to yield positive changes in financial behavior.

CHAPTER 2

LITERATURE REVIEW

Financial satisfaction is a potential tool of use to help guide personal financial decisions, of interest to financial planners, consumers of financial services, and financial public policy makers. The following literature review about financial satisfaction is divided into four sections. The first section is a review of literature about the definition of financial satisfaction and measurement of financial satisfaction as a dependent variable. The subsequent two sections present literature supporting correlatory variables, and a theoretical framework for financial satisfaction. The final section describes specific variables in the theoretical framework, based on available data.

Definition and Measurement of Financial Satisfaction

Although there still is limited research in academic literature about the measurement of financial satisfaction (Joo & Grable, 2004; Plagnol, 2011; Traut-Mattausch & Jonas, 2011), existing literature about financial satisfaction consistently cites the Campbell, Converse, and Rogers (1976) research, which concludes that financial satisfaction is a component in overall personal well-being, and that financial satisfaction is dependent upon each individual's frame of reference. In the literature, financial satisfaction is often measured with a single item, considered to be a valid measure of quality of life indicators (Porter & Garman, 1993); however studies have also used a multi-item method (Joo & Grable, 2004).

When operationalized consistently, the results of analyses of financial satisfaction provide validity to the financial satisfaction construct. The following section describes the definition and measurement of variables used in studies about financial satisfaction.

Porter and Garman (1993) published the first robust model of financial satisfaction (n=506). A scale was constructed for each of four characteristics hypothesized to correlate with financial satisfaction. Financial satisfaction was defined as satisfaction with income and savings, ability to meet expenses, and perceptions of the fairness of the economic system. Financial satisfaction was measured by adapting Cantril's (1965) scale, using "an 11-step ladder, on which the respondent is asked to imagine the best possible financial situation as forming the upper end, and the worst possible financial situation as forming the lower end" (p. 139). Then the respondent was "asked to locate an estimate of his/her current financial situation along the ladder between these two extremes" (p. 139).

Joo and Grable (2004), in a research study aimed at defining and testing a framework to explain financial satisfaction (n=220), defined financial satisfaction as "satisfaction with one's present financial situation" (p. 25). Joo and Grable utilized a single question, with responses measured on a ten point scale to assess financial satisfaction. The question asked respondents how satisfied they were with their present financial situation, with ten indicating the highest level of financial satisfaction.

The European Community Household Panel, used by Alessie, Crossley, and Hildebrand (2006) in a study of financial satisfaction, operationalized financial satisfaction employing a materially identical question, "How satisfied are you with your present financial situation? (1) not at all satisfied (2) largely unsatisfied (3) mildly unsatisfied (4) mildly satisfied (5) largely satisfied (6) fully satisfied." (p. 7).

Plagnol (2011), in her study about the changes in financial satisfaction over a person's lifetime, defined financial satisfaction as a domain specific feeling of overall satisfaction, following Campbell, Converse, and Rogers (1976). She analyzed data from the National Survey of Families and Households (NSFH) using financial satisfaction as the dependent variable (n=7,277). To measure financial satisfaction, respondents were asked to respond to a single question, "On a scale of 1-7, where 1 is very dissatisfied and 7 is very satisfied, overall, how satisfied are you with your financial situation?"

Financial satisfaction was not defined directly in Loibl and Hira (2005) study sampling office workers of an insurance company (n=1,420). Financial satisfaction was measured on a Likert five-item scale, 1 = very dissatisfied, 5 = very satisfied. The multi-item scale was composed of the following questions: " During the past six months, how satisfied have you been with each of the following (1) the way you have used your money; (2) your ability to make investment decisions with the money you have saved; (3) your preparation to meet long-term goals; (4) your ability to meet large unexpected expenses; (5) the amount of your unpaid balances in our credit cards; (6) the extent to which you have been able to control your financial situation; (7) the estate planning you have done.

Traut-Mattausch and Jonas (2011), in a research study investigating the relationship between financial satisfaction, income, and saving, defined financial satisfaction as a feeling of fulfillment with one's own economic situation, relative to the person's comparison group. This definition again follows Campbell, Converse, and Rogers (1976). In the Traut-Mattausch and Jonas study, financial satisfaction was measured with three items. The questions were all answered on a seven point scale, 1-7, with seven demarking low satisfaction. The questions were: "(a) How do you evaluate your own economic situation today? (b) How satisfied are you

with your standard of living? (c) If you want something, how much can you afford?" (p. 248). Responses to each question were recorded. In the analysis, financial satisfaction was treated as a single variable.

Thus, in studies of financial satisfaction, financial satisfaction is generally defined as a self-reported feeling of contentment with one's present financial situation, and financial satisfaction is considered to be a sub-domain of overall well-being. Further, Traut-Mattausch and Jonas (2011) pointed out that the feeling of financial satisfaction may be judged relative to the economic situation of peers, or the environment around the subject.

Correlates of Financial Satisfaction

The definition of financial satisfaction follows a relatively common thread, first established by Campbell, Converse and Rogers (1976), asserting that financial satisfaction is a sub-set of general personal satisfaction. However, the research performed to measure financial satisfaction has been inconsistent with regard to testing the factors that may correlate with financial satisfaction. Studies have tested correlations between financial satisfaction and a small number of explanatory variables, such as income and age (Plagnol, 2011), or income, age, and saving behavior (Traut-Mattausch & Jonas, 2011). It was first Porter and Garman (1993), then Joo and Grable (2004), who posited a more comprehensive framework, composed of a larger number of variables. Several studies describing factors that correlate with financial satisfaction have been published since the Joo and Grable study; however, a comprehensive model framework for financial satisfaction has yet to be tested by other authors using other data sets.

The literature about financial satisfaction commonly refers to the independent variables as determinants (i.e., Joo & Grable, 2004; Plagnol, 2011), implying the direction of causation is known. The current study uses the term correlate, rather than determinant, because the evidence

for causation or direction of variable relationships is not well formed. However, fixed characteristics, such as age, gender, and ethnicity, can only correlate with financial satisfaction in one direction; thus, they can be termed determinants of financial satisfaction.

Plagnol's (2011) findings that financial satisfaction increased with age were consistent with a study of retirees versus non-retirees (Hira & Mugenda, 1998). Plagnol attributed this change to life-course increases in assets and decreases in debt, after controlling for the parabolic nature of income change over a lifetime. In addition to age, Plagnol reported other correlates with financial satisfaction, including: income, assets, debt, health, household members, employment status, sex, and education level. Joo and Grable (2004), however did not find a correlation between age and financial satisfaction.

The Plagnol research utilized the NSFH data, which is composed of several waves. Thus, analysis of both cross-sectional and longitudinal data was possible. Plagnol (2011) reported a longitudinal analysis (n=3,751) with results suggesting that age and assets (when controlling for income) were positively correlated with financial satisfaction, while liabilities had a negative association. In other words, financial satisfaction increases with age and assets, irrespective of actual income. In a cross-sectional wave ordered logit analysis, income, assets, and debt were significant factors in determining financial satisfaction, as were health, household members, employment status, gender, and education level. Notably, Plagnol reported that a weighted least squares method of analysis yielded similar results.

Traut-Mattausch and Jonas (2011) reported that saving behavior has also been found to correlate with financial satisfaction at various levels of income. Interestingly, in another study controlling for income, Alessie, Crossley, and Hildebrand (2006), who used an international survey of respondents in European countries, found that financial satisfaction increased for both

men and women when they cohabit, versus when they live alone, but more so for women than men. Therefore, previous research suggested household composition and saving behavior are also determinants of financial satisfaction.

Conceptual Framework

Goal setting theory suggests that people set goals with the anticipation of satisfaction from attaining those goals, and in such a way goals motivate action (Latham & Locke, 1991). Behavior is guided by goals toward attainment of satisfaction. The effect runs in both directions; satisfaction can affect behavior, as behavior can affect satisfaction. Financial satisfaction is a subset of overall satisfaction; thus as goals guide overall behavior towards overall satisfaction, financial goals guide financial behaviors toward financial satisfaction.

Based on a model by Porter and Garman (1993), Joo and Grable (2004) described a financial satisfaction framework, represented in Figure 1. The comprehensive nature of this framework was an improvement over previous studies that focused on only a few correlating variables.

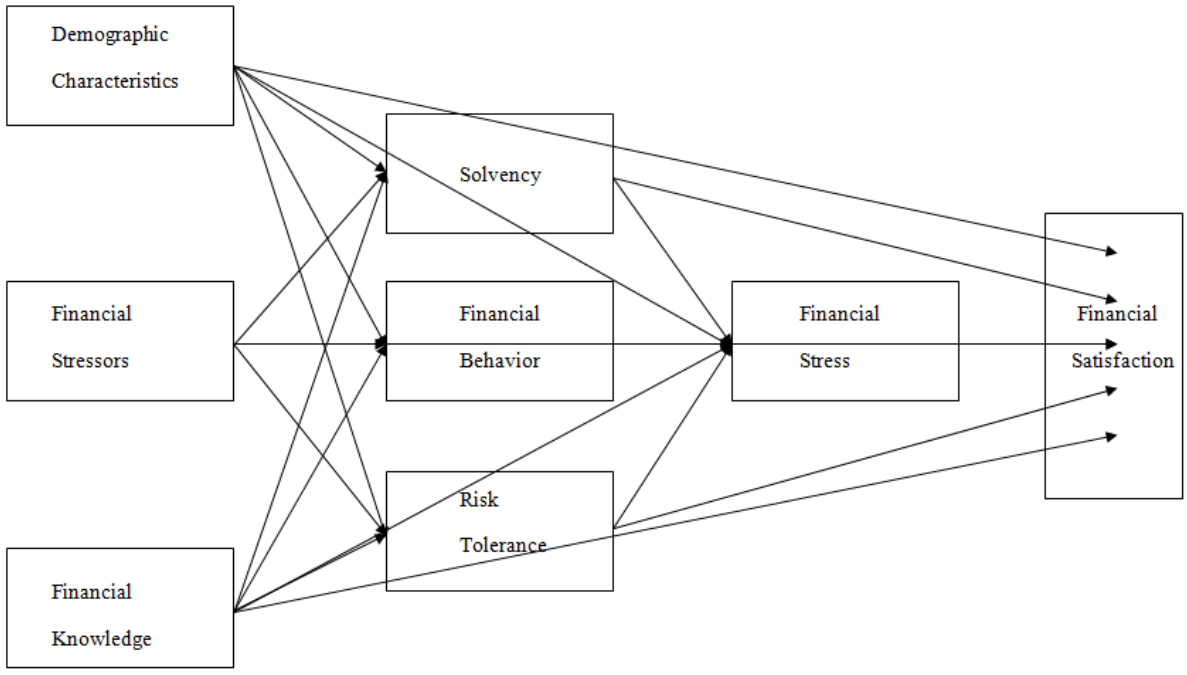

Figure 1. Joo and Grable (2004)Framework for Financial Satisfaction

The correlates of financial satisfaction according to the Joo and Grable (2004) framework are arranged in three levels to depict interaction with subsequent levels, as well as the direct effects of the variables on financial satisfaction. The arrows indicate the direction of the effect. Demographic characteristics, financial stressors, and financial knowledge are in the first level. These variables are hypothesized to impact financial satisfaction directly, as well as to produce indirect effects by interacting with the variables on the second level, which are solvency, financial behavior, and risk tolerance. The second level variables produce direct effects on financial satisfaction, as well as interact with the third level variable, financial stress. Financial stress, in turn, produces a direct effect on financial satisfaction.

Subsequent to the introduction of the Joo and Grable framework, research had indicated that collapsing assets and liabilities into a single solvency variable produced a variable of little informative value (Plagnol, 2011). Further, Joo and Grable (2004) reported that the level of

financial stress correlated positively with the existence of financial stressors; therefore, financial stress can be accounted for in the proposed analysis by data about the stressor. One study measured financial satisfaction on a scale, where high financial stress made up the lowest point in the scale and financial satisfaction the highest (Prawitz, Garman, Sorhaindo, O'Neill, Kim, & Drentea, 2006); thus, financial stress was defined as the opposite of financial satisfaction and so these terms capture opposite ends of essentially the same concept. Thus, the inability in the present research to assess solvency and level of financial stress may not be serious limitations of the financial satisfaction model developed here.

Figure 2 represents the adjusted financial satisfaction framework that will be used in the present study. The characteristics associated with financial satisfaction are divided into two groups, behavioral characteristics and fixed characteristics. Fixed characteristics refer to characteristics that cannot be changed, such as age, risk tolerance, or external stressors. Behavioral characteristics refer to characteristics that can be controlled such as maintaining an emergency fund, or paying the credit card in full every month. In Figure 2 the arrows represent the direction of effect between the variables. Fixed characteristics cannot be affected by financial satisfaction, but can have an effect on financial satisfaction, i.e., age (Plagnol, 2011). Behaviors are expected to be affected by financial satisfaction as well as to affect financial satisfaction through goal setting.

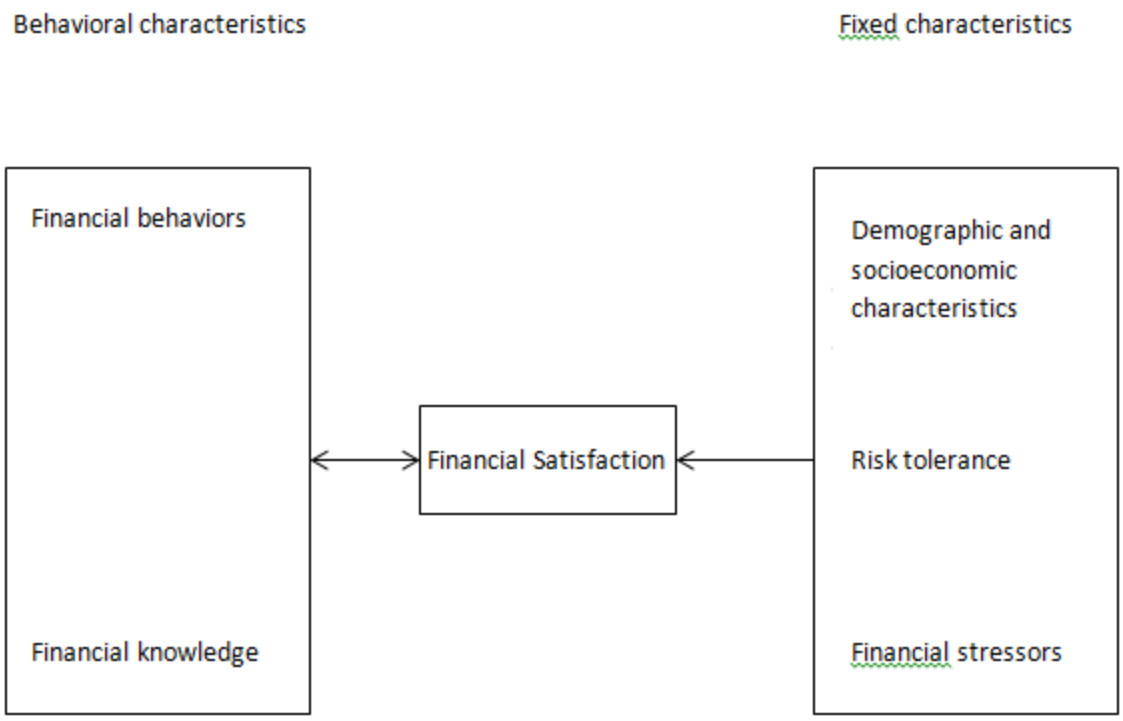

Figure 2. Adjusted Model of Financial Satisfaction

The NFCS does not have a variable that can represent solvency or level of financial stress in the Joo and Grable (2004) framework. Further, while Joo and Grable (2004) used a path analysis to test direct and indirect relationships between variables, the present study will examine only direct relationships, but include a greater focus on specific financial behaviors. Porter and Garman (1993) introduced a four component framework for financial satisfaction. Joo and Grable (2004) expanded the framework. The present research provides insight into the relationship of specific behaviors with financial satisfaction.

Variables

The Joo and Grable framework is the most comprehensive framework for financial satisfaction published to date; it incorporated a wider variety of variables than had previous models. The present research utilized a model of financial satisfaction based on the Joo and

Grable framework. What follows in this section is a description of the variables used in the Joo and Grable framework, and the variables available for the present study (Figure 2).

The dependent variable tested in the Joo and Grable (2004) framework was financial satisfaction. Joo and Grable (2004) used a single item 10 point categorical variable to represent self-reported financial satisfaction, as discussed earlier.

The independent variables in the Joo and Grable (2004) framework were single-item measures and multiple-item measures. Financial stress, financial knowledge, demographic and socioeconomic characteristics, and financial solvency were single-item measures. Financial stressors, financial risk tolerance, and financial behavior were measured using multiple items.

The independent variables representing demographic and socioeconomic characteristics in the Joo and Grable (2004) framework included age, gender, race, marital status, children, income, education, and homeownership status. Age and the number of financial dependents were continuous variables, while household income was categorical. Education was coded with two dummy variables, and gender, marital status, education and homeownership were also dummy coded in the analysis.

Joo and Grable (2004) differentiated between financial stress and financial stressors. Stressors were defined as events, whereas financial stress was measured as a 10 point categorical variable in response to a question regarding the level of financial stress felt by the respondent. To measure the financial stressors variable, the respondents marked which of 24 financially stressful events their household had experienced in the past twelve months. The financially stressful events included investment losses, injuries, disabilities, accidents, illnesses, wage garnishments, marriage, birth, retirement, job loss, divorce, death, moving, paying for household or vehicle repairs, foreclosure, legal problems, bankruptcy, medical bills, and pre-existing excessive

consumer debt. The authors then created an additive scale composed of the total number of stressful events indicated by the respondent.

Financial knowledge in the Joo and Grable (2004) framework was measured as a subjective evaluation of the respondent's perceptions of their own level of financial knowledge. The respondents described their knowledge on a three level scale of below average, average, or above average.

To measure risk tolerance, Joo and Grable (2004) created an index using six questions with four categorical levels of response, 1 = strongly agree, 4 = strongly disagree. The questions used are in Table 1.

Table 1

Joo and Grable (2004) Risk Questionnaire

Response	Question
1 = strongly agree	In terms of investing, safety is more important than returns.
2	I am more comfortable putting my money in a bank account than in the stock market.
3	When I think of the work "risk" the term "loss" comes to mind immediately.
4 = strongly disagree	Making money in stocks and bonds is based on luck.
	I lack the knowledge to be a successful investor.
	Investing is too difficult to understand.

Joo and Grable (2004) also created an index to examine financial behaviors. Ten questions, each with four categories of responses were used. A response of 1 indicated never, while 4 indicated always. Questions are in Table 2.

Table 2

Joo and Grable (2004) Financial Behavior Questionnaire

Response	Question
1 – never	I set money aside for savings.
2	I set money aside for retirement.
3	I had a plan to reach my financial goals.
4 - always	I had a weekly or monthly budget that I followed.
	I paid credit cards in full and avoided finance charges.
	I reached the maximum limit on a credit card.
	I spent more money than I had.
	I had to cut living expenses.
	I had to use a credit card because I ran out of cash.
	I had financial troubles because I ran out of money.

Joo and Grable (2004) represented financial solvency with a single item categorical variable in response to the question "Suppose you were to sell all of your major possessions, turn all of your investments and other assets into cash, and pay all of your debts. Would you be in debt, break even, or have something left over?" The scale was 1 to 5, with one being serious debt, and 5 representing having money left over. However, subsequent research found the solvency variable of limited predictive value.

An additional important observation in Plagnol (2011) was that collapsing assets and liabilities into a single net worth variable caused a significant loss of information about the magnitude of the underlying assets and liabilities. In other words, assets of $1 with liabilities of $1 equals a zero net worth, as do assets of $1 million and liabilities of $1 million. Two households with a $0 net worth, but one with $1 in assets and the other with $1 million in assets, would ascribe different levels of financial satisfaction to any given income level.

The Joo and Grable (2004) framework model was tested using primary data (n=220) for direct and indirect effects of independent variables on financial satisfaction using path analysis. Findings indicated that education, financial knowledge, solvency levels, and good financial behaviors were directly and positively associated with financial satisfaction. Risk tolerance and financial stress were negatively associated with financial satisfaction. These authors' path analysis also identified indirect effects from education, homeownership, the number of dependents, income, financial stressors, and other variables. The framework model presented solvency, financial behaviors, risk tolerance, and financial stress levels as mediating variables. The variables found to have the largest correlation with financial satisfaction were positive cash flow and money management related financial behaviors. Other strongly-related variables were the level of financial stress and financial knowledge.

However, the Joo and Grable (2004) study had several limitations. The framework was tested using data from a small (n=220), non-nationally representative sample. Therefore, given these limitations, the Joo and Grable framework requires further validation.

In summary, Joo and Grable (2004) measured financial satisfaction in a manner similar to that of the NFCS State-by-State survey. The Joo and Grable framework of determinants of financial satisfaction consisted of eight factors derived from 15 independent variables. Joo and

Grable (2004) concluded that the following factors were associated with increased levels of financial satisfaction: financial knowledge, higher education levels, financial risk tolerance, positive financial behaviors, financial solvency, and lower financial stress. The present study utilized similar variables to those used by Joo and Grable (2004) to test a model of financial satisfaction.

Financial satisfaction is an important component in personal financial goal setting and decision making; thus, it is of interest to financial planners, financial educators, and public policy analysts. The present study will test an adjusted Joo and Grable framework using a larger, more representative data set, with additional focus on the relative magnitude of the association of specific financial behaviors with financial satisfaction.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Financial satisfaction is an important factor in personal financial decision making, with applications in the professional practice of financial planning, personal financial decision making, and public policy. There has been relatively little scholarly research about the topic of measurement of personal financial satisfaction; however, recent literature suggests a general framework for the determinants of financial satisfaction (Joo & Grable, 2004). The current section will describe the research method and identify the variables that form the financial satisfaction models utilized by the present study.

Research Design

The goal of this research is to test correlates in a model of financial satisfaction for significance, and observe the relative magnitude of the relationship between financial satisfaction and certain financial behaviors. Using a correlational research design, the present research presented models of financial satisfaction to test hypotheses of correlates of financial satisfaction.

Six models were constructed with financial satisfaction as the dependent variable. The variables were arranged in blocks and added to the model one by one, in a stepwise linear regression, following past research (Hira & Mugenda, 1998; Joo & Grable, 2004; Plagnol, 2011; Robb & Woodyard, 2011; Porter & Garman, 1993), as depicted in Table 3. An F test was performed to test whether each new block of variables provided additional predictive value, α=0.05.

Table 3

Models of Financial Satisfaction

Model	Block
Model 1	Demographic
Model 2	Model 1 + Knowledge
Model 3	Model 2 + Risk Tolerance
Model 4	Model 3 + Financial Stressors
Model 5	Model 4 + Financial Behaviors
Model 6	Model 5 + Credit and Banking Behaviors

Data

The current research will analyze data provided by FINRA's National Financial Capability Study (NFCS) State-by-State Survey. Financial Industry Regulatory Authority (FINRA) is the largest independent regulator of securities transactions in the United States. Through its foundation, the FINRA Investor Education Foundation, FINRA sponsors the National Financial Capability Study (NFCS). The goal of the NFCS is to gain a better understanding of the financial behaviors, financial knowledge, and financial attitudes of Americans.

The State-by-State Survey, one of three components of NFCS, is an instrument developed to quantify a variety of financial attitudes and behaviors. Collected between June and October 2009, the NFCS State-by-State survey provides a cross-sectional sample of US households. The sample is geographically representative, with approximately 500 observations per state, and relatively large, n=28,000.

Variables and Measurement

The NFCS State-by-State survey contains variables that generally represent the Joo and Grable (2004) framework, most notably financial satisfaction. The NFCS State-by-State sample (n=28,146) is drawn from across the country, with observations evenly disbursed per state, whereas the Joo and Grable (2004) study was sampled from Northern Texas (n=220), a much more homogenous population. Therefore, the current research will address two major limitations to generalizability of Joo and Grable (2004) findings, size of the data set and representativeness of the data sample.

Net worth and stress variables, represented in the Joo and Grable (2004) framework, were not represented in the NFCS State-by-State data. NSCS does not contain a variable measuring someone's stress level; however, stressful events were used as a proxy in the current analysis. Joo and Grable (2004) noted that financial stress level is related to financial stressors; therefore, capturing financial stressors may capture some of the financial stress level effect on financial satisfaction. The lack of the stress level variable made replication of the Joo and Grable path analysis method impossible. Further, there is no proxy for net worth in the NFCS State-by-State data; however, as noted earlier, separate asset and liability variables are needed to provide reliable results (Plagnol, 2011).

The NFCS survey provides data in the form of categorical responses to a variety of demographic and socioeconomic questions. Even yes/no questions include category options for "don't know" and "prefer not to say" responses. The variables used in the present analysis are described below. The use of these variables is supported in the Hypothesis section.

Dependent Variable

Financial Satisfaction was the dependent variable, measured as a subjective evaluation of the respondent's own personal financial condition (Table 4).

Table 4

Financial Satisfaction Measure

Variable	Question
Financial satisfaction	Overall, thinking of your assets, debts, and savings, how satisfied are you with your current personal financial condition? Please use a 10-point scale, where 1 means "Not At All Satisfied" and 10 means "Extremely Satisfied"

The responses were coded on a continuous 1 to 10 scale. "Don't know", and "prefer not to say" responses were also recorded – for the purpose of analysis these responses were dropped.

Independent Variables

A number of independent variables were utilized in this study to construct six models (Table 3). Subsequent paragraphs in this section describe the variables.

Model 1: Demographic and Socio-economic Characteristics

Model 1 was made up of demographic and socio-economic characteristics. Age was measured as a continuous variable, and recorded as a categorical variable. For the purpose of analysis, dummy variables were created for each category (Table 5), 1 if true, otherwise 0. The group under 18 was not reported.

Table 5

Age

Variable	Question
Under 18	What is your age?
Age 18-24	
Age 25-29	
Age 35-39	
Age 40-44	
Age 45-49	
Age 50-54	
Age 55-59	
Age 60-64	
Age 65 or older	

Gender of the respondent was measured as a categorical variable. The data were coded 1 for female, 0 male. Following Joo and Grable (2004), ethnicity responses were coded in a dichotomous variable representing white (non-hispanic), and non-white. Ethnicity was reported as indicated below (Table 6) and coded 1 for non-white, otherwise 0.

Table 6

Gender and Ethnicity

Variable	Question
Female	What is your gender?
Ethnicity	Which of the following best describes your race or ethnicity: White(non-hispanic), Black(non-hispanic), Hispanic, Asian, Other

Each respondent in the survey indicated their level of education (Table 7). The responses were dummy coded.

Table 7

Education

Variable	Question
Not completed high school	What was the last year of education that you completed?
High school	
Some college	
College	
Graduate school	
Don't know	
Prefer not to say	

Marital status of the respondent was recorded as an indication of one of categories in Table 8, and dummy coded.

Table 8

Marital Status

Variable	Question
Married	What is your marital status?
Separated	
Divorced	
Widowed/widower	
Single	

Income of the respondent's household was measured as a categorical variable (Table 9) and dummy coded.

Table 9

Income

Variable	Question
Less than $15,000	What is your (household's) approximate annual income, including wages, tips, investment income, public assistance, income from retirement plans, etc.? Would you say it is …
At least $15,000 but less than $25,000	
$25,000-$35,000	

$35,000-$50,000
$50,000 - $75,000
$75,000-$100,000
$100,000-$150,000
Over $150,000

The number of children in the household of the respondent was recorded as a categorical variable. For the purpose of analysis the number of children was represented on a scale of 0-4, with 4 representing 4 or more children (Table 10).

Table 10

Dependent Children

Variable	Question
1	How many children do you have who are financially dependent on you (or your spouse/partner)?:
2	
3	
4 or more	
no financially dependent children	
do not have any children	
prefer not to say	

Household composition was measured as a categorical response (Table 11) but dummy coded.

Table 11

Household Composition

Variable	Question
I am the only adult in the household	Which of the following describes your current living arrangements?
I live with my spouse/partner/significant other	
I live in my parents' home	
I live with other family, friends, or roommates	
Prefer not to say	

Employment status was recorded as a categorical variable (Table 12) and dummy coded 1 for each employment category, otherwise 0.

Table 12

Employment Status

Variable	Question
Self-employed	Which of the following best describes your current employment or work status?
Work full-time for an employer	
Work part-time for an employer	

Homemaker
Full-time student
Permanently, sick, disabled, or unable to work
Unemployed or temporarily laid off
Retired
Prefer not to say

Model 2: Knowledge

Financial knowledge of the respondent was measured in two ways, subjectively and objectively. Similar to Joo and Grable (2004), the respondent's self-assessment of financial knowledge was coded as a categorical variable on a scale from 1 to 7 (Table 13). "Don't know" and "Prefer not to say" responses were dropped.

Table 13

Self-perceived Knowledge

Response	Question
1 very low	On a scale of 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?
2	
3	
4	
5	

6
7
Don’t know
Prefer not to say

NFCS data also provided measured knowledge variables, which gave an opportunity to observe the correlation between objective and subjective knowledge. Objective financial knowledge of the respondent was measured by answering five multiple choice financial knowledge questions. A scale was generated indicating the number of correct responses, i.e., three correct responses would be recorded as an ordinal variable with a value of 3. The questions posed to respondents were as follows in Table 14.

Table 14

Financial Knowledge Questions

Response	Question
More than $102	Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?
Exactly $102	
Less than $102	
Don’t know	
Prefer not to say	

More than today	Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?
Exactly the same	
Less than today	
Don't know	
Prefer not to say	
They will rise	If interest rates rise, what will typically happen to bond prices?
They will fall	
They will stay the same	
There is no relationship between bond prices and the interest rate	
Don't know	
Prefer not to say	
True	A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.
False	

Don’t know	
Prefer not to say	
True	Buying a single company’s stock usually provides a safer return than a stock mutual fund.
False	
Don’t know	
Prefer not to say	

Model 3: Risk Tolerance

The risk tolerance of the respondent was measured and coded as a categorical variable on a scale of 1 to 10 (Table 15). “Don’t know” and “prefer not to say” responses were dropped.

Table 15

Risk Tolerance

Response	Question
1 Not at all willing	When thinking of your financial investments, how willing are you to take risks?
2	
3	
4	
5	
6	

7
8
9
10 Very willing
Don’t know
Prefer not to say

Model 4: Financial Stressors

Four financial stressful events were identified in the NFCS data to represent financial stressors in the financial satisfaction model: sudden income drop, difficulty paying bills, having paid a credit card fee, and foreclosure. The data were recorded as categorical variables.

The variable sudden income drop was recorded as a categorical variable (Table 16), and dummy coded 1 for “yes”, otherwise 0.

Table 16

Sudden Income Drop

Response	**Question**
Yes	In the past 12 months, have you (or has your household) experienced a large drop in income which you did not expect?
No	
Don’t know	
Prefer not to say	

The variable representing difficulty paying bills was recorded as a categorical variable (Table 17), and dummy coded 1 for very difficult, 0 otherwise.

Table 17

Difficulty Paying Bills

Response	Question
Very difficult	In a typical month, how difficult is it for you to cover your expenses and pay all of your bills?
Somewhat difficult	
Not at all difficult	
Don't know	
Prefer not to say	

Foreclosure was the third stressful event variable in the NFCS data. It was dummy coded 1 for yes, otherwise 0 (Table 18).

Table 18

Foreclosure

Response	Question
Yes	Have you been involved in a foreclosure process on your home in the last 2 years?
No	
Don't know	
Prefer not to say	

Model 5: Financial Behaviors

Ten financial behavior variables were identified in the NFCS data. There is a gap in the literature about specific behavioral correlates of financial satisfaction; therefore, the results of the regression on the behavioral variables are exploratory in nature. The following section discusses the coding of each variable that will be used to format the hypotheses, discussed later.

Spending more money than income is a behavior that may have a correlation with financial satisfaction. Recorded as a categorical variable (Table 19), the data were dummy coded 1 for "spending more than income", otherwise 0.

Table 19

Spending More Than Income

Response	Question
Spending less than income Spending more than income Don't know Prefer not to say	Over the past year, would you say your (household's) spending was less than, more than, or about equal to your (household's) income? Please do not include the purchase of a new house or car, or other big investment you may have made:

The behavior of holding an emergency fund was also captured by NFCS as a categorical variable (Table 20). It was dummy coded 1 for "yes", otherwise 0.

Table 20

Emergency Fund

Response	Question
Yes No Don't know Prefer not to say	Have you set aside emergency or rainy day funds that would cover your expenses for 3 months, in case of sickness, job loss, economic downturn, or other emergencies?

NFCS data captured planning for retirement in two questions (Table 21), which were dummy coded into one variable 1 for "yes", otherwise 0. One question was asked of retirees, the other of non-retirees, therefore the respondents were not asked both questions.

Table 21

Planned for Retirement

Response	Question
Yes No Don't know Prefer not to say	Have you ever tried to figure out how much you have to save for retirement? Before you retired, did you try to figure out how much you needed to save for retirement?

Having a savings account is another factor in the NFCS data that may be significantly correlated with financial satisfaction. The data were recorded as categorical data (Table 22), dummy coded 1 for "yes", otherwise 0.

Table 22

Savings Account

Response	Question
Yes No Don't know Prefer not to say	Do you (or does your household) have a savings account, money market account, or CDs?

The ownership of an investment account, investment, or retirement plan was created from categorical responses to six questions and collapsed into one binary variable. The responses were dummy coded 1 for yes if any of the accounts were selected, otherwise 0. Non-retirees were asked about the ownership of an employer-provided retirement savings account, and ownership of a non-employer-provided savings account. Retirees were asked to select from among eight options for generating income in retirement (Table 23).

Table 23

Investment Account

Response	Question
Yes No Don't know	Do you (or your spouse/partner) have any retirement plans through a current or previous employer, like a pension plan or a 401(k)?

Prefer not to say	Do you (or your spouse/partner) have any other retirement accounts NOT through an employer, like an IRA, Keogh, SEP, or any other type of retirement account that you have set up yourself? Which of the following are you and your spouse/partner using for your living expenses? Pension plans Withdrawals from savings, investments, or retirement accounts Dividends or interest income from savings, investments, or retirement accounts Rental income or proceeds from the sale of real estate

Owning a home, other real estate, or business are other financial behavior variables in the NFCS data that may be significantly correlated with financial satisfaction. The data were recorded as categorical data (Table 24), dummy coded for each variable 1 for "yes", otherwise 0.

Table 24

Homeownership, Other Real Estate, Business

Response	Question
Yes No Don't know Prefer not to say	Do you (or your spouse/partner) currently own any of the following? – Your home Other real estate (for example, a second home or investment property) Part or all of a business or farm

Working with a financial professional may correlate with financial satisfaction. NFCS provides variables on having worked with five types of advisors (Table 25); all were collapsed into one binary variable coded 1 for "yes", otherwise 0.

Table 25

Worked with a Financial Professional

Response	Questions
Yes	In the last 5 years, have you asked for any
No	advice from a financial professional about
Don't know	any of the following? Debt counseling
Prefer not to say	Savings or investments
	Taking out a mortgage or loan
	Insurance of any type
	Tax planning

Model 6: Credit and Banking Behaviors

The behaviors in Model 6 are specific to credit and banking activities. The payment of credit cards in full every month, and make only minimum payments were measured as a categorical variables in the NFCS data (Table 26). Positive and negative financial behaviors are suggested by Joo and Grable (2004) to correlate with financial satisfaction. Each variable was dummy coded 1 for "yes", otherwise 0.

Table 26

Credit Card Behaviors

Response	Question
Yes No Don' know Prefer not to say	In the past 12 months, which of the following describes your experience with credit cards? – I always pay my credit card in full In some moths, I carried over a balance and was charged interest In some months, I paid the minimum payment only

Alternative financing activities are defined as lending and other financial services that occur outside a traditional bank. These types of financing activities are often considered expensive. They are included in the analysis to contrast with traditional banking activities. The alternative financing variables (Table 27) were collapsed into one dummy variable, 1 for "yes", otherwise 0.

Table 27

Alternative Financing

Response	Question
Yes	Please indicate if you have done any of the following in the past 5 years. – Have you taken an auto title loan?

No	Have you taken out a short term “payday”
Don’t know	loan?
Prefer not to say	Have you gotten an advance on your tax refund? This is sometimes called a “refund anticipation loan” or “Rapid Refund” (not the same as e-filing)
	Have you ever used a pawn shop?
	Have you used a rent-to-own store?

A variable for overdrafting a checking account was also provided by the NFCS data (Table 28). Overdrafting is an unnecessary expense and, as such, is a poor financial behavior. Each variable was dummy coded 1 for “yes”, otherwise 0.

Table 28

Overdraft

Response	Questions
Yes	Do you or your spouse/partner overdraw
No	your checking account occasionally?
Don’t know	
Prefer not to say	

Table 29 compares the variables used by Joo and Grable (2004) with those of the current research, including descriptions, definitions and measurement scales.

Table 29

Comparison of Variables: Joo and Grable (2004) and the Adjusted Model

Variable	Joo and Grable (2004)	Adjusted Model
Financial satisfaction	10 point scale	10 point scale
Age	continuous	categorical
Gender	binary: male/female	binary: male/female
Race	binary: white/non-white	binary: white/non-white
Marital status	binary: married/not-married	categorical
Dependent children	continuous	categorical: 0 to 4+
Income	categorical	categorical
Education	double binary; some college, and college graduate	categorical
Homeownership status	binary	binary
Self-assessed knowledge	categorical: above, below or average	categorical: 1 to 7 scale
Measured knowledge	N/A	index of five questions
Stress	scale made up of 24 potential events	N/A
Stressors	categorical: 1 to 10 scale	binary: sudden loss of income
Risk tolerance	index based on five categorical responses	categorical: 1 to 10 scale
Financial behaviors	index composed of responses to nine questions	each behavior represented individually
Solvency	self-reported 1 to 5 scale	N/A

Models were built (Table 3) to test the correlation between financial satisfaction and a set of dependent variables. The specific makeup of the models is discussed in the data analysis section.

Hypotheses

The Joo and Grable (2004) framework has eight factors influencing financial satisfaction: demographic and socioeconomic characteristics, financial stressors, financial knowledge, financial behavior, risk tolerance, financial stress, and solvency. Each factor is made up of one or several variables. The stress and solvency variables were not represented in the data; thus, the model framework represented in Figure 2. A hypothesis was formed for each variable. A summary of hypotheses is provided (Table 30).

Literature suggests that demographic and socioeconomic factors correlate with financial satisfaction. An increase in age has been found to correlate with increasing financial satisfaction (Plagnol, 2011).

Hypothesis 1: Age will be positively correlated with financial satisfaction.

Married couples' spending patterns have been found to more closely resemble those of single females (Alessie, Crossley, & Hilderbrand, 2006), and the financial satisfaction of both males and females increases if cohabiting, but more so for females (Alessie, Crossley, & Hilderbrand, 2006). Therefore, controlling for marital status and household composition, being female is expected to positively correlate with financial satisfaction. A married couple is generally expected to live together; thus, both variables are expected to correlate positively with financial satisfaction.

Hypothesis 2: Being female will be positively correlated with financial satisfaction, versus being male.

Hypothesis 3: Being married will be positively correlated with financial satisfaction, versus other types of marital status.

Hypothesis 4: Living with a partner will be positively correlated with financial satisfaction, versus other living arrangements.

Income is assumed to increase with financial satisfaction (Joo & Grable, 2004; Plagnol, 2011).

Hypothesis 5: An increase in income will be positively correlated with financial satisfaction.

Joo and Grable (2004) found that education was negatively correlated with financial satisfaction, and being a homeowner had a positive correlation. However, the same study did not find a correlation between ethnicity and financial satisfaction.

Hypothesis 6: Education will be negatively correlated with financial satisfaction.

Hypothesis 7: Owning a home will be positively correlated with financial satisfaction.

Hypothesis 8: Ethnicity will not be significantly correlated with financial satisfaction.

Joo and Grable (2004) found a negative effect of dependent children on financial satisfaction. The level of financial stress and financial stressors were also found to have major negative effects on financial satisfaction.

Hypothesis 9: The number of dependent children will be negatively correlated with financial satisfaction.

Financial satisfaction increases over the life-course (Plagnol, 2011). Therefore, retirees are expected to have a higher financial satisfaction than other workers.

Hypothesis 10: Working full-time will be negatively correlated with financial satisfaction, relative to being retired.

Financial knowledge can be measured subjectively or objectively, and both have been positively correlated with positive financial decisions in previous studies (Robb & Woodyard, 2011); thus financial knowledge is expected to correlate positively with financial satisfaction. Joo and Grable (2004) also found a positive correlation for subjective knowledge. Therefore, hypothesis 11 and 12 were formulated.

Hypothesis 11: Perceived knowledge level will be positively correlated with financial satisfaction.

Hypothesis 12: Measured knowledge level will be positively correlated with financial satisfaction.

Risk tolerance has been shown to have a slightly negative correlation with financial satisfaction (Joo & Grable, 2004).

Hypothesis 13: Risk tolerance will be positively correlated with financial satisfaction.

Joo and Grable (2004) suggested that financial stress and financially stressful events negatively correlate with financial satisfaction. Their study also found a correlation between financial stress and financially stressful events. The NFCS does not provide data about the respondent's level of financial stress; however, the data do provide the responses to questions regarding financially stressful events: sudden loss of income, difficulty paying bills, having paid a credit card fee, and having suffered a foreclosure.

Hypothesis 14: Financially stressful events will be negatively correlated with financial satisfaction.

Literature suggests that financial behaviors are the factors most strongly correlated with financial satisfaction (Joo & Grable, 2004). Further, positive behaviors, such as saving money and paying credit cards in full, have a positive correlation with financial satisfaction, while

negative behaviors have a negative correlation. The NFCS State-by-State survey had three financial behavior factors that can be tested as correlates of financial satisfaction: sudden income drop, difficulty paying bills, and foreclosure

Spending more money than is available as income is a negative financial behavior. Although, at lower income levels spending more than income could be interpreted as a stressful event, at most income levels spending more money than income is considered a choice.

Hypothesis 15: Spending more than income will be negatively correlated with financial satisfaction.

Although opinions on the size of an emergency fund vary from three months to a year's worth of living expenses (Huston & Chang, 1997), merely having an emergency fund is a consistent piece of advice given by financial advisors.

Hypothesis 16: Having an emergency fund will be positively correlated with financial satisfaction.

Saving money and owning assets are additional common pieces of financial advice, thus they may lead to financial satisfaction.

Hypothesis 17: Having a savings account will be positively correlated with financial satisfaction.

Hypothesis 18: Having an investment account will be positively correlated with financial satisfaction.

Hypothesis 19: Owning other real estate will be positively correlated with financial satisfaction.

Hypothesis 20: Owning a business will be positively correlated with financial satisfaction.

People often seek help to make their financial decisions. Using such services would be expected to lead to financial satisfaction.

Hypothesis 21: Working with a financial professional will be positively correlated with financial satisfaction.

Specific behaviors with banking and lending services may also contribute to financial satisfaction, although there is a gap in literature on this topic.

Hypothesis 22: Paying credit card in full will be positively correlated with financial satisfaction.

Hypothesis 23: Carrying a balance will be negatively correlated with financial satisfaction.

Hypothesis 24: Making a minimum credit card payment will be negatively correlated with financial satisfaction.

Using alternative financing, or overdrawing a checking account can carry with it high transaction fees. Therefore, it would be expected that someone would only use these services in an emergency; therefore, using alternative financing or overdrafting a checking account is expected to correlate negatively with financial satisfaction.

Hypothesis 25: Alternative financing methods will be negatively correlated with financial satisfaction.

Hypothesis 26: Overdrafting an account will be negatively correlated with financial satisfaction.

Table 30

Summary of Hypotheses

Hypothesis	Correlation	Model
1: Age	+	1
2: Female	+	1
3: Married	+	1
4: Living with partner	+	1
5: Income	+	1

6: Education	+	1
7: Homeownership	+	1
8: Ethnicity	None	1
9: Dependents	-	1
10: Working F/T	-	1
11: Perceived knowledge	+	2
12: Measured knowledge	+	2
13: Risk tolerance	-	3
14: Financial stressors	-	4
15: Spend more than income	-	5
16: Emergency fund	+	5
17: Savings account	+	6
18: Investment account	+	5
19: Own other real estate	+	5
20: Own business	+	5
21: Financial professional	+	5
22: Pay credit card in full	+	6
23: Carry balance	-	6
24: Minimum credit card payment	-	6
25: Alternative financing	-	6
26: Overdrafting	-	6

Data Analysis

Methods of analysis in past research focused on financial satisfaction as the independent variable using linear as well as ordered logit regressions. A form of linear regression analysis was used by Joo and Grable (2004), Robb and Woodyard (2011), and Traut-Mattausch and Jonas (2011). Plagnol (2011) utilized an ordered logit procedure as well as a linear regression procedure. Plagnol (2011) found that linear regression analysis did not contradict the ordered logit procedure. Financial satisfaction in the Plagnol (2011) study was represented as a categorical variable with a 1-7 scale, and a mean of 4.708, observed on 8,855 data points. The present study used a multiple linear regression to test the stated hypotheses.

Hira and Mugenda (1998), in an analysis of financial satisfaction of retirees versus non-retirees, used a stepwise regression to test significance of factors. The present study utilized stepwise regression models to test the stated hypotheses and observe the magnitude of the correlation between financial satisfaction and the stated behavior variables. The level of significance was $\alpha = 0.05$.

The variables were separated into six blocks: 1) socioeconomic and demographic factors, 2) financial knowledge, 3) risk tolerance, 4) stressors, 5) general financial behaviors, and 6) financial behaviors with credit and banking. An initial model (Model 1) was generated to determine what proportion of financial satisfaction can be explained by socioeconomic and demographic characteristics. Each block was then added sequentially to the model (Table 3). The block would be rejected from the model, using an F test and $\alpha = 0.05$, if the block did not provide additional explanatory value. An F test can be used to determine whether each block of variables included in the model adds predictive value (Ott & Longnecker, 2001).

Financial stressors and financial behaviors, which were separated into three models, were added last to test whether these blocks of variables added any additional information to the model, beyond the variation in financial satisfaction that was explained using the previous models.

Model 1: Socioeconomic and demographic factors

Financial Satisfaction = B0 + B1 age + B2 gender +B3 ethnicity + B4 education + B5 marital status + B6 income + B7 dependents + B8 only adult in household + B9 live in parents' home + B10 live with roommate + B11 self-employed + B12 part-time employee + B13 homemaker + B14 student + B15 disabled + B16 unemployed + B17 retired + E

Model 2: Knowledge

Financial Satisfaction = B0 + B1 age + B2 gender + B3 ethnicity + B4 education + B5 marital status + B6 income + B7 dependents + B8 only adult in household + B9 live in parents' home + B10 live with roommate + B11 self-employed + B12 part-time employee + B13 homemaker + B14 student + B15 disabled + B16 unemployed + B17 retired + B18 self-assessed knowledge + B19 measured knowledge + E

Model 3: Risk tolerance

Financial Satisfaction = B0 + B1 age + B2 gender + B3 ethnicity + B4 education + B5 marital status + B6 income + B7 dependents + B8 only adult in household + B9 live in parents' home + B10 live with roommate + B11 self-employed + B12 part-time employee + B13 homemaker + B14 student + B15 disabled + B16 unemployed + B17 retired + B18 self-assessed knowledge + B19 measured knowledge + B20 risk tolerance + E

Model 4: Stressors

Financial Satisfaction = B0 + B1 age + B2 gender +B3 ethnicity + B4 education + B5 marital status + B6 income + B7 dependents + B8 only adult in household + B9 live in parents' home +

B10 live with roommate + B11 self-employed + B12 part-time employee + B13 homemaker + B14 student + B15 disabled + B16 unemployed + B17 retired + B18 self-assessed knowledge + B19 measured knowledge + B20 risk tolerance + B21 sudden income drop + B22 difficulty paying bills + B23 foreclosure +E

Model 5: Financial Behaviors

Financial Satisfaction = B0 + B1 age + B2 gender + B3 ethnicity + B4 education + B5 marital status + B6 income + B7 dependents + B8 only adult in household + B9 live in parents' home + B10 live with roommate + B11 self-employed + B12 part-time employee + B13 homemaker + B14 student + B15 disabled + B16 unemployed + B17 retired + B18 self-assessed knowledge + B19 measured knowledge + B20 risk tolerance + B21 sudden income drop + B22 difficulty paying bills + B23 foreclosure + B24 spend more than income + B25 emergency fund + B26 planned retirement + B27 investment account + B28 homeownership + B29 other real estate + B30 own business + B31 financial professional + E

Model 6: Credit and Banking Behaviors

Financial Satisfaction = B0 + B1 age + B2 gender + B3 ethnicity + B4 education + B5 marital status + B6 income + B7 dependents + B8 only adult in household + B9 live in parents' home + B10 live with roommate + B11 self-employed + B12 part-time employee + B13 homemaker + B14 student + B15 disabled + B16 unemployed + B17 retired + B18 self-assessed knowledge + B19 measured knowledge + B20 risk tolerance + B21 sudden income drop + B22 difficulty paying bills + B23 foreclosure + B24 spend more than income + B25 emergency fund + B26 planned retirement + B27 investment account + B28 homeownership + B29 other real estate + B30 own business + B31 financial professional + B32 pay credit card in full + B33 carry credit

card balance + B34 minimum credit card payment + B35 alternative financing + B36 overdraft + B37 savings account + E

Joo and Grable (2004) pointed out that the predictor variables may have direct and indirect effects on financial satisfaction. They used a path analysis to determine these direct and indirect effects. In the present study only the direct effects were considered, a potential weakness of this research. Plagnol (2011) had access to longitudinal data, a definite advantage over the current study. NFCS, however, provides a larger data set and incorporates more of the independent variables found significant in the Joo and Grable (2004) framework.

The current research adds to the body of knowledge on financial satisfaction because it uses a more nationally representative and larger data set, n=28,000, with variables representative of the full Joo and Grable (2004) framework, to test the framework. The statistical methodology provides a bridge between the frameworks developed by Joo and Grable (2004). The current research further adds to an understanding of the determinants of financial satisfaction by allowing the examination of correlation of both subjective and objective financial knowledge with financial satisfaction. Shortcomings of the current study include a less robust scale design, relative to Joo and Grable (2004), omission of a solvency and stress variable, and a lack of longitudinal data to control for potential endogeneity of variables.

CHAPTER 4

RESULTS

A multiple linear regression was performed for six models, with financial satisfaction as the dependent variable. Descriptive statistics on the entire sample are located in Appendix A. Linear regressions were performed on Models 1 through 6. The adjusted R^2, VIF scores, and F test results were recorded for each model. Results of the F test for each model were significant at $\alpha = 0.05$ (Appendix B). Complete results for VIF and F test for each model are reported in Appendix B. Hypotheses will be discussed in the discussion and conclusion section.

Table 31 and Table 32 contain the descriptive statistics for the dependent variable, financial satisfaction. The responses "don't know" and "prefer not to say" were dropped; thus the coded variable financial satisfaction had a final n = 27,664 (Table 31).

Table 31

Sample Characteristics of Financial Satisfaction

Correlate	n	Mean	SD	Min	Max
Financial satisfaction	27664	4.54	2.72	1	10

Table 32

Financial Satisfaction Response

Response	N
1 – not at all satisfied	6,023
2	1,996

3	2,968
4	2,919
5	3,088
6	2,724
7	3,356
8	2,437
9	1,080
10 – extremely satisfied	1,073
don't know	269
prefer not to say	213
Total	28,146

Model 1, a regression of socioeconomic and demographic factors on financial satisfaction, produced an adjusted R^2 of .1795, indicating that these socioeconomic and demographic factors account for about 18% of the variability of response predicted by the model. The mean VIF was 1.86, with the variable representing age 35 to 44 recording the highest, with a VIF of 3.57, all well within acceptable ranges. Results for Model 1 are in Table 33 and Appendix B.

Table 33

Model 1: Demographic and Socioeconomic Characteristics

Financial satisfaction	Coef.	P>t
Age 18 to 24[a]	0.20	*

Age 25 to 34[a]	-0.29	***
Age 35 to 44[a]	-0.59	***
Age 45 to 54[a]	-0.68	***
Age 55 to 64[a]	-0.42	***
Female[g]	-0.34	***
Non-white[h]	-0.01	
Some college[b]	-0.23	***
No high school[b]	-0.03	
College[b]	0.07	
Graduate school[b]	0.06	
Widowed[c]	-0.05	
Single[c]	-0.16	**
Divorced[c]	-0.49	***
Separated[c]	-0.65	***
Less than $15k[d]	-1.46	***
$15k to 25k[d]	-1.27	***
$25k to 35k[d]	-0.85	***
$35k to 50k[d]	-0.54	***
$75k to 100k[d]	0.44	***
$100k to 150k[d]	0.91	***
Over $150k[d]	1.72	***
Dependents	-0.20	***
Only adult in household[e]	0.42	***

Live with parents[e]	-0.08	
Live roommate[e]	-0.13	
Self-employed[f]	-0.17	**
Work part-time[f]	0.09	
Homemaker[f]	0.37	***
Student[f]	0.03	
Disabled[f]	-0.31	***
Unemployed[f]	-0.99	***
Retired[f]	0.78	***
Constant	5.56	

Reference variables: [a] Age over 65 [b] High school [c] Married [d] From 50k to 75k [e] Living with partner [f] Work full-time [g] Male [h] White

p<0.001 ***, p<0.01 **, p<0.05*

The reference variable was over age 65. The age 18 to 24 variable correlated positively with financial satisfaction. However, the coefficients for the subsequent age variables were increasingly more negative. The coefficient for the age 55 to 65 variable, although still negative, was greater than the coefficient for the age 45 to 54 variable. Therefore, in Model 1 age was positively correlated with financial satisfaction. Relative to being over age 65, Model 1 suggests that growing older reduces financial satisfaction until the age range 45 to 54; however, financial satisfaction begins to increase thereafter.

The coefficient for the variable representing being female was negative, thus indicating a negative correlation between being female and financial satisfaction. However, the variable representing race was not significant.

Completion of high school was the control variable for the education variables. With one exception, the education variables were not significant. Having taken some college classes was negatively correlated with financial satisfaction.

Being single, divorced, or separated had a negative correlation with financial satisfaction, relative to being married. Being widowed is not significantly correlated with financial satisfaction at $\alpha = 0.05$.

The reference variable for the income variables was income from $50,000 to $75,000. All of the income variables were significant in the regression. The less than $15,000 income variable had the highest negative coefficient. Each subsequent income variable, in increasing order, had a progressively less negative coefficient value until the $75,000 to $100,000 variable, at which point the coefficient becomes more positive with each increasing income level variable. Accounting for the reference variable, the pattern suggests that financial satisfaction increases with income, controlling only for demographic and socioeconomic characteristics.

Having dependents in the home had a negative correlation with financial satisfaction, while being the only adult in the home, relative to living with a partner, had a positive correlation. Living with parents and living with roommates were not significantly correlated with financial satisfaction.

The reference variable for employment was working full-time. The variables representing being unemployed, disabled, and self-employed were negatively correlated with financial satisfaction, while being a homemaker and being retired were positively correlated. Being a student and working part-time were not significantly correlated with financial satisfaction.

Adding variables representing knowledge to the regression, Model 2, improved the adjusted R^2 from .1795 to .2463, an increase of .0668. The F test was significant at $\alpha = 0.05$. The

mean VIF was 1.83, and the highest was VIF 3.58, age 35 to 44. Results are reported in Table 34 and Appendix B.

Table 34

Model 2: Knowledge

Financial satisfaction	Coef.	P>t
Age 18 to 24[a]	0.27	***
Age 25 to 34[a]	-0.15	*
Age 35 to 44[a]	-0.40	***
Age 45 to 54[a]	-0.54	***
Age 55 to 64[a]	-0.34	***
Female[g]	-0.26	***
Non-white[h]	-0.08	*
Some college[b]	-0.22	***
No high school[b]	0.04	
College[b]	0.03	
Graduate school[b]	0.03	
Widowed[c]	-0.06	
Single[c]	-0.17	**
Divorced[c]	-0.49	***
Separated[c]	-0.63	***
Less than $15k[d]	-1.29	***
$15k to 25k[d]	-1.18	***

$25k to 35k[d]	-0.79	***
$35k to 50k[d]	-0.49	***
$75k to 100k[d]	0.42	***
$100k to 150k[d]	0.81	***
Over $150k[d]	1.52	***
Dependents	-0.20	***
Only adult in household[e]	0.44	***
Live with parents[e]	0.06	
Live roommate[e]	-0.08	
Self-employed[f]	-0.31	***
Work part-time[f]	0.08	
Homemaker[f]	0.30	***
Student[f]	0.05	
Disabled[f]	-0.29	***
Unemployed[f]	-0.96	***
Retired[f]	0.67	***
Perceived knowledge	0.57	***
Measured knowledge	-0.13	***
Constant	3.02	

Reference variables: [a] Age over 65 [b] High school [c] Married [d] From 50k to 75k [e] Living with partner [f] Work full-time [g] Male [h] White

p<0.001 ***, p<0.01 **, p<0.05*

Both knowledge variables were significantly correlated with financial satisfaction. Perceived financial knowledge was found to be positively correlated with financial satisfaction,

while financial literacy score, measured knowledge, was negatively correlated. Controlling for knowledge produced a significant negative correlation between being non-white and financial satisfaction at $\alpha = 0.05$.

Model 3 added a risk tolerance variable, and produced an adjusted R^2 increase over the previous model of 0.018, from .2463 to .2643. The F test was significant at $\alpha = 0.05$. The mean VIF was 1.82, and the highest VIF score was 3.59, age 35 to 44. Results for Model 3 are in Table 35 and Appendix B.

Table 35

Model 3: Risk Tolerance

Financial Satisfaction	Coef.	P>t
Age18 to 24[a]	0.06	
Age25 to 34[a]	-0.30	***
Age35 to 44[a]	-0.51	***
Age45 to 54[a]	-0.61	***
Age55 to 64[a]	-0.37	***
Female[g]	-0.12	***
Non-white[h]	-0.13	***
Some college[b]	-0.23	***
No high school[b]	0.08	
College[b]	-0.01	
Graduate school[b]	-0.05	
Widowed[c]	-0.06	

Single[c]	-0.22	***
Divorced[c]	-0.51	***
Separated[c]	-0.65	***
Less than $15k[d]	-1.18	***
$15k to 25k[d]	-1.08	***
$25k to 35k[d]	-0.70	***
$35k to 50k[d]	-0.42	***
$75k to 100k[d]	0.37	***
$100k to 150k[d]	0.70	***
Over $150k[d]	1.35	***
Dependents	-0.20	***
Only adult in household[e]	0.41	***
Live with parents[e]	0.07	
Live with roommate[e]	-0.09	
Self-employed[f]	-0.33	***
Work part-time[f]	0.11	*
Homemaker[f]	0.36	***
Student[f]	0.09	
Disabled[f]	-0.15	
Unemployed[f]	-0.93	***
Retired[f]	0.74	***
Perceived knowledge	0.51	***

Measured knowledge	-0.16	***
Risk tolerance	0.16	***
Constant	2.70	

Reference variables: [a] Age over 65 [b] High school [c] Married [d] From 50k to 75k [e] Living with partner [f] Work full-time [g] Male [h] White

p<0.001 ***, p<0.01 **, p<0.05*

Risk tolerance was significant at $\alpha = 0.01$ and positively correlated with financial satisfaction. Controlling for risk tolerance produced an insignificant correlation between financial satisfaction and the age variable 18 to 24, as well as the disabled variable. However, the working part-time variable was significant and positively correlated.

Model 4 controlled for three stressful events. With respect to Model 3, the adjusted R^2 increased to .4466, an increase of .1823. The F test was significant at $\alpha = 0.05$. The mean VIF was 1.78, and no individual variable had a VIF of over 3.6. Results are presented in Table 36 and Appendix B.

Table 36

Model 4: Financial Stressors

Financial Satisfaction	Coef.	P>t
Age18 to 24[a]	0.09	
Age25 to 34[a]	-0.18	**
Age35 to 44[a]	-0.31	***
Age45 to 54[a]	-0.34	***
Age55 to 64[a]	-0.20	***
Female[g]	-0.03	

Non-white[h]	-0.05	
No high school[b]	0.23	**
Some college[b]	-0.21	***
College[b]	-0.05	
Graduate school[b]	-0.08	
Single[c]	-0.26	***
Divorced[c]	-0.44	***
Separated[c]	-0.46	***
Widowed[c]	-0.04	
Less than $15k[d]	-0.39	***
$15k to 25k[d]	-0.35	***
$25k to 35k[d]	-0.23	***
$35k to 50k[d]	-0.16	***
$75k to 100k[d]	0.18	***
$100k to 150k[d]	0.28	***
Over $150k[d]	0.61	***
Dependents	-0.03	*
Only adult in household[e]	0.32	***
Live with parents[e]	-0.13	
Live with roommate[e]	-0.03	
Self-employed[f]	-0.03	
Work part-time[f]	0.15	**

Homemaker[f]	0.29	***
Student[f]	0.14	*
Disabled[f]	-0.05	
Unemployed[f]	-0.30	***
Retired[f]	0.51	***
Perceived knowledge	0.38	***
Measured knowledge	-0.18	***
Risk tolerance	0.14	***
Sudden income drop	-0.69	***
Difficulty paying bills	-1.64	***
Foreclosure	-0.06	
Constant	6.18	***

Reference variables: [a] Age over 65 [b] High school [c] Married [d] From 50k to 75k [e] Living with partner [f] Work full-time [g] Male [h] White

p<0.001 ***, p<0.01 **, p<0.05*

Sudden income drop and difficulty paying bills are both negatively correlated with financial satisfaction in Model 4. However, having a foreclosure is not significantly correlated with financial satisfaction.

Controlling for financial stressors, having not completed high school became significant with a positive correlation, relative to having completed high school, and having completed some college became significant with a negative correlation. Being female and non-white were not significantly correlated with financial satisfaction. Other variables that were not significant were dependents, self-employment, and being disabled.

Model 5 controlled for financial behaviors. Model 5 had an adjusted R^2 of .4894, an increase of .0428 over Model 4. The F test was significant at $\alpha = 0.05$. The mean VIF was 1.73 and the highest individual variable was age 35 to 44 with a VIF of 3.65. Results are reported in Table 37 and Appendix B.

Table 37

Model 5: Financial Behaviors

Financial Satisfaction	Coef.	P>t
Age18 to 24[a]	0.37	***
Age25 to 34[a]	0.14	*
Age35 to 44[a]	-0.04	
Age45 to 54[a]	-0.14	**
Age55 to 64[a]	-0.07	
Female[g]	-0.05	
Non-white[h]	0.00	
No high school[b]	0.22	**
Some college[b]	-0.20	***
College[b]	-0.12	**
Graduate school[b]	-0.15	**
Single[c]	-0.21	***
Divorced[c]	-0.34	***
Separated[c]	-0.34	**
Widowed[c]	-0.04	

Less than $15k[d]	-0.22	***
$15k to 25k[d]	-0.19	***
$25k to 35k[d]	-0.10	*
$35k to 50k[d]	-0.06	
$75k to 100k[d]	0.11	*
$100k to 150k[d]	0.10	*
Over $150k[d]	0.28	***
Dependents	-0.01	
Only adult in household[e]	0.26	***
Live with parents[e]	-0.10	
Live with roommate[e]	0.00	
Self-employed[f]	-0.15	**
Work part-time[f]	0.09	*
Homemaker[f]	0.23	***
Student[f]	0.13	
Disabled[f]	0.04	
Unemployed[f]	-0.37	***
Retired[f]	0.43	***
Perceived knowledge	0.32	***
Measured knowledge	-0.19	***
Risk tolerance	0.11	***
Sudden income drop	-0.70	***
Difficulty paying bills	-1.25	***

Foreclosure	-0.02	
Spend more than income	-0.47	***
Emergency fund	1.10	***
Planned retirement	0.09	**
Investment account	-0.01	
Homeowner	0.22	***
Own other real estate	0.16	***
Own business	0.04	
Fin professional	-0.08	***
Constant	5.64	***

Reference variables: [a] Age over 65 [b] High school [c] Married [d] From 50k to 75k [e] Living with partner [f] Work full-time [g] Male [h] White

$p<0.001$ ***, $p<0.01$ **, $p<0.05$*

Behaviors positively correlated with financial satisfaction were having an emergency fund, planning for retirement, having a savings account, owning a home, and owning other real estate. The variables not significantly correlated with financial satisfaction were having an investment account, and owning a business.

Controlling for financial behaviors caused significance changes in several variables. The age 18 to 24 variable, age 25 to 34 variable, the age 45 to 54 variable, were significant age variables at $\alpha = 0.05$ in Model 5. The pattern of these three variables is declining financial satisfaction with age. The education variables were significant, with a pattern suggesting a negative relationship with financial satisfaction. The income variables from $35,000 to $50,000, was the only insignificant income variable in Model 5. Unemployment and self-employment were more negatively correlated with financial satisfaction than working full-time for an

employer. However, working part-time, being a homemaker, and being retired correlate positively with working full-time.

Model 6 controlled for credit and banking behaviors. The adjusted R^2 increased to .4972 an increase of .0078 from Model 5. The F test was significant at $\alpha = 0.05$. The mean VIF was 1.72 and the highest VIF was 3.67, age 35 to 44. Results are presented in Table 38 and Appendix B.

Table 38

Model: 6 Credit and Banking Behaviors

Financial Satisfaction	Coef.	P>t
Age18 to 24[a]	0.39	***
Age25 to 34[a]	0.18	**
Age35 to 44[a]	0.01	
Age45 to 54[a]	-0.10	
Age55 to 64[a]	-0.04	
Female[g]	-0.05	
Non-white[h]	0.02	
No high school[b]	0.23	**
Some college[b]	-0.20	***
College[b]	-0.16	***
Graduate school[b]	-0.21	***
Single[c]	-0.20	***
Divorced[c]	-0.31	***

Separated[c]	-0.31	**
Widowed[c]	-0.02	
Less than $15k[d]	-0.27	***
$15k to 25k[d]	-0.21	***
$25k to 35k[d]	-0.11	*
$35k to 50k[d]	-0.07	
$75k to 100k[d]	0.10	*
$100k to 150k[d]	0.08	
Over $150k[d]	0.22	***
Dependents	0.00	
Only adult in household[e]	0.24	***
Live with parents[e]	-0.14	*
Live with roommate[e]	-0.02	
Self-employed[f]	-0.16	**
Work part-time[f]	0.06	
Homemaker[f]	0.19	***
Student[f]	0.07	
Disabled[f]	0.03	
Unemployed[f]	-0.39	***
Retired[f]	0.38	***
Perceived knowledge	0.31	***
Measured knowledge	-0.20	***
Risk tolerance	0.11	***

Sudden income drop	-0.70	***
Difficulty paying bills	-1.17	***
Foreclosure	-0.01	
Spend more than income	-0.42	***
Emergency fund	0.89	***
Planned retirement	0.08	**
Investment account	-0.02	
Homeowner	0.19	***
Own other real estate	0.15	***
Own business	0.07	
Fin professional	-0.08	***
Pay credit card in full	0.49	***
Carry balance	-0.05	
Minimum credit card payment	-0.18	***
Alternative financing	-0.06	
Overdraft	-0.04	
Savings account	0.07	**
Constant	5.55	***

Reference variables: [a] Age over 65 [b] High school [c] Married [d] From 50k to 75k [e] Living with partner [f] Work full-time [g] Male [h] White

p<0.001 ***, p<0.01 **, p<0.05*

The only significant factors that positively correlated with financial satisfaction were paying the credit card in full every month, and having a savings account. Making only minimum credit card payments was also significant, but negatively correlated with financial satisfaction.

Using alternative financing methods and overdrafting a checking account were not found to be significant in Model 6.

After controlling for credit and banking behaviors the age 18 to 24 and age 25 to 34 variables were significant and positively correlated, relative to age over 65. None of the other age variables were significant. Increasing education suggested negative correlation with financial satisfaction. The income variables $35,000 to $50,000 and $100,000 to $150,000 were not significant; however, the other income variables indicated increasing financial satisfaction with income. The significance and correlation of the other variables with financial satisfaction did not change.

The results of the experiment have been presented above. These results, in the form of hypotheses, will the discussed in the concluding section.

CHAPTER 5

DISCUSSION AND CONCLUSION

A model of financial satisfaction was examined using data from the NFCS State-by-State survey. Financial behaviors were found to be significant correlates with financial satisfaction, controlling for socio-economic and demographic characteristics, financial knowledge, risk tolerance, and stress, based on the F tests performed on each model for $H_{0:}$ additional variables have no additional predictive value. H_0 was rejected for each model (Appendix B); therefore, financial behaviors are a significant predictor of financial satisfaction. Each hypothesis is discussed below.

Hypothesis 1: Age will be positively correlated with financial satisfaction.

The reference variable for age in the regressions for all models was over age 65; thus, the coefficient of each age variable in the regression should be interpreted as the correlation between the age variable relative to over age 65. In Model 1 and Model 2, all of the age brackets were significant. In chronological order, the age 18 to 24 variable had a positive coefficient, and the age 25 to 34 variable through the age 45 to 54 variable coefficients showed a steadily increasing negative magnitude of correlation with financial satisfaction. The age 55 to 64 variable had a lower magnitude negative coefficient than the age 45 to 54 variable. Therefore, Model 1 and Model 2 results suggest that financial satisfaction begins high early in life and decreases with age, bottoming out at age 45 to age 54. Financial satisfaction increases with age beyond about age 54. These results somewhat agree with Plagnol (2011); however, Plagnol (2011) found an

overall increasing pattern of financial satisfaction with age. Plagnol (2011) controlled for health and wealth, variables not available in the NFCS data.

Model 3 controlled for risk tolerance. In that model the age 18 to 24 variable was not significant at $\alpha = 0.05$. The remaining age variables were significant, and the pattern of correlation with financial satisfaction remained unchanged from Models 1 and 2. A possible explanation is that young people have a misperception of risk, but as they age their understanding of risk improves. Therefore controlling for risk tolerance, being in the youngest age category is not a correlate of financial satisfaction.

Controlling for stressors in Model 4, the overall pattern of correlation with financial satisfaction remained consistent. However, the age 35 to 44 and age 55 to 64 variables were not significant. All of the other age variables were significant at $\alpha = 0.05$. Possibly financial stressors occur less frequently, or less severely, to the younger age groups, but have an effect as age increases.

Controlling for financial behaviors in Models 5 and 6, however, only the youngest age groups remained significant. Both age group variables had a positive coefficient; therefore, both age groups had a higher correlation with financial satisfaction than being over age 65.

The results did not support Hypothesis 1. After controlling for behaviors and stressors, an increase in age was not correlated with financial satisfaction. As noted earlier, this study did not control for wealth. Since an increase in wealth was expected to positively correlate with financial satisfaction (Plagnol, 2011), missing wealth variables may affect the results of the model. The correlation of wealth with financial satisfaction, in the presence of a robust set of independent variables, should be a subject of future research.

Hypothesis 2: Being female will positively correlate with financial satisfaction, versus being male.

In Models 1, 2, and 3, being female, versus being male, was negatively correlated with financial satisfaction, refuting Hypothesis 2, but supporting the results by Plagnol (2011), who suggested that males have higher income aspirations, thus lower relative financial satisfaction than females, at a given income level. However, controlling for financial behaviors and stressors, gender was not a significant predictor of financial satisfaction in models 4 through 6. The results did not support Hypothesis 2.

Hypothesis 3: Being married will be positively correlated with financial satisfaction, versus other types of marital status.

The control variable for marital status was married. In all models the marital status variables have a negative coefficient in the financial satisfaction regression. All were significant with the exception of widowed, which had a small sample size. The results supported Hypothesis 3.

Hypothesis 4: Living with a partner will be positively correlated with financial satisfaction, versus other living arrangements.

The reference variable for living arrangements was living with a partner. The variables living with parents and living roommate were not significant in models 1 through 5. In Model 6 the variable living with parents was significant with a negative correlation; therefore suggesting that living with a partner was preferable to living with parents. The variable only adult in household was significant at $\alpha = 0.05$ across all models, but had a positive coefficient, indicating that being the only adult in the household was more positively correlated with financial

satisfaction than living with a partner. This result seems to have contradicted Hypothesis 4, being married, as married couples typically live together.

Hypothesis 5: An increase in income will be positively correlated with financial satisfaction.

An increase in income shows a pattern of increasing correlation with financial satisfaction in Models 1, 2, 3, and 4. However, controlling for financial behaviors in Models 5 the income variable $35k to $50k became insignificant. In Model 6 both income variables $35k to $50k and $100k to $150k were insignificant. It may be that financial satisfaction increases with income, until a point where managing money becomes stressful. This effect may be mitigated at high income levels where the comfort of additional assets overcomes the stress of managing them. The results generally supported Hypothesis 5, financial satisfaction generally increased with income. The results suggest that at middle income levels people may experience stress. Financial education professionals may want to target this population.

Hypothesis 6: Education will be negatively correlated with financial satisfaction.

Having high school as the highest level of education was the control variable in the regressions. In Model 1 through Model 3 (risk tolerance) only the variable indicating some college education was significant, with a negative correlation. In Model 4 (financial stressors) having no high school became significant with a positive correlation. In Model 5 (financial behaviors) and Model 6 (credit and banking behaviors), however, all the education variables were significant. The variables indicating more education than only high school had negative coefficients, while the variable representing having less than a high school education had a positive coefficient. Therefore, the results suggested that financial satisfaction had a negative correlation with education. The results did support Hypothesis 6.

Hypothesis 7: Owning a home will be positively correlated with financial satisfaction.

Homeownership was introduced in Model 5 as a financial behavior. In Model 5 and Model 6 homeownership was significantly and positively correlated with financial satisfaction. The results supported Hypothesis 7.

Hypothesis 8: Ethnicity will not be significantly correlated with financial satisfaction.

Being non-white was not significantly correlated with financial satisfaction, except in Model 2 (knowledge) and Model 3 (risk tolerance). In these cases being non-white was negatively correlated with financial satisfaction. The results support Hypothesis 8.

Hypothesis 9: The number of dependent children will be negatively correlated with financial satisfaction.

In Model 1 through Model 4 (financial stressors) the variable representing the number of dependent children was significant with a negative coefficient, suggesting that increasing the number of dependents had a negative correlation with financial satisfaction. However, in Model 5 and 6 the dependents variable was not significant. The results did not support Hypothesis 9.

Hypothesis 10: Working full-time will be negatively correlated with financial satisfaction, relative to being retired.

Working full-time was the reference variable for work status. The variables retired, unemployed, and homemaker were significant across all models. The results indicated that in terms of financial satisfaction being a homemaker and being retired is preferable to working full-time; however, as expected, being unemployed was not preferable to working full-time. Being self-employed was significant in all models except Model 4 (financial stressors). Surprisingly however, being self-employed had a lower correlation with financial satisfaction than being employed full-time. The results supported Hypothesis 10.

Hypothesis 11: Perceived knowledge level will be positively correlated with financial satisfaction.

Perceived knowledge was introduced in Model 2 and was significant and positively correlated with financial satisfaction in all models. The results supported Hypothesis 11.

Hypothesis 12: Measured knowledge level will be positively correlated with financial satisfaction.

The measured knowledge variable was a scale consisting of the number of correct responses to five questions. The measured knowledge variable was negatively correlated with financial satisfaction in all models. Regressions were performed using each individual question as independent variables, replacing the measured knowledge scale (not reported here). Each question was significant with a negative correlation with financial satisfaction; therefore, the analysis was performed using the measured knowledge scale. The results did not support Hypothesis 12. The results seemed to support the idea that the more you know, the unhappier you are. The discrepancy in the direction of effect between measured knowledge and perceived knowledge is of interest to financial educators and is worthy of further research.

Hypothesis 13: Risk tolerance will be positively correlated with financial satisfaction.

Risk tolerance was introduced in Model 3. The results supported Hypothesis 13; as risk tolerance increased, so did financial satisfaction across all models. However, it should be noted that risk tolerance was measured using a single item. Joo and Grable (2004) suggest that a single item measure for risk tolerance may be inadequate.

Hypothesis 14: Financially stressful events will be negatively correlated with financial satisfaction.

The results supported Hypothesis 14; financially stressful events had a negative correlation with financial satisfaction. Stressful events were introduced in Model 4 and were significant in models 5 and 6 with a negative coefficient. Foreclosure, however, was not a significant factor, possibly due to the small number of positive responses in this variable (806 out of 28,146). Additionally, having difficulty paying bills had the largest magnitude of coefficient of all the variables.

Hypothesis 15: Spending more than income will correlate negatively with financial satisfaction.

The results supported Hypothesis 15, spending more than income had a negative correlation with financial satisfaction in Model 5 and Model 6.

Hypothesis 16: Having an emergency fund will correlate positively with financial satisfaction.

The results supported Hypothesis 16; having a three month emergency fund was positively correlated with financial satisfaction. Notable, having an emergency fund was the second largest correlate in the regression.

Hypothesis 17: Having a savings account will correlate positively with financial satisfaction.

The results supported Hypothesis 17; a savings account was positively correlated with financial satisfaction.

Hypothesis 18: Having an investment account will be positively correlated with financial satisfaction.

Hypothesis 18 was not supported by the results. Having an investment account was not a significant factor in predicting financial satisfaction. It is possible that having an investment account in 2009 may indicate near term investment losses, thus lowering financial satisfaction.

Hypothesis 19: Owning other real estate will be positively correlated with financial satisfaction.

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Hypothesis 19 was supported by the data; owning other real estate was positively correlated with financial satisfaction.

Hypothesis 20: Owning a business will be positively correlated with financial satisfaction.

Owning a business correlated positively with financial satisfaction, supporting Hypothesis 20. This is an unexpected result in light of the results of Hypothesis 10 which indicated that being self-employed was not preferable to working for an employer full-time, in terms of financial satisfaction. It could be that there is a distinction between being self-employed and owning a business of an established size and revenue.

Hypothesis 21: Working with a financial professional will be positively correlated with financial satisfaction.

Working with a financial professional was significantly correlated with financial satisfaction in Model 5 and Model 6. However, the relationship was negative. The results do not support Hypothesis 21. The variable working with a financial professional was a construct of working with a wide variety of professionals in the financial arena. It could be that working with certain types of financial professionals does correlate with financial satisfaction. Determining the correlation of working with certain types of financial professionals is another area worthy of future research. Further, the effect of knowing the true financial situation may work to lower financial satisfaction, as also implied by Hypothesis 12 (measured knowledge) and Hypothesis 6 (education).

Hypothesis 22: Paying credit cards in full will be positively correlated with financial satisfaction.

The results supported Hypothesis 22. The variable representing paying the credit card in full every month was significant with a positive coefficient.

Hypothesis 23: Carrying a balance will be negatively correlated with financial satisfaction.

The results supported Hypothesis 23; carrying a balance was negatively correlated with financial satisfaction.

Hypothesis 24: Making a minimum credit card payment will be negatively correlated with financial satisfaction.

The results supported Hypothesis 24, making a minimum payment on a credit card was significant and negatively correlated with financial satisfaction.

Hypothesis 25: Alternative financing methods will be negatively correlated with financial satisfaction.

Using alternative financing methods was not a significant predictor of financial satisfaction; therefore, Hypothesis 25 was not supported. The alternative financing variable was constructed from several types of alternative financing behaviors. It is possible that some of these behaviors may have had a significant relationship with financial satisfaction, but the combination does not.

Hypothesis 26: Overdrafting an account will be negatively correlated with financial satisfaction.

Overdrafting a checking account was not a significant predictor of financial satisfaction; the results do not support Hypothesis 26.

Conclusions

Financial satisfaction is an important factor in the goal setting and financial behavior process. A model of financial satisfaction has been suggested. Financial behaviors and financial stressors accounted for 47% of the predictive power of the model on financial satisfaction (adjusted R^2 =0.4972). This finding is important because it validates the merit of work on financial literacy and education, as behaviors and stressors can be controlled and mitigated.

Joo and Grable (2004) and Porter and Garman (1993) concluded that positive financial behaviors correlated with financial satisfaction; however, they did not suggest which behaviors were better, in terms of financial satisfaction, than others. Multiple linear regression partial slopes represent a corresponding change in the dependent variable to a one unit change in each independent variable. Thus, the results of the multiple linear regression performed on financial satisfaction permit an exploratory look at strength of correlation of each variable with financial satisfaction.

Table 39 lists the behavior variables and standardized coefficients of the results in Model 6 by absolute value of magnitude of the standardized coefficient for each variable, suggesting the magnitude of correlation with financial satisfaction, relative to each other.

Table 39

Standardized Significant Behavior Factors by Magnitude

Variable	Standardized Coefficient
Difficulty paying bills	-0.31
Emergency fund	0.16
Sudden income drop	-0.13
Pay credit card in full	0.08
Spend more than income	-0.06
Financial professional	-0.05
Own a home	0.03
Minimum credit card payment	-0.03
Own other real estate	0.02
Planned retirement	0.01

Savings account	0.01

The variable difficulty paying bills, had a high negative coefficient value, relative to the other terms. This would be expected, as someone who is not able to comfortably pay their bills is unlikely to be financially satisfied with their present financial situation. Further, Joo and Grable (2004) observed a correlation between financial satisfaction and stress. Similarly, experiencing a sudden income drop and spending more than income also had the expected negative correlations with financial satisfaction. While experiencing a sudden income drop may be unavoidable in most cases, spending more than income, in the long term, is in many cases a function of spending, more so than income. Therefore, the results support the importance of taking steps to manage cash flow, a finding of interest to financial planners.

Paying a credit card in full each month was also positively correlated with financial satisfaction. Thus, the results provided some validation to the model; the behavioral and stress items that would be expected to correlate highly, did so, relative to the other variables in the model.

One surprising finding in this study was that the variable having an emergency fund had largest coefficient by magnitude in the full model regression of financial satisfaction. The coefficient for the variable emergency fund was twice as large as the coefficient for paying off a credit card in full each month, the second largest coefficient by magnitude. This finding has to be interpreted with caution, as statistical analysis cannot provide guidance on specific individual actions. However, the important role that having an emergency fund may play in a model of financial satisfaction deserves further study.

Another surprising result was the opposite correlation for perceived knowledge and measured knowledge, with financial satisfaction. The perceived knowledge variable acted as expected; the more you know the more satisfied you are. However, the actual financial knowledge variable had the opposite effect. Similarly, an increase in education also is negatively correlated with financial satisfaction. The results should not be interpreted to mean that increasing knowledge should be avoided because of the negative correlation suggested by the results. The NFCS survey only tested basic and specific financial knowledge questions, these questions may not fully represent the knowledge needed to actually increase financial satisfaction.

The prevailing poor economic conditions during sample collection may explain the lack of significance for the correlation between having an investment account and financial satisfaction. However, during that same economic crisis, homeownership, owning other real estate, and owning a business also correlated positively with financial satisfaction. These results suggest that tangible investments, such as real estate or a business, may provide more financial satisfaction than intangible assets, such as stock and bond certificates typically held in investment accounts.

The NFCS State-by-State survey provided a large data set and a pool of variables that allowed for the construction of a comprehensive model of financial satisfaction, based on the literature. The measurement of financial satisfaction was also consistent with the literature. However, several limitations exist. Two of eight components of the Joo and Grable (2004) framework, the most comprehensive model for financial satisfaction published to date, were not represented in the NFCS data, solvency and stress level. Further, Joo and Grable (2004) found support for direct and indirect effects of independent variables on financial satisfaction using a

path analysis. One finding was that many of the independent variables produced an effect on financial stress, which in turn had an effect on financial satisfaction. The lack of a stress level measure in the present study did not allow reproduction of the Joo and Grable (2004) framework model, taking into account direct and indirect effects. Future research should seek to mitigate this limitation.

Risk tolerance was represented by a one-item measure; however, some literature has suggested that a multi-item measure is preferable (Joo & Grable, 2004). Future research about the measure of financial satisfaction should include a risk tolerance scale supported by literature.

Finally, this study does not address the direction of the relationship between financial satisfaction and the independent behavioral variables presented. In order to support previous authors' claims of causality, further research utilizing longitudinal data is needed.

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APPENDIX A

Descriptive Statistics of Variables

Variable	Observations	Mean	Std. Dev.	Min	Max
Financial satisfaction	27664	4.55	2.73	1	10
Age 18 to 24	28146	0.12	0.32	0	1
Age 25 to 34	28146	0.18	0.38	0	1
Age 35 to 44	28146	0.19	0.39	0	1
Age 45 to 54	28146	0.21	0.41	0	1
Age 55 to 64	28146	0.16	0.37	0	1
Age 65 or older	28146	0.14	0.35	0	1
Female	28146	0.53	0.50	0	1
Non-white	28146	0.25	0.43	0	1
No high school	28146	0.03	0.17	0	1
High school	28146	0.24	0.43	0	1
Completed some college	28146	0.35	0.48	0	1
College	28146	0.24	0.43	0	1
Graduate school	28146	0.14	0.35	0	1
Married	28146	0.56	0.50	0	1
Single	28146	0.26	0.44	0	1
Divorced	28146	0.12	0.33	0	1
Separated	28146	0.02	0.13	0	1

Widowed	28146	0.04	0.20	0	1
Less than $15k	28146	0.13	0.33	0	1
$15k - 25k	28146	0.12	0.33	0	1
$25k - 35k	28146	0.12	0.33	0	1
$35k - 50k	28146	0.16	0.37	0	1
$50k - 75k	28146	0.19	0.39	0	1
$75k - 100k	28146	0.12	0.32	0	1
$100k - 150k	28146	0.10	0.30	0	1
Over $150k	28146	0.06	0.24	0	1
Dependent children	28146	0.76	1.11	0	4
Only adult in household	28146	0.21	0.41	0	1
Live with partner	28146	0.63	0.48	0	1
Live with parents	28146	0.07	0.26	0	1
Live with roommate	28146	0.09	0.28	0	1
Self-employed	28146	0.09	0.28	0	1
Work full-time	28146	0.39	0.49	0	1
Work part-time	28146	0.10	0.29	0	1
Homemaker	28146	0.09	0.28	0	1
Student	28146	0.05	0.22	0	1
Disabled	28146	0.04	0.20	0	1
Unemployed	28146	0.09	0.29	0	1
Retired	28146	0.16	0.37	0	1
Perceived knowledge	27548	4.99	1.29	1	7

Measured knowledge	28146	3.12	1.42	0	5
Risk tolerance	27196	4.41	2.59	1	10
Sudden income drop	28146	0.39	0.49	0	1
Difficulty paying bills	27644	1.79	0.72	1	3
Foreclosure	28146	0.03	0.17	0	1
Spend more than income	28146	0.20	0.40	0	1
Emergency fund	28146	0.37	0.48	0	1
Plan retirement	28146	0.43	0.49	0	1
Savings account	28146	0.77	0.42	0	1
Investment account	28146	0.64	0.48	0	1
Homeowner	28146	0.62	0.49	0	1
Own other real estate	28146	0.15	0.35	0	1
Own business	28146	0.12	0.33	0	1
Financial professional	26370	5.02	1.80	1	7
Paid card in full	28146	0.31	0.46	0	1
Carry a balance	28146	0.42	0.49	0	1
Minimum credit card payment	28146	0.29	0.45	0	1
Alternative financing	28146	0.24	0.42	0	1
Overdraft	28146	0.24	0.43	0	1

APPENDIX B

VIF AND F-test Results for Models 1 - 6

Model 1: Demographic and Socioeconomic Characteristics

VIF

Variable	VIF	1/VIF
Age 35-44	3.57	0.28
Age 25-34	3.52	0.28
Age 18-24	3.47	0.29
Age 45-54	3.33	0.30
Single	3.09	0.32
Only adult in household	2.80	0.36
Retired	2.29	0.44
Age 55-64	2.28	0.44
Divorced	2.10	0.48
Less than $15k	1.98	0.50
Live with parents	1.93	0.52
Live with roommate	1.78	0.56
College	1.73	0.58
Some college	1.68	0.60
Graduate school	1.68	0.60
$15k - 25k	1.62	0.62

Widowed	1.62	0.62
$35k - 50k	1.57	0.64
$25k - 35k	1.52	0.66
$75k - 100k	1.45	0.69
$100k - 150k	1.44	0.69
Student	1.41	0.71
Dependent children	1.4	0.71
Over $150k	1.33	0.75
Homemaker	1.32	0.76
Unemployed	1.28	0.78
Work part-time	1.24	0.81
Disabled	1.18	0.85
Separated	1.17	0.85
Self-employed	1.15	0.87
Female	1.12	0.89
No high school	1.11	0.90
Non-white	1.09	0.92
Mean VIF	1.86	

Model 2: Knowledge

F ratio = 1141.05 Probability > F = 0.0000

VIF

Variable	VIF	1/VIF
Age 35-44	3.58	0.28
Age 25-34	3.54	0.28
Age 18-24	3.46	0.29
Age 45-54	3.35	0.30
Single	3.08	0.32
Only adult in household	2.80	0.36
Retired	2.28	0.44
Age 55-64	2.28	0.44
Divorced	2.1	0.48
Less than $15k	2.0	0.50
Live with parents	1.92	0.52
College	1.81	0.55
Live with roommate	1.78	0.56
Some college	1.76	0.57
Graduate school	1.72	0.58
$15k - 25k	1.64	0.61
Widowed	1.61	0.62
$35k - 50k	1.57	0.64
$25k - 35k	1.52	0.66

$100k - 150k	1.45	0.69
$75k - 100k	1.45	0.69
Student	1.42	0.70
Dependent children	1.40	0.71
Measured knowledge	1.36	0.74
Over $150k	1.34	0.75
Homemaker	1.32	0.76
Unemployed	1.27	0.78
Work part-time	1.24	0.81
Female	1.18	0.85
Disabled	1.18	0.85
Separated	1.17	0.85
Self-employed	1.15	0.87
Perceived knowledge	1.14	0.88
No high school	1.11	0.90
Non-white	1.10	0.91
Mean VIF	1.83	

Model 3: Risk Tolerance

F ratio = 674.00 Probability > F = 0.0000

VIF

Variable	VIF	1/VIF
Age 35-44	3.59	0.28
Age 25-34	3.54	0.28
Age 18-24	3.47	0.29
Age 45-54	3.34	0.30
Single	3.07	0.33
Only adult in household	2.79	0.36
Retired	2.29	0.44
Age 55-64	2.28	0.44
Divorced	2.09	0.48
Less than $15k	1.99	0.50
Live with parents	1.91	0.52
College	1.83	0.55
Graduate school	1.77	0.56
Live with roommate	1.77	0.56
Some college	1.73	0.58
$15k - 25k	1.64	0.61
Widowed	1.61	0.62
$35k - 50k	1.57	0.64
$25k - 35k	1.52	0.66

$100k - 150k	1.46	0.68
$75k - 100k	1.45	0.69
Student	1.42	0.71
Dependent children	1.40	0.71
Measured knowledge	1.36	0.73
Over $150k	1.36	0.74
Homemaker	1.32	0.76
Unemployed	1.27	0.79
Risk tolerance	1.26	0.79
Work part-time	1.24	0.81
Female	1.21	0.82
Disabled	1.18	0.85
Perceived knowledge	1.17	0.85
Separated	1.17	0.86
Self-employed	1.15	0.87
No high school	1.11	0.90
Non-white	1.10	0.91
Mean VIF	1.82	

Model 4: Financial Stressors

F ratio = 2871.1 Probability > F = 0.0000

VIF

Variable	VIF	1/VIF
Age 35-44	3.60	0.28
Age 25-34	3.54	0.28
Age 18-24	3.41	0.29
Age 45-54	3.36	0.30
Single	3.04	0.33
Only adult in household	2.79	0.36
Age 55-64	2.29	0.44
Retired	2.29	0.44
Divorced	2.09	0.48
Less than $15k	2.03	0.49
Live with parents	1.87	0.54
College	1.83	0.55
Graduate school	1.78	0.56
Live with roommate	1.77	0.57
Completed some college	1.74	0.58
$15k - 25k	1.68	0.59
Widowed	1.61	0.62
$35k - 50k	1.57	0.64
$25k - 35k	1.54	0.65

$100k - 150k	1.47	0.68
Difficulty paying bills	1.46	0.68
$75k - 100k	1.45	0.69
Dependent children	1.43	0.70
Student	1.40	0.71
Over $150k	1.38	0.72
Measured knowledge	1.37	0.73
Unemployed	1.32	0.76
Homemaker	1.32	0.76
Risk tolerance	1.27	0.79
Sudden income drop	1.25	0.80
Work part-time	1.24	0.81
Female	1.22	0.82
Work part-time	1.19	0.84
Perceived knowledge	1.18	0.85
Disabled	1.17	0.85
Self-employed	1.17	0.86
Separated	1.11	0.90
No high school	1.10	0.91
Non-white	1.03	0.97
Foreclosure	3.60	0.28
Mean VIF	1.78	

Model 5: Financial Behaviors

F ratio = 247.43 Probability > F = 0.0000

Variable	VIF	1/VIF
Age 35-44	3.65	0.27
Age 25-34	3.61	0.28
Age 18-24	3.45	0.29
Age 45-54	3.38	0.30
Single	3.06	0.33
Only adult in household	2.81	0.36
Age 55-64	2.30	0.44
Retired	2.28	0.44
Less than $15k	2.12	0.47
Divorced	2.11	0.47
College	1.87	0.54
Live with parents	1.87	0.54
Graduate school	1.82	0.55
Live with roommate	1.77	0.56
Difficulty paying bills	1.77	0.56
Completed some college	1.76	0.57
$15k - 25k	1.75	0.57
Have investment account	1.62	0.62
Widowed	1.61	0.62
$35k - 50k	1.58	0.63

Homeowner	1.57	0.64
$25k - 35k	1.57	0.64
$100k - $150k	1.51	0.66
Emergency fund	1.48	0.67
$75k - 100k	1.47	0.68
Over $150k	1.44	0.70
Dependent children	1.43	0.70
Self-employed	1.41	0.71
Student	1.41	0.71
Measured knowledge	1.39	0.72
Own business	1.34	0.74
Unemployed	1.33	0.75
Homemaker	1.33	0.75
Risk tolerance	1.31	0.76
Planned retirement	1.29	0.78
Sudden income drop	1.26	0.79
Work part-time	1.24	0.80
Perceived knowledge	1.24	0.81
Female	1.23	0.82
Own other real estate	1.20	0.84
Disabled	1.19	0.84
Separated	1.17	0.85
Spend more than income	1.16	0.86

Financial Professional	1.14	0.88
Non-white	1.11	0.90
No high school	1.11	0.90
Foreclosure	1.03	0.97
Mean VIF	1.73	

Model 6

F ratio = 65.37 Probability > F = 0.0000

VIF

Variable	VIF	1/VIF
Age 35-44	3.67	0.27
Age 25-34	3.64	0.27
Age 18-24	3.47	0.29
Age 45-54	3.39	0.30
Single	3.06	0.33
Only adult in household	2.81	0.36
Age 55-64	2.30	0.43
Retired	2.29	0.44
Less than $15k	2.16	0.46
Divorced	2.12	0.47
College	1.89	0.53
Carry a credit card balance	1.88	0.53
Live with parents	1.87	0.53
Difficulty paying bills	1.87	0.53
Graduate school	1.83	0.55
Live with roommate	1.77	0.56
$15k - 25k	1.77	0.56
Pay credit card in full	1.77	0.56
Completed some college	1.77	0.57

Emergency fund	1.67	0.60
Investment account	1.67	0.60
Minimum credit card payment	1.64	0.61
Widowed	1.61	0.62
Homeowner	1.60	0.62
$35k – 50k	1.58	0.63
$25k - 35k	1.57	0.64
$100k – 150k	1.51	0.66
$75k - 100k	1.47	0.68
Dependent children	1.45	0.69
Over $150k	1.44	0.69
Self-employed	1.41	0.71
Student	1.41	0.71
Measured knowledge	1.41	0.71
Own business	1.35	0.74
Unemployed	1.34	0.75
Homemaker	1.33	0.75
Risk tolerance	1.31	0.76
Planned retirement	1.29	0.77
Savings account	1.29	0.78
Sudden income drop	1.27	0.79
Alternative financing	1.27	0.79
Work part-time	1.25	0.80

Perceived knowledge	1.24	0.80
Female	1.23	0.81
Overdraft	1.20	0.83
Own other real estate	1.20	0.83
Disabled	1.20	0.84
Spend more than income	1.18	0.85
Separated	1.17	0.85
Financial professional	1.14	0.88
Non-white	1.12	0.90
No high school	1.11	0.90
Foreclosure	1.04	0.96
Mean VIF	1.72	