Understanding on-time mortgage payment history in the wake of the 2007 financial crisis: an application of the responsible financial actions index

by

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B.S., Indiana University Kokomo, 1999
M.B.A., Indiana University Kokomo, 2011

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Family Studies and Human Services
College of Human Ecology

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Abstract

The purpose of this study was to investigate the determinants that explain and predict an individual's propensity to perform responsible financial actions and make on-time mortgage payments. The research was guided by Social Cognitive Theory (SCT) (Bandura, 1986) and explored personal factors, environmental influences, and attributes of behavior as co-factors within a combined causal framework.

Data for this study came from the publicly available, 2009, 2012, and 2015 National Financial Capability Study (NFCS) datasets. These datasets were selected for the specific questions, timeframe, and richness of the financial information provided by the respondents. Responses for each survey were weighted to be representative of Census distributions according to the American Community Survey (FINRA Investor Education Foundation, 2017). The data are weighted to be representative of each state based on age, gender, ethnicity, and education.

The two variables of interest were the responsible financial actions index and mortgage payment history. To isolate the determinants of these two variables more accurately, this research adopted a multi-step approach to the analytical procedure. The analyses began with the construction of the responsible financial actions index – unifying the most fundamental responsible financial actions recommended by financial professionals into a single value. Once confirmed as a valid and reliable measure, the responsible financial actions index was explored empirically as both a dependent variable and a target variable.

Further analyses involved the application of the SCT Triadic Model to develop OLS and Multinomial Logistic regression models. Utilizing a series of regression models, this study explored empirically the hypothesized relationships among variables categorized as personal factors, environmental influences, attributes of behavior, and on-time mortgage payment history.

When exploring variables to predict the responsible financial actions index, the OLS regression models provided consistent findings when analyzing data from the 2009, 2012, and 2015 surveys. As predicted by the SCT Triadic Model, the following personal factors, age, subjective and objective financial knowledge, financial self-efficacy, and financial risk tolerance were significant across all three survey years. The following environmental influences were significant: income, educational attainment, and marital status.

To estimate the odds of paying a mortgage on-time, a series of Multinomial Logistic regression analyses were conducted. When evaluating these results, key findings were identified across all three years of data in two models. Model 1, *never late* vs. *late once*, and Model 2, *never late* vs. *late more than once*. In Model 1, for all three years, self-efficacy was found to be predictive of on-time mortgage payment history. In Model 2, for all three years, both financial self-efficacy and the financial actions index were found to be predictive of on-time mortgage payment history.

These findings contribute to the body of empirical literature related to consumer economics and personal financial planning providing insight and understanding for how financial outcomes can be improved through basic responsible financial actions. This has important implications for financial professionals, counselors, and educators given the applicable value for the responsible financial actions index. For example, these results should encourage educators to work towards identifying new pedagogical approaches for improving financial self-efficacy among students.

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Dedication

This dissertation is dedicated to my loving family and friends. To my husband, Douglas, for your unwavering support and encouragement throughout this adventure. To my children, Tara, Tasha, Jacob, and Casey for your love, pride, and understanding. To my amazing grandchildren, Colton, Max, Payton, Na'Mya, Ariah, and Alanis, you six little humans have provided me with a continuous source of energy and joy. To my mother, for your years of strength and wisdom. To my father, you are missed so very much, thank you for always believing in me. To my best friends, Gabby and Jason, you have provided me with inspiration and unconditional friendship.

"When gone am I, the last of the Jedi will you be. The Force runs strong in your family. Pass on what you have learned." — Yoda

Chapter 1 - Introduction

Statement of the Problem

For a consumer, a mortgage default can be financially and emotionally devastating. Beyond the negative economic impact, research has found that consumers involved in a mortgage default experience higher levels of anxiety, depression, and financial stress (Alley, et al., 2011; Cannuscio, et al., 2012). Given the negative impact a mortgage default can have on a consumer, it is the purpose of this research to explore the factors associated with a consumer's propensity to make on-time mortgage payments.

Historically, there has been a considerable amount of research conducted to understand consumer financial behaviors and the associated financial outcomes (Fitzsimmons, Hira, Bauer, & Hafstrom, 1993; Kahneman & Tversky, 1984). Over the past decade, research related to consumer financial behavior has increased due to a combination of excellent data and an interest in helping consumers after the 2008 Great Recession (Frydman & Camerer, 2016). Much of this research has focused on financial knowledge and financial literacy as determinants for optimal financial decisions (Allgood & Walstad, 2013; Huston, 2010, 2012; Lusardi & Scheresberg, 2013; Xiao, Serido, & Shim, 2011). The focus on financial literacy extended to the highest levels of the U.S. government. A report issued to President George W. Bush, on January 6, 2009 identified the lack of financial literacy among American consumers as one of the root causes for the 2007 financial crisis (President's Advisory Council on Financial Literacy, 2008). The 2007 financial crisis ultimately led to the 2008 Great Recession (Verick & Islam, 2010), negatively impacting many consumers and weakening their economic stability. Beyond financial literacy, current literature has centered around consumer financial well-being (Shim, Xiao, Barber, & Lyons, 2009), financial health (O'Neil, 2009), and consumer financial capability (Lusardi, 2011).

However, in the same period, research related to basic consumer financial responsibility seems to have been overlooked.

On the surface, it appears there may be some social sensitivity to the concept of financial responsibility. For example, the term “financial responsibility” can, in certain instances, infer blame or imply intentional financial neglect for one’s own financial well-being.

Quazi, Azlan, and Nejati (2015) discovered that given the availability of extensive research on a wide range of consumer-related topics, some socially sensitive consumer issues remained comparatively unexplored. For example, when conducting a literature review on consumer social responsibility, the authors found that related issues had been widely researched in both conceptual and empirical terms, but the issue of consumer social responsibility had received limited attention by both researchers and practitioners (Quazi, Azlan, & Nejati, 2015).

There appears to be a lack of understanding of what is meant by financial responsibility and no accepted measure of the concept currently exists. This research expands the body of consumer financial literature by exploring the concept of financial responsibility and investigating the relationship between financial responsibility and on on-time mortgage payments.

Theoretical Framework

Financial responsibility and its relationship to on-time mortgage payment history can be effectively explained and understood from the perspective of Bandura’s (1986) Social Cognitive Theory (SCT). Bandura (1986) described how human behavior had often been explained simply in terms of unidirectional causation, where behaviors are depicted as either being shaped and regulated by environmental influences or driven by internal characteristics or personal factors. Bandura (1986) found that what individuals think, believe, and feel affected how they behaved.

According to Bandura (1986), an individual's expectations, beliefs, and cognitive competencies are developed and altered by environmental influences that provide information and activate reactions through modeling, instruction, and social persuasion.

Social cognitive theory goes beyond merely considering the social cognitive aspects of human behavior. It seeks to explain how these concepts work together and impact each other. SCT subscribes to the concept of interactive agency and posits that individuals contribute to their own motivation and action within a system referred to as, a triadic reciprocal causation model (Bandura, 1999). Interactive agency asserts that behaviors are impacted by personal factors, environmental influences, and attributes of behavior. Each of these three primary constructs can then affect or be affected by either of the other two. The triadic reciprocal causation model represents how the three constructs operate together as determinants of outcomes (Bandura, 1999). Figure 1.1 illustrates these relationships.

Redding, Rossi, Rossi, Velicer, and Prochaska (2000) described reciprocal determinism as the basic organizing principle of SCT. This fundamental concept asserts that a continuous, dynamic interaction exists between the individual, their environment, and their behaviors. When a change occurs in one of the three areas, the other two can be impacted (Bandura, 1999a). Because of the influence between personal factors, environmental influence, and attributes of behavior, Bandura (1999a) asserts that people are both products and producers of their environment.

> *"They construct thoughts about future courses of action to suit ever-changing situations, assess their likely functional value, organize and deploy strategically the selected options, evaluate the adequacy of their thinking based on the effects which their actions produce and make whatever changes may be necessary"* (Bandura, 1999b p. 23).

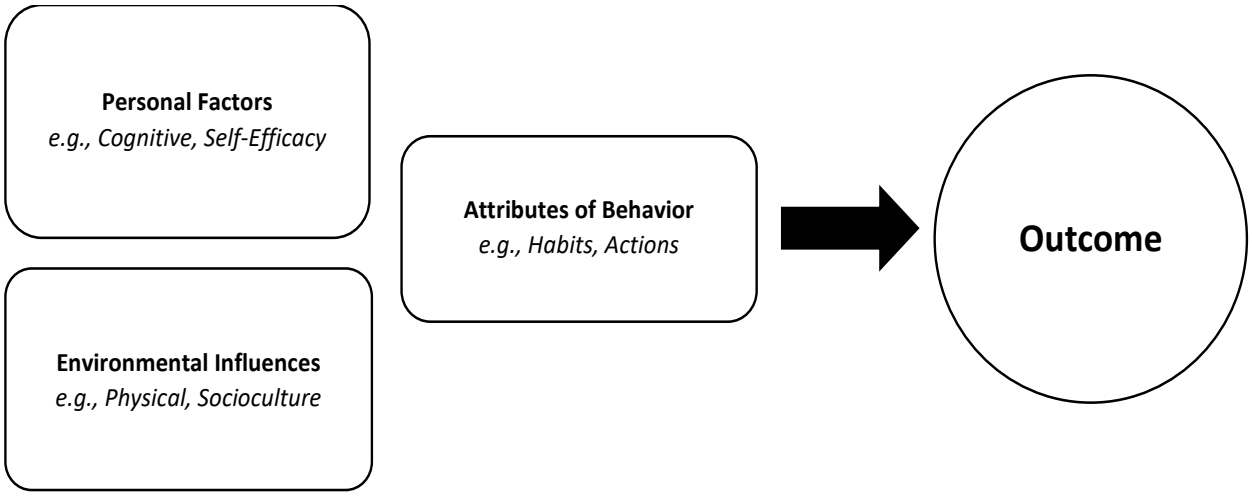

Figure 1.1 Representation of Bandura's SCT Triadic Reciprocal Causation Model

As described by Bandura (1986), an individual's ability to adapt and change is grounded in social systems. Personal agency (a personal factor) functions within a broad network of socio-structural (also called environmental) influences (Bandura, 1986). These socio-structural systems, in turn, create constraints and provide resources and opportunity for personal development and functioning (Bandura, 1986). In the SCT Triadic Model, personal factors, environmental influences, and attributes of behavior are treated as co-factors within a combined causal structure.

For example, lacking the financial resources needed to provide for subsistence can have a severe negative impact on everyday life for an individual (Bandura, 1999b). Socioeconomic status, economic conditions, and family structure can strongly influence behavior indirectly through their impact on people's aspirations, sense of self-efficacy, and other self-regulatory factors (Bandura, 1999b).

Research Objectives

To explore the concept of financial responsibility as a predictor for on-time mortgage payment history, the current study focused on the construction of an index of responsible financial actions based on fundamental financial practices recommended by practitioners, educators, and researchers in the field of financial planning. The conceptual model for this index is presented in Figure 1.3. For the current study, the responsible financial actions index is conceptualized as a comprehensive measure of recommended financial actions and includes the five financial sub-constructs described in further detail in this chapter.

The main research objectives of this study are (a) to create a valid and reliable measure of responsible financial actions, (b) to explore personal factors and environmental influences as predictors for the responsible financial actions index and on-time mortgage payment history, and (c) to explore the relationship between the responsible financial actions index as a predictor for on-time mortgage payment history. To accomplish these objectives, the following two research questions guided this study.

Research Questions

1. How are personal factors and environmental influences related to attributes of behavior measured by the responsible financial actions index?
2. How are personal factors, environmental influences, and attributes of behavior measured by the responsible financial actions index, related to on-time mortgage payment history?

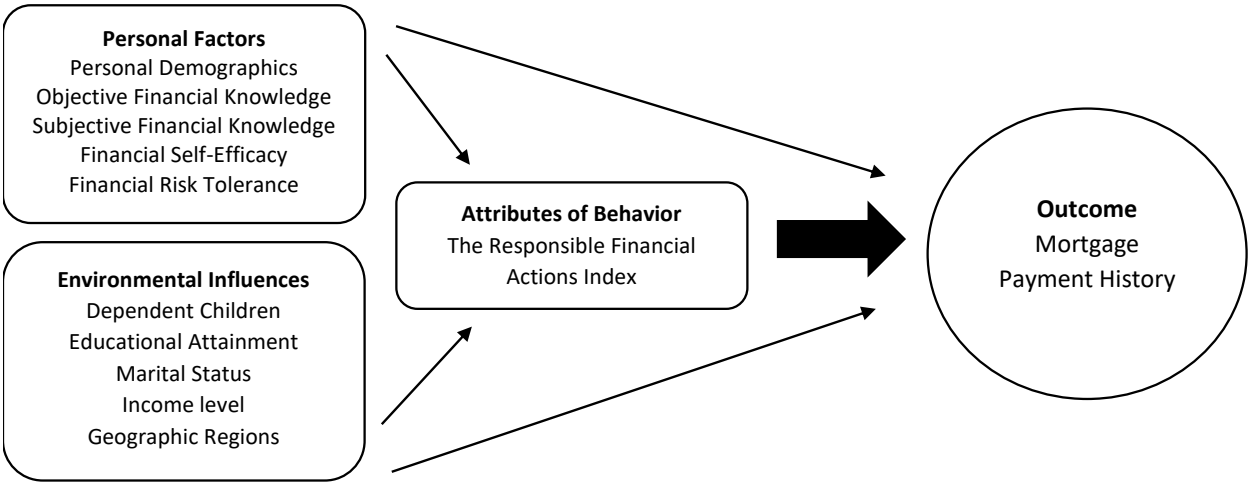

Figure 1.2 Adapted SCT Triadic Reciprocal Causation Model

Application of Theoretical Model

To explore the research questions, this study adapted Bandura's (1999b) SCT triadic reciprocal causation model. Figure 1.2 is an illustration of the conceptual framework used to model the hypothesized relationships between variables identified as personal factors, environmental influences, attributes of behavior, and the outcome, in this study. The responsible financial actions index was explored as an attribute of behavior described as habits, actions, or things that people "do." On-time mortgage payment history is defined as an outcome. This clarification is intentional. Within the literature, there is a clear distinction made between what is a behavior (actions) and what is an outcome. Behaviors are not outcomes, they only partly contribute to outcomes together with other factors (Ajzen & Fishbein, 1990). For example, a wife may want to pay down credit card debt, but the husband continues to charge items. However, behaviors should lead to outcomes so reducing spending as an action or behavior should lead to lower credit card debt as an outcome, given other factors.

The SCT Triadic Model as presented in Figure 1.2 provided the theoretical framework to guide the variable selection and the hypothesized relationships presented in the current study. To explore empirically the sub-constructs and theoretical relationships presented in Figure 1.2, this study developed two empirical models. The first model was organized and guided by the first three sub-constructs of the SCT Triadic Model and explored personal factors and environmental influences as explanatory variables for the target variable, attributes of behavior defined as the responsible financial actions index. This relationship is indicated by the first two small arrows in Figure 1.2. The second empirical model was developed to test the full comprehensive model and explored personal factors, environmental influences, and attributes of behavior as explanatory variables for the target variable, on-time mortgage payment history.

Data

For this study, data were examined from the publicly available, 2009, 2012, and 2015 National Financial Capability Study (NFCS) datasets (FINRA Investor Education Foundation, 2017). The research objectives for the NFCS were to identify key indicators of financial capability and examine how these indicators vary with underlying demographic, behavioral, attitudinal, and financial literacy factors (FINRA Investor Education Foundation, 2017). These datasets were selected as appropriate for the current study given the specific questions, timeframe, and richness of the financial information provided by the respondent to the surveyors.

Responsible Financial Actions Index - Conceptual Model

The conceptual model of responsible financial actions and its index measurements are presented in Figure 1.3. This model was utilized in this study to construct the responsible financial actions index as a measure for financial responsibility. These measurements are identified as fundamental financial actions recommended by practitioners, educators, and

researchers in the field of financial planning. For this study, the responsible financial actions index is described as a comprehensive measure of recommended financial actions and includes the following five financial sub-constructs.

1. Financial time horizon.
2. Money management.
3. Financial risk management.
4. Financial awareness.
5. Ownership of baseline financial products.

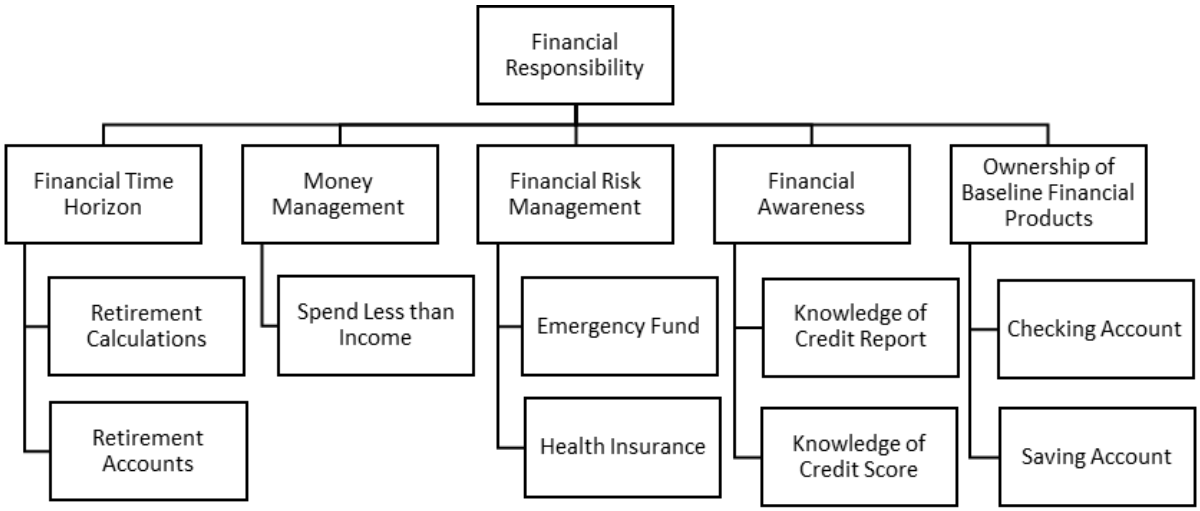

Figure 1.3 Conceptual Model – Responsible Financial Actions Index

Financial time horizon refers to planning for future financial needs and is measured by three items related to ownership of retirement accounts and calculating retirement needs. Financial time horizon is identified as a responsible financial action given the critical role saving and planning for one's future has on overall consumer financial wellbeing. (Barrett & Kecmanovic, 2013)

Money management as a responsible financial action is measured with one comprehensive item of overall spending, spending less than income. Money management is

identified as a responsible financial action, given the positive impact effective money management has been found to have a consumer's financial position (Hilgert, Hogarth, & Beverly, 2003).

Financial risk management includes responsible financial actions related to the presence of an emergency fund and health insurance. Research indicates that individuals found to have to adequate health insurance and an emergency fund have a greater ability to withstand an economic shock as compared to those who do not (Lusardi, 2011). Financial risk management is measured by two items related to insurance and ownership of an emergency fund.

Financial awareness is a measure of an individual's understanding of how individual financial behaviors relate to financial outcomes. In the current study, financial awareness was measured by the responsible financial actions related to knowledge of financial information on one's credit report and credit score. Given the importance of credit reports and credit scores, consumers need to be aware of what their reports contain. Credit experts suggest that it is a prudent practice for consumers to check the accuracy and completeness of their credit report information periodically (Lyons, Rachlis, & Scherpf, 2007).

Ownership of baseline financial products relates to an individual's access to transaction accounts at a federally insured financial institution. Research indicates that access to a transaction accounts provides consumers with the opportunity to conduct basic financial transactions and save for unforeseen emergencies and long-term financial security (FDIC, 2015). Ownership of baseline financial products is measured by two items related to ownership of checking and saving accounts.

The financial sub-constructs described in the conceptual model are viewed as "responsible financial actions" and are identified as being the most fundamental to responsible

financial behavior as recommended by financial professionals. This distinction is important. The index was conceptualized as a financial measure that can be applied to all consumers independent of factors such as social class, education, cognitive abilities, and income level.

In summary, the conceptual model of the responsible financial actions index includes five financial sub-constructs. Within these five financial sub-constructs are nine financial categories, measured by 9 or10 individual items. These individual measurements are described fully in Chapter 3.

Limitations

The findings from this research may provide unique insights into consumer financial behavior as it relates to responsible financial actions and mortgage payment outcomes but there are several limitations that should be noted. The study is limited to self-reported data for only the respondents of the 2009, 2012, and 2015 NFCS datasets. Within the surveyed households, only one person was identified as the respondent. As a result, financial information from the other person(s) in the household was not obtained. This could be a limitation given that the financial actions for the other members in the household are not collected. The NFCS dataset only collects self-reported data from respondents. There is the possibility for errors when using self-reported data as relates to incorrect self-assessments by the respondents. Given that many of the questions of interest relate to self-reporting of personal financial information, some respondents may have hesitated to give accurate and truthful information.

Further limitations exist around the construction and use of the responsible financial index. Findings in the current study relate to an index that has not been previously tested. Results are limited to mortgage payment outcomes and therefore the index may or may not be applicable to other financial outcomes. Further research utilizing the responsible financial actions index as a

predictor for financial outcomes will be required in order to fully confirm the reliability and validity.

Implications

Results from this study may provide insight into consumer behavior as it specifically relates to the social cognitive factors that influence responsible financial actions and on-time mortgage payment. In addition, this study may deliver a reliable and valid composite measure for financial responsibility. The ability to measure an individual's level of financial responsibility with an easy to administer questionnaire may be helpful to educators, counselors, and advisors when working directly with consumers. Additionally, a measurement of financial responsibility could benefit social scientists as they explore research questions related to better understanding financial behaviors among of consumers.

From a theoretical perspective, this study could provide a foundation for understanding the theoretical connections between personal factors, environmental influences, financial responsibility, and positive financial outcomes. This study may extend the body of empirical evidence needed to support the importance of financial related services, programs, and initiatives designed to help improve economic security for consumers.

Summary

The recent experience of the 2007 financial crisis emphasized the need to understand better the factors that impact positive financial behaviors among consumers. The purpose of this study is to empirically examine the relationships between social cognitive factors, responsible financial actions, and mortgage payment outcomes in the time-period between 2007-2014.

This study was guided by SCT which subscribes to a triadic reciprocal causation model (Bandura, 1986). SCT asserts that individuals contribute to their own motivation and action

within a system of triadic reciprocal causation where personal factors, environmental influences, and attributes of behavior all operate as the final determinants of behavior (Badura,1986).

Based on the SCT Triadic Model framework it was expected that in the first set of empirical models, when holding all else equal, personal factors and environmental influences, would have a statistically significant relationship with attributes of behavior measured by the responsible financial actions index. Further, as predicted by the SCT Triadic Model framework, it was expected that in the second set of empirical models, when holding all else equal, personal factors, environmental influences, and attributes of behavior measured by the responsible financial actions index would have a statistically significant relationship with on-time mortgage payment history.

In summary, this study employed data from the 2009, 2012, and 2015 National Financial Capability Study (NFCS) and adapted Bandura's SCT Triadic model to examine the relationships between personal factors, environmental influences, attributes of behavior measured by the responsible financial actions index, and on-time mortgage payment history during the time-period of 2007-2014. Specifically, this study expanded prior research by unifying previously identified recommended financial practices into a single index of responsible financial actions. The results of this study provide evidence that supports the relationship between personal factors, environmental influences, attributes of behavior measured by the responsible financial actions index, and on-time mortgage payment history among American consumers. The findings of this research present additional support for personal financial education and counseling that can improve consumers' overall economic well-being.

Beyond the current chapter, this study was organized by five additional chapters. Chapter 2 includes a comprehensive literature review of the relevant findings found in previous research.

Chapter 3 outlines the methodology including the design of the study, the operationalization of the variables, the approach to the index construction, and the analytical approach to the study. Chapter 4 includes the findings and results related to the index construction and the Ordinary Least Squares regression models. Chapter 5 includes the results and findings related to the multinomial regressions and Chapter 6 concludes with a discussion on the findings, implications, and limitations of this study. It also considers directions for future research.

Chapter 2 - Literature Review

To expand the body of knowledge in consumer economics and personal financial planning, this research builds on prior empirical work related to consumer financial behavior. To explore effectively the concept of financial responsibility and its relationship to on-time mortgage payments, it is important to have an accurate and historical account of the previous literature and relevant findings related to these concepts.

The literature review for this study is organized into the following four sections: (a) a review of Bandura's (1986) Social Cognitive Theory (SCT) and how it has been used in prior research, (b) a survey of the literature that has identified the need for financial responsibility, (c) a review of the relevant findings related to the financial sub-constructs included in in the responsible financial actions index, and (d) a review of the relevant findings related to on-time mortgage payments.

Theoretical Framework and Related Literature

Albert Bandura's work on Social Cognitive Theory dates to his 1963 publication on Social Learning and Personality Development (Bandura, 1963). According to the theoretical tenets, learning is a result of observing and modeling the behavior of others. Bandura's work brought attention to the role of social modeling in human motivation, thought and action. His work shaped the direction of behavioral psychology, shifting the focus from behavior to that of cognition (Conner & Norman, 2005).

In 1986, Bandura published Social Foundations of Thought and Action: A Social Cognitive Theory (Bandura, 1986). At this time, Bandura had fully developed his SCT of human functioning. The SCT framework incorporated the concept of reciprocal determinism, wherein personal factors, environmental influences, and attributes of behavior interact to create the model

of triadic reciprocal causation which posits that people are both actors as well as products of their environment (Bandura, 1986). The triadic model is based on a general hypothesis of reciprocity between an individual's cognitions, environment, and behavior (Bandura, 1986). Bandura described how environmental influences, such as educational conditions and socioeconomic status, affect behaviors through their impact on people's cognitions (Bandura et al., 2002). Beyond Bandura's work, social cognitive models in general, have been one of the most widely applied in behavioral research (Conner & Norman, 2005). Other models often used include Transtheoretical Model of Change, Health Belief Model, Theory of Reasoned Action and Risk Reduction Model (Ozmete & Hira, 2011). Social cognition considers an individual's feelings and beliefs in social situations. The approach focuses on thoughts as processes which then interact between observable stimuli and responses to one's own environment (Fiske & Taylor, 1991). Determining which cognitions (thoughts, feelings, and beliefs) predict behaviors has been the focus of a considerable amount of research (Conner & Norman, 2005).

When researching the application of behavioral theories and models to financial behavior, Ozmete and Hira (2011) identified several social cognitive theories and models such as, Janz and Becker's Health Belief Model (1984), Azjen and Fishbein's (1980) Theory of Reasoned Action, and Bandura's Social Cognitive Theory (1986) as models and theories which have been applied across a wide variety of disciplines, including financial behavior. Further, Ozmete and Hira (2011) suggested that SCT may be the most comprehensive model of human behavior yet proposed. SCT explains how years of environmental influences shape people into who they are today. For example, the financial attitudes and values individuals have about money come from their home environment and are formed during childhood and youth. As individuals learn

through social interaction, they begin to understand and form their values, knowledge, and attitudes about finances (Ozmete & Hira, 2011).

Historically, Bandura's SCT has been utilized most extensively in the field of psychology to help understand a broad range of human behaviors (Ozmete & Hira, 2011). Most recently, many health psychologists have applied SCT models to explore health behaviors, specifically. Conner and Norman (2005) explained how SCT has been used to guide research examining behaviors that influence health and the factors that determine which individuals will and will not perform such behaviors. Many studies on health behaviors focus on the relationships between cognitions, environment, and behavior.

For example, SCT was used to guide a study comparing gender differences in health behaviors. The study found that women, when compared to men, perceived greater health outcomes from eating a variety of healthy foods (Wardle, et al., 2004). Porr, Drummond, and Richter (2006) utilized the SCT framework to explore health literacy as an empowerment tool for low-income mothers and found that even when an individual was identified as having the motivation and desire to behave according to one's own decisions, they may not necessarily have the skills or knowledge required to do so. McAuley and Blissmer (2000) in their study on self-efficacy and physical activity, identified SCT as one of the most prominent frameworks used to understand health promotion behaviors, including physical activity.

In a health promotion study exploring nutritional content in food purchases, Anderson, Winett, and Wojcik (2007) utilized SCT as a way to explain how other variables such as self-efficacy and self-regulation could be used in integrating healthier nutrition into U.S. lifestyles. The cultural relevance of SCT was examined in a study designed to investigate physical activity interventions among African-American women (Joseph, Ainsworth, Mathis, Hooker, & Keller,

2017). In this study, findings explained the utility of the SCT theoretical basis for behavioral change for physical activity programs for African-American woment (Joseph et al., 2017).

Physical health, in many ways, is analogous to financial health as both can be positively or negatively impacted by the decisions of the individual. For this reason, Bandura's SCT Triadic Model has been adopted to guide this study. Developed from social learning theory, SCT offers a comprehensive framework for understanding health-related behaviors. The SCT Triadic Model illustrates how behavior is a function of aspects of the environment and of the individual person.

Financial Responsibility

A growing concern about financial responsibility among American consumers is well documented in the literature. For example, Hastings, Madrian, and Skimmyhorn (2013) believe the public urgency over the American consumers' level of financial literacy is a reaction to a changing economic climate in which consumers now assume greater personal financial responsibility in the face of increasingly complicated financial products. Similar sentiments were noted in a study exploring age differences in consumer financial capability – Xiao and Chen (2015) stated that the financial capability movement is motivated by the current weakening of the government-managed economic safety net and the subsequent increase in individual responsibility for financial stability and long-term economic security.

Babiarz and Robb (2014) described financial education as being particularly salient given the current economic environment in which American consumers, who are recovering from the recession, are faced with greater personal responsibility in an increasingly complex financial market. In a study investigating the effects of perceived and actual financial literacy on financial behaviors, Allgood and Walstad (2016) concluded that what consumers know about household

finance is important because of the many types of personal financial responsibilities people typically assume over their lifetime.

When examining the relationship between financial knowledge, financial best practices, and financial satisfaction, Robb and Woodward (2011) analyzed the degree to which a composite measure of financial knowledge was associated with what might be considered best practice financial behaviors. The composite measure of financial knowledge came from FINRA Financial Capability Survey and asked five financial questions relating to compound interest, inflation, bond pricing, mortgages, and diversification (Robb & Woodyard, 2011). Robb and Woodward (2011) hypothesized that more financially knowledgeable consumers would display more responsible financial behaviors (i.e., have significantly better scores on a composite measure of best practice behavior). Robb and Woodyard (2011) concluded that consumers who engage in more responsible financial behaviors are more satisfied financially.

Several studies described how changes in the financial landscape necessitate the need for higher levels of financial literacy among individuals. For example, the transition to defined contribution retirement plans has placed greater responsibility on individuals' savings and financial decisions (de Bassa Scheresberg, 2013; Gruber & Wise, 2001; Robb & Woodward, 2011). In general, individuals now have a greater responsibility for their financial well-being than in the past (de Bassa Scheresberg, 2013).

Concern for financial responsibility among young consumers has been noted in several studies. For example, research examining the influence of a financial education seminar on the attitudes, knowledge, and intentions toward financial responsibility of college students presented findings that questioned the link between knowledge and financial behaviors (Borden, Lee, Serido, & Collins, 2008). The authors did not note any significant relationships between financial

knowledge and responsible financial behavior and suggested that whereas greater financial knowledge may improve student intentions towards more responsible financial behavior, it did not necessarily indicate whether or not students followed through with their plans. (Borden et al., 2008).

In a study focused on young adults age 25 to 34, de Bassa Scheresberg (2013) concluded that despite being financially active, most young adults were ill-equipped to deal with financial responsibilities. The study found that young adults displayed very low levels of financial literacy, especially among certain demographic subgroups, such as women and minorities (de Bassa Schersberg, 2013).

In summary, the concern for consumer financial responsibility is clearly documented in the literature. Arguments for increased financial responsibility among consumers are supported with assertions regarding new financial landscapes, complex financial markets, complex financial products, and the shift from defined benefit to defined contribution retirement plans. Further, the need for financial literacy coupled with the growing gap between the amount of financial accountability expected of individual consumers and the demonstrated ability of the average consumer to manage financial decisions can be financially paralyzing without financial responsibility. While much of the literature attributes the need for financial responsibility to recent changes in the financial system, the importance of financial responsibility is not a new phenomenon. For example, as stated by Theodore Vail in 1919:

> The future of our country depends upon making every individual, young and old, fully realize the obligations and responsibilities belonging to citizenship...The future of each individual rests in the individual, providing each is given a fair and proper education and training in the useful things of life...Habits of life are formed in youth...What we

> need in this country now...is to teach the growing generations to realize that thrift and economy, coupled with industry, are necessary now as they were in past generations. (Vail, 1919 as quoted in Hastings, Madrian, & Skimmyhorn, 2013 p.1)

Sub-Constructs of Conceptual Model

The following section reviews the relevant empirical findings related to the social and cognitive determinants for the five sub-constructs of the responsible financial actions index. They are: (a) financial time horizon, (b) money management, (c) financial risk management, (d) financial awareness, and (e) ownership of baseline financial products.

Financial Time Horizon

For this study, an individual's financial time horizon is defined as saving for retirement and the financial planning decisions that provide future monetary value at the expense of immediate gratification. Fundamental to understanding the numerous factors that influence an individual's decision to save and plan for the future is the concept of "intertemporal discounting," or simply the tendency to assign a lower value to rewards received in the future and a higher value to rewards which are received closer to the present (Loewenstein & Prelec, 1992). For example, a study on impulsivity in children found that when the participants were instructed to pick between an immediate, smaller reward and a delayed, larger reward, it was more difficult for them to wait for the larger reward when either the immediate or the delayed reward was in the room (Mischel, 1974).

Traditional economic theory posits that individuals make intertemporal decisions by maximizing a utility function where all relevant constraints and preferences are known and weighted appropriately (Simon, 1959). To further explore this theory, several studies in neuroscience investigated the role that preference functions and subjectivity play in the

intertemporal decision-making process (Kable & Glimcher, 2007; McClure, Cybert, Montague, & Montague, 2004)

When presenting participants with a fixed immediate reward of $20 and larger delayed rewards that varied randomly from trial to trial, Kable and Glimcher (2007) found a clear match between the subjective preferences of the participants and neural activity in specific regions of the brain. Kable and Glimcher (2007) concluded the results from the study support the role of preference functions as part of brain processing for choice. Similar findings were identified in a study by McClure et al., (2004). The authors found that when participants were presented with the opportunity to receive an immediate reward, there was increased brain activity in areas related to emotion (McClure et al., 2004). Conversely, when given a choice that lacked an immediate reward, there was no apparent increase in brain activity. Interestingly, when participants selected larger, delayed rewards over the smaller, immediate rewards, there was increased brain activity in the regions associated with higher cognition possibly indicating valuation processing (McClure et al., 2004).

Many researchers have identified financial knowledge as a key determinant of intertemporal financial decisions. For instance, Lusardi and Mitchell (2005) concluded that respondents classified as being more financially knowledgeable were more likely to have engaged in financial planning. A subsequent study (Lusardi, Michaud, & Mitchell, 2017) provided further support when they estimated that 30% – 40% of retirement wealth inequality could be accounted for by financial knowledge. Olsen and Whitman (2007) conducted a literature review on best practices for designing retirement savings plans and providing financial education in the workplace and found that low levels of financial knowledge resulted in suboptimal retirement savings decisions.

Given the financial implications related to financial knowledge, Meier and Sprenger (2012) investigated the role of time preference and discounting as it relates to the acquisition of financial knowledge. In their study, they found that the more individuals discounted the future, the lower the probability would be that they would elect to participate in a short, free financial education program. They found that time preference strongly mattered and that individual time preference may partially explain who will and who will not decide to invest in financial knowledge through financial education.

Money Management

Effective money management has been identified as an important safeguard against excessive consumption and personal debt (Godwin & Koonce, 1992). In a study exploring age differences and financial capability, researchers identified spending less than income as one of 20 desirable financial behaviors used in a financial capability index (Xiao & Chen, 2015). Findings from the study suggested a positive relationship between financial capability and age (Xiao & Chen, 2015).

In prior consumer economic and financial planning research, various personal factors and environmental influences have been found to impact money management behaviors among consumers. For example, under personal factors, researchers found that women are more likely than men to exhibit compulsive buying behaviors (Hira & Mugenda, 2000). When investigating money management by income level, Atkinson, McKay, Kempson, and Collard, (2007) found that individuals with lower levels of household income reported more active money management behaviors when compared to higher income individuals. Tang and Lachance (2012) found statistically significant differences between low-income and high-income groups. For example,

under “cash flow management” they found there were more low-income earners outspending their incomes or overdrawing their checking accounts (Tang & Lachance, 2012)

Environmental influences have also been identified as impacting money management behaviors. For instance, (Shim, Barber, & Card, 2010) developed a hierarchical, conceptual model of financial socialization processes to explore empirically the connections between parents, employment, and education and the financial learning, attitudes, and behaviors of first year college students. They concluded that their results confirmed the proposed model and highlight processes by which adolescents and young adults may develop healthy financial behaviors. A prior study by Ibrahim et al., (2009) found socialization and parental norms to have a significant positive relationship on money management of the young adults (Ibrahim et al., 2009).

Most prevalent in prior literature are the findings related to financial education, financial knowledge, and financial literacy, and their relationship to money management behaviors. For example, studies found financial literacy to be related to greater savings (Babiarz & Robb, 2014; de Bassa Scheresberg, 2013). Several studies reported positive relationships between financial education and money management behaviors (Ambuehl et al., 2014; Brown et al., 2014; Wagner, 2015; Xiao and O’Neill, 2016). Lastly, prior research found statistically significant relationships between both subjective and objective financial knowledge, and basic financial management behavior (Robb & Woodyard, 2011).

Financial Risk Management

As a precautionary measure, consumers are encouraged to accumulate a reserve of wealth to protect against unexpected financial needs or uninsurable financial risks (Deaton, 1992). Individuals unable to meet unexpected financial needs through financial reserves or insurance

coverage, may find themselves to be at risk financially. For instance, as emergency savings decreased, consumers were more likely to experience the following: problems related to meeting monthly financial obligations, trouble making minimum payments on credit cards, use of payday loans, and concerns related to paying their mortgage or rent (Brobeck 2008b). Further, Broebeck (2008a) found that many households failed to accurately forecast their emergency needs.

Within the literature, there have been a number of social cognitive factors found to influence savings rates and the ability to cope with a financial shock due to lack of an emergency. For example, Hilgert, Hogarth, and Beverly (2003) documented a strong relationship between financial knowledge and the likelihood of maintaining an emergency or rainy-day fund. Similarly, using data collected by the 2009 National Financial Capability Study, Babiarz and Robb (2014) found both self-reported financial confidence and financial knowledge to be positively related to a household reporting whether they did or did not have an emergency fund.

Using data from the 2009 TNS Global Economic Crisis Survey, Lusardi, Schneider, and Tufano (2011) examined households' financial fragility by looking at their capacity to come up with $2,000 in 30 days. The study documented widespread financial weakness in the United States, reporting that about one quarter of Americans say they would not be able to come up with the funds. In addition, their research found that financial fragility was more prevalent among individuals with low educational attainment and no financial education and among families with children. The authors characterized the capacity for the American consumer to cope with a financial shock as "strikingly limited" (p. 9). In a similar study, Caner and Wolff (2004) noted that many households hold few or no liquid assets, have no emergency funds, and are very vulnerable to financial shocks.

Lower savings rates were also identified among minority households and those households with lower levels of educational attainment (Chase, Gjertson, & Collins, 2011). Lusardi (2011) identified differences in ability to cope with a financial shock among African Americans and Hispanics when compared to other races and ethnicities. In this study, Lusardi (2011) described how both African Americans and Hispanics were more likely to display behaviors associated with low financial capability. Similar findings were reported for respondents living in households that included minor children and for respondents living in households with their parents – both respondent groups were found to be less able to cope with a financial shock when compared to households without minor children or households without parents, respectively (Lusardi, 2011). In addition, Lusardi, Schneider, and Tufano (2011) identified women, the young, and many individuals in older age groups as having difficulty in coping with a financial shock due to lack of an emergency fund. On a more positive note, for those individuals who do save, the act of saving has been found to have a positive association with subjective well-being (Shim, Serido, & Tang, 2012).

When exploring emergency funds together with information on health insurance, the financial implications for consumers changed. For example, using data from the 2009 Financial Capability Study, Lusardi (2011) found that families could buffer a health shock if they were covered by health insurance; however, only 81% of respondents reported being covered by health insurance. When considering the proportion of individuals who were covered by health insurance and had emergency funds in 2009, the percentage was much smaller (45%). Based on these findings, more than half of the population could have difficulties dealing with health shocks with a significant minority of the population (15%) found to be highly exposed to shocks

– identified as those respondents who do not having an emergency fund and are without health insurance (Lusardi, 2011).

However, it should be noted that the data for Lusardi's (2011) research was collected in 2009 which was prior to the enactment of Affordable Care Act. Given the timeframe, the percent of individuals reporting being covered by health insurance should be higher today than in 2009. According to the 2016 Health Insurance Coverage: Early Release of Estimates from the National Health Interview Survey – 87.6% of individuals above 18-64 reported being covered by insurance (Cohen, Zammitti, & Martinez, 2016). This is a 6.6% increase from the 81% reported in Lusardi's (2011) research.

Financial Awareness

In the current study, financial awareness is measured by one's knowledge of their credit report and credit score. Credit reports and scores reflect consumer credit behaviors. Using innovative risk predication technology models, credit scores can be used to predict future financial payment behavior (Fair Isaac, 2018)

The Fair Credit Reporting Act (FCRA) requires each of the three national credit reporting bureaus — TransUnion, Equifax, and Experian — to provide consumers, once per year, with a free copy of their credit report (Federal Trade Commission, 2017). The FCRA is enforced by the Federal Trade Commission (FTC) and promotes the accuracy and privacy of information in the reports. Consumer credit reports include information related to how a consumer pays their bills, where a consumer lives, and whether they have been sued or have filed for bankruptcy. Credit bureaus sell the information in the reports to employers, creditors, insurers, and other businesses so they can then evaluate consumer applications for credit, insurance, employment, or renting a home (Federal Trade Commission, 2017).

Although credit plays a critical role in a consumer's financial position, there is considerable evidence to suggest that many consumers are not well informed, nor have they sought out information about their credit report and/or their credit score. For example, Lusardi (2011) reported that only 38% of consumers had obtained a copy of their credit report and only 36% had knowledge about their credit score. Furthermore, Lusardi (2011) found that consumers with low income and low education were less likely to have obtained a credit report and/or to have checked their credit score.

Within the literature, as with the other subconstructs of personal financial responsibility, financial knowledge has been identified as a significant predictor for financial awareness. A study conducted by Robb, Babiarz, and Jung (2017) identified a positive relationship between a consumer's level of subjective and objective financial knowledge and obtaining a credit report. More specifically, they found that consumers having higher levels of financial knowledge, were more likely to have checked their credit report in the past 12 months (Robb, Babiarz, & Jung, 2017).

Ownership of Base-Line Financial Products

Access to a transaction account at a federally insured financial institution provides consumers with the opportunity to conduct basic financial transactions and save for unforeseen emergencies and long-term goals. Unfortunately, many consumers, particularly those living in low-to-moderate income households, do not have access to mainstream financial products such as bank accounts and low-cost loans (FDIC, 2009). The 2015 FDIC National Survey of Unbanked and Underbanked Households reported that 26.9% of U.S. households were identified as either unbanked or underbanked (FDIC, 2015). Specifically, the 2015 survey found that 7.0% of households were "unbanked," meaning that there was no one in the household who owned a

checking or savings account. In addition, 19.9% of U.S. households were identified as being "underbanked," defined as a household that owns a checking or savings account but also used one of the following alternative financial products or service providers in the past 12 months: money orders, check cashing, international remittances, payday loans, refund anticipation loans, rent-to-own services, pawn shop loans, or auto title loans (FDIC, 2015).

Further, differences were identified among racial, ethnic, and minority groups. Certain racial and ethnic minorities were more likely to be unbanked or underbanked when compared to the population as a whole. For example, an estimated 18.2% of black households and 16.2% of Hispanic households were found to be unbanked as compared to only 3.1% of white households (FDIC, 2105).

Notable differences between banked and unbanked consumers based on marital status were identified in a 2009 FDIC survey (FDIC, 2009). Family households for which the householder is an unmarried female or unmarried male were found to be more likely than married couple households to be unbanked. Almost 20% of unmarried female family households and 14.9% of unmarried male family households were identified as unbanked, compared to approximately 4% of married couple family households (FDIC, 2009).

The 2015 FDIC survey identified differences between low-income households and other households. For example, nearly 11.8% of households earning between $15,000 - $30,000 to be unbanked (FDIC, 2015). The FDIC (2015) report further identified that the proportion of unbanked households declined significantly with consumers' education and age. Households identified as being more likely to be unbanked had less than a college education and were under age 45 (FDIC, 2015). Lastly, the proportion of unbanked and underbanked households was found

to vary across the different regions of the country. The highest levels of unbanked households were concentrated in the Southern region (FDIC, 2015).

Beyond reporting descriptive differences among groups, the 2015 FDIC survey investigated the reasons for why households were unbanked. The majority of unbanked households (57.4%) cited not having enough money as the main reason for not having a bank account. Other reasons included wanting more privacy, not trusting banks, and concerns related to bank fees (FDIC, 2015).

Lusardi (2011) further described the financial challenges associated with not having a bank account, reporting that 7% of unbanked consumers occasionally used money orders to pay bills and 47% used check cashing services. These services charge higher fees and have increased transactional costs. According to Lusardi (2011), about 15% of the population were identified as not having a checking account and 28% as not have savings account, a money market account, or Certificates of Deposit. When these two variables were considered together, Lusardi (2011) concluded the proportion of the unbanked in 2009 to be about 12% of the population. This is approximately 4% higher than what was reported in the 2009 FDIC report and 5% higher than what was reported in the 2015 FDIC report (FDIC, 2009 & FDIC 2015).

Lusardi (2011) identified proportional difference across income and education levels. She reported that close to 31% of those identified as low-income were unbanked, and 36% of individuals without a high school degree were unbanked.

Mortgage Payment Outcomes

Over the past decade, largely due to the unprecedented levels of residential foreclosures, mortgage payment outcomes have attracted the attention of policy makers, educators, and researchers. Foreclosure is the legal process by which a lender takes possession of a property and

although specific lenders' policies may differ, foreclosures generally occur after a homeowner has defaulted on their mortgage payments.

Foreclosure rates in 2009 (the timeframe corresponding with the first year of data collection for this study) reached a record 4.6% (US Census, 2018). Foreclosure rates varied greatly across loan type. The foreclosure rate for prime conventional loans was 3.3% compared to the foreclosure rate for subprime conventional loans which was 15.6%. Consistent with the foreclosure rates of prime conventional loans, the foreclosure rates for Federal Housing Administration (FHA) loans and Veteran Administration (VA) were 3.6%, and 2.5%, respectively (US Census, 2018).

The comparatively high foreclosure rates associated with subprime loans contributed largely to the 2007 financial crisis (The Financial Crisis Inquiry Commission, 2011). In 2007, there were approximately 27 million subprime and Alternative A paper (Alt-A) mortgages in the U.S. financial system (The Financial Crisis Inquiry Commission, 2011). Around this same time (2004-2006), the percentage of subprime mortgages increased from an historical 8% or lower range to approximately 20%. By March 2007, the aggregate value of subprime mortgages in the U.S. was estimated to be $1.3 trillion dollars (The Financial Crisis Inquiry Commission, 2011).

The financial losses for both borrowers and lenders associated with the delinquency and default of the mortgages fully accounted for the disruption witnessed in financial system that ultimately led to the 2007 financial crisis (The Financial Crisis Inquiry Commission, 2011). Delinquency and default are both financial terms representing different degrees related to missing payments. A mortgage is considered delinquent when a payment is late by one day or more. After extended delinquency, a mortgage may go into default. Loan default has more serious financial consequences and can generally lead to foreclosure.

The enormity of the situation was further described by Gerardi, Goette, and Meier (2013) when they reported that over 50% of all U.S. subprime mortgages found to have originated between 2006 and 2007, ended up in default after 5 years, with many more identified as being delinquent. Given the negative economic impact a mortgage default can have on a consumer, it is important to understand the factors associated with a consumer's propensity to make on-time mortgage payments.

Within the literature, several factors have been identified as determinants of mortgage payment behavior. For example, an empirical analysis conducted by Gerardi, Goette, and Meier (2013) explored numeracy skill and mortgage default utilizing a mortgage dataset from the Federal Reserve Bank of Boston. The data included, for each record, the entire payment history of each mortgage and detailed information on the characteristics of the mortgage contracts selected by subprime borrowers. Researchers then supplemented the data with measures of numerical and general cognitive ability by conducting telephone interviews with the same borrowers. The study controlled for income, education, financial risk tolerance, and time preference and found that the ability to perform basic mathematical calculations was negatively associated with the propensity to default on one's mortgage (Gerardi, Goette, & Meier, 2013).

Using data from a national bank, Jiang, Nelson, and Vytlacil (2009) developed two predictive models of mortgage delinquency to investigate the relationship between mortgage delinquency and loan origination channel, documentation level, and borrower demographics. Their data consisted of 721,767 mortgage loans originated between January 2004 and February 2008 from a national bank. The authors concluded that brokered loans were more than 50% more likely to be delinquent than bank-originated loans. This difference was attributed to lower borrower quality based on identifiable risk factors. Additionally, mortgage delinquency was

found to be higher for black and Hispanic borrowers. However, this could be attributed to overall lower credit scores among this population in addition to recognizing that during this time, black and Hispanic borrowers gained a significantly higher share of the new loan originations in the sample under investigation (Jiang, Nelson, & Vytlacil, 2009). It is important to note that 14% to 15% of the analytical sample for this study was comprised of subprime loans as compared to 18% to 21% percent nationally (Jiang, Nelson, & Vytlacil, 2009).

Within the literature, several studies explored personal financial factors as predictors of mortgage payment behavior. For example, an increased risk of mortgage default was reported for those individuals identified as having a lower credit score (Chan, Gedal, Been, & Haughwout, 2011; Haughwout, Peach, & Tracy, 2008). Similar studies investigated borrowers' debt-to-income ratios at the time of loan origination finding high debt-to-income ratios to be associated with an increased likelihood of mortgage default (Chan et al., 2011; Foote, Gerardi, Goette, & Willen, 2009).

In addition to financial predictors, neighborhood characteristics and location have been found to be related to mortgage default. Chan et al., (2011) explored several census tract level demographic measures from the 2000 Census and found lower median income neighborhoods to have higher rates of mortgage default. Their study conducted monthly observations through December 2009 on mortgages that originated in New York City from 2004 to 2007 (Chan et al., 2011). Several related studies, found an increased probability of mortgage default or foreclosure for mortgage holders living in neighborhoods identified as having nearby foreclosures (Campbell, Giglio, & Pathak, 2009; Chan et al., 2011; Harding, Rosenblatt, & Yao, 2009). As relates to the racial composition of a neighborhood, Chan et al. (2011) found that regardless of

the race of the individual mortgage holder, a higher risk of mortgage default existed for all borrowers living in neighborhoods identified as being predominantly black.

While many of the studies have been designed to explore negative mortgage payment behaviors, determinants of positive mortgage behavior have also been identified. For example, the importance of financial counseling as it relates to mortgage payment behavior was empirically explored in a study by Agarwal, Amromin, Itzhak, Chomsisengphet, and Evanoff (2009). In this study, the effectiveness of financial counseling for mortgage applicants was measured. Mortgage applicants identified as having low credit scores were required to attend loan counseling, while those applicants with high credit scores were required to attend counseling only if the mortgage they selected was designated as "risky." The study found no change in mortgage choice among the applicants required to attend counseling. However, the applicants who could avoid counseling by choosing a less risky mortgage did so. In similar research, Collins (2007) explored mortgage default counseling for subprime borrowers based on the 2005 Chicago Mortgage Default Counseling Survey. The cross-sectional survey included borrowers at various stages of the foreclosure process. Collins concluded that for each additional hour of counseling the marginal probability of a mortgage holder moving to a more severe stage of foreclosure was reduced, suggesting that financial counseling could be more successful if provided for longer durations.

In summary, there is extensive literature on mortgage default but much of the research is based on the characteristics of the loans and the borrowers, captured at the time of the mortgage. Further, much of this research was conducted in response to macroeconomic events (Chan, et al., 2011; Haughwout, Peach, & Tracy, 2008; Jiang, Nelson, & Vytlacil, 2009; Goette & Meier, 2013). There are limited studies that examine the specific factors associated with the individual

borrower and most of this research focused on personal factors (i.e., financial knowledge, race) or environmental influences (e.g., Census region, income), and education (Agarwal et al., 2009; Collins, 2007; Chan et al., 2011; Foote et al., 2009). Based on the literature review, there appears to be relatively little research related to responsible financial actions as it relates to on-time mortgage payment history

Literature Review Summary

To develop the current study, previous research was reviewed in the areas associated with the following four sections: (a) Bandura's Social Cognitive Theory, (b) financial responsibility, (c) the financial sub-constructs included in in the responsible financial actions index, and (d) on-time mortgage payments. Prior literature indicated that multiple personal factors and environmental influences have been shown to impact both responsible financial actions and on-time mortgage payment history. Consistent findings related to personal factors were found in the areas of financial knowledge and for environmental influences, income and education attainment.

Chapter 3 - Methodology

Chapter 1 and Chapter 2 provided the foundation for the study. Included were the statement of the problem, justification and purpose for the study, the theoretical framework, definitions of the constructs for the conceptual model, research questions, and the hypotheses. Further, an extensive literature review of the relevant findings associated with mortgage payment outcomes, and responsible financial actions was provided. This chapter describes the methodology and the analytical approach for the data that was used to explore the following two research questions, originally presented in Chapter 1:

1. How are personal factors and environmental influences related to attributes of behavior measured by the responsible financial actions index?
2. How are personal factors, environmental influences, and attributes of behavior measured by the responsible financial actions index, related to on-time mortgage payment history?

Design of the Study and Methods

This study utilized data from the 2009, 2012, and 2015 National Financial Capability Study (NFCS) dataset (FINRA Investor Education Foundation, 2017). The methodology and empirical approach described in this chapter were based on a modified version of Bandura's (1986) SCT Triadic Model. The SCT Triadic Model identifies specific social cognitive factors that impact behavior and outcomes. Explanatory variables for this study were organized by the three sub-constructs of SCT Triadic Model: (a) personal factors, (b) environmental influences, and (c) attributes of behavior. Attributes of behavior were measured by the responsible financial actions index constructed from the conceptual model presented in Chapter 1. By measuring an individual's responsible financial actions index score, this study sought to identify relationships

between environmental influences, personal factors, responsible financial actions, and on-time mortgage payment outcomes.

Anticipated results of the study are to:

a) present a valid and reliable index for responsible financial actions;

b) identify relationships between personal factors, environmental influences, and responsible financial actions; and

c) identify relationships between personal factors, environmental influences, and responsible financial actions as predictors of mortgage payment outcomes.

Data

The data for this study were drawn from the publicly available 2009, 2012, and 2015 National Financial Capability Study (NFCS) dataset, supported by the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation (FINRA Investor Education Foundation, 2017). Together with the U.S. Department of the Treasury and President George W. Bush's Advisory Council on Financial Literacy, the FINRA Investor Education Foundation commissioned the first national study of the financial capability of American adults in 2009. The research objectives of the survey were to identify and benchmark key indicators of financial capability and evaluate how these indicators vary with underlying demographic, behavioral, attitudinal, and financial literacy characteristics (FINRA Investor Education Foundation, 2017). Since the 2009 survey, there have been two subsequent surveys in 2012 and 2015.

The NFCS 2009, 2012, and 2015 State-by-State Surveys are cross-sectional nationwide online surveys with over 25,000 American adults per year. Responses from each survey were weighted to be representative of U.S. Census population distributions as reported in the American Community Survey (FINRA Investor Education Foundation, 2017). The data are

weighted to be representative of each state based on the age, gender, ethnicity, and educational attainment of the respondents.

Each of the three surveys collected data from respondents through a series of questions about demographic characteristics, financial literacy, and other aspects related to the financial status of the respondents (FINRA Investor Education Foundation, 2017). Given that the primary objective of the FINRA survey is to identify key indicators of financial capability and examine how these indicators vary between underlying demographic, behavioral, attitudinal, and financial literacy factors, it has been identified as an appropriate dataset for this study.

Sample

In the current study, the analytical sample in first empirical model was limited to only those respondents identified as: (a) being between the ages of 18 and 64 at the time of the survey, (b) employed, (c) having an annual household income no greater than $150,000, and (d) being non-retired. The analytical sample for the second empirical model was restricted to respondents identified as: (a) being between the ages of 18 and 64 at the time of the survey, (b) employed, (c) having an annual household income no greater than $150,000, (d) being a homeowner, (b) having a mortgage, and (e) being non-retired.

To control for missing data, only complete cases were included in the analyses. Listwise deletion was applied to all explanatory variables and control variables. If any single value was found to be missing, the entire record was excluded from the sample.

The final sample size for this study, once all sample selection criteria was applied, produced an average sample size of about 16,000 for the first set of empirical models and 9,000 for the second set of empirical models. The data sample for this research was weighted to represent the general adult US population.

Operationalization of Variables

Explanatory Variables

For the current study, the explanatory variables were selected and organized by the three sub-constructs of SCT Triadic Model (Bandura, 1986): (a) personal factors, (b) environmental influences, and (c) attributes of behavior. A complete and detailed description of the operationalization of variables utilized in the empirical models is contained in this section. A summary of the explanatory variables and their measurements are presented in Table 3.1 for both the personal factors and the environmental influences and Table 3.2 for attributes of behavior.

Table 3.1 *Measurement of Explanatory Variables*

Variables	Measurement
Personal factors	
Personal demographics	
Gender	1 if male; otherwise 0
Age	Five categories18-64
Category 1	Age 18 to 24
Category 2	Age 25 to 34
Category 3	Age 35 to 44
Category 4	Age 45 to 54
Category 5	Age 55 to 64
Race and ethnicity	1 if white; otherwise 0
Objective financial knowledge	Score 0-5
Subjective financial knowledge	Scale 1-7
Financial self-efficacy	Scale 1-7
Financial risk tolerance	Scale 1-10
Environmental influences	
Having one or more dependent children	1 if one or more dependent children; otherwise 0
Educational attainment	Four categories ranging from: less than college - post graduate education.
Marital status	1 if married; otherwise 0
Annual household income	Four categories < $35,000 to < $150,000
Category 1	< $35,000
Category 2	$35,000 to $49,999
Category 3	$50,000 to $74,999
Category 4	$75,000 < $150,000
Census regions	Four regions
Region 1	Midwest
Region 2	Northwest
Region 3	South
Region 4	West

Note. Variables and measurements came from the 2009, 2012, and 2015 NFCS surveys (FINRA Investor Education Foundation, 2017).

Personal Factors

For this study, personal factors were measured by the following five variables: (a) personal demographic variables including gender, age, and race, (b) objective financial knowledge, (c) subjective financial knowledge, (d) financial self-efficacy, and (e) financial risk tolerance. These variables were selected based on SCT theoretical framework and the related

findings in previous research. Bandura described personal factors as being cognitive, affective, and biological (Bandura, 1999a).

Data on gender were collected by asking the respondents to identify as being either male or female. In the current study, gender was measured as a binary variable, defined as male (coded 1) or female (coded 0). Data on age were collected by asking the respondents to report their age. In the current study, age was coded as a categorical variable using the following five categories: 18-29 (coded 1); 30-39 (coded 2); 40-49 (coded 3); 50-59 (coded 4); and 60-64 (coded 5). Data on race were collected by asking respondents to indicate which of the following best described their race or ethnicity. Response options include the following: (a) white or Caucasian, (b) black or African-American, (c) Hispanic or Latino/a, (d) native American or Alaska Native, and (e) other. Race and ethnicity were measured as a binary variable defined as white (coded 1) and nonwhite (coded 0).

To measure the level of the respondent's objective financial knowledge, five generally accepted financial knowledge questions regarding compound interest, mortgages, bond prices, inflation, and diversification where presented. (Lusardi & Mitchell, 2008, 2011). To limit guessing, a "do not know" response option was included. Coded as (1) for correct and (0) for incorrect and "do not know," binary variables were created to identify whether a respondent correctly or incorrectly answered each of the five knowledge questions.

As they were asked in the 2009, 2012, and 2015 NFCS Surveys, the questions were:

1. Compound Interest: "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?" The following five response options were

presented as multiple-choice answers: (a) More than $102, (b) Exactly $102, (c) Less than $102, (d) Do not know, and (e) Refuse to answer.

2. Inflation: "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?" The following five response options were presented as multiple-choice answers: (a) More than today, (b) Exactly the same, (c) Less than today, (d) Do not know, and (e) Refuse to answer.
3. Bond Pricing: "If interest rates rise, what will typically happen to bond prices?" The following 6 response options were presented as multiple-choice options: (a) They will rise, (b) They will fall, (c) They will stay the same, (d) There is no relationship between bond prices and the interest rates, (e) Do not know, and (f) Refuse to answer.
4. Mortgages: "Please tell me whether this statement is true or false. 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." The following four response options were presented as multiple-choice options: (a) True, (b) False, (c) Do not know, and (d) Refuse to answer.
5. Diversification: "Please tell me whether this statement is true or false. Buying a single company's stock usually provides a safer return than a stock mutual fund." The following four response options were presented as multiple-choice options: (a) True, (b) False, (c) Do not know, and (d) Refuse to answer.

As a measure of subjective financial knowledge, respondents were asked to self-assess their overall financial knowledge with the following statement:

"On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?"

Responses were coded as a 7-point scale with higher scores reflecting a greater subjective financial knowledge (NFCS 2009, 2012, & 2015).

As a measure of financial self-efficacy, participants were asked to indicate how strongly they agree or disagree with the following statement:

"I am good at dealing with day-to-day financial matters, such as checking accounts, credit and debit cards, and tracking expenses."

Responses were coded as a 7-point scale with higher scores reflecting a greater financial self-efficacy (NFCS 2009, 2012, & 2015).

As a measure for financial risk tolerance, respondents were asked to indicate their willingness to take financial risks based on the following statement.

"When thinking of your financial investments, how willing are you to take risks? Please use a 10-point scale, where 1 means 'Not at All Willing' and 10 means 'Very Willing.'"

Responses were coded as a 10-point scale with higher scores reflecting a greater financial risk tolerance (NFCS 2009, 2012, & 2015).

Environmental Influences

Environmental influences were measured by the following five variables: (a) having one or more dependent children, (b) educational attainment, (c) marital status, (d) annual household income, and (e) Census region. Supported by previous literature, these variables were selected based on SCT Triadic Model framework. Bandura described three types of environmental influences that include the imposed environment, selected environment, and constructed environment (Bandura, 1999a).

In the current study, having one or more financially dependent children was recoded to create a binary variable distinguishing between respondents who have one or more dependent children (coded 1) and those who do not (coded 0). Data on financially dependent children were collected by asking respondents the following questions:

"How many children do you have who are financially dependent on you or your spouse? Please include children not living at home, and step-children as well."

Educational attainment was measured as a categorical variable using four categories of the same variable: (a) less than college (coded 1), (b) some college (coded 2), (c) college graduate (coded 3), and (d) post graduate education/degree (coded 4). To collect data on the respondents' educational attainment, respondents were asked to identify the last year of education completed.

Marital status was measured as a binary variable defined as married (coded 1) and unmarried (coded 0). To collect data on the respondents' marital status, respondents were asked the following question: "What is your marital status." Respondents who self-identified as married were coded as married, respondents who self-identified as single, separated, divorced, widowed/widower, or prefer not to say were coded as unmarried.

Annual household income was measured as a categorical variable ranging from less than $35,000 to less than $150,000. Data on the respondent's annual household income were collected using the following question and response options.

"What is your household's approximate annual income including wages, tips, investment income, public assistance, and income from retirement plans, etc.? Would you say it is:" (a) less than $15,000, (b) at least $15,000 but less than $25,000, (c) at least $25,000 but less than $35,000 (d) at least $35,000 but less than $50,000, (e) at least $50,000 but less

than $75,000, (f) at least $75,000 but less than $100,000, (g) at least $100,000 but less than $150,000, (h) $150,000 or more, (i) don't know, (j) prefer not to say

In the current study, the responses were recoded to create the following four household income categories: less than $35,000 (coded 1), at least $35,000 but less than $50,000 (coded 2), at least $50,000 but less than $75,000 (coded 3), at least $75,000 but less than $150,000 (coded 4). Respondents with all other responses for income were excluded from the study.

Census region was measured as a categorical variable, defined by the four U.S. Census Regions and Divisions of the United States. Coding for the specific regions is as follows: Northeast Region 1 (coded 1), Midwest Region 2 (coded 2), South Region 3 (coded 3), and the West Region 4 (coded 4) (FINRA Investor Education Foundation, 2017).

Attributes of Behavior

The responsible financial actions index was used to represent the third sub-construct in the SCT Triadic Model – attributes of behavior. For this study, in the first empirical model, the responsible financial actions index was utilized as the target variable. In the second empirical model, the responsible financial actions index was used as an explanatory variable. A complete and detailed summary of the index construction and operationalization for this variable is included in the following section.

Target Variables

Responsible Financial Actions Index

The conceptual framework used to construct the responsible financial actions index began with the assumption that to be financially responsible an individual, at a minimum, should practice the fundamental responsible financial actions needed to meet basic financial obligations. In the current study, the responsible financial actions index was defined as having the following

five financial sub-constructs: (a) financial time horizon, (b) money management, (c) financial risk management, (d) financial awareness, and (e) ownership of baseline financial products. Within each of the five financial sub-constructs are nine specific financial categories. In the current study, the nine financial categories were measured by 10 binary variables for the 2009 and 2012 data and 9 binary variables for the 2015 data. A complete list of the financial sub-constructs and measurements are presented in Table 3.2.

Table 3.2 *Measurements for the Responsible Financial Actions Index*

Financial sub-constructs	NFCS Questions	Measurement
Financial time horizon	Have you ever tried to figure out how much you need to save for retirement?	1 if yes; otherwise 0
	Do you or your spouse/partner have any retirement plans through a current or previous employer?[a]	1 if yes; otherwise 0
	Do you or your spouse/partner regularly contribute to a retirement account like a 401K or IRA?	1 if yes; otherwise 0
Money management	Over the past year, would you say, your/or your household's spending was less than, more than, or about equal to your income? Please do not include the purchase of a new house or car, or other big investments you may have made.	1 if spend less; otherwise 0
Financial risk management	Are you covered by health insurance?	1 if yes; otherwise 0
	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?	1 if yes; otherwise 0
Financial awareness	In the past 12 months, have you obtained a copy of your credit report?[b]	1 if yes; otherwise 0

	In the past 12 months, have you checked your credit score?[b]	1 if yes; otherwise 0
	How would you rate your current credit record?[c]	1 if good or very good; otherwise 0
Ownership of base-line financial products	Do you/ Does your household have a checking account?	1 if yes; otherwise 0
	Do you/ Does your household have a savings account, money market account, or CDs?	1 if yes; otherwise 0

Note. Variables and measurements came from the 2009, 2012, and 2015 NFCS surveys (FINRA Investor Education Foundation, 2017).

[a]The base for the retirement account question changed from non-retired households in 2009 to all respondents in 2012 and 2015. Tracking comparisons to 2009 will be made by looking at the responses of only non-retired respondents.

[b]In the 2009 and 2012 survey, two questions were used to measure financial awareness, producing an 11-item index.

[c]The 2015 survey introduced a single question to measure financial awareness. This modification reduced the index from 11 items to 10 items for 2015. This change should be considered when tracking comparisons to 2009 and 2012.

Financial time horizon, the first of the five responsible financial actions index sub-constructs, was measured by the following three, yes (coded 1) or no (coded 0) questions:

1. "Have you ever tried to figure out how much you need to save for retirement?"
2. "Do you or your spouse/partner have any retirement plans through a current or previous employer?"
3. "Do you or your spouse/partner regularly contribute to a retirement account like a 401K or IRA?"

The second responsible financial actions index sub-construct, money management, was measured by the following, yes (coded 1) or no (coded 0) question:

"Over the past year, would you say, your/or your household's spending was less than, more than, or about equal to your income? Please do not include the purchase of a new house or car, or other big investments you may have made."

Financial risk management, the third sub-construct for the responsible financial actions index was measured by the following two, yes (coded 1) or no (coded 0) questions:

1. "Are you covered by health insurance?"
2. "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?"

The fourth sub-construct of the conceptual model is financial awareness. For 2009 and 2012 survey data, financial awareness was measured by the following two, yes (coded 1) or no (coded 0) questions:

1. "In the past 12 months, have you obtained a copy of your credit report?"
2. "In the past 12 months, have you checked your credit score?"

For the 2015 survey data, financial awareness was measured by the following single question.

1. "How would you rate your current credit record?"

The response options included *very bad*, *bad*, *about average*, *good*, *very good*, *don't know*, and *prefer not to say*. For 2015, financial awareness was coded as a binary variable where *about average*, *good* or *very good* was coded as (1) and all other responses were coded as (0).

The last of the five sub-constructs is ownership of baseline financial products, which was measured by the following two, yes (coded 1) or no (coded 0) questions:

1. "Do you/Does your household have a checking account?"
2. "Do you/Does your household have a savings account, money market account, or CDs?"

On-Time Mortgage Payment History

The target variable for the second empirical model was on-time mortgage payment history. For the 2009 and 2012 surveys, data for this variable was collected by asking respondents the following question:

1. "How many times have you been late with your mortgage payments in the last 2 years? (If you have more than one mortgage on your home(s), please consider them all.)"

For the 2015 survey, data for this variable was collected by asking respondents the following question:

2. "How many times have you been late with your mortgage payments in the past 12 months? (If you have more than one mortgage on your home(s), please consider them all.)"

In the current study, on-time mortgage payment history was measured as a categorical variable defined by the following three categories: (a) never late (coded 1), (b) late once (coded 2), and (c) late more than once (coded 3). It should be noted that the 2009 and 2012 mortgage question referenced the *last two years* and the 2015 mortgage question referenced the *past 12 months*. This change should be considered when tracking comparisons to 2009, 2012, and 2015.

Measurement of Sample Variables

In the first empirical model, the analytical sample was limited to only those respondents identified as: (a) being between the ages of 18 and 64, (b) employed, (c) and having an annual household income no greater than $150,000. In the second empirical model, the analytical sample was restricted to only those respondents identified as: (a) being between the ages of 18 and 64, (b) employed, (c) having an annual household income no greater than $150,000, (d) being a homeowner, and (b) having a mortgage.

The measurements for age and income were described in the section on explanatory variables. Data on homeownership were collected by asking the respondents the following yes or no question: "Do you currently own your home?" Homeownership was measured as a binary

variable defined as homeowner (coded 1) and non-homeowner (coded 0). Data on mortgage holders were collected by asking respondents the following yes or no question: "Do you currently have any mortgages on your home?" Mortgage holder was measured as a binary variable. Respondents who answered yes were identified as a mortgage holder (coded 1), all other responses were identified as a non-mortgage holder (coded 0). Data on employment status were collected with the following question:

"Which of the following best describes your current employment or work status?" Response options included the following: (a) self-employed, (b) work full-time for an employer, (c) work part-time for an employer, (d) homemaker, (e) full-time student, (f) permanently sick, (g) disabled, or (h) unable to work, (i) unemployed or temporarily laid off, (j) retired, and (k) prefer not to say. Employment was measured as a binary variable. Responses of self-employed, work full-time, work part-time, and homemaker were identified as employed (coded 1). All other responses were identified as unemployed (coded 0).

Approach to Index Construction

The responsible financial actions index included 10 individual items for the 2009 and 2012 sample and 9 individual items for the 2015 sample (see Table 3.3). It should be noted that as an index measure, the responsible financial actions index was a summary number derived from combining a set of variables to measure the multidimensional construct, financial responsibility. As the most commonly accepted measure for assessing reliability and internal consistency, the Cronbach's alpha was calculated for the items in the index. This result provides confirmation for how well the items within a composite measure measured the same latent variable (Price & Mueller, 1986). Additionally, criterion-related validity was explored by measuring the correlation coefficient between the financial responsibility index and the mortgage

payment question. Criterion-related validation can be used to provide persuasive evidence of index validity by demonstrating the relationship between the predictor (responsible financial actions index) with the criterion (mortgage payment history) (Grable, Archuleta, & Nazarinia. 2011).

Hypotheses

To examine empirically the two research questions presented in this study, an index of responsible financial actions was constructed, and two independent empirical models were developed. Supported by the findings in previous research, the hypothesized relationships presented in Table 3.3 and Table 3.4 are derived from and are organized by, the three constructs described in Bandura's SCT Triadic Model presented in Chapter 1. Contained in Table 3.3 are the nine hypothesized relationships developed to explore personal factors and environmental influences as explanatory variables for the target variable, attributes of behavior defined as the responsible financial actions index. Table 3.4 presents the 10 hypothesized relationships developed to explore personal factors, environmental influences, attributes of behavior as explanatory variables for the target variable, on-time mortgage payment history.

Table 3.3 *Hypotheses for Empirical Model I*

Hypotheses	Predictor variables	Relationship	Dependent variable
H_1-H_5	Personal factors		
	Personal demographics	Related	Responsible financial actions
	Objective financial knowledge	+	
	Subjective financial knowledge	+	
	Financial self-efficacy	+	
	Financial risk tolerance	Related	
H_6-H_9	Environmental influences		
	Having one or more dependent children	Related	
	Educational attainment	+	
	Marital status	Related	
	Annual household income	+	
	Census region	Related	

Table 3.4 *Hypotheses for Empirical Model II*

Hypotheses	Predictor variables	Relationship	Dependent variable
H_1-H_5	Personal factors		
	Personal demographics	Related	Mortgage payment outcomes
	Objective financial knowledge	+	
	Subjective financial knowledge	+	
	Financial self-efficacy	+	
	Financial risk tolerance	Related	
H_6-H_9	Environmental influences		
	Having one or more dependent children	Related	
	Educational attainment	+	
	Marital status	Related	
	Annual household income	+	
	Census region	Related	
H_{10}	Attributes of behavior		
	Responsible financial actions	Related	

Empirical Model I

OLS Regression Models

As a statistical method to explore the responsible financial actions index – a series of Ordinary Least Squares (OLS) regression analyses were performed. The OLS regression analyses included the explanatory variables identified as personal factors and environmental influences. Three regression analyses representing each of the three years of survey data (2009, 2012, and 2015), were performed. To test for multicollinearity or redundancy issues between the predictor variables the variance inflation factor (VIF) was measured.

The approach used more precisely describes the direction and magnitude for each explanatory variable as it relates to the individual factors. The model is described as follows:

$$Rfa = \beta + Xp_i + Xe_i + e_i$$

Where Rfa denotes the responsible financial actions index, β is the slope, Xp_i denotes personal factors, and Xe_i denotes environmental influences, and e as the error term. The slope estimate provides information related to the direction and magnitude of the anticipated relationships (Lewis-Beck, 1995). The error term describes the amount of variation not predicted by the slope and intercept terms.

A series of OLS regression models covering three years (2009, 2012, and 2015) were designed to identify statistically significant relationships between the explanatory variables and the target variable – the responsible financial actions index. Results of the analyses provided coefficients for each variable of interest indicating the strength and direction of relationship the explanatory variables have with the target variable – the responsible financial actions index.

Each coefficient had a corresponding positive or negative sign. Positive signs associated with the coefficient indicated a positive relationship and a negative sign supported a negative

relationship. For example, it is hypothesized that that when holding all else equal, a positive relationship will be found between income and the responsible financial actions index score. Further, the coefficient reflected the expected change in the dependent variable, the responsible financial actions index. For every one-unit change in a variable of interest, a one-unit change was expected in the dependent variable (Schroeder, Sjoquist, & Stephan, 1986). In other words, as income increases, it is hypothesized that the responsible financial actions index will also increase.

Empirical Model II

Multinomial Logistic Regression Models

A series of multinomial logistic regression analyses, representing each of the three years of survey (2009, 2012, and 2015), was performed to explore the hypothesized relationships for the second empirical model. This analytical procedure modeled the relationships between variables identified as personal factors, environmental influences, and attributes of behaviors, measured by the responsible financial actions index, as predictor variables for the target variable, on-time mortgage payment history. Multinomial logistic regression was determined to be an appropriate statistical approach given the categorical structure of the dependent variable, on-time mortgage payment history (Allison, 2012). These analyses were conducted so to estimate the odds of paying: "never late" versus "late once" and "never late" versus "late more than once."

The coefficients of a multinomial logistic regression are called odds ratios (Allison, 2012). The odds ratios for each variable represent how a single unit increase or decrease in that variable is related to the odds of "never late" on a mortgage. For example, an increase in income was interpreted as a one-unit increase in responsible financial actions index score and can be

associated with an increase in the odds of never paying late on a mortgage, as compared to paying late once, or paying late more than once.

Summary

Responsible financial actions and on-time mortgage payment history are two important aspects of personal finance. Both can impact a consumer over their lifetime producing either negative or positive consequences. It was the purpose of the current study, to expand the depth of knowledge related to how personal factors, environmental influences, and attributes of behavior impact these areas.

To explore these relationships, this dissertation statistically analyzed key variables associated with the sub-constructs of Bandura's SCT Triadic Model. The analytical approach and hypothesized relationships for this study were designed to answer the two research questions presented in Chapter 1. Utilizing a series of OLS and Multinomial regression models, this study tested several hypotheses and statistical relationships between the explanatory variables and target variables. The empirical results of this study provided findings related to the direction and strength of those relationships, expanding the body of empirical literature related to consumer economics and personal financial planning.

Chapter 4 - Findings and Results for Index Construction and OLS Regressions

The analytical procedures for the current study were conducted in the following steps: (1) responsible financial actions index construction, (2) descriptive statistical analyses for sample one, (3) OLS regression analyses, (4) descriptive statistical analyses for sample two, and (5) Multinomial Logistic regression analyses. Results and findings for the descriptive statistical analyses for sample one, index construction, and the OLS regression analyses (steps one through three), are presented in this chapter. Results and findings for steps four and five are presented in Chapter 5.

Results of the Index Construction

The first step in the empirical analyses was to construct the responsible financial actions index and confirm it as a reliable and valid measure. To confirm validation, the construction and assessment of the index included a Spearman's rank correlation test between the responsible financial actions index and the mortgage payment history question. To measure for reliability and internal consistency of the index, the Cronbach's alpha was calculated.

Important to index construction is the opportunity to collect and analyze cross-sectional data over time (Grable, Archuleta, & Nazarinia, 2010; Trochin, 2005). This allows for testing across time periods with data collected from different samples utilizing the same questions. The index for this study was constructed using data from three different samples, collected over three different time periods (2009, 2012, and 2015). Consistent findings were obtained for all three samples. The data for 2009 survey produced a sample size of 17,248 with a mean responsible financial actions index score of 5.18. The data from the 2012 survey produced a sample size of

14,710 with a mean responsible financial actions index score of 5.13, and the data for 2015 produced a sample size of 15,979 with a mean responsible financial actions index score of 5.56.

Validation of the index was conducted by testing the criterion-related validity. This process involved correlating the predictor (responsible financial actions index) coefficient with the criterion (mortgage payment history question). Based on the ordinal nature of the criterion variable, Spearman's rank correlation was selected to assess the criterion-related validity of the index. The results of the correlation analysis are presented in Table 4.1. Validity coefficients range between 0 (no relationship) and 1 (a perfect relationship) so the higher the validity coefficient, the more useful the scale (Grable, Archuleta, & Nazarinia, 2010). A guideline originally offered by Saad, Carter, Rothenberg, and Israelson (1999) for evaluating the magnitude of the validity coefficient is described in Grable, Archuleta, and Nazarinia (2010). The guideline is as follows: (a) "above 0.35 = very beneficial," (b) "0.21-0.35 = likely to be useful," (c) "0.11-0.20 = depends on curcumstances," and (d) "below 0.11 = unlikely to be useful" (Grable, Archuleta, & Nazarinia, 2010). Based on this guideline, the results across all three years consistently provided an acceptable level of validity but the interpretation level of results, varied slightly. The 2009 (-0.31) and 2012 (-0.22) results indicated that the index was *likely to be useful*. The 2015 (-0.17) results were interpreted as *depends on circumstances*.

Table 4.1 *Spearman's Rank Correlation Results*

	2009 Model (N=17,248)		2012 Model (N=14,710)		2015 Model (N=15,979)	
	Mortgage Question	Financial Actions Index	Mortgage Question	Financial Actions Index	Mortgage Question	Financial Actions Index
Mortgage Question	1.0000	-.315***	1.0000	- .219***	1.0000	-.173***
Financial Actions Index	-.315***	1.0000	-.219***	1.000	-.173***	1.0000

Note. Variables and measurements came from the 2009, 2012, and 2015 NFCS surveys (FINRA Investor Education Foundation, 2017).
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

To measure the reliability and internal consistency of the index, the Cronbach's alpha was calculated for each sample (2009, 2012, and 2015). For the 2009 and 2012 sample, the index contained ten items and for the 2015 sample, the index contained nine items. These results are reported in the summary statistics (Table 4.2). The alpha scores were .69, .71, and .71 for 2009, 2012, and 2015 respectively.

The literature is mixed for how these results should be interpreted. While some researchers may find these scores to be lower than the acceptable levels, it should be noted that a few factors may have contributed to the reduced alphas. First, the index is short (9-10) items and it is composed of all dichotomous items. Both factors tend to reduce the alpha score (Carmines & Zeller, 1979; Grable, Archuleta, & Nazarinia, 2010). Second, the measure is not unidimensional. The responses relate to a multidimensional concept (financial responsibility). Cronbach's alpha is based on "tau equivalency" which assumes that each item is measuring the same latent trait on the index (Yang & Green, 2011). Given that there are multiple financial traits that underlie the

items in the index, the index is short, and is constructed of all dichotomous items, the reliability may have been underestimated by the alpha.

Descriptive Statistic Results for OLS Regressions

Contained in Table 4.2 are the descriptive statistics of variables constructed for the series of OLS regression analyses reported here. Three years of data representing 2009, 2012, and 2015 were included in the OLS regression analyses. The table is organized as follows. The predictor variables represent personal factors and environmental influences and the dependent variable, the responsible financial actions index, represents attributes of behavior. These are the three sub-constructs of the SCT Triadic Model.

The full sample for each year of data was weighted to produce a reliable representation of the population and is comparable to U.S. census distribution on gender, race, education, and census division (FINRA Investor Education Foundation, 2017). Based on the descriptive statistic results, the analytical sample, across all three years of data, for this study closely resembled the U.S. population.

2009 Sample Characteristic Results

The analytical sample for the 2009 data included a total of 17,248 respondents. All respondents were: (a) employed, (b) under the age of 65, and (c) with household incomes at or below $150,000.

When looking at sample characteristics related to personal factors, the descriptive results showed that about half (51%) identified as male, 84% were between the ages of 25 and 64, and 65% of the sample identified as white. Objective financial knowledge scores were measured by the five individual financial knowledge questions. The respondents in the 2009 survey reported the following mean scores: compound interest (0.81), inflation (0.65), bond pricing (0.28),

mortgage (0.78), diversification (0.54). While not reported in Table 4.2, it is important to note that when looking at the questions collectively, respondents total score was a 3.06 out of a possible score of five. Reported mean scores for subjective financial knowledge and financial self-efficacy, on scales from one to seven, were 4.87 and 5.54, respectively. When respondents were asked about financial risk tolerance, a mean score of 4.12 on a scale of 1-10 was reported.

For the sample characteristics related to environmental influences, slightly less than half (46%) of the sample reported having dependent children, 69% of the sample reported having *some college* or more, about half (51%) identified as married, and nearly two-thirds (60%) of the sample reported incomes of between $35,000 - $150,000.

As an attribute of behavior and the target variable for this model, the responsible financial actions index scores were reported. Out of a possible score of 10, respondents' mean scores for the responsible financial actions index in 2009 was 5.18. This result indicated that on average, as identified in the current study, respondents had performed, about five of the recommended responsible financial actions. In other words, on average, as identified in the current study, respondents had performed 75% or more of the recommended responsible financial actions. Of the individual items, the most likely to have been performed were, having a checking account and having health insurance.

2012 Sample Characteristic Results

Sample characteristic results for the 2012 analytical sample are also presented in Table 4.2. The analytical sample for the 2012 survey included a total of 14,710 respondents. Sample selection criteria were the same as for the 2009 data.

When exploring the sample characteristics related to personal factors, half (50%) identified as male, 86% were between the ages of 25 and 64, and 61% of the sample identified as white. Objective financial knowledge scores were measured by the five individual financial knowledge questions. The respondents in the 2012 survey reported the following mean scores: compound interest (0.61), inflation (0.39), bond pricing (0.27), mortgage (0.77), diversification (0.47). While not reported in Table 4.2, it is important to note that when looking at the questions collectively respondents total score was a 2.51 out of a possible score of five. Reported mean scores for subjective financial knowledge and financial self-efficacy, on scales from one to seven, were 5.06 and 5.60, respectively. When asked about financial risk tolerance, a mean score of 4.76 on a scale of 1-10 was reported.

In terms of environmental influences, slightly more than half (53%) of the sample reported having one or more dependent children, and 63% of the sample reported having some college or more. Half (50%) of the sample identified as married, and just over half (60%) of the sample reported incomes of between $35,000 - $150,000.

Identified as an attribute of behavior and the target variable for this model, the responsible financial actions index scores are reported in the table. Out of a possible score of 10, respondents' mean scores for the responsible financial actions index in 2012 was 5.13. This result indicated that on average, as identified in the current study, respondents had performed, about five of the recommended responsible financial actions. In other words, on average, as identified in the current study, respondents had performed 75% or more of the recommended responsible financial actions. Of the individual items, the most likely to have been performed were, having a checking account and having health insurance.

2015 Sample Characteristic Results

Finally, Table 4.2 also reports the sample characteristics for the 2015 analytical sample. The analytical sample for the 2015 survey included a total of 15,979 respondents. Sample selection criteria were the same as for the 2009 and 2012 data.

When looking at sample characteristics related to personal factors, fewer than half (44%) identified as male, 87% were between the ages of 25 and 64, and 69% of the sample identified as white. Related to respondents' objective financial knowledge scores measured by the five financial knowledge questions, the respondents in the 2015 survey reported the following mean scores: compound interest (0.78), inflation (0.59), bond pricing (0.27), mortgage (0.79), diversification (0.47). While not reported in Table 4.2, it is important to note that when looking at the questions collectively, respondents had a total score 2.90 out of a possible score of five. Reported mean scores for subjective financial knowledge and financial self-efficacy, on scales from one to seven, were 5.17 and 5.79, respectively. When respondents were asked about their financial risk tolerance, a mean score of 5.39 on a scale of 1-10 was reported.

For the sample characteristics related to environmental influences, it was found that fewer than half (46%) of the sample reported having dependent children, 76% of the sample reported having some college or more, about half (51%) identified as married, and just over half (67%) of the sample reported incomes of between $35,000 - $150,000.

As an attribute of behavior and the target variable for this model, the responsible financial actions index scores were reported. Out of a possible score of 10, respondents' mean scores for the responsible financial actions index in 2015 was 5.56. In other words, on average, as identified in the current study, respondents had performed 75% or more of the recommended

responsible financial actions. Of the individual items, the most likely to have been performed were, having a checking account and having health insurance.

Table 4.2 *Weighted Descriptive Statistics for OLS Regressions*

Variables	2009 (N=17,248)			2012 (N=14,710)			2015 (N=15,979)		
Dependent Variable	Mean	SD	α	Mean	SD	α	Mean	SD	α
Responsible Financial Actions (index 1-10)[a]	5.18	2.29	0.69	5.13	2.42	0.71	5.56	2.13	0.71
Spending less	0.42	0.49		0.41	0.49		0.41	0.49	
Has health insurance	0.76	0.42		0.75	0.43		0.88	0.33	
Presence of an emergency fund	0.31	0.45		0.35	0.48		0.43	0.50	
Calculate for retirement	0.38	0.48		0.38	0.49		0.43	0.50	
Has a self-retirement account	0.24	0.42		0.23	0.43		0.30	0.46	
Has an employer sponsored retirement account	0.54	0.49		0.51	0.50		0.59	0.49	
Has a checking account	0.91	0.28		0.90	0.31		0.93	0.26	
Has a savings account	0.75	0.43		0.72	0.45		0.77	0.42	
Has checked credit score (2009 and 2012)	0.43	0.49		0.42	0.50		-	-	
Has obtained copy of credit report (2009 and 2012)	0.44	0.49		0.46	0.50		-	-	
Rated credit record about average or higher	-	-		-	-		0.82	0.38	
Predictor Variables[b]									
Personal Factors									
Male	0.51	0.49		0.50	0.50		0.44	0.50	
Female (reference group)	0.49	0.49		0.50	0.50		0.56	0.50	
Age 18 to 24 (reference group)	0.16	0.36		0.14	0.35		0.13	0.34	
Age 25 to 34	0.22	0.41		0.24	0.43		0.25	0.43	
Age 35 to 44	0.23	0.42		0.21	0.41		0.22	0.42	

Age 45 to 54	0.24	0.42	0.25	0.43	0.23	0.42
Age 55 to 64	0.14	0.34	0.16	0.37	0.17	0.38
White	0.65	0.47	0.61	0.49	0.69	0.46
Non-white (reference group)	0.35	0.47	0.39	0.49	0.31	0.46
Compound interest question	0.81	0.39	0.61	0.49	0.78	0.41
Inflation question	0.65	0.47	0.39	0.49	0.59	0.49
Bond pricing question	0.28	0.44	0.27	0.45	0.27	0.44
Mortgage question	0.78	0.41	0.77	0.42	0.79	0.41
Diversification question	0.54	0.49	0.47	0.50	0.47	0.50
Subjective financial knowledge (scale 1-7)	4.87	1.29	5.06	1.31	5.17	1.20
Financial self-efficacy (scale 1-7)	5.54	1.61	5.60	1.58	5.79	1.39
Risk tolerance (scale 1-10)	4.12	2.62	4.76	2.79	5.39	2.73
Environmental Influences						
No dependent children (reference group)	0.54	0.49	0.47	0.50	0.54	0.50
One or more dependent children	0.46	0.49	0.53	0.50	0.46	0.50
Less than college (reference group)	0.31	0.46	0.37	0.49	0.23	0.42
Some college	0.43	0.49	0.37	0.48	0.40	0.49
College education	0.18	0.38	0.18	0.38	0.24	0.43
Post graduate degree	0.08	0.27	0.08	0.28	0.12	0.32
Married	0.51	0.49	0.50	0.50	0.51	0.50
Unmarried (reference group)	0.49	0.49	0.50	0.50	0.49	0.50
Income less than 35K (reference group)	0.40	0.48	0.40	0.49	0.34	0.47
Income 35K to 50K	0.16	0.37	0.16	0.36	0.15	0.36
Income 50K to 75K	0.20	0.39	0.20	0.40	0.22	0.41
Income 75K to 150K	0.24	0.42	0.25	0.43	0.30	0.46
South Region (reference group)	0.36	0.47	0.36	0.48	0.26	0.44

MW Region	0.24	0.42	0.22	0.42	0.33	0.47
NE Region	0.22	0.41	0.17	0.38	0.24	0.43
West Region	0.18	0.38	0.24	0.43	0.18	0.38

Note. Variables and measurements came from the 2009, 2012, and 2015 NFCS surveys (FINRA Investor Education Foundation, 2017).

[a]Responsible financial actions index is (0-10) for 2009 and 2012 and (0-9) for 2015.

[b]Totals may not equal 100% due to rounding.

2009 OLS Regression Results

Results of the 2009 OLS regression analysis using variables organized by personal factors and environmental influences to predict responsible financial actions are reported in Table 4.3. Consistent with the theoretically supported hypotheses and previously cited research, variables identified both as personal factors and environmental influences were found to be significantly related to the responsible financial actions index. In terms of personal factors – gender, age, four of the five objective financial knowledge questions, subjective financial knowledge, financial self-efficacy, and financial risk tolerance were significantly related to the responsible financial actions index at the $p < 0.001$ level. In addition, the following environmental influences, having one or more dependent children, education level, marital status, household income, and three of the four Census regions were significantly related to the responsible financial actions index at the $p < 0.001$ level.

In other words, holding all else equal, males as compared to females would have a 0.103 increase in the responsible financial actions index score. Respondents between the ages of 25 and 34 would have a 0.454 unit increase in the responsible financial actions index score, as compared to individuals between the ages of 18 and 24. The model predicts older individuals would also have a higher responsible financial action score than individuals between 18 and 24. As related to objective financial knowledge, financial knowledge questions two, three, four, and five were

all found to be significantly related to the responsible financial action index. When holding all else equal, correctly answering financial knowledge question two, three, four, and five would result in a 0.101, 0.183, 0.229, and 0.322 increase in the responsible financial actions index. The effect size varied slightly between questions but when considered collectively, answering these four financial knowledge questions correctly would result in an index increase of 0.835. The model predicted a positive relationship between subjective financial knowledge and the responsible financial actions index. A one-unit increase in subjective financial knowledge would lead to a 0.154 unit increase in responsible financial actions index scores. Similarly, regarding financial self-efficacy and financial risk tolerance, when controlling for other variables, a one-unit increase in financial self-efficacy would result in a 0.089 unit increase in the responsible financial actions index score and a one-unit increase in financial risk tolerance would result in a 0.201 increase in the responsible financial actions index score.

Consistent with the theoretical predictions of Social Cognitive Theory (SCT), the model predicted relationships between environmental influences and the responsible financial actions index. A negative relationship was identified for those respondents with one or more dependent children. When controlling for other variables, respondents reporting having one or more dependent children would have a 0.110 unit decrease in the responsible financial actions index. Results related to educational attainment were consistent with previous studies. In the model reported here, those respondents identified as having "some college," "college education," or "post graduate education" would have between a 0.441 and a 0.868 unit increase in responsible financial actions index as compared to those respondents identified as having an education level of "less than college." Household income was significant across all three income categories. In the 2009 survey, respondents identified as having household incomes of $35,000 to less than

$50,000, $50,000 to less than $75,000, and $75,000 to less than $150,000 were found to have a 0.725, 1.159, and 1.716 unit increase respectively in the responsible financial actions index score as compared to individuals with reported household incomes of less than $35,000. Respondents Census region was significantly related to responsible financial actions index. When holding all else equal, a 0.156 – 0.168 unit increase in the index was found for those respondents located in the North East and West regions respectively compared to those in the south.

2012 OLS Regression Results

Results of the OLS regression analysis using 2012 data are reported in Table 4.3. Consistent with the theoretical predictions and previously cited research, findings related to both personal factors and environmental influences were identified as being significantly related to the responsible financial actions index. As related to personal factors – age, objective and subjective financial knowledge, financial self-efficacy, and financial risk tolerance were all found to be significantly related at the $p < 0.001$ level. Under environmental influences – education level, household income, marital status, and certain Census regions were all found to be significantly related at the $p < .001$ level.

In terms of personal factors, the model predicted that when holding all else equal, respondents between the ages of 25 and 34 would have a 0.267 unit increase in the responsible financial actions index score, as compared to individuals between the ages of 18 and 24. Results ranged from 0.160 to 0.612 for age categories representing older respondents. Regarding objective financial knowledge, financial knowledge questions three, four, and five were significantly related to the responsible financial action index score. When controlling for other variables, the model predicted that correctly answering financial knowledge questions three, four, and five would result in a 0.179, 0.460, and 0.360, increase respectively in responsible

financial actions index scores. The relationship between subjective financial knowledge and the responsible financial actions index was positive. In other words, a one-unit unit increase in subjective financial knowledge would lead to a 0.167 unit increase in the responsible financial actions index scores. Regarding financial self-efficacy and financial risk tolerance, results showed that when controlling for other factors, a one-unit increase in financial self-efficacy would result in a 0.079 unit increase in the responsible financial actions index score and a one-unit increase in financial risk tolerance would result in a 0.192 increase in the responsible financial actions index score.

When exploring environmental influences and the responsible financial actions index, the model predicted several positive relationships. Education was positively related to the responsible financial actions index. When holding all else equal, respondents identified as having "some college," "college education," or "post graduate education" had between a 0.531 and a 0.980 unit increase in the responsible financial actions index as compared to those respondents identified as having "less than college." Consistent with the 2009 survey, household income was significant across all three income categories. In the 2012 survey, respondents identified as having household incomes of $35,000 to less than $50,000, $50,000 to less than $75,000, and $75,000 to less than $150,000 were found to have a 0.779, 1.279, and 1.765 unit increase respectively in the responsible financial actions index score as compared to individuals with reported household incomes of less than $35,000. Census region was found to impact a respondent's financial actions index score. When controlling for other variables, a 0.071, 0.151 and 0.138 unit increase in the index was found for those respondents located in the Midwest, North, and West Census regions respectively when compared to respondents identified as residing in the South Census region.

2015 OLS Regression Results

Consistent with the results of 2009 and 2012 OLS regression models, the explanatory variables for the 2015 OLS regression model were organized by personal factors and environmental influences to predict responsible financial actions, and these results are also reported in Table 4.3. Again, consistent with the theoretically supported hypotheses and previously cited research, findings related to both personal factors and environmental influences were identified as being significantly related to the responsible financial actions index. In terms of personal factors –age, objective and subjective financial knowledge, financial self-efficacy, and financial risk tolerance were all found to be significantly related at the $p < 0.001$ level. Under environmental influences – education level, household income, marital status, and certain Census regions were significantly related at the $p < 0.001$ level.

The model predicted that when holding all else equal, respondents between the ages of 25 and 34 would have a 0.151 unit increase in the responsible financial actions index score, as compared to individuals between the ages of 18 and 24. Other positive relationships were identified in older age categories but unlike the 2009 and 2012 models, the age category 45 to 54 was not significant. Regarding objective financial knowledge, all five of the financial knowledge questions were significantly related to the responsible financial action index. When holding all else equal, the model predicted that a correct response for financial knowledge questions one, two, three, four, and five would result in a 0.117, 0.063, 0.195, 0.368, and 0.291 increase, respectively, in the responsible financial actions index score. Regarding subjective financial knowledge, the model predicted that a one-unit increase in subjective financial knowledge would lead to a 0.083 unit increase in the responsible financial actions index score. When controlling for other variables, financial self-efficacy and financial risk tolerance predicted a one-unit

increase in financial self-efficacy would result in a 0.145 unit increase in the responsible financial actions index score and a one-unit increase in financial risk tolerance would result in a 0.243 increase in the responsible financial actions index score.

When exploring variables categorized as environmental influences, the model predicted several positive relationships. When controlling for other variables, respondents who identified as having "some college," "college education," or "post graduate degree" had a 0.323, 0.745, and 0.788 unit increase respectively in the responsible financial actions index score as compared to those respondents identified as having "less than college." Consistent with the 2009 and the 2012 surveys, household income was significant across all three income categories. In the 2015 survey, respondents identified as having household incomes of $35,000 to less than $50,000, $50,000 to less than $75,000, and $75,000 to less than $150,000 were found to have a 0.638, 1.052, and 1.512 unit increase respectively in the responsible financial actions index score as compared to individuals with reported household incomes of less than $35,000. Census region was again found to impact a respondent's financial actions index score. When compared to respondents residing in the South Region, a 0.100, 0.105, and 0.113 unit increase in the index was found for those respondents located in the Midwest, North, and West regions, respectively.

Table 4.3 *OLS Regression Analysis Results Predicting Responsible Financial Actions Index*

	2009 Model (N=17,248)		2012 Model (N=14,710)		2015 Model (N=15,979)	
Variable	Coeff	SE	Coeff	SE	Coeff	SE
Intercept	0.552	0.079	0.369	0.091	0.664	0.078
Personal Factors						
Male	0.103***	0.028	-0.065*	0.031	-0.035	0.025
Female (reference group)	-	-	-	-	-	-
Age 18 to 24 (reference group)	-	-	-	-	-	-

Age 25 to 34	0.454***	0.046	0.267***	0.055	0.151***	0.044
Age 35 to 44	0.484***	0.048	0.160**	0.057	0.161***	0.046
Age 45 to 54	0.632***	0.047	0.317***	0.056	0.023	0.045
Age 55 to 64	0.786***	0.053	0.612***	0.060	0.191***	0.048
White	-0.075	0.030	-0.075***	0.034	0.041	0.027
Non-white (reference group)	-	-	-	-	-	-
Objective Financial Knowledge						
Compound interest question	0.069	0.037	0.009	0.039	0.117***	0.032
Inflation question	0.101**	0.032	0.020	0.035	0.063*	0.029
Bond pricing question	0.183***	0.031	0.179***	0.035	0.195***	0.029
Mortgage question	0.229***	0.036	0.460***	0.040	0.368***	0.032
Diversification question	0.322***	0.030	0.360***	0.033	0.291***	0.027
Subjective financial knowledge	0.154***	0.012	0.167***	0.013	0.0825***	0.012
Financial self-efficacy	0.089***	0.009	0.079***	0.011	0.145***	0.010
Financial risk tolerance	0.201***	0.006	0.192***	0.006	0.243***	0.005
Environmental Influences						
No dependent children (reference group)	-	-	-	-	-	-
One or more dependent children	-0.110***	0.031	0.033	0.033	-0.155***	0.028
Less than college (reference group)	-	-	-	-	-	-
Some college	0.441***	0.033	0.531***	0.038	0.323***	0.032
College education	0.746***	0.043	0.902***	0.044	0.745***	0.038
Post graduate degree	0.868***	0.058	0.980***	0.057	0.788***	0.047
Married	0.216***	0.032	0.115***	0.035	0.172***	0.029
Unmarried (reference group)	-	-	-	-	-	-

Income less than 35K (reference group)	-	-	-	-	-	-
Income 35K to 50K	0.725***	0.041	0.779***	0.047	0.638***	0.039
Income 50K to 75K	1.159***	0.041	1.279***	0.045	1.052***	0.037
Income 75K to 150K	1.716***	0.043	1.765***	0.048	1.512***	0.039
South region (reference group)	-	-	-	-	-	-
Midwest region	0.0713	0.037	0.084*	0.040	0.100**	0.033
North region	0.156***	0.039	0.151***	0.045	0.105**	0.036
Northwest region	0.168***	0.036	0.138***	0.039	0.113***	0.032
F	484		440		590	
R^2	.42		.44		.49	

Note. Variables and measurements came from the 2009, 2012, and 2015 NFCS surveys (FINRA Investor Education Foundation, 2017)
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Summary of OLS Regression Results and Findings

This chapter reported results related to the first research question originally presented in Chapter 1 of this dissertation. That question was:

1. How are personal factors and environmental influences related to attributes of behavior as measured by the responsible financial actions index?

When evaluating the OLS regression results, consistent findings across the 2009, 2012, and 2015 samples were obtained for most of the explanatory variables. The SCT Triadic Model framework largely supported most of the hypothesized relationships.

Table 4.4 summarizes the findings related to the hypothesized relationships first presented in Chapter 3. As predicted by the SCT Triadic Model, both personal factors and environmental influences were found to impact attributes of behavior as measured by the responsible financial actions index.

When exploring personal factors as predictors for behavioral attributes, age, subjective and objective financial knowledge, financial self-efficacy, and financial risk tolerance were found to be the most consistent determinants of the responsible financial actions index (behavioral attributes) across all three surveys. In terms of environmental influences as predictors for behavioral attributes, income, educational attainment, and marital status were identified as consistent predictors of the responsible financial actions index (behavioral attributes)

Table 4.4 *Results of Hypothesized Relationships for OLS Regression Predicting Responsible Financial Actions*

Explanatory variables	Hypothesized relationships	2009 (N=17,248)	2012 (N=14,710)	2015 (N=15,979)
Personal factors				
Personal demographics				
Gender	Related	Accept (+)	Accept (-)	Reject
Age	Related	Accept (+)	Accept (+)	Accept (+)
Race	Related	Reject	Accept (-)	Reject
Objective financial knowledge	+	Limited	Limited	Limited
Subjective financial knowledge	+	Accept (+)	Accept (+)	Accept (+)
Financial self-efficacy	+	Accept (+)	Accept (+)	Accept (+)
Financial risk tolerance	+	Accept (+)	Accept (+)	Accept (+)
Environmental Influences				
Having one or more dependent children	Related	Accept (-)	Accept (-)	Accept (-)
Educational attainment	+	Accept (+)	Accept (+)	Accept (+)
Marital status	Related	Accept (+)	Accept (+)	Accept (+)
Annual household income				
Census region	Related	Accept (+)	Reject	Accept (+)

It should be noted that inconsistent results among gender, race, and census region were found. In terms of personal factors, it was hypothesized that gender and race would be related to

behavioral attributes measured by the responsible financial actions index. Gender was found to be related but only in the 2009 (positive) and 2012 (negative) survey years and these two results were inconsistent. Race was found to be related but only in the 2012 (negative) survey year. In terms of environmental influences, it was hypothesized that census region would be related. Positive relationships were identified but only for the 2009 and 2015 survey years.

Further, a positive relationship between objective financial knowledge and the responsible financial actions index was hypothesized. The results related to this hypothesized relationship were limited. In the current study, financial knowledge was measured by five individual financial questions. Financial knowledge question one related to compound interest and this question was only significant in the 2015 survey year. Financial knowledge question two related to inflation and this question was significant only in survey years 2009 and 2012. Financial knowledge questions three, four, and five were consistently significant across all three survey years.

Chapter 5 - Findings and Results for the Multinomial Logistic Regressions

This chapter reports the results for the Multinomial Logistic regression analyses. A series of three analyses, across all three years (2009, 2012, and 2015) were conducted. These analyses explored the target variable, on-time mortgage payment history had which had a three-category outcome, *never late*, *late once*, and *late more than once*. Results and findings for the descriptive statistical analyses and the multinomial logistic analyses, are presented in this chapter.

Descriptive Statistics for Multinomial Regressions

Contained in Table 5.1 are the descriptive statistics of variables constructed for the series of multinomial regression analyses reported here. Three surveys containing data from 2009, 2012, and 2015 were included in the analyses. Results were organized around the three sub-constructs of the SCT Triadic Model, personal factors, environmental influences, and attributes of behavior.

The full sample for each survey year was weighted to produce a reliable representation of the population and is comparable to U.S. census distribution on gender, race, education, and census division (FINRA Investor Education Foundation, 2017). Based on the descriptive statistic results, the analytical sample, across all three survey, for this study closely resembled the U.S. population.

2009 Sample Characteristic Results

Presented in Table 5.1 are the sample characteristic results for the 2009 analytical sample. The analytical sample for the 2009 survey included a total of 8,044 respondents, identified as: (a) homeowners, (b) with a mortgage, (c) employed, (d) under the age of 65, and (e) with household incomes at or below $150,000.

Under personal factors, the descriptive results showed that about half (49%) identified as male, 95% were between the ages of 25 and 64, and 72% of the sample identified as white. In terms of objective financial knowledge, respondents in the 2009 survey reported the following mean scores: compound interest (0.84), inflation (0.71), bond pricing (0.32), mortgage (0.88), diversification (0.61). While not reported in Table 5.1, it is important to note that when looking at the questions collectively respondents total score was a 3.36 out of a possible score of five. Reported mean scores for subjective financial knowledge and financial self-efficacy, on scales from 1 to 7, were 5.06 and 5.70, respectively. When asked about financial risk tolerance, the mean score for the sample was 4.59 on a scale of 1-10.

When looking at sample characteristics related to environmental influences, about half (52%) of the sample reported having one or more dependent children, 71% of the sample reported having *some college* or more, 69% identified as married, and just three-fourths (78%) of the sample reported incomes of between $35,000 - $150,000.

As an attribute of behavior, the responsible financial actions index scores were reported. Out of a possible score of 10, respondents' mean scores for the responsible financial actions index in 2009 was 6.02. This result indicated that on average, as identified in the current study, respondents had performed, six of the recommended responsible financial actions. This result indicated that on average, as identified in the current study, respondents had performed 75% or more of the recommended responsible financial actions. Of the individual items, the most likely to have been performed were, having health insurance, having a checking account, having a savings account, and having an employer sponsored retirement account.

The target variable, on-time mortgage payment history was organized into one of three categories. The majority (75%) of the sample reported never paying late, 9% reported paying late once, and 16% reported paying late more than once.

2012 Sample Characteristic Results

Shown in Table 5.1 are the sample characteristic results for the 2012 analytical sample. The analytical sample for the 2012 survey included a total of 5,664 respondents, identified as: (a) homeowners, (b) with a mortgage, (c) employed, (d) under the age of 65, and (e) with household incomes at or below $150,000.

In terms of personal factors, just over half of the sample (52%) identified as male, 95% were between the ages of 25 and 64, and 67% of the sample identified as white. When looking at respondents' scores related to objective financial knowledge, respondents reported the following mean scores: compound interest (0.82), inflation (0.68), bond pricing (0.33), mortgage (0.88), diversification (0.57). While not reported in Table 5.1, it is important to note that when looking at the questions collectively respondents total score was a 3.28 out of a possible score of five. The reported mean scores for subjective financial knowledge and financial self-efficacy, on scales from 1-7, were 5.31 and 5.85, respectively. When respondents were asked to rate their financial risk tolerance, a mean score of 5.29 on a scale of 1-10 was reported.

As related to environmental influences, (57%) of the sample reported having one or more dependent children, 71% of the sample reported having some college or more, 71% identified as married, and most (84%) of the sample reported incomes of between $35,000 - $150,000.

As an attribute of behavior, the responsible financial actions index scores were reported. Out of a possible score of 10, respondents' mean scores for the responsible financial actions index in 2012 was 6.28. This result indicated that on average, as identified in the current study,

respondents had performed, slightly more six of the recommended responsible financial actions. This result indicated that on average, as identified in the current study, respondents had performed 75% or more of the recommended responsible financial actions. Of the individual items, the most likely to have been performed were, having health insurance, having a checking account, having a savings account, and having an employer sponsored retirement account.

The target variable, on-time mortgage payment history was reported for three categories. A majority (74%) of the sample reported never paying late, 9% reported paying late once, and 17% reported paying late more than once.

2015 Sample Characteristic Results

Sample characteristic results for the 2015 analytical sample are presented in Table 5.1. The analytical sample for the 2015 survey included a total of 6,268 respondents, identified as: (a) homeowners, (b) with a mortgage, (c) employed, (d) under the age of 65, and (e) with household incomes at or below $150,000.

Under personal factors, the descriptive results showed that about half (51%) identified as male, 94% were between the ages of 25 and 64, and 68% of the sample identified as white. In terms of objective financial knowledge, the respondents in the 2015 survey reported the following mean scores: compound interest (0.81), inflation (0.63), bond pricing (0.30), mortgage (0.86), diversification (0.51). While not reported in Table 5.1, it is important to note that when looking at the questions collectively respondents total score was a 3.11 out of a possible score of five. Reported mean scores for subjective financial knowledge and financial self-efficacy, on scales from 1 to 7, were 5.38 and 5.96, respectively. When asked about financial risk tolerance, a mean score of 5.95 on a scale of 1-10 was reported.

In terms of environmental influences, about half (58%) of the sample reported having one or more dependent children, 78% of the sample reported having some college or more, 70% identified as married, and most (86%) of the sample reported incomes of between $35,000 - $150,000.

As an attribute of behavior, the responsible financial actions index scores were reported. Out of a possible score of 9, respondents' mean scores for the responsible financial actions index in 2015 was 6.36. Based on this result, as identified in the current study, respondents on average, had performed slightly more than 6 of the recommended responsible financial actions. This result indicated that on average, as identified in the current study, respondents had performed 75% or more of the recommended responsible financial actions. Of the individual items, the most likely to have been performed were, having health insurance, having a checking account, having a savings account, and having an employer sponsored retirement account.

The target variable, on-time mortgage payment history was reported for three categories. The majority (82%) of the sample reported never paying late, 8% reported paying late once, and 10% reported paying late more than once.

Mean scores across all three years were consistent for individuals who paid late once but a notable change was observed from 2009 to 2015 for mean scores related to *late more than once* and *never late*. When comparing mean scores for *never late*, a 7-point increase was observed and when comparing mean scores for *late more than once*, a 6-point decrease was observed. This can most likely be contributed to the macro-economic changes witnessed in the mortgage industry at that time. From the tightened lending requirements to the large number of foreclosures taken place, the mortgage landscape changed dramatically during this time.

Table 5.1 *Weighted Descriptive Statistic Characteristics Multinomial Regressions*

	2009 Model (N=8,044)			2012 Model (N=5,664)			2015 Model (N=6,268)		
	Mean	SD	α	Mean	SD	α	Mean	SD	α
Dependent Variable									
Never late	0.75	0.41		0.74	0.42		0.82	0.39	
Mortgage late once	0.09	0.27		0.09	0.28		0.08	0.27	
Mortgage late more than once	0.16	0.35		0.17	0.36		0.10	0.30	
Predictor Variables[b]									
Personal Factors									
Male	0.49	0.47		0.52	0.48		0.51	0.48	
Female (reference group)	0.51	0.47		0.48	0.48		0.49	0.48	
Age 18 to 24 (reference group)	0.05	0.20		0.05	0.21		0.06	0.22	
Age 25 to 34	0.21	0.38		0.21	0.39		0.22	0.40	
Age 35 to 44	0.29	0.43		0.26	0.42		0.28	0.43	
Age 45 to 54	0.29	0.43		0.30	0.44		0.28	0.43	
Age 55 to 64	0.17	0.35		0.19	0.38		0.17	0.36	
White	0.72	0.42		0.67	0.45		0.68	0.45	
Non-white (reference group)	0.28	0.42		0.33	0.45		0.32	0.45	
Compound interest question	0.84	0.34		0.82	0.37		0.81	0.38	
Inflation question	0.71	0.43		0.68	0.45		0.63	0.47	
Bond pricing question	0.32	0.44		0.33	0.45		0.30	0.44	
Mortgage question	0.88	0.31		0.88	0.31		0.86	0.33	
Diversification question	0.61	0.46		0.57	0.48		0.51	0.48	
Subjective financial knowledge (scale 1-7)	5.06	1.12		5.31	1.11		5.38	1.05	
Financial self-efficacy (scale 1-7)	5.70	1.48		5.85	1.37		5.96	1.22	

Financial risk tolerance (scale 1-10)	4.59	2.51		5.29	2.57		5.95	2.53	
Environmental Influences									
No dependent children (reference group)	0.48	0.47		0.43	0.48		0.42	0.48	
One or more dependent children	0.52	0.47		0.57	0.48		0.58	0.48	
Less than college (reference group)	0.28	0.43		0.29	0.44		0.22	0.40	
Some college	0.41	0.47		0.36	0.46		0.44	0.48	
College education	0.20	0.39		0.23	0.41		0.22	0.40	
Graduate education	0.10	0.29		0.12	0.31		0.12	0.32	
Married	0.69	0.44		0.71	0.44		0.70	0.44	
Unmarried (reference group)	0.31	0.44		0.29	0.44		0.30	0.44	
Income less than 35K (reference group)	0.22	0.40		0.16	0.35		0.14	0.34	
Income 35K to 50K	0.17	0.36		0.14	0.34		0.14	0.34	
Income 50K to 75K	0.26	0.42		0.27	0.43		0.26	0.42	
Income 75K to 150K	0.35	0.46		0.43	0.48		0.46	0.48	
South Region (reference group)	0.37	0.46		0.34	0.46		0.36	0.46	
MW Region	0.24	0.41		0.24	0.42		0.23	0.41	
NE Region	0.17	0.36		0.17	0.37		0.16	0.35	
West Region	0.22	0.40		0.24	0.41		0.25	0.42	
Attributes of behavior									
Responsible financial actions (index 1-10)[a]	6.02	1.98	0.62	6.28	2.07	0.63	6.36	1.78	0.63
Spend less than income	0.42	0.47		0.44	0.48		0.43	0.48	
Has health insurance	0.86	0.32		0.87	0.32		0.93	0.24	
Presence of an emergency fund	0.37	0.46		0.43	0.48		0.52	0.48	
Calculate for retirement	0.47	0.47		0.51	0.48		0.54	0.48	

Has a self-retirement account	0.34	0.45	0.38	0.47	0.42	0.48
Has an employer sponsored retirement account	0.74	0.42	0.75	0.42	0.78	0.40
Has a checking account	0.98	0.13	0.98	0.14	0.98	0.13
Has a savings account	0.84	0.35	0.85	0.34	0.87	0.33
Has checked credit score (2009 and 2012)	0.50	0.47	0.56	0.48	-	-
Has obtained copy of credit report (2009 and 2012)	0.51	0.47	0.50	0.48	-	-
Rated credit record about average or higher	-	-	-	-	0.89	0.30

Note. Variables and measurements came from the 2009, 2012, and 2015 NFCS surveys (FINRA Investor Education Foundation, 2017).

[a]Responsible financial actions index is (0-10) for 2009 and 2012 and (0-9) for 2015.

[b]Totals may not equal 100% due to rounding.

Results of the Multinomial Logistic Regression Models

The purpose of second set of analyses was to isolate the relationships between the explanatory variables, organized by personal factors, environmental influences, and attributes of behavior, and the target variable, on-time mortgage payment history. The possible outcomes for the target variable, on-time mortgage payment history, were *never late*, *late once*, and *late more than once*. An estimation model was developed for each year of data (2009, 2012, and 2015) and a series of multinomial regressions analyses predicting on-time mortgage payment history was conducted by estimating the odds of *never late* vs. *late once* and *never late* vs. *late more than once*. Results for the regression analyses are presented in Table 5.2, Table 5.3, and Table 5.4 for 2009, 2012, and 2015, respectively.

2009 Model 1 – Never Late vs. Late Once

The 2009 Model 1 estimated the odds of *never late* vs. *late once*. These results are presented Table 5.2. Under personal factors, the model predicted statistically significant relationships among age, race, two of the objective financial knowledge questions, financial self-efficacy, and financial risk tolerance and mortgage payment history. In terms of environmental influences, having one or more dependent children and household income were both found to be statistically related and under attributes of behavior, the responsible financial actions index was significantly related at the $p<0.001$ level.

Specifically, the model predicted that when holding all else equal, the odds of paying *never late* vs. *late once* was 78% higher for individuals 35 to 44 and 81% higher for individuals age 55 to 64 as compared to individuals between 18 and 24. Conversely, the odds of paying *never late* vs. *late once* was 8% lower for individuals 25 to 34 as compared to individuals 18 to 24. When comparing white respondents to those respondents identified as non-white, the model predicted for white respondents there was a 68% increase in the odds of paying *never late* vs. *late once*. For objective financial knowledge, a positive relationship was identified for financial knowledge questions one and three. When controlling for other variables, the model showed that for a correct response to financial knowledge questions one and three, a 36% and 28%, respectively increase in the odds of paying *never late* vs. *late once*. Positive relationships were identified for both financial self-efficacy and financial risk tolerance. A one unit increase in both the financial self-efficacy scale and the financial risk tolerance scale increased the odds an individual paying *never late* vs. *late once* by 12% and 9%, respectively.

When looking at environmental influences, the model showed a negative relationship for respondents identified as having one or more dependent children. When holding all else equal,

there was a decrease in the odds paying *never late* vs. *late once* of 36% for households reporting having one or more dependent children as compared to households reporting no dependent children. For individuals reporting a household income between $75,000 and $150,000, there was an increase in the odds of paying *never late* vs. *late once* by 24% over individuals with household incomes of less than $35,000.

As hypothesized, attributes of behavior measured by the responsible financial actions index was found to be predictive of on-time mortgage payment history. The model showed that when holding all else equal, a one unit increase in the responsible financial actions index increased the odds of paying *never late* vs. *late once* by 10%.

2009 Model 2 – Never Late vs. Late More than Once

Results for the 2009 model estimating the odds of *never late* versus *late more than once* are presented in Table 5.2. For the explanatory variables categorized under personal factors, the model predicted statistically significant relationships among age, race, certain areas of objective financial knowledge, subjective financial knowledge, financial self-efficacy, and financial risk tolerance. In terms of environmental influences, significant findings among respondent having one or more dependent children, annual household income, and Census region were identified and under attributes of behavior, the responsible financial actions index was significant related at the $p<0.001$ level.

When holding all else equal, the model predicted the odds of paying *never late* vs. *late more than once* was 41% lower for individuals age 25 to 34 as compared to individuals between 18 and 24. When comparing white respondents to those respondents identified as non-white, the model predicted that for white respondents there was a 77% increase in the odds of paying *never late* vs. *late more than once*. For objective financial knowledge, a positive relationship at the

$p<0.001$ level was identified for financial knowledge question one. When controlling for other variables, the model predicted that for a correct response to financial knowledge questions one, there was a 44% increase in the odds of paying *never late* vs. *late more than once*. A negative relationship was identified among financial knowledge question three. When holding all else equal, the model predicted that a correct response, would decrease the odds of paying *never late* vs. *late more than once* 11%. For subjective knowledge, the model predicted that a one unit increase in the subjective knowledge scale would decrease the odds of paying *never late* vs. *late more than once* by 6%. Positive relationships were identified for both financial self-efficacy and financial risk tolerance. A one unit increase in both the financial self-efficacy scale and the financial risk tolerance scale increased the odds an individual paying *never late* vs. *late more than once* by 23% and 36%, respectively.

When looking at environmental influences, the model predicted a negative relationship for respondents identified as having one or more dependent children. When holding all else equal, there was a decrease in the odds paying *never late* vs. *late more than once* of 39% for households reporting having one or more dependent children as compared to households reporting no dependent children. For individuals reporting a household income between $75,000 and $150,000, there was an increase in the odds of paying *never late* vs. *late more than once* by 93% over individuals with household incomes of less than $35,000. When comparing Census regions, the model showed an increase in the odds of paying *never late* vs. *late more than once* of 22% and 19% for individuals living in the Midwest Region and West Region respectively when compared respondents living in the South Region.

Consistent with the results identified in the 2009 Model 1, attributes of behavior measured by the responsible financial actions index was found to be predictive of on-time

mortgage payment history. When holding all else equal, the model predicted that a one unit increase in the responsible financial actions index increased the odds of paying *never late* vs. *late more than once* by 28%.

Table 5.2 *2009 Multinomial Logistic Regression Results Predicting On-Time Mortgage Payments*

	2009 Model 1 Never late vs late once			2009 Model 2 Never late vs late more than once		
	(N=6,784)			(N=7,302)		
Variable	B	SE b	Odds-Ratio	b	SE b	Odds-Ratio
Intercept	-0.07	0.31	-	-1.92	0.28	-
Personal Factors						
Male	-0.14	0.09	0.87	-0.15	0.08	0.87
Female (reference group)	-	-	-	-	-	-
Age 18 to 24 (reference group)	-	-	-	-	-	-
Age 25 to 34	-0.65**	0.19	1.92	-0.53*	0.24	0.59
Age 35 to 44	0.58**	0.18	1.78	-0.43	0.21	0.65
Age 45 to 54	0.45*	0.18	1.57	-0.56	0.22	0.57
Age 55 to 64	0.59***	0.20	1.81	-0.51	0.22	0.60
White	0.52***	0.09	1.68	0.57**	0.08	1.77
Non-white (reference group)	-	-	-	-	-	-
Compound interest question	0.31**	0.12	1.36	0.36***	0.09	1.44
Inflation question	0.18	0.10	1.19	0.03	0.09	1.03
Bond pricing question	0.25*	0.10	1.28	-0.12**	0.08	0.89
Mortgage question	-0.05	0.13	0.95	-0.77	0.11	0.94
Diversification question	0.08	0.09	1.08	-0.06	0.11	1.06
Subjective Financial knowledge	-0.06	0.03	0.85	-0.14*	0.04	0.94
Financial self-efficacy	0.11***	0.03	1.12	0.20***	0.02	1.23
Financial risk tolerance	0.09***	0.02	1.09	0.10***	0.02	1.36
Environmental influences						
Married	0.11	0.10	1.11	0.08	0.09	1.29
Unmarried (reference group)	-	-	-	-	-	-
No dependent children (reference group)	-	-	-	-	-	-
One or more dependent children	-0.05***	0.10	0.64	-0.49***	0.08	0.61
Less than college (reference group)						
Some college	-0.03	0.10	0.97	0.15	0.08	1.02
College education	0.16	0.10	1.18	0.16	0.11	1.18

Graduate education	0.26	0.18	1.30	0.41*	0.16	1.51
Income less than 35K (reference group)	-	-	-	-	-	-
Income 35K to 50K	0.02	0.14	1.02	0.05	0.11	1.05
Income 50K to 75K	0.08	0.14	1.09	0.31**	0.11	1.37
Income 75K to 150K	0.22**	0.14	1.24	0.66***	0.12	1.93
MW Region	0.18	0.12	1.20	0.20*	0.09	1.22
NE Region	0.09	0.13	1.09	0.09	0.11	1.10
West Region	0.11	0.11	1.12	0.18**	0.13	1.19
South Region (reference group)	-	-	-	-	-	-
Responsible Financial Actions (Index)	0.09***	0.03	1.10	0.25***	0.02	1.28

Note. Variables and measurements came from the 2009, 2012, and 2015 NFCS surveys (FINRA Investor Education Foundation, 2017)
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

2012 Model 1 – Never Late vs. Late Once

The 2012 Model 1 estimated the odds of *never late* vs. *late once*. Findings for this model are presented Table 5.3. Under personal factors, the model predicted statistically significant relationships among age, objective financial knowledge, subjective financial knowledge, and financial self-efficacy. In terms of environmental influences, the model only predicted one significant relationship which was among respondents identified as having one or more dependent children.

As a personal factor, age, across all age categories, was found to be statistically significant at the $p<0.001$ level. When holding all else equal, the odds of paying *never late* vs. *late once* was 105% higher for respondents age 25 to 34, 141% higher for respondents age 35 to 44, and 140% higher for respondents 45 to 54, and 238% higher for respondents 55 to 64 as compared to individuals between 18 and 24. For objective financial knowledge, a positive relationship was identified for financial knowledge questions one and two. When controlling for

other variables, the model predicted that a correct response to financial knowledge questions one and two, would increase the odds of paying *never late* vs. *late once* by 63% and 51% respectively. The model predicted a negative relationship for financial knowledge question three. When holding all else equal, a correct response to financial knowledge question three, would decrease the odds of paying *never late* vs. *late once* by 31%. A positive relationship was identified for financial self-efficacy. The model predicted that one unit increase in the financial self-efficacy scale increased the odds an individual paying *never late* vs. *late once* by 22%.

When looking at environmental influences, the model showed a negative relationship for respondents identified as having one or more dependent children. When holding all else equal, there was a decrease in the odds paying *never late* vs. *late once* of 33% for households reporting having one or more dependent children as compared to households reporting no dependent children.

2012 Model 2 – Never Late vs. Late More than Once

Results for the 2012 model estimating the odds of paying *never late* vs *late more than once* are presented in Table 5.3. In terms of variables categorized as personal factors, the model predicted statistically significant relationships among race, certain areas of objective financial knowledge, subjective financial knowledge, financial self-efficacy, and financial risk tolerance. In terms of environmental influences, having one or more dependent children and household income were significant and in terms of attributes of behavior, the responsible financial actions index was significantly related to the target outcome at the $p<0.001$ level.

In terms of personal factors, when comparing white respondents to those respondents identified as non-white, the model predicted that for white respondents there was a 110% increase in the odds of paying *never late* vs. *late more than once*. For objective financial

knowledge, a positive relationship at the $p<0.001$ level was identified for financial knowledge question one, two, and five. When holding all else equal, the model predicted that a correct response to financial knowledge questions one, two, and three, would increase in the odds of paying *never late* vs. *late more than once* by 63%, 38%, and 53%, respectively. For subjective knowledge, the model predicted that a one unit increase in the subjective knowledge scale would decrease in the odds of paying *never late* vs. *late more than once* by 12%. Positive relationships were identified for both financial self-efficacy and financial risk tolerance. A one unit increase in both the financial self-efficacy scale and the financial risk tolerance scale increased the odds an individual paying *never late* vs. *late more than once* by 26% and 20%, respectively.

When looking at environmental influences, the model predicted a negative relationship for respondents identified as having one or more dependent children. When holding all else equal, there was a decrease in the odds paying *never late* vs. *late more than once* of 46% for households reporting having one or more dependent children as compared to households reporting no dependent children. For individuals reporting a household income between $75,000 and $150,000, there was an increase in the odds of paying *never late* vs. *late more than once* by 79% over individuals with household incomes of less than $35,000.

Consistent with the results identified in the 2009 Model 1 and Model 2, attributes of behavior measured by the responsible financial actions index were found to be statistically significant at the $p<0.001$ level. The model predicted that when holding all else equal, a one unit increase in the responsible financial actions index increased the odds of paying *never late* vs. *late more than once* by 12%.

Table 5.3 *2012 Multinomial Logistic Regression Results Predicting On-Time Mortgage Payments*

	2012 Model 1 Never late vs late once (N=4,708)			2012 Model 2 Never late vs late more than once (N=5,090)		
Variable	b	SE b	Odds-Ratio	B	SE b	Odds-Ratio
Intercept	0.96	0.37		-2.20	0.34	
Personal Factors						
Male	-0.10	0.10	0.90	-0.07	0.09	0.93
Female (reference group)	-	-	-	-	-	
Age 18 to 24 (reference group)	-	-	-	-	-	-
Age 25 to 34	0.72***	0.20	2.05	0.13	0.21	1.14
Age 35 to 44	0.88***	0.21	2.41	0.19	0.21	1.21
Age 45 to 54	0.86***	0.21	2.40	0.02	0.21	1.02
Age 55 to 64	1.22***	0.23	3.38	0.05	0.22	1.05
White	0.18	0.11	1.19	0.74***	0.09	2.10
Non-white (reference group)						
Compound interest question	0.49***	0.12	1.63	0.49***	0.10	1.63
Inflation question	0.41***	0.12	1.51	0.33***	0.09	1.38
Bond pricing question	-0.37***	0.11	0.69	-0.09	0.09	0.91
Mortgage question	0.03	0.15	1.02	-0.12	0.13	0.89
Diversification question	0.22*	0.11	1.25	0.42***	0.09	1.53
Subjective financial knowledge	-0.13*	0.05	0.88	-0.13***	0.04	0.88
Financial self-efficacy	0.20***	0.04	1.22	0.23***	0.03	1.26
Financial risk tolerance	0.02	0.02	1.02	0.18***	0.02	1.20
Environmental influences						
Married	0.15	0.12	1.16	0.028	0.10	1.03
Unmarried (reference group)	-	-	-	-	-	-
No dependent children (reference group)	-	-	-	-	-	-
One or more dependent children	-0.56***	0.12	0.57	-0.61***	0.10	0.54
Less than college (reference group)	-	-	-	-	-	-
Some college	-0.34	0.13	0.71	-0.10	0.10	0.91
College education	-0.11	0.15	0.89	0.05	0.12	1.05
Post graduate degree	-0.12	0.19	0.89	0.30	0.17	1.35
Income less than 35K (reference group)	-	-	-	-	-	-
Income 35K to 50K	-0.24	0.18	0.79	-0.11	0.14	0.89

Income 50K to 75K	-0.07	0.16	0.93	0.21	0.13	1.23
Income 75K to 150K	0.33	0.17	1.39	0.58***	0.14	1.79
MW region	0.22	0.14	1.25	0.25*	0.11	1.28
NE region	0.01	0.14	1.00	-0.16	0.12	0.86
West region	0.02	0.13	1.02	0.24*	0.11	1.27
South region (reference group)	-	-	-	-	-	-
Responsible financial actions index	0.01	0.03	1.00	0.12***	0.02	1.12

Note. Variables and measurements came from the 2009, 2012, and 2015 NFCS surveys (FINRA Investor Education Foundation, 2017).
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

2015 Model 1 – Never Late vs. Late Once

The 2015 Model 1 estimated the odds of *never late* vs. *late once*. Findings for this model are presented Table 5.4. Under personal factors, the model predicted statistically significant relationships among gender, age, race objective financial knowledge, subjective financial knowledge, and financial self-efficacy. In term of environmental influences, the model predicted significant findings among having one or more dependent children, household income, and Census region. A negative relationship was identified among gender. When holding all else equal, the odds of paying *never late* vs. *late once* were 29% lower for males as compared to females. Age, across all age categories, was found to be significant. When holding all else equal, the odds of paying *never late* vs. *late once* was 55% higher for respondents age 25 to 34, 129% higher for respondents age 35 to 44, and 173% higher for respondents 45 to 54, and 321% higher for respondents 55 to 64 as compared to individuals between 18 and 24. When comparing white respondents to those respondents identified as non-white, the model predicted for white respondents there was a 29% increase in the odds of paying *never late* vs. *late once*. For objective financial knowledge, positive relationships were identified for financial knowledge questions one, two, and three. When controlling for other variables, the model showed that for a

correct response to financial knowledge questions one, two and three, there was a 88%, 45%, and 38% increase, respectively, in the odds of paying *never late* vs. *late once*. For subjective knowledge, the model predicted that a one unit increase in the subjective knowledge scale would decrease in the odds of paying *never late* vs. *late once* by 23%. A positive relationship was identified for financial self-efficacy. A one unit increase in the financial self-efficacy scale, increased the odds an individual paying *never late* vs. *late once* by 18%.

In terms of environmental influences, the model predicted a negative relationship for among having one or more dependent children. When holding all else equal, there was a decrease in the odds paying *never late* vs. *late once* of 45% for households reporting having one or more dependent children as compared to households reporting no dependent children. Under income, when compared to individuals reporting household incomes of less than $35,000, there was an increase in the odds of paying *never late* vs. *late once* of 18% for or individuals reporting a household income between $35,000 and $50,000, 100% for individuals reporting household incomes between $50,000 and $75,000, and 134% for individuals reporting household incomes between $75,000 and $150,000. When comparing Census regions, the model predicted an increase in the odds of paying *never late* vs. *late once* 18% for individuals living in the Midwest Region when compared to respondents living in the South Region.

2015 Model 2 – Never Late vs. Late More than Once

Results for the 2015 model estimating the odds of paying *late once* vs. *late more than once* are presented in Table 5.4. Among variables categorized as personal factors, the model predicted statistically significant relationships among gender, age, race, objective financial knowledge, subjective financial knowledge, and financial self-efficacy. Among variables identified as environmental influences, having one or more dependent children, marital status,

and household income were found to be significantly related to on-time mortgage payment history. As an attribute of behavior, the responsible financial actions index was found to be significant at the $p<0.001$ level.

A negative relationship was identified among gender. When holding all else equal, the odds of paying *never late* vs. *late more than once* were 27% lower for males as compared to females. Age was found to be significant across several categories. When holding all else equal, the odds of paying *never late* vs. *late more than once* was 54% higher for respondents age 35 to 44, and 48% higher for respondents 45 to 54, and 94% higher for respondents 55 to 64 as compared to individuals between 18 and 24. When comparing white respondents to those respondents identified as non-white, the model predicted that for white respondents there was a 44% increase in the odds of paying *never late* vs. *late more than once*. For objective financial knowledge, positive relationships were identified for financial knowledge questions one, two, and three. When controlling for other variables, the model predicted that for a correct response to financial knowledge questions one, two and three, there was an 78%, 74%, and 55% increase, respectively, in the odds of paying *never late* vs. *late more than once*. For subjective knowledge, the model predicted that a one unit increase in the subjective knowledge scale would decrease the odds of paying *never late* vs. *late more than once* by 24%. A positive relationship was identified for financial self-efficacy. A one unit increase in the financial self-efficacy scale, increased the odds an individual paying *never late* vs. *late more than once* by 25%.

In terms of environmental influences, the model predicted a negative relationship among respondents identified as married. When holding all else equal, there was a decrease in the odds of paying *never late* vs. *late more than once* of 21% for respondents who reported married as compared to those respondents who reported unmarried. As in all previous models, the current

model showed a negative relationship was among having one or more dependent children. When holding all else equal, there was a decrease in the odds paying *never late* vs. *late more than once* of 50% for households reporting having one or more dependent children as compared to households reporting no dependent children. For household income, when compared to individuals reporting household incomes of less than $35,000, there was an increase in the odds of paying *never late* vs. *late more than once* of 56% for or individuals reporting a household income between $35,000 and $50,000, 45% for individuals reporting household incomes between $50,000 and $75,000, and 100 for individuals reporting household incomes between $75,000 and $150,000.

Consistent with the results identified in the 2009 Model 1 and Model 2, and the 2012 Model 2, attributes of behavior measured by the responsible financial actions index was found to be statistically significant at the $p<0.001$ level. The model predicted that when holding all else equal, a one unit increase in the responsible financial actions index increased the odds of paying *never late* vs. *late more than once* by 32%.

Table 5.4 *2015 Multinomial Logistic Regression Results Predicting On-Time Mortgage Payments*

	2015 Model 1 Never late vs. late once (N=5,553)			2015 Model 2 Never late vs. late more than once (N=5,675)		
Variable	b	SE b	Odds-Ratio	b	SE b	Odds-Ratio
Intercept	1.96	0.40		-0.99	0.33	-
Personal Factors						
Male	-0.34**	0.10	0.71	-0.31***	0.09	0.73
Female (reference group)	-	-	-	-	-	-
Age 18 to 24 (reference group)	-	-	-	-	-	-
Age 25 to 34	0.43*	0.18	1.55	0.13	0.19	1.14
Age 35 to 44	0.83**	0.20	2.29	0.43*	0.20	1.54
Age 45 to 54	1.00**	0.20	2.73	0.39*	0.20	1.48
Age 55 to 64	1.44**	0.24	4.21	0.66**	0.22	1.94
White	0.25*	0.10	1.29	0.38***	0.10	1.44
Non-white (reference group)						
Compound interest question	0.63**	0.12	1.88	0.58***	0.11	1.78
Inflation question	0.37**	0.11	1.45	0.56***	0.10	1.74
Bond pricing question	-0.13	0.11	0.88	-0.05	0.11	0.95
Mortgage question	0.15	0.13	1.16	-0.03	0.12	0.97
Diversification question	0.32**	0.11	1.38	0.44***	0.10	1.55
Subjective Financial Knowledge	-0.27**	0.05	0.77	-0.27***	0.05	0.76
Financial self-efficacy	0.17**	0.04	1.18	0.22***	0.04	1.25
Financial Risk Tolerance	-0.01	0.02	1.00	0.02	0.02	1.02
Environmental influences						
Married	-0.03	0.12	1.88	-0.24*	0.11	0.79
Unmarried (reference group)	-	-	-	-	-	-
No dependent children (reference group)	-	-	-	-	-	-

One or more dependent children	-0.75***	0.12	1.45	-0.70***	0.11	0.50
Less than college (reference group)	-	-	-	-	-	-
Some college	-0.09	0.13	1.16	-0.01	0.11	0.99
College education	0.02	0.16	1.38	-0.03	0.14	0.97
Post graduate degree	0.08	0.19	0.77	-0.08	0.18	0.93
Income less than 35K (reference group)						
Income 35K to 50K	0.33*	0.16	1.18	0.45**	0.15	1.56
Income 50K to 75K	0.57***	0.16	1.00	0.37**	0.14	1.45
Income 75K to 150K	0.85***	0.16	2.34	0.69***	0.15	2.00
South Region (reference group)	-	-	-	-	-	-
MW Region	0.27*	0.14	1.18	0.21	0.12	1.23
NE Region	-0.07	0.14	1.00	-0.18	0.13	0.84
West Region	0.05	0.13	2.34	0.16	0.12	1.17
Attributes of Behavior						
Responsible Financial Actions Index	0.06	0.03	1.07	0.28***	0.03	1.32

Note. Variables and measurements came from the 2009, 2012, and 2015 NFCS surveys (FINRA Investor Education Foundation, 2017)
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Summary of Multinomial Logistic Regression Results and Findings

The results presented in this chapter provided findings related to the second research question originally presented in Chapter 1 of this dissertation. The question is as follows:

2. How are personal factors, environmental influences, and attributes of behavior measured by the responsible financial actions index, related to on-time mortgage payment history?

When evaluating the Multinomial Logistic regression results, key findings were identified findings across all three (2009, 2012, and 2015) years of data for both Model 1 and Model 2.

These results strongly align with the anticipated relationships predicted by the SCT Triadic Model framework.

Across all three years of data, the 2009, 2012, and 2015 Model 1 was conducted so to estimate the odds of paying a mortgage: *never late* vs *late once*. Contained in Table 5.5 is a summary of the findings for the hypothesized relationship first presented in Chapter 3. As predicted by the SCT Triadic Model, personal factors, environmental influences, and attributes of behavior were found to impact the outcome variable, on-time mortgage payment history. The most consistent findings in Model 1 were the relationships of financial self-efficacy and having one or more dependent children for predicting mortgage payment history, *never late* vs. *late once*. Across all three years of data, a statistically significant relationship between these two variables and mortgage payment history was identified.

Additional insight was gained when evaluating the results from Model 2. Across all three years (2009, 2012, and 2015), Model 2 estimated the odds of *never late* vs. *late more than once*. Table 5.6 summarizes the findings for the hypothesized relationships first presented in Chapter 3. The first two key findings, the relationships of financial self-efficacy and having one or more dependent children for predicting mortgage payment history, *never late* vs. *late more than once* were consistent with Model 1. They were found to have statistically significant relationships to mortgage payment history, *never late* vs. *late more than once*. Also consistent across all three years was the responsible financial actions index. For the current study, this result is of specific interest given that this is a new financial index, constructed for this dissertation. The SCT Triadic Model strongly supports the three key findings from Model 2.

Table 5.5 *Results of Hypothesized Relationships for Multinomial Logistic Regressions Predicting Never Late vs. Late Once*

Explanatory variables	Hypothesized relationships	2009 Model 1 (N=6,784)	2012 Model 1 (N=4,708)	2015 Model 1 (N=6,268)

Personal factors					
H1-H5	Personal demographics				
	Gender	Related	Reject	Reject	Accept (-)
	Age	Related	Conflicting	Accept (+)	Accept (+)
	Race	Related	Accept (+)	Reject	Accept (+)
	Objective financial knowledge	+	Conflicting	Conflicting	Limited
	Subjective financial knowledge	+	Reject	Reject	Reject
	Financial self-efficacy	+	Accept (+)	Accept (+)	Accept (+)
	Financial risk tolerance	+	Accept (+)	Reject	Reject
Environmental influences					
H6-H10	Marital status	Related	Reject	Reject	Reject
	One or more dependent children	Related	Accept (-)	Accept (-)	Accept (-)
	Educational attainment	+	Reject	Reject	Reject
	Income	+	Limited	Conflicting	Accept (+)
	Census region	Related	Reject	Reject	Limited
Attributes of behavior					
H11	Responsible financial actions	+	Accept (+)	Reject	Reject

It should be noted that inconsistent results among gender, age, race, and census region were found. In terms of personal factors, it was hypothesized that gender, age, and race would be related to mortgage payment history, *never late* vs. *late once*. Gender was found to be negatively related but only in the 2015 survey year. Age was consistently found to be related to mortgage payment history when estimating the odds of paying *never late* vs. *late once*. Across all three years of survey data a positive relationship was identified except for one. The 2009 model showed a negative relationship for respondents identified as being between age 25 to 34 while a positive relationship was identified among all other age categories. Race was found to be related but only in the 2009 (positive) and 2015 (positive) survey years. In terms of environmental influences, it was hypothesized that census region would be related. A relationship was identified

but only for the 2015 survey year and only for respondents identified as being geographically located in the Midwest region.

Further, a positive relationship between objective financial knowledge and the mortgage payment history (*never late* vs. *late once*) was hypothesized. There were conflicting and limited results related to this hypothesized relationship. In the current study, financial knowledge was measured by five individual financial questions. Financial knowledge question one related to compound interest and a positive relationship was identified across all three survey years. Financial knowledge question two related to inflation and this question was only significant in the 2012 and 2015 survey years. Financial knowledge question three related to bond pricing. This question was significantly related in two of the three survey years, but the direction of the relationship conflicted (positive for 2009 and negative for 2012). Financial knowledge question four related to mortgages and there were no significant relationships identified. Financial knowledge question five related to diversification and a positive relationship was identified for the 2015 survey year.

Table 5.6 *Results of Hypothesized Relationships for Multinomial Logistic Regressions Predicting Never Late vs. Late More than Once*

	Explanatory variables	Hypothesized relationships	2009 Model 2 (N=7,302	2012 Model 2 (N=5,090)	2015 Model 2 (N=5,675)
Personal factors					
H1-H5	Personal demographics				
	Gender	Related	Reject	Reject	Accept (-)
	Age	Related	Conflicting	Reject	Limited
	Race	Related	Accept (+)	Accept (+)	Accept (+)
	Objective financial knowledge	+	Conflicting	Limited	Limited
	Subjective financial knowledge	+	Reject	Reject	Reject
	Financial self-efficacy	+	Accept (+)	Accept (+)	Accept (+)

	Financial risk tolerance	+	Accept (+)	Accept (+)	Reject
Environmental influences					
H6-H10	Marital status	Related	Reject	Reject	Accept (-)
	One or more dependent children	Related	Accept (-)	Accept (-)	Accept (-)
	Educational attainment	+	Limited	Reject	Reject
	Income	+	Limited	Limited	Accept (+)
	Census region	Related	Limited	Limited	Reject
Attributes of behavior					
H11	Responsible financial actions	+	Accept (+)	Accept (+)	Accept (+)

As compared to the first model, the hypothesized relationships were more consistent when predicting *never late* vs. *late more than once* but a few inconsistencies should still be noted. In terms of personal factors, it was hypothesized that gender and age would be related to mortgage payment history, *never late* vs. *late once more than once*. Gender was found to be negatively related but only in the 2015 survey year. Age was found to be related to mortgage payment history, but the results conflicted across age categories and survey years. The 2009 model showed a negative relationship for respondents identified as being between the ages of 25 and 34, there were no significant findings related to age identified for the 2012 survey year, and for 2015 positive relationships between age and mortgage payment history were identified among the three oldest age categories. In terms of environmental influences, it was hypothesized that census region would be related. Positive relationships were identified but only for the 2009 and 2012 survey years and only for respondents identified as being geographically located in the Midwest region or West regions.

Further, a positive relationship between objective financial knowledge and the mortgage payment history (*never late* vs. *late more than once*) was hypothesized. There were conflicting and limited results related to this hypothesized relationship. In the current study, financial

knowledge was measured by five individual financial questions. Financial knowledge question one related to compound interest and a positive relationship was identified across all three survey years. Financial knowledge question two related to inflation and this question was only significant in the 2012 and 2015 survey years. Financial knowledge question three related to bond pricing. This question was only significantly related to mortgage payment history in the 2009 survey, but the direction of the relationship was negative. Financial knowledge question four related to mortgages and there were no significant relationships identified. Financial knowledge question five related to diversification and a positive relationship was identified for the 2012 and 2015 survey years.

Chapter 6 - Discussion, Implications, Limitations, and Future Research

There were multiple objectives for this dissertation. The first objective was to construct a reliable and valid index that could be used to describe a set of recommended responsible financial actions recommended by previous research. Second, this research aimed to empirically explore explanatory variables organized by personal factors and environmental influences as determinants of the responsible financial actions index. The final objective was to examine the predictive value of the explanatory variables organized by personal factors, environmental influences, and attributes of the behavior measured by the responsible financial actions index on on-time mortgage payment history as a financial outcome.

The statistical relationships between these constructs were examined through a series of ordinary least squares regression analyses and multinomial logistic regression analyses. The findings support the theoretical framework developed and the results confirmed many of the hypothesized relationships. Financial self-efficacy, having one or more dependent children, and the responsible financial actions index were found to be the only three variables that had consistent predictive value across the 2009, 2012, and 2015 models when comparing *never late* vs. *late more than once*. It could be argued that *late more than once*, is a stronger indicator of financial distress or financial instability as compared to *late once*. When isolated, the responsible financial actions index appears to provide consistent predictive value for paying a mortgage *late more than once*, but it does not capture larger economic factors that may negatively contribute to a family's ability to pay on time.

According to the 2017 Report on the Economic Well-Being of U.S. Households by the Federal Reserve, the inability to pay bills may sign of economic vulnerability but understanding

the multitude of reasons behind these types of negative financial outcomes is complex (Board of Governors of the Federal Reserve System, 2017). The *Financial Diaries: How American Families Cope in a World of Uncertainty* (Morduch & Schneider, 2017) captures how American families cope with financial challenges. For many families, financial insecurity is interwoven with inequalities of income and wealth (Morduch & Schneider, 2017). The authors concluded that many of the financial challenges experienced by families are outside of their control and financial shortfalls can often be attributed to larger economic changes in society (Morduch & Schneider, 2017). The authors acknowledge personal responsibility and the need for individuals to make better choices but recognize an economic system that is often fundamentally unfair (Morduch & Schneider, 2017).

In support of this research and the responsible financial actions index, the authors describe the importance of small steps. They explain how small steps and interventions can at times have big results due to interconnections (Morduch & Schneider, 2017, p.178). These efforts can meaningfully enhance greater financial stability for families who are struggling (Morduch & Schneider, 2017, p.178). The 2017 Report on the Economic Well-Being of U.S. Households by the Federal Reserve reported that 22% of adults expected to forgo payment on some of their bills in the month of the survey and one-third of the 22% said that their rent, mortgage, or utility bills would be left at least partially unpaid. (Board of Governors of the Federal Reserve System, 2017).

Discussion of Research Findings

Despite a large body of research on financial behavior, little research has been conducted on the responsible financial actions associated with personal financial responsibility. The analyses reported here adapted a widely used behavioral model, Social Cognitive Theory (SCT)

(Bandura, 1986) as a theoretical framework to explore responsible financial actions and mortgage payment outcomes. The theoretical framework provided a logical approach for variable choice and directed the hypothesized empirical relationships. Most importantly, the theory provided a framework for understanding the differences between financial actions measured by the responsible financial actions index and financial outcomes measured by on-time mortgage payment history. In the current study, the distinction between financial actions and financial outcomes provided clarity and a depth of understanding related to the intricacies of financial behavior that has not always been demonstrated in previous research.

The responsible financial actions index was constructed as a composite measure for the most fundamental responsible financial actions recommended by financial professionals. As compared to other commonly explored composite financial measures, this index is distinctly different in several ways. It is limited to a single sub-construct of the SCT Triadic Model, it has strong predictive value, and it has useful practical application.

Results of the OLS regressions provided valuable insight into the key predictors for the responsible financial actions index. Derived from SCT, variables representing both personal factors and environmental influences were found to be significant predictors of responsible financial actions. For example, personal factors such as age, and subjective financial knowledge, financial self-efficacy, and financial risk tolerance were all positive determinants for the responsible financial actions index. Objective financial knowledge had limited predictive value. It is clear to see how these basic inherent characteristics can impact a respondent's score, but it should be noted, these characteristics are often difficult or impossible to change.

In addition to personal factors, several environmental influences were found to be predictive of the index. Having one or more dependent children, educational attainment, marital

status, income, and Census region also impact an individual's score. Individuals have more control over their environment but for many of these factors, there is still much effort needed to change them.

The findings for the Multinomial Logistic regression models supported the proposed theoretical framework and provided great insight into the factors associated with on-time mortgage payment history. Only three variables, one personal factor, one environmental influence, and one attribute of behavior were consistently predictive across all three years of data.

In terms of personal factors, financial self-efficacy was predictive of on-time mortgage payment history. The results related to financial self-efficacy are of specific interest given that self-efficacy is a primary construct in SCT as it represents an individual's perception of external factors. It makes practical sense that an individual's perception of financial control could be valuable when managing day-to-day financial responsibilities. Across all three years of data, financial self-efficacy was found to be a significant predictor of on-time mortgage payment history when compared to both paying late once and paying late more than once.

The most concerning result was identified under environmental influences. For respondents reporting having one or more dependent children, the model showed a negative relationship between having one or more dependent children and on-time mortgage payment history. This group appears to be at the greatest risk for paying late once and for paying late more than once. These results were consistent across all three years, supporting a heightened need for awareness. Paying late on a mortgage can cause significant financial distress, ultimately leading to economic hardship. For families having one or more dependent children, a stressful

financial situation can be particularly challenging. Financial stress has the potential to negatively impact the overall health of the family unit.

In terms of attributes of behavior, two unique contributions of this dissertation are the construction of the responsible financial actions index and its use as a determinant for on-time mortgage payment history. As stated, the theoretical framework supporting this study clearly distinguishes between actions and outcomes and further explains how personal factors and environmental influences work together to impact actions and outcomes. The responsible financial actions index was found to have significant predictive value across all three years of data, when comparing *never late* to *late more than once*. This finding is of specific interest given that paying *late more than once* as compared to paying *late once* could indicate a higher level of economic vulnerability (Board of Governors of the Federal Reserve System, 2017).

It is also important to note that individuals have more control over actions as compared to personal factors and environmental influences. The knowledge that basic responsible financial actions are predictive of on-time mortgage payment history (much in the same way as knowledge, education, and income) can be of practical value for consumers. In addition, it is important to note that previously identified determinants of positive financial behaviors became less predictive in the current model. For example, limited or conflicting results were found for educational attainment, objective financial knowledge, and income. Understanding that the performance of fundamental financial actions reduces the significance of more traditional important financial factors can be interpreted as positive news for consumers. For example, understanding that generally, there is a positive relationship between higher levels of educational attainment and financial outcomes is important, but for many consumers, a higher educational level may not be easily achievable. Conversely, the financial actions represented in the

responsible financial actions index are more accessible to consumers and can be achieved with much less effort than a higher level of education.

Practical Implications

The findings in this dissertation have important practical implications for financial counselors, educators, and professionals. Unlike other financial constructs, consumers have greater control over the financial actions represented in the index. Understanding the correlation between the actions in the index and mortgage payment outcomes can be financially beneficial for consumers. It should also be noted, that the responsible financial actions index can be applied to all consumers, regardless of socioeconomic status.

The practical application of the index is consistent with Maslow's Hierarchy of Needs motivational theory, where higher level needs cannot be obtained until lower level needs are satisfied (Maslow, 1943). For example, if a financial counselor is working with an individual who has a low score on the responsible financial actions index, the counselor may want to avoid counseling them on comparing interest rates and focus only on improving the responsible financial actions index score which is more representative of lower level needs. This approach would fit well with an overall financial planning approach to assure all areas of finance are considered. Conversely, higher level financial concepts could be introduced for those individuals identified as having a high responsible financial actions index score. For example, a counselor may want to counsel a consumer with a high index score on appropriate debt levels. Additionally, for financial counselors and coaches, the index could serve as a useful measure to help determine the appropriate time for introducing more complex financial topics.

For financial educators, the role of financial self-efficacy as a determining factor of on-time mortgage payment history presents tremendous opportunities. The results of this

dissertation should encourage educators to work towards identifying new pedagogical approaches for improving financial self-efficacy in the classroom. Best practices in financial education should focus on developing curriculum designed to improve self-efficacy. As supported by this research, it is clear to see how actions and ability are related. Educators are well positioned to improve financial self-efficacy by providing students with opportunities to participant in financial activities that require financial actions.

Finally, for financial professionals in the mortgage industry, the findings in this research could be used to support the need for counseling services for new mortgage applicants. Beyond traditional financial advice for new mortgage applicants, this index could be used by counselors to educate new mortgage applicants about the importance of maintaining a high index score and the related fact that a higher score means that a more comprehensive financial plan is in place.

Limitations of the Current Study

The current study has several limitations worth noting. First, financial knowledge, financial self-efficacy, and financial risk tolerance were all measured at the time the data was collected, whereas responsible financial actions and on-time mortgage payment history are prior financial actions and outcomes. This could imply a possible intertemporal issue suggesting that the positive or negative financial action or outcomes could have potentially influenced risk tolerance or financial self-efficacy reports. Second, the findings in this dissertation are based on cross-sectional data, making it difficult to identify any causal pathways in terms of responsible financial actions and on-time mortgage payment history.

Another limitation of this dissertation relates to the respondents' interpretation of the mortgage payment history question. Based on the year of the questionnaire (2009, 2012, or 2015), the mortgage payment question asked respondents to disclose the number of times they

paid late over a given time frame. How this question was interpreted could have easily varied from one respondent to another. For example, for some respondents, late could have been interpreted as just one day late, compared to others who may not have considered a payment late until after a late fee was assessed. A possible third interpretation is related to how a late payment is defined and reflected on a credit report. Respondents with this understanding, may not have considered a mortgage payment late until it was 30 days or beyond.

Recommendations for Future Research

The findings in this study present several opportunities for future research. First, this dissertation was limited to cross-sectional data of non-retired individuals with incomes below $150,000. Future studies using longitudinal data would afford researchers the opportunity to observe changes in financial actions and outcomes over time. Secondly, this study excluded the retired population. Fannie Mae's Housing Insights research found that homeowners age 65-69 in 2015 were 10% more likely to have a mortgage than homeowners of the same age in 2000 (Fannie Mae, 2017). Research investigating the factors related to on-time mortgage payment history among the retired population could provide valuable insight among this population.

Building on the findings in this study, future research applying the framework developed in this dissertation to other financial outcomes such as on-time credit card payments could provide additional support for the validity and reliability of the responsible financial actions index. Beyond different populations of interest and other financial constructs, there is a need for applicable research related to the implementation of the index in a practical setting. Research exploring motivational theories and best practices for how to help consumers increase their index score is needed.

Finally, research related to improving financial self-efficacy among low-income populations could help to direct the conversation towards one of actions and ability, as compared to knowledge and literacy. While the latter should not be thought of as less important, the feasibility for improving responsible financial actions through financial self-efficacy is a more practical direction and comparatively as effective.

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Appendix A - Sample Frequency and Coding

The SAS System

The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
employed	28146	0.7048248	0.4561296	0	1.0000000
homeowner	27808	0.6245685	0.4842428	0	1.0000000
mortgage	17199	0.6849235	0.4645598	0	1.0000000
incomecats	28146	4.2141334	2.0538186	1.0000000	8.0000000
agecats	28146	3.5585163	1.5778053	1.0000000	6.0000000

The SAS System

The FREQ Procedure

employed	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	8308	29.52	8308	29.52
1	19838	70.48	28146	100.00

homeowner	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	10440	37.54	10440	37.54
1	17368	62.46	27808	100.00

Frequency Missing = 338

mortgage	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	5419	31.51	5419	31.51
1	11780	68.49	17199	100.00

Frequency Missing = 10947

incomecats	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	3589	12.75	3589	12.75
2	3424	12.17	7013	24.92
3	3455	12.28	10468	37.19
4	4505	16.01	14973	53.20
5	5394	19.16	20367	72.36
6	3296	11.71	23663	84.07
7	2821	10.02	26484	94.10
8	1662	5.90	28146	100.00

agecats	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	3285	11.67	3285	11.67
2	4934	17.53	8219	29.20
3	5400	19.19	13619	48.39
4	5907	20.99	19526	69.37
5	4543	16.14	24069	85.51
6	4077	14.49	28146	100.00

```
Libname finra 'C:\Users\Gloria\Box Sync\SAS DOCS';

data nfcs.gloria;
set nfcs.NFCSStateData101208;


*employment;
if a9 in (1:8) then do;
if a9 = <5 then employed=1; else employed =0;
end;

*homeowner;
if ea_1 in (1:2) then do;
if ea_1 = 1 then homeowner =1; else homeowner = 0;
end;

*has mortgage;
if e7 in (1:2)then do;
if e7 = 1 then mortgage =1; else mortgage = 0;
end;

*age;
if 6>=A3Ar_w>=1;
agecats=A3Ar_w;
```

```
if agecats  =     A3Ar_w      ;
if agecats  =1    then  age18to24   =1;   else  age18to24   =     0     ;
if agecats  =2    then  age25to34   =1;   else  age25to34   =     0     ;
if agecats  =3    then age35to44    =1;   else  age35to44   =     0     ;
if agecats  =4    then age45to54    =1;   else  age45to54   =     0     ;
if agecats  =5    then age55to64    =1    ;     else  age55to64   =     0
      ;
if agecats  =6 then age65plus =1    ;     else  age65plus   =     0     ;

*income;
if A8 in (1:8) then do;
incomecats=A8;
if incomecats = 1 or 2 or 3 then incomeless35 = 1; else incomeless35    = 0;
if incomecats = 4           then income35to50 = 1; else income35to50    = 0;
if incomecats = 5           then income50to75 = 1; else income50to75    = 0;
if incomecats = 6 or 7      then income75to150 = 1; else income75to150 = 0;
if incomecats = 8           then income150plus = 1; else income150plus = 0;
end;

proc means;
var employed homeowner mortgage incomecats agecats;
run;


proc freq;
table employed homeowner mortgage incomecats agecats;
run;
/*
```

Appendix B - Coding 2009

```
option obs=max;
option compress=yes;

libname finra 'C:\Users\Gloria\Box Sync\SAS DOCS';

data nfcs.gloria;
set nfcs.NFCSStateData101208;

**************************Sample
Characteristics*********************************;
*homeowner;
if ea_1 in (1:2);
if ea_1 then do;
if ea_1 = 1 then homeowner =1;
end;

*has mortgage;
if e7 in (1:2);
if e7 then do;
if e7 = 1 then mortgage =1; else mortgage = 0;
end;

*employed;
if a9 in (1:8);
if a9 then do;
if a9 = 1 or 2 or 3 or 4 or 5 then employed =1; else employed = 0;
end;


****************************Personal
Factors*******************************;

*race;
If a4a_new_w in (1:6);
If a4a_new_w in (1:6) then do;
white =a4a_new_w=1;
nonwhite=a4a_new_w =>2;
end;

*Gender;
if A3 =1 then male=1; else male=0;
if A3 = 2 then female=1; else female =0;

*age;
if 5>=A3Ar_w>=1;
agecats=A3Ar_w;
if    agecats     =     A3Ar_w      ;
if    agecats     =     1     then  age18to24   =     1     ;     else
      age18to24   =     0     ;
if    agecats     =     2     then  age25to34   =     1     ;     else
      age25to34   =     0     ;
if    agecats     =     3     then  age35to44   =     1     ;     else
      age35to44   =     0     ;
```

```
if    agecats     =     4     then  age45to54   =     1     ;     else
      age45to54   =     0     ;
if    agecats     =     5     then  age55to64   =     1     ;     else
      age55to64   =     0     ;

*risk tolerance;
if J1 in (1:10)then riskaversion = J1;

*financial know;
KNOW1=m6=1;
KNOW2=m7=3;
KNOW3=m8=2;
KNOW4=m9=1;
KNOW5=m10=2;

KNOW=sum(of KNOW1 KNOW2 KNOW3 KNOW4 KNOW5);

*subjective knowledge;
If M4 in (1:7) then subknow=m4;
if m4 in (98:99) then delete;


*financial efficacy;
if m1_1 in (1:7) then fineeff=m1_1;
if m1_1 in (98:99) then delete;

**************************************Environmental
Influences******************;
*dependent children;
if A11 in (1:6) then do;
if A11 =1 or A11 =2 or A11= 3 or A11= 4 then depchild = 1; else depchild = 0;
if A11 =5 or A11= 6 then nochild = 1; else nochild = 0;
end;
if A11 in (98:99) then delete;

*education;
if a5 in (1:5);
if a5 in (1:5) then do;
lesscollege = a5=1 or a5=2;
Somecollege = a5=3;
College= a5=4;
Graddegree=a5=5;
end;

*marital status;
if a6 in (1:5);
if a6 in (1:5) then do;
married=a6=1;
other=a6=2 or a6=3 or a6=4 or a6=5;
end;

*income;
if A8 in (1:7);
if A8 in (1:7) then do;
incomeless35 =A8=1 or a8=2 or A8=3;
income35to50 =A8=4;
income50to75 =A8=5;
```

```
income75to150 = A8=6 or A8=7;
end;

/*censusreg*/
if censusreg=1 then regne=1; else regne=0;
if censusreg=2 then regmw=1; else regmw=0;
if censusreg=3 then regs=1; else regs=0;
if censusreg=4 then regw=1; else regw=0;


*risk aversion;
if J1 in (1:10)then riskaversion = J1;

**************************Responsible Financial Actions Index
Variables*************************************;

*Spending less than income;
if J3 in (1:98) then do;
spendingless = J3 =1;
end;
if J3 in (99) then delete;

*covered by health insurance;
if H1 in (1:98) then do;
healthins = H1 = 1;
end;
if H1 in (99) then delete;


*emergency fund;
if J5 in (1:98);
if J5 in (1:98) then do;
emerfund =J5=1;
end;
if J8 in (99) then delete;

*calculate for retirement;
if J8 in (1:98);
if J8 in (1:98) then do;
calcforret =J8=1;
end;
if J8 in (99) then delete;

*employer retirement account;
if C1 in (1:98);
if C1 in (1:98) then do;
empretirement =C1=1;
end;
if C1 in (99) then delete;

*self retirement account;
if C4 in (1:98);
if C4 in (1:98) then do;
selfretirement =C4=1;
end;
if C4 in (99) then delete;
```

```
*creditreport;
if J11 in(1:98) then do;
creditreport=J11=1;
end;
if J11 in(99) then delete;

*creditscore;
if J12 in (1:98) then do;
creditscore=J12=1;
end;
if J12 in (99) then delete;

*Have checking account;
if B1 in(1:98) then do;
checking=B1=1;
end;
if B1 in (99) then delete;

*Have savings/CD/Money account;
if B2 in(1:2) then do;
savings=B2=1;
end;
if B2 in (99) then delete;


*financial responsibility;

finresp = spendingless + healthins +  creditreport + creditscore + calcforret
+ empretirement + selfretirement + checking + savings + emerfund ;

*mortgage payment;
if e15 in (1:3) then do;
if e15 = 1 then mortgagelate = 2;
if e15 = 2 then mortgagelate =3;
if e15 = 3 then mortgagelate = 1;
end;

if e15 in (1:3) then do;
if e15 = 1 then neverlate = 1; else neverlate = 0;
if e15 = 2 then lateonce = 1; else lateonce = 0;
if e15 = 3 then latemore = 1; else latemore = 0;
end;


end;
/*
Proc freq;
table employed homeowner mortgage;
run;


proc means;
var  mortgagelatenever mortgagelateonce mortgagelatemore employed homeowner
mortgage finresp spendingless healthins calcforret creditreport creditscore
empretirement checking savings emerfund selfretirement white nonwhite male
```

```
female age18to24 age25to34 age35to44 age45to54 age55to64 riskaversion subknow
fineeff know1 know2 know3 know4 know5
married other depchild nochild lesscollege somecollege College Graddegree
incomeless35 income35to50 income50to75 income75to150 regs regw regmw regne;
weight wgt_n2;
run;
*/
proc logistic descending;
where homeowner=1 and mortgage = 1 and employed = 1;
Class mortgagelate (ref=last);
model  mortgagelate = white male age25to34 age35to44 age45to54 age55to64
riskaversion fineeff subknow know1 know2 know3 know4 know5
married depchild somecollege College Graddegree income35to50 income50to75
income75to150 regw regmw regne finresp/ link=glogit;
weight wgt_n2;
run;

/*
proc corr alpha;
where homeowner=1 and mortgage =1;
var healthins creditreport creditscore  empretirement selfretirement
calcforret spendingless  savings checking emerfund;
run;


proc freq;
where employed=1;
table lifeins emerfund calcforret creditreport creditscore  empretirement
selfretirement;
run;



proc corr alpha;
where mortgage =1 and homeowner = 1;
var healthins renthomeins lifeins calcforret creditreport creditscore
empretirement selfretirement spendingless savings checking emerfund;
run;

proc corr alpha;
var healthins renthomeins lifeins empretirement checking savings ;
run;
```

Appendix C - Coding 2012

```
option obs=max;
option compress=yes;

libname finra 'C:\Users\Gloria\Box Sync\SAS DOCS';

data nfcs.gloria;
set nfcs.fcs;


**************************Sample
Characteristics*********************************;
*employment;
if a9 in (1:8) then do;
if a9 = <5 then employed=1; else employed =0;
end;


*homeowner;
if ea_1 in (1:2);
if ea_1 then do;
if ea_1 = 1 then homeowner =1;
end;

*has mortgage;
if e7 in (1:2);
if e7 then do;
if e7 = 1 then mortgage =1; else mortgage = 0;
end;

**************************2012 Personal
Factors*******************************;

*race;
If a4a_new_w in (1:6);
If a4a_new_w in (1:6) then do;
white =a4a_new_w=1;
nonwhite=a4a_new_w =>2;
end;

*Gender;
if A3 =1 then male=1; else male=0;
if A3 = 2 then female=1; else female =0;

*age;
if 5>=A3Ar_w>=1;
agecats=A3Ar_w;
if    agecats     =     A3Ar_w      ;
if    agecats     =     1     then  age18to24   =     1     ;     else
      age18to24   =     0     ;
if    agecats     =     2     then  age25to34   =     1     ;     else
      age25to34   =     0     ;
if    agecats     =     3     then  age35to44   =     1     ;     else
      age35to44   =     0     ;
```

```
if    agecats     =     4     then  age45to54   =     1     ;     else
      age45to54   =     0     ;
if    agecats     =     5     then  age55to64   =     1     ;     else
      age55to64   =     0     ;

*risk aversion;
if J1 in (1:10)then riskaversion = J1;

*financial know;
KNOW1=m6=1;
KNOW2=m7=3;
KNOW3=m8=2;
KNOW4=m9=1;
KNOW5=m10=2;

KNOW=sum(of KNOW1 KNOW2 KNOW3 KNOW4 KNOW5);

*subjective knowledge;
If M4 in (1:7) then confident=m4;
if m4 in (98:99) then delete;


*financial efficacy;
if m1_1 in (1:7) then fincap=m1_1;
if m1_1 in (98:99) then delete;

**************************************Environmental
Influences******************;
*dependent children;
if A11 in (1:6) then do;
if A11 =1 or A11 =2 or A11= 3 or A11= 4 then depchild = 1; else depchild = 0;
if A11 =5 or A11= 6 then nochild = 1; else nochild = 0;
end;
if A11 in (98:99) then delete;

*education;
if a5_2012 in (1:6);
if a5_2012 in (1:6) then do;
lesscollege = a5_2012=1 or a5_2012=2 or a5_2012=3;
Somecollege = a5_2012=4;
College= a5_2012=5;
Graddegree=a5_2012=6;
end;

*marital status;
if a6 in (1:5);
if a6 in (1:5) then do;
married=a6=1;
other=a6=2 or a6=3 or a6=4 or a6=5;
end;

*income;
if A8 in (1:7);
if A8 in (1:7) then do;
incomeless35 =A8=1 or a8=2 or A8=3;
income35to50 =A8=4;
income50to75 =A8=5;
```

```
income75to150 = A8=6 or A8=7;
end;

/*censusreg*/
if censusreg=1 then regne=1; else regne=0;
if censusreg=2 then regmw=1; else regmw=0;
if censusreg=3 then regs=1; else regs=0;
if censusreg=4 then regw=1; else regw=0;


*risk aversion;
if J1 in (1:10)then riskaversion = J1;

**************************Responsible Financial Behavior
Variables*************************************;

*Spending less than income;
if J3 in (1:3) then do;
spendingless = J3 =1;
end;
if J3 in (98:99) then delete;

*covered by health insurance;
if H1 in (1:2) then do;
healthins = H1 = 1;
end;
if H1 in (98:99) then delete;


*covered by renters or homeowners insurance (not in the 2012);



*emergency fund;
if J5 in (1:2);
if J5 in (1:2) then do;
emerfund =J5=1;
end;
if J8 in (98:99) then delete;

*calculate for retirment;
if J8 in (1:2);
if J8 in (1:2) then do;
calcforret =J8=1;
end;
if J8 in (98:99) then delete;

*employer retirement account;
if C1_2012 in (1:2);
if C1_2012 in (1:2) then do;
empretirement =C1_2012=1;
end;
if C1_2012 in (98:99) then delete;

*self retirement account;
if C4_2012 in (1:2);
if C4_2012 in (1:2) then do;
```

```
selfretirement =C4_2012=1;
end;
if C4_2012 in (98:99) then delete;


*creditreport;
if J11 in(1:2) then do;
creditreport=J11=1;
end;
if J11 in(98:99) then delete;

*creditscore;
if J12 in (1:2) then do;
creditscore=J12=1;
end;
if J12 in (98:99) then delete;

*Have checking account;
if B1 in(1:2) then do;
checking=B1=1;
end;
if B1 in (98:99) then delete;

*Have savings/CD/Money account;
if B2 in(1:2) then do;
savings=B2=1;
end;
if B2 in (98:99) then delete;


*financial responsibility;

finresp = spendingless + healthins + creditreport + creditscore +
empretirement + checking + savings + emerfund + calcforret + selfretirement ;

*mortgage payment;
if e15 in (1:3) then do;
if e15 = 1 then mortgagelate = 1;
if e15 = 2 then mortgagelate =3;
if e15 = 3 then mortgagelate = 2;
end;

if e15 in (1:3) then do;
if e15 = 1 then neverlate = 1; else neverlate = 0;
if e15 = 2 then lateonce = 1; else lateonce = 0;
if e15 = 3 then latemore = 1; else latemore = 0;
end;

proc means;
where mortgage = 1 and homwowner = 1 and employed = 1;
var  neverlate lateonce latemore finresp spendingless healthins calcforret
creditreport creditscore empretirement checking savings emerfund
selfretirement
white nonwhite male female age18to24 age25to34 age35to44 age45to54 age55to64
riskaversion fincap confident know1 know2 know3 know4 know5
 married other depchild nochild lesscollege somecollege College Graddegree
incomeless35 income35to50 income50to75 income75to150 regs regw regmw regne;
```

```
weight wgt_n2;
run;


proc corr alpha;
var healthins creditreport creditscore  empretirement spendingless  savings
checking emerfund calcforret selfretirement ;
run;


proc logistic ;
where homeowner=1 and mortgage = 1 and employed = 1;
Class mortgagelate (ref=last);
model  mortgagelate = white male age25to34 age35to44 age45to54 age55to64
riskaversion fincap confident know1 know2 know3 know4 know5
married depchild somecollege College Graddegree income35to50 income50to75
income75to150 regw regmw regne finresp/ link=glogit;
weight wgt_n2;
run;
```

Appendix D - Coding 2015

```
libname finra "C:\Users\Gloria Preece\Box Sync\SAS DOCS";
data nfcs;
set nfcs.nfcs2015;

**************************Sample
Characteristics*********************************;

*employment;
if a9 in (1:8) then do;
if a9 = <5 then employed=1; else employed =0;
end;

*homeowner;
if ea_1 in (1:2);
if ea_1 then do;
if ea_1 = 1 then homeowner =1; else homowner = 0;
end;

*has mortgage;
if e7 in (1:2);
if e7 then do;
if e7 = 1 then mortgage =1; else mortgage = 0;
end;


**************************Personal
Factors*****************************************;


*race;
If a4a_new_w in (1:6);
If a4a_new_w in (1:6) then do;
white =a4a_new_w=1;
nonwhite=a4a_new_w =>2;
end;*race;


*Gender;
if A3 =1 then male=1; else male=0;
if A3 = 2 then female=1; else female =0;

*age;
if 5>=A3Ar_w>=1;
agecats=A3Ar_w;
if    agecats     =     A3Ar_w      ;
if    agecats     =     1     then  age18to24   =     1     ;     else
      age18to24   =     0     ;
if    agecats     =     2     then  age25to34   =     1     ;     else
      age25to34   =     0     ;
if    agecats     =     3     then  age35to44   =     1     ;     else
      age35to44   =     0     ;
```

```
if    agecats     =     4     then  age45to54   =     1     ;     else
      age45to54   =     0     ;
if    agecats     =     5     then  age55to64   =     1     ;     else
      age55to64   =     0     ;

*risk aversion;
if J1 in (1:10)then riskaversion = J1;

*financial know;
KNOW1=m6=1;
KNOW2=m7=3;
KNOW3=m8=2;
KNOW4=m9=1;
KNOW5=m10=2;

KNOW=sum(of KNOW1 KNOW2 KNOW3 KNOW4 KNOW5);

*subjective knowledge;
If M4 in (1:7) then confident=m4;
if m4 in (98:99) then delete;

*financial capability;
if m1_1 in (1:7) then fincap=m1_1;
if m1_1 in (98:99) then delete;


*********************************environmental*********************************
*****;


*dependent children;
if A11 in (1:6) then do;
if A11 =1 or A11 =2 or A11= 3 or A11= 4 then depchild = 1; else depchild = 0;
if A11 =5 or A11= 6 then nochild = 1; else nochild = 0;
end;
if A11 in (98:99) then delete;

*education;
if a5_2015 in (1:7);
if a5_2015 in (1:7) then do;
lesscollege = a5_2015=1 or a5_2015=2 or a5_2015=3 ;
Somecollege = a5_2015=4 or a5_2015=5;
College= a5_2015=6;
Graddegree=a5_2015=7;
end;

*marital status;
if a6 in (1:5);
if a6 in (1:5) then do;
married=a6=1;
other=a6=2 or a6=3 or a6=4 or a6=5;
end;

*income;
if A8 in (1:7);
if A8 in (1:8) then do;
incomeless35 =A8=1 or a8=2 or A8=3;
```

```
income35to50 =A8=4;
income50to75 =A8=5;
income75to150 = A8=6 or A8=7;
end;

/*censusreg*/
if censusreg=1 then regne=1; else regne=0;
if censusreg=2 then regmw=1; else regmw=0;
if censusreg=3 then regs=1; else regs=0;
if censusreg=4 then regw=1; else regw=0;



*******************************FR
Scale*****************************************

*Spending less than income;
if J3 in (1:3) then do;
spendingless = J3 =1;
end;
if J3 in (98:99) then delete;

*covered by health insurance;
if H1 in (1:2) then do;
healthins = H1 = 1;
end;
if H1 in (98:99) then delete;

*emergency fund;
if J5 in (1:2);
if J5 in (1:2) then do;
emerfund =J5=1;
end;
if J8 in (98:99) then delete;

*calculate for retirment;
if J8 in (1:2);
if J8 in (1:2) then do;
calcforret =J8=1;
end;
if J8 in (98:99) then delete;

*calculate for retirment;
if J8 in (1:2);
if J8 in (1:2) then do;
calcforret =J8=1;
end;
if J8 in (98:99) then delete;

*employer retirement account;
if C1_2012 in (1:2);
if C1_2012 in (1:2) then do;

empretirement =C1_2012=1;
end;
if C1_2012 in (98:99) then delete;
```

```
*self retirement account;
if C4_2012 in (1:2);
if C4_2012 in (1:2) then do;
selfretirement =C4_2012=1;
end;
if C4_2012 in (98:99) then delete;

*Have checking account;
if B1 in(1:2) then do;
checking=B1=1;
end;
if B1 in (98:99) then delete;

*Have savings/CD/Money account;
if B2 in(1:2) then do;
savings=B2=1;
end;
if B2 in (98:99) then delete;

*Credit Awareness;
if j32 in (1:98)then do;
if j32 = 3 or j32 = 4 or j32 = 5 then aware =1;else aware = 0;

end;

*mortgage payment;
if e15_2015 in (1:3) then do;
if e15_2015 = 1 then mortgagelate = 2;
if e15_2015 = 2 then mortgagelate =3;
if e15_2015 = 3 then mortgagelate = 1;
end;

if e15_2015 in (1:3) then do;
if e15_2015 = 1 then neverlate = 1; else neverlate = 0;
if e15_2015 = 2 then lateonce = 1; else lateonce = 0;
if e15_2015 = 3 then latemore = 1; else latemore = 0;
end;

*financial responsibility;

finresp = aware + spendingless + healthins  + empretirement + checking +
savings + emerfund + calcforret + selfretirement ;

/*
proc means;
Where mortgage = 1 and homeowner = 1 and employed = 1;
var neverlate lateonce latemore finresp spendingless aware unaware healthins
emerfund calcforret empretirement selfretirement checking savings male female
white nonwhite age18to24 age25to34 age35to44 age45to54 age55to64 married
other lesscollege somecollege college graddegree depchild nochild
riskaversion know1 know2 know3 know4 know5 confident fincap
incomeless35 income35to50 income50to75 income75to150 regw regs regmw regne ;
run;

proc corr alpha;
var spendingless aware healthins emerfund calcforret empretirement
selfretirement checking savings ;
```

```
run;

*/

proc logistic descending ;
where homeowner=1 and mortgage = 1 and employed = 1 ;
Class mortgagelate (ref=last);
model  mortgagelate = white male age25to34 age35to44 age45to54 age55to64
riskaversion fincap confident know1 know2 know3 know4 know5
married depchild somecollege College Graddegree income35to50 income50to75
income75to150 regw regmw regne finresp/ link=glogit;
weight wgt_n2;
run;
```

Appendix E - 2015 NFCS Questionnaire

2015 National Financial Capability Study

State-by-State Survey Instrument

Note:

• Changes to the NFCS State-by-State survey are footnoted in this document. Footnotes are labeled with the year that the change was implemented (2015 or 2012).

Sample Characteristics:

• N ≈ 500 respondents per state (plus D.C.)

− Oversamples in California, Illinois, New York, and Texa

2015 NFCS State-by-State Survey Instrument - 2

Z) Thank you very much for participating in this research.

• Please be assured that all of your answers will be completely ANONYMOUS and CONFIDENTIAL. Therefore, please try to answer these questions as openly and honestly as possible.

A1a) [SECTION A: DEMOGRAPHICS & CLASSIFICATION QUESTIONS]

A2) Please enter your 5 digit home zip code.

[_____]

[EDIT: 00001-99998]

[LOAD ALL GEO INFORMATION TO DATA]

[CHECK TOTAL STATE QUOTA, IF FULL, TERMINATE & SKIP TO QTERM]

A3) What is your gender?

Male 1

Female.....2

A3a)2 What is your age?

[DROP DOWN MENU; PUNCH MATCHES AGE]

[13 13

14 14

15 15

16 16

17 17

18 18

19 19

20 20

…etc. …etc.

97 97

98 98

99 99

100 100

101 or older.....101

Prefer not to say ..... 999]

[IF Q.A3a = 13-17, 999 (REF), TERMINATE & SKIP TO QTERM]

2 2012: Changed from age ranges in 2009 to continuous years in 2012. Tracking comparisons can be made by coding

individual years into the age ranges used in 2009.

2015 NFCS State-by-State Survey Instrument - 3

A3b) [BUILDER: CREATE GENDER/AGE NET FROM Q's A3 & A3a:

Male 18-24.....1

Male 25-34.....2

Male 35-44.....3

Male 45-54 4

Male 55-64.....5

Male 65+.....6

Female 18-24 7

Female 25-34 8

Female 35-44 9

Female 45-54 10

Female 55-64 11

Female 65+ 12

CHECK GENDER/AGE QUOTA BY STATE, IF FULL, TERMINATE & SKIP TO QTERM]

A4)3 Which of the following best describes your race or ethnicity?

Select all that apply.

[M]

White or Caucasian.....1

Black or African-American.....2

Hispanic or Latino/a.....3

Asian 4

Native Hawaiian or other Pacific Islander.....7

American Indian or Alaska Native.....5

Other 6

Prefer not to say .....

2015 NFCS State-by-State Survey Instrument - 4

A4a)4 [BUILDER: PUNCH ETHNICITY

IF SINGLE RESPONSE:

IF Q.A4 = 1, PUNCH 1

IF Q.A4 = 2, PUNCH 2

IF Q.A4 = 3, PUNCH 3

IF Q.A4 = 4, PUNCH 4

IF Q.A4 = 7, PUNCH 4

IF Q.A4 = 5 or 6, PUNCH 5

IF MULTIPLE RESPONSES:

IF Q.A4 = 3, PUNCH 3

IF Q.A4 = 4 AND 7 ONLY, PUNCH 4

IF Q.A4 NE 3 OR (NE 4 AND 7 ONLY), PUNCH 5

White non-Hispanic 1

Black non-Hispanic.....2

Hispanic (any race).....3

Asian non-Hispanic.....4

Other non-Hispanic (American Indian, Other, 2+ ethnicities) 5

CHECK ETHNICITY QUOTA BY STATE, IF FULL, TERMINATE & SKIP TO QTERM]

[IF Q.A4 = 5, 7 (AMERICAN INDIAN, NATIVE HAWAIIAN), ASK; OTHERWISE SKIP TO Q.A5]

A30)

5 Do you currently live on or near an Indian reservation, Tribal community, or an Alaska Native community, village or corporation, or on Hawaiian Homelands?

Yes.....1

No 2

Prefer not to say 99

4 2015: Programming logic updated to correspond to changes to A4 (ethnicity).

5 2015: New question.

2015 NFCS State-by-State Survey Instrument - 5

A5)6,7 What was the highest level of education that you completed?

Did not complete high school 1

High school graduate – regular high school diploma 2

High school graduate – GED or alternative credential 3

Some college, no degree 4

Associate's degree.....5

Bachelor's degree.....6

Post graduate degree 7

Prefer not to say 99

[IF Q.A5 = 99 (REF), TERMINATE & SKIP TO QTERM]

[CHECK EDUCATION QUOTA BY STATE, IF FULL, TERMINATE & SKIP TO QTERM]

A6) What is your marital status?

Married.....1

Single 2

Separated.....3

Divorced.....4

Widowed/widower.....5

Prefer not to say 99

[IF Q.A6 = 99 (REF), TERMINATE & SKIP TO QTERM]

A7) Which of the following describes your current living arrangements?

I am the only adult in the household.....1

I live with my spouse/partner/significant other.....2

I live in my parents' home 3

I live with other family, friends, or roommates.....4

Prefer not to say 99

[IF Q.A7 = 99 (REF), TERMINATE & SKIP TO QTERM]

6 2012: Changed “high school graduate” into two separate categories (regular diploma and GED). Tracking comparisons

between 2012 and 2009 can be made by coding into 2009 categories.

7 2015: Changed “some college” and “college graduate” into three separate categories (“some college, no degree,”

“associate’s degree,” and “bachelor’s degree”). Minor wording changes (from “last year of education” and “post graduate

education” in 2012 to “highest level of education” and “post graduate degree” in 2015).

2015 NFCS State-by-State Survey Instrument - 6

A7a) [BUILDER: PUNCH MARITAL STATUS VARIABLE:

If Q.A6 = 1, PUNCH MARRIED

If Q.A6 = 2 – 5 AND Q.A7 = 2, PUNCH LIVING WITH PARTNER

If Q.A6 = 2 – 5 AND Q.A7 = 1, 3, or 4, PUNCH SINGLE

Married.....1

Living with partner 2

Single 3

If Q.A7a = 1, CVAR “spouse”

If Q.A7a = 2, CVAR “partner”

IF Q.A7a = 1 OR 2, CVAR “Does your household”

IF Q.A7a = 3, CVAR “Do you”]

A11)8 How many children do you have who are financially dependent on you [IF Q.A7a = 1 OR 2 INSERT:

or your [spouse/partner]]? Please include children not living at home, and step-children as well.

1 1

2 2

3 3

4 or more.....4

No financially dependent children.....5

Do not have any children 6

Prefer not to say 99

[IF Q.A11 = 99, TERMINATE & SKIP TO QTERM]

A8) What is your [IF Q.A7a = 1 OR 2) INSERT: household's] approximate annual income, including

wages, tips, investment income, public assistance, income from retirement plans, etc.? Would you

say it is…

Less than $15,000 1

At least $15,000 but less than $25,000 2

At least $25,000 but less than $35,000 3

At least $35,000 but less than $50,000 4

At least $50,000 but less than $75,000 5

At least $75,000 but less than $100,000 6

At least $100,000 but less than $150,000 7

$150,000 or more.....8

Don't know 98

Prefer not to say 99

[IF Q.A8 = 98 (DK) OR 99 (REF), TERMINATE & SKIP TO QTERM]

[CHECK INCOME QUOTA BY STATE, IF FULL, TERMINATE & SKIP TO QTERM]

8 2012: Changed question order (appears earlier in the survey than in 2009).

2015 NFCS State-by-State Survey Instrument - 7

AM21)

9 Have you ever been a member of the U.S. Armed Services, either in the active or reserve component?

Currently a member of the U.S. Armed Services.....1

Previously a member of the U.S. Armed Services.....2

Never a member of the U.S. Armed Services.....3

Prefer not to say 99

[IF Q.AM21 = 2 (PREVIOUSLY), ASK; OTHERWISE SKIP TO Q.AM22]

AM30)

10When did you complete your service in the military?

Within the past year 1

1 to 3 years ago 2

4 to 10 years ago 3

More than 10 years ago.....4

Prefer not to say 99

AM31)

11Did you retire from the military?

Yes.....1

No 2

Don't know 98

Prefer not to say 99

AM32)

12What was your most recent military service branch and component?

[DISPLAY WITH BREAKS ON THE LIST]

Army 1

Army National Guard (full-time, activated, or non-activated) 2

Army Reserve (full-time, activated, or non-activated) 3

Navy.....4

Navy Reserve (full-time, activated, or non-activated).....5

Air Force 6

Air National Guard (full-time, activated, or non-activated) 7

Air Force Reserve (full-time, activated, or non-activated).....8

Marine Corps 9

Marine Corps Reserve (full-time, activated, or non-activated).....10

Coast Guard 11

Coast Guard Reserve (full-time, activated, or non-activated).....12

Don't know 98

Prefer not to say 99

9 2012: Military question added to State-by-State survey. See note that follows question X3.

10 2015: New question.

11 2015: New question.

12 2015: New question.

2015 NFCS State-by-State Survey Instrument - 8

[IF Q.A6 = 1 (MARRIED), ASK; OTHERWISE SKIP TO Q.X3]

AM22)

13Has your spouse ever been a member of the U.S. Armed Services, either in the active or reserve

component?

Currently a member of the U.S. Armed Services.....1

Previously a member of the U.S. Armed Services.....2

Never a member of the U.S. Armed Services.....3

Prefer not to say 99

X3) [BUILDER: PUNCH QUESTIONNAIRE VERSION:

If Q.AM21 = 1 OR Q.AM22 = 1, PUNCH 2 (MILITARY)

ALL OTHERS, PUNCH 1 (CORE)

Core questions 1

Military ..... 2]

Note on Military Questions:

• As with the 2012 NFCS, the 2015 State-by-State Survey includes the same military classification questions used in the 2015 Military Survey. Individuals in the State-byState Survey who self-identified as military service members or spouses were asked these classification questions so that their responses can be used to supplement the Military Survey. These questions are shown in grey below.

− For notes on changes to the military classification questions, please refer to the 2015 Military survey instrument.

• Depending on their military status, respondents were also shown military-specific wording for several questions, as indicated in the programming instructions in this document.

[IF Q.X3 = 2 (MILITARY), ASK; OTHERWISE SKIP TO Q.A9]

X4) [BUILDER: PUNCH MILITARY STATUS VARIABLE:

If Q.AM21 = 1 (CURRENT MEMBER), PUNCH RESPONDENT IN SERVICE

If Q.AM21 = 2, 3, 99 (PREV, NEVER, REF) AND Q.AM22 = 1 (SPOUSE CURRENT MEMBER), PUNCH SPOUSE IN SERVICE

Respondent in service 1

Spouse in service ..... 2]

13 2012: Military question added to State-by-State survey.

2015 NFCS State-by-State Survey Instrument - 9

A9) Which of the following best describes your current employment or work status?

Self employed 1

Work full-time for an employer [IF Q.AM21 = 1 INSERT: or the military].....2

Work part-time for an employer [IF Q.AM21 = 1 INSERT: or the military] 3

Homemaker.....4

Full-time student.....5

Permanently sick, disabled, or unable to work 6

Unemployed or temporarily laid off 7

Retired.....8

Prefer not to say 99

[IF Q.A9 = 99, TERMINATE & SKIP TO QTERM]

[IF Q.A7a = 1 OR 2, ASK; OTHERWISE SKIP TO Q.A10a]

A10) Which of the following best describes your [spouse/partner]'s current employment or work status?

Self employed 1

Work full-time for an employer [IF Q.AM22 = 1 INSERT: or the military].....2

Work part-time for an employer [IF Q.AM22 = 1 INSERT: or the military] 3

Homemaker.....4

Full-time student.....5

Permanently sick, disabled, or unable to work 6

Unemployed or temporarily laid off 7

Retired.....8

Prefer not to say 99

[IF Q.A10 = 99, TERMINATE & SKIP TO QTERM]

A10a) [BUILDER: HOUSEHOLD RETIREMENT STATUS:

IF Q.A9 = 1 – 3, PUNCH NON-RETIRED HOUSEHOLD

IF ((Q.A7a = 3 AND Q.A9 = 4 – 7) OR (Q.A7a = 1, 2 AND Q.A9 = 4 – 7 AND Q.A10 = 1 – 7)), PUNCH NON-RETIRED HOUSEHOLD

IF Q.A9 = 8, PUNCH RETIRED-HOUSEHOLD – RESPONDENT RETIRED

IF Q.A7a = 1, 2 AND Q.A9 = 4 – 7 AND Q.A10 = 8, PUNCH RETIRED HOUSEHOLD – RESPONDENT NOT WORKING AND SPOUSE RETIRED

Non-retired household 1

Retired household--Respondent retired 2

Retired household--Respondent not working and spouse retired ..... 3]

2015 NFCS State-by-State Survey Instrument - 10

[IF Q.X3 = 2 (MILITARY), ASK; OTHERWISE SKIP TO Q.A21]

AM7) What is your [IF Q.X4 = 2 INSERT: spouse's] military service branch and component? [DISPLAY WITH BREAKS ON THE LIST]

Army 1

Army National Guard (full-time, activated, or non-activated) 2

Army Reserve (full-time, activated, or non-activated) 3

Navy.....4

Navy Reserve (full-time, activated, or non-activated).....5

Air Force 6

Air National Guard (full-time, activated, or non-activated) 7

Air Force Reserve (full-time, activated, or non-activated).....8

Marine Corps 9

Marine Corps Reserve (full-time, activated, or non-activated).....10

Coast Guard 11

Coast Guard Reserve (full-time, activated, or non-activated).....12

Don't know 98

Prefer not to say 99

2015 NFCS State-by-State Survey Instrument - 11

AM3) What is your [IF Q.X4 = 2 INSERT: spouse's] current pay grade? [DISPLAY WITH BREAKS ON THE LIST]

E-1.....1

E-2.....2
E-3.....3
E-4.....4
E-5.....5
E-6.....6
E-7.....7
E-8.....8
E-9.....9
W-1 10
W-2 11
W-3 12
W-4 13
W-5 14
O-1/O-1E 15
O-2/O-2E 16
O-3/O-3E 17
O-4 18
O-5 19
O-6 or above 20
Don't know 98
Prefer not to say 99

[IF Q.AM7 = 2, 3, 5, 7, 8, 10, 12, 98, 99 (NATIONAL GUARD, RESERVE, DK, REF), ASK; OTHERWISE SKIP TO Q.X5]

AM29) [IF Q.X4 = 1 INSERT: Are you currently full-time or on active duty (i.e., activated)?] [IF Q.X4 = 2 INSERT: Is your spouse currently full-time or on active duty (i.e., activated)?]

Yes.....1
No 2
Don't know 98
Prefer not to say 99

X5) [BUILDER: PUNCH ACTIVE STATUS
IF Q.AM7 = 1, 4, 6, 9, 11, PUNCH 1 (ACTIVE)

IF Q.AM29 = 1, PUNCH 1 (ACTIVE)

[IF Q.AM7 = 2, 3, 5, 7, 8, 10, 12, 98, 99 AND Q.AM29 = 2, 98, 99, PUNCH 2 (NON-ACTIVE)

Active.....1

Non-active..... 2]

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[IF Q.X5 = 1 (ACTIVE), ASK; OTHERWISE SKIP TO Q.A21]

AM24) Where is your [IF Q.X4 = 2 INSERT: spouse's] permanent duty station (homeport) located?

In one of the 50 states, D.C., Puerto Rico, or a U.S. territory or possession 1

Europe (e.g., Bosnia-Herzegovina, Germany, Italy, Serbia, United Kingdom).....2

Former Soviet Union (e.g., Russia, Tajikistan, Uzbekistan).....3

East Asia and Pacific (e.g., Australia, Japan, Korea).....4

North Africa, Near East, or South Asia (e.g., Bahrain, Kuwait, Saudi Arabia, Diego Garcia)5

Sub-Saharan Africa (e.g., Kenya, South Africa).....6

Western Hemisphere (e.g., Cuba, Honduras, Peru).....7

Other 8

Don't know 98

Prefer not to say 99

AM25) Where do you live [IF Q.X4 = 1 INSERT: at your permanent duty station]?

[IF Q.X4 = 1 (RESPONDENT IN SERVICE)] Aboard ship.....1

[IF Q.X4 = 1 (RESPONDENT IN SERVICE)] Barracks/dorm/BEQ/UEPH/BOQ/UOPH military facility.....2

Military family housing, on base 3

Military family housing, off base.....4

Privatized military housing that you rent on base.....5

Privatized military housing that you rent off base 6

Civilian/community housing that you own or pay mortgage on.....7

Civilian/community housing that you rent 8

Other 9

Prefer not to say 99

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[IF Q.A5 = 2, 3, 4, 5 (HS GRAD, SOME COLLEGE, ASSOCIATE'S DEGREE) AND Q.A9 NE 5
(NOT FT STUDENT), ASK; OTHERWISE SKIP TO Q.A22]

A21)14,15Are you a part-time student taking courses for credit?

Yes.....1
No 2
Don't know 98
Prefer not to say 99

[IF Q.A5 = 2, 3, 4, 5 (HS GRAD, SOME COLLEGE, ASSOCIATE'S DEGREE) AND ((Q.A9 = 5
OR Q.A21 = 1) (FT OR PT STUDENT)), ASK; OTHERWISE SKIP TO Q.A14]

A22)16,17Which of the following best describes the school you are attending?

Four-year college or university.....1
Two-year community college 2
Vocational, technical, or trade school 3
Other 4
Don't know 98
Prefer not to say 99

[IF Q.A7a = 1, 2, ASK; OTHERWISE SKIP TO Q.A16]

A14) Who in the household is most knowledgeable about saving, investing and debt?

You.....1
Someone else 2
You and someone else are equally knowledgeable 3
Don't know 98
Prefer not to say 99

A16) [END OF SCREENER]

14 2012: New question.

15 2015: Question base updated to correspond to changes to A5 (education).

16 2012: New question.

17 2015: Question base updated to correspond to changes to A5 (education).

J) [SECTION J: FINANCIAL ATTITUDES & BEHAVIORS]

Ja) These days, a lot of people are thinking about financial issues. We are interested in your opinions on
some of these issues.

J1) 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.”

Not At All
Satisfied
1 2 3 4 5 6 7 8 9
Extremely
Satisfied
10
Don’t
know
Prefer not
to say
1 2 3 4 5 6 7 8 9 10 98 99

J2) When thinking of your financial investments, how willing are you to take risks? Please use a 10-point
scale, where 1 means “Not At All Willing” and 10 means “Very Willing.”

Not At All
Willing
1 2 3 4 5 6 7 8 9
Very Willing
10
Don’t
know
Prefer not

to say

1 2 3 4 5 6 7 8 9 10 98 99

J3) Over the past year, would you say your [IF Q.A7a = 1 OR 2 INSERT: household's] spending was less

than, more than, or about equal to your [IF Q.A7a = 1 OR 2 INSERT: household's] income? Please

do not include the purchase of a new house or car, or other big investments you may have made.

Spending less than income.....1

Spending more than income.....2

Spending about equal to income 3

Don't know 98

Prefer not to say 99

J4) In a typical month, how difficult is it for you to cover your expenses and pay all your bills?

Very difficult.....1

Somewhat difficult.....2

Not at all difficult.....3

Don't know 98

Prefer not to say 99

J5) 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?

Yes.....1

No 2

Don't know 98

Prefer not to say 99

[IF Q.A11 = 1, 2, 3, 4 (FINANCIALLY DEPENDENT CHILD), ASK; OTHERWISE SKIP TO Q.J8]

J6) Are you setting aside any money for your children's college education?

Yes.....1

No 2

Don’t know 98

Prefer not to say 99

[IF Q.A10a = 1 (NOT RETIRED), ASK; OTHERWISE SKIP TO Q.J9]

J8) Have you ever tried to figure out how much you need to save for retirement?

Yes.....1

No 2

Don’t know 98

Prefer not to say 99

[IF Q.A10a = 2, 3 (RETIRED), ASK; OTHERWISE SKIP TO Q.J10]

J9) [IF Q.A10a = 2 INSERT: Before you retired, did you try to figure out how much you needed to save
for retirement?]

[IF Q.A10a = 3 INSERT: Before your [spouse/partner] retired, did you try to figure out how much
you needed to save for retirement?]

Yes.....1

No 2

Don’t know 98

Prefer not to say 99

J10) In the past 12 months, [IF Q.A7a = 3 INSERT: have you/ IF Q.A7a = 1 OR 2 INSERT: has your
household] experienced a large drop in income which you did not expect?

Yes.....1

No 2

Don’t know 98

Prefer not to say 99

J20)18 How confident are you that you could come up with $2,000 if an unexpected need arose within the
next month?

I am certain I could come up with the full $2,000 1

I could probably come up with $2,000 2

I could probably not come up with $2,000 3

I am certain I could not come up with $2,000 4

Don’t know 98

Prefer not to say 99

18 2012: New question.

J30)

19 In planning or budgeting your [IF Q.A7a = 1 OR 2 INSERT: household’s] saving and spending,

which of the following time periods is most important to you [IF Q.A7a = 1 OR 2 INSERT: and your

household]?

The next few months.....1

The next year 2

The next few years.....3

The next 5 to 10 years.....4

Longer than 10 years.....5

Don’t know 98

Prefer not to say 99

J31)

20 Does your household have a budget? A household budget is used to decide what share of your household income will be used for spending, saving or paying bills.

Yes.....1

No 2

Don’t know 98

Prefer not to say 99

J32)

21 How would you rate your current credit record?

Very bad 1

Bad.....2

About average 3

Good 4
Very good.....5
Don’t know 98
Prefer not to say 99
J33)
22 How strongly do you agree or disagree with the following statements? Please give your answer on a
scale of 1 to 7, where 1 = “Strongly Disagree,” 7 = “Strongly Agree,” and 4 = “Neither Agree Nor
Disagree”. You can use any number from 1 to 7. (Select an answer for each)
[RANDOMIZE]
Strongly
Disagree
1 2 3
Neither
Agree nor
Disagree
4 5 6
Strongly
Agree
7
Don’t
Know
Prefer not
to Say
J33_1) I worry about running out of
money in retirement
1 2 3 4 5 6 7 98 99
J33_2) I set long term financial goals and
strive to achieve them
1 2 3 4 5 6 7 98 99

J14) [END OF SECTION J]

19 2015: New question.

20 2015: New question.

21 2015: New question.

22 2015: New questions.

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B) [SECTION B: BANKING]

[DISPLAY Q'S B1 AND B2 ON SAME SCREEN]

B1) [IF Q.A7a = 3 INSERT: Do you/ IF Q.A7a = 1 OR 2 INSERT: Does your household] have a checking account?

Yes.....1

No 2

Don't know 98

Prefer not to say 99

B2) [IF Q.A7a = 3 INSERT: Do you/ IF Q.A7a = 1 OR 2 INSERT: Does your household] have a savings account, money market account, or CDs?

Yes.....1

No 2

Don't know 98

Prefer not to say 99

[IF Q.B1 = 1 (YES), ASK; OTHERWISE SKIP TO Q.B30]

B4) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] overdraw your checking account occasionally?

Yes.....1

No 2

Don't know 98

Prefer not to say 99

B14) [MOVED TO END OF SECTION C]

B30)

23 A reloadable prepaid debit card is not linked to a bank or credit union account, but you or someone
else, like a relative, employer, or a government agency, can add money onto this card. You can use it
to make purchases and pay bills where credit cards are accepted.

How often do you make payments (e.g., for shopping, for paying bills, or for any other purposes) using a reloadable prepaid debit card?

Frequently 1
Sometimes.....2
Never.....3
Don't know 98
Prefer not to say 99

23 2015: New question. Replaces B22_5 from 2012.

B31)

24 How often do you use your mobile phone to pay for a product or service in person at a store, gas station, or restaurant (e.g., by waving/tapping your mobile phone over a sensor at checkout, scanning a barcode or QR code using your mobile phone, or using some other mobile app at checkout)?

Frequently 1
Sometimes.....2
Never.....3
Don't know 98
Prefer not to say 99

B16) [END OF SECTION B]

Appendix F - 2012 NFCS Questionnaire

National Financial Capability Study
2009 State-by-State Survey Questionnaire
Sample Characteristics:
 N ≈ 500 respondents per state (plus D.C.)
 Quotas within each state by:
 Age
 Gender
 Income
 Ethnicity
 Education
Coding Notes
 For all questions in the survey except open ended numeric questions (see below):
 Code 98 = Don't know
 Code 99 = Refused
 For open-ended numeric questions E5, E6, E9, E13, F8, F9 & G3:
 Code -98 = Don't know
 Code -99 = Refused
Z) Thank you very much for participating in this research.
 Please be assured that all of your answers will be completely ANONYMOUS and CONFIDENTIAL. Therefore, please try to answer these questions as openly and honestly as possible.
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 2
A1a) [BEGIN SCREENER]
A2) Please enter your 5 digit home zip code.
[_____]
[EDIT: 00001-99998]
[LOAD ALL GEO INFORMATION TO DATA]
[CHECK STATE QUOTAS, IF FULL, TERMINATE & SKIP TO Q.1000]
A3) What is your gender?
Male.....1
Female 2
A3aw) What is your age?
[DROP DOWN BOX]
Under 18 1
18-24.....2
25-29.....3
30-34.....4
35-39 5
40-44.....6
45-49.....7
50-54.....8
55-59.....9
60-64..... 10
65 or older..... 11

Prefer not to say 99
[IF Q.A3aw = 1 (<18) OR 99 (REF), TERMINATE & SKIP TO Q.1000]
A3b) [BUILDER: CREATE GENDER/AGE NET FROM Q'S A3 & A3aw:
Male 18-24.....1
Male 25-34.....2
Male 35-44.....3
Male 45-54 4
Male 55-64.....5
Male 65+.....6
Female 18-24 7
Female 25-34 8
Female 35-44 9
Female 45-54 10
Female 55-64 11
Female 65+ 12
CHECK QUOTAS BY STATE, IF FULL, TERMINATE & SKIP TO Q.1000]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 3
A4) Which of the following best describes your race or ethnicity?
Select all that apply.
[M]
White or Caucasian 1
Black or African-American.....2
Hispanic or Latino/a 3
Asian/Pacific Islander.....4
Native American or Alaska Native.....5
Other.....6
Prefer not to say 99
[IF Q.A4 = 99 (REF), TERMINATE & SKIP TO Q.1000][CODE 99 EXCLUSIVE]
[IF MULTIPLE RESPONSES AT Q.A4 ASSIGN TO QUOTA BASED ON PRIORITY:
1) Asian
2) African American
3) Hispanic
4) Other – Other + Native American
5) White]
[CHECK QUOTAS BY STATE, IF FULL, TERMINATE & SKIP TO Q.1000]
A5) What was the last year of education that you completed?
Did not complete high school 1
High school graduate 2
Some college 3
College graduate.....4
Post graduate education 5
Prefer not to say 99
[IF Q.A5 = 99 (REF), TERMINATE & SKIP TO Q.1000]
[CHECK QUOTAS BY STATE, IF FULL, TERMINATE & SKIP TO Q.1000]
A6) What is your marital status?
Married 1

Single.....2
Separated.....3
Divorced 4
Widowed/widower 5
Prefer not to say 99
[IF Q.A6 = 99 (REF), TERMINATE & SKIP TO Q.1000]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 4
A7) Which of the following describes your current living arrangements?
I am the only adult in the household.....1
I live with my spouse/partner/significant other.....2
I live in my parents' home 3
I live with other family, friends, or roommates.....4
Prefer not to say 99
[IF Q.A7 = 99 (REF), TERMINATE & SKIP TO Q.1000]
A7a) BUILDER: PUNCH MARITAL STATUS VARIABLE:
If Q.A6 = 1, PUNCH MARRIED
If Q.A6 = 2 – 5 AND Q.A7 = 2, PUNCH LIVING WITH PARTNER
If Q.A6 = 2 – 5 AND Q.A7 = 1, 3, or 4, PUNCH SINGLE
Married 1
Living with partner.....2
Single.....3
If Q.A7a = 1, CVAR "spouse"
If Q.A7a = 2, CVAR "partner"]
IF Q.A7a = 1 OR 2, CVAR "Does your household"
IF Q.A7a = 3, CVAR "Do you"]
A8) What is your [IF Q.A7a = 1 OR 2) INSERT: household's] approximate annual income, including
wages, tips, investment income, public assistance, income from retirement plans, etc.? Would you
say it is…
Less than $15,000.....1
At least $15,000 but less than $25,000 2
At least $25,000 but less than $35,000 3
At least $35,000 but less than $50,000 4
At least $50,000 but less than $75,000 5
At least $75,000 but less than $100,000 6
At least $100,000 but less than $150,000 7
$150,000 or more 8
Don't know 98
Prefer not to say 99
[IF Q.A8 = 98 OR 99, TERMINATE & SKIP TO Q.1000]
[CHECK QUOTAS BY STATE, IF FULL, TERMINATE & SKIP TO Q.1000]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 5
A9) Which of the following best describes your current employment or work status?
Self employed 1
Work full-time for an employer 2

Work part-time for an employer.....3
Homemaker.....4
Full-time student 5
Permanently sick, disabled, or unable to work.....6
Unemployed or temporarily laid off.....7
Retired 8
Prefer not to say 99
[IF Q.A9 = 99, TERMINATE & SKIP TO Q.1000]
[IF Q.A7a = 1 OR 2, ASK; OTHERWISE SKIP TO Q.A10a]
A10) Which of the following best describes your [spouse/partner]'s current employment or work status?
Self employed 1
Work full-time for an employer 2
Work part-time for an employer.....3
Homemaker.....4
Full-time student 5
Permanently sick, disabled, or unable to work.....6
Unemployed or temporarily laid off.....7
Retired 8
Prefer not to say 99
[IF Q.A10 = 99, TERMINATE & SKIP TO Q.1000]
A10a) BUILDER: HOUSEHOLD RETIREMENT STATUS:
IF Q.A9 = 1 – 3, PUNCH NON-RETIRED HOUSEHOLD
IF ((Q.A7a = 3 AND Q.A9 = 4 – 7) OR (Q.A7a = 1, 2 AND Q.A9 = 4 – 7 AND Q.A10 = 1 – 7)), PUNCH NON-RETIRED HOUSEHOLD
IF Q.A9 = 8, PUNCH RETIRED-HOUSEHOLD – RESPONDENT RETIRED
IF Q.A7a = 1, 2 AND Q.A9 = 4 – 7 AND Q.A10 = 8, PUNCH RETIRED HOUSEHOLD – RESPONDENT NOT WORKING AND SPOUSE RETIRED
Non-retired household 1
Retired household--Respondent retired 2
Retired household--Respondent not working and spouse retired.....3]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 6
A11) How many children do you have who are financially dependent on you [IF Q.A7a = 1 OR 2 INSERT:
or your [spouse/partner]]? Please include children not living at home, and step-children as well.
1.....1
2.....2
3.....3
4 or more.....4
No financially dependent children 5
Do not have any children 6
Prefer not to say 99
[IF Q.A11 = 99, TERMINATE & SKIP TO Q.1000]
[IF Q.A7a = 1, 2, ASK; OTHERWISE SKIP TO Q.A16]
[DISPLAY Q'S A14 & A15 ON SAME SCREEN]
A14) Who in the household is most knowledgeable about saving, investing and debt?

You 1
Someone else 2
You and someone else are equally knowledgeable 3
Don’t know 98
Prefer not to say 99
A15) Who in your household usually handles the chore of bill paying?
You 1
Someone else 2
You and someone else share the responsibility.....3
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 7
J) [BEGIN SECTION J]
Ja) These days, a lot of people are thinking about financial issues. We are interested in your opinions on
some of these issues.
J1) 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.”
NotAt All
Satisfied
1 2 3 4 5 6 7 8 9
Extremely
Satisfied
10
Don’t
know
Prefer not
to say
1 2 3 4 5 6 7 8 9 10 98 99
J2) When thinking of your financial investments, how willing are you to take risks? Please use a 10-point
scale, where 1 means “Not At All Willing” and 10 means “Very Willing.”
NotAt All
Willing
1 2 3 4 5 6 7 8 9
Very Willing
10
Don’t
know
Prefer not
to say
1 2 3 4 5 6 7 8 9 10 98 99
J3) Over the past year, would you say your [IF Q.A7a = 1 OR 2 INSERT: household’s] spending was less

than, more than, or about equal to your [IF Q.A7a = 1 OR 2 INSERT: household's] income? Please
do not include the purchase of a new house or car, or other big investments you may have made.
Spending less than income.....1
Spending more than income 2
Spending about equal to income.....3
Don't know 98
Prefer not to say 99
J4) In a typical month, how difficult is it for you to cover your expenses and pay all your bills?
Very difficult.....1
Somewhat difficult 2
Not at all difficult 3
Don't know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 8
J5) 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?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.A11 = 1, 2, 3, 4 (FINANCIAL DEPENDENT CHILD), ASK; OTHERWISE SKIP TO Q.J8]
J6) Are you setting aside any money for your children's college education?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.J6 = 1 (YES), ASK; OTHERWISE SKIP TO Q.J8]
J7) Are you using a 529 Plan or Coverdell Educational Savings Account to save for college?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.A10a = 1 (NOT RETIRED), ASK; OTHERWISE SKIP TO Q.J9]
J8) Have you ever tried to figure out how much you need to save for retirement?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.A10a = 2, 3 (RETIRED), ASK; OTHERWISE SKIP TO Q.J10]
J9) [IF Q.A10a = 2 INSERT: Before you retired, did you try to figure out how much you needed to save
for retirement?]

[IF Q.A10a = 3 INSERT: Before your [spouse/partner] retired, did you try to figure out how much
you needed to save for retirement?]
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 9
J10) In the past 12 months, [IF Q.A7a = 3 INSERT: have you/ IF Q.A7a = 1 OR 2 INSERT: has your
household] experienced a large drop in income which you did not expect?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[DISPLAY Q'S J11 & J12 ON SAME SCREEN]
J11) In the past 12 months, have you obtained a copy of your credit report?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
J12) In the past 12 months, have you checked your credit score?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.J12 = 1 (YES), ASK; OTHERWISE SKIP TO Q.J14]
J13) What was your credit score the last time you checke
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 10
Ka) [BEGIN SECTION K]
K) In the last 5 years, have you asked for any advice from a financial professional about any of the
following? (Select an answer for each)
[RANDOMIZE]

	Yes	No	Don't Know	Prefer notto Say
K_1) Debt counseling	1	2	98	99
K_2) Savings or investments	1	2	98	99
K_3) Taking out a mortgage or a loan	1	2	98	99
K_4) Insurance of any type	1	2	98	99
K_5) Tax planning	1	2	98	99

[IF Q.K_1, K_2, K_3, K_4, K_5 = 1 (YES), ASK; OTHERWISE SKIP TO Q.K8a]
K6) Typically, when looking for a financial professional, do you meet with or talk to more than one
advisor before making a choice?

Yes.....1
No.....2
Don't know 98
Prefer not to say 99
K7) Have you ever checked with a state or federal regulator regarding the background, registration, or
license of a financial professional?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 11
K8a) How strongly do you agree or disagree with the following statements? Please give your answer on a
scale of 1 to 7, where 1 = "Strongly Disagree," 7 = "Strongly Agree," and 4 = "Neither Agree Nor
Disagree". You can use any number from 1 to 7. (Select an answer for each)
[RANDOMIZE]

	Strongly Disagree 1 2 3	Neither Agree nor Disagree 4 5 6	Strongly Agree 7	Don't Know	Prefer not to Say
K8a_1) "I would trust financial professionals and accept what they recommend."	1 2 3	4 5 6	7	98	99
K8a_2) "Financial professionals are too expensive for me."	1 2 3	4 5 6	7	98	99
K8a_3) "It is hard to find the right financial professional for me."	1 2 3	4 5 6	7	98	99

K11) [END OF SECTION K]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 12
B) [BEGIN SECTION B]
[DISPLAY Q'S B1 AND B2 ON SAME SCREEN]

B1) [Do you/Does your household] have a checking account?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
B2) [Do you/Does your household] have a savings account, money market account, or CDs?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.B1 = 1 (YES), ASK; OTHERWISE SKIP TO Q.B5]
B3) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] use a debit card tied to your bank
account?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
B4) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] overdraw your checking account
occasionally?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 13
[IF Q.B1 AND B2 = 2 (NO), ASK; OTHERWISE SKIP TO Q.B14]
B5a) Which of the following are reasons why you do not have a checking or savings account? (Select an
answer for each)
[RANDOMIZE]

	Yes	No	Don't Know	Prefer not to Say
B5a_1) Do not have enough money to make it worthwhile	1	2	98	99
B5a_2) Do not like dealing with banks	1	2	98	99
B5a_3) Bank fees are too high	1	2	98	99
B5a_4) Inconvenient hours or location	1	2	98	99
B5a_5) Banks would not let me open an account	1	2	98	99
B5a_6) Do not want to share my personal information	1	2	98	99

[DISPLAY Q'S B11, B12, B13 ON SAME SCREEN WITH DROP DOWN BOXES]
B11) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] sometimes go to a check cashing
store to cash checks?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
B12) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] sometimes cash checks at a grocery
store or supermarket?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
B13) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] sometimes pay your bills with money
orders?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 14
[IF Q.B1 OR B2 = 1, 98, 99 (YES, DK, REF), ASK; OTHERWISE SKIP TO Q.B16]
B14) Not including retirement accounts, [IF Q.A7a = 1 OR 2 INSERT does your household/IF Q.7a = 3
INSERT: do you] have any investments in stocks, bonds, mutual funds, or other securities?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.B14 = 1 (YES), ASK; OTHERWISE SKIP TO Q.B16]
B15) Not including retirement accounts, what is the total approximate current value of your [IF Q.A7a = 1
OR 2 INSERT: household's] investments in stocks, bonds, mutual funds and other securities? Would
you say it is…
Less than $10,000.....1
At least $10,000 but less than $50,000 2
At least $50,000 but less than $100,000 3
At least $100,000 but less than $250,000 4
More than $250,000 5
Don't know 98
Prefer not to say 99
B16) [END OF SECTION B]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 15

[IF Q.A10a = 1 (NON-RETIRED HH), ASK; OTHERWISE SKIP TO Q.D]
C) [BEGIN SECTION C]
Ca) The following are questions about retirement accounts and pensions. Please answer to the best of
your knowledge. If you really do not know the answer, please select "don't know."
C1) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] have any retirement plans through a
current or previous employer, like a pension plan or a 401(k)?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.C1 = 1 (YES) AND Q.A7a = 1 OR 2, ASK; OTHERWISE SKIP TO Q.C3]
C2) Were these plans provided by your employer or your [spouse/partner]'s employer, or both?
Your employer 1
Your [spouse's/partner's] employer.....2
Both your employer and your [spouse's/partner's] employer.....3
Don't know 98
Prefer not to say 99
[IF Q.C1 = 1 (YES), ASK; OTHERWISE SKIP TO Q.C4]
C3) Are any of these retirement plans the kind where you [IF Q.A7a = 1 OR 2 INSERT: or your
[spouse/partner]] get to choose how the money is invested?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
C4) Do you [IF Q.A7a = 1 OR 2 INSERT: 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?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.C3 = 1 OR Q.C4 = 1 (YES), ASK; OTHERWISE, SKIP TO Q.C12]
C5) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] regularly contribute to a retirement
account like a 401(k) or IRA?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99

C6) What is the total approximate current value of your [IF Q.A7a = 1 OR 2 INSERT: household's]
retirement accounts? Would you say it is…
Less than $10,000.....1
At least $10,000 but less than $50,000 2
At least $50,000 but less than $100,000 3
At least $100,000 but less than $250,000 4
More than $250,000 5
Don't know 98
Prefer not to say 99
C7) How much of your [IF Q.A7a = 1 OR 2 INSERT: household's] retirement portfolio is invested in
stocks or mutual funds that contain stocks?
More than half.....1
Less than half 2
None 3
Don't know 98
Prefer not to say 99
C8) Are your [IF Q.A7a = 1 OR 2 INSERT: household's] retirement assets primarily invested in a lifecycle or target-date fund?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.C8 = 2 (NO) OR 98 (DK), ASK; OTHERWISE SKIP TO Q.C10]
C9) How often do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] change or rebalance the
investments in your [IF Q.A7a = 1 OR 2 INSERT: household's] retirement account(s)?
At least once a year 1
Once every few years 2
Rarely 3
Never 4
Don't know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 17
[DISPLAY Q'S C10 & C11 ON SAME SCREEN]
C10) In the last 12 months, have you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] taken a loan
from your retirement account(s)?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
C11) In the last 12 months, have you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] taken a
hardship withdrawal from your retirement account(s)?

Yes.....1
No.....2
Don't know 98
Prefer not to say 99
C12) In the last 12 months, have you received a statement from the Social Security Administration that tells
you how much money you can expect to receive from Social Security when you retire?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.C12 = 1 (YES), ASK; OTHERWISE SKIP TO Q.C16]
[DISPLAY Q'S C13 & C14 ON SAME SCREEN]
C13) Have you used the information to decide or adjust your decision about when to stop working?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
C14) Have you used the information to decide or adjust your decision about when to claim your Social
Security benefits?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
C16) [END OF SECTION C]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 18
[IF Q.A10a = 2, 3 (RETIRED HH), ASK; OTHERWISE SKIP TO Q.E]
D) [BEGIN SECTION D]
D1w) [IF Q.A10a = 2 INSERT: At what age did you retire?]
[IF Q.A10a = 3 INSERT: At what age did your [spouse/partner] retire?]
[DROP DOWN BOX]
54 years old or earlier 1
55.....2
56.....3
57.....4
58 5
59.....6
60.....7
61.....8
62.....9
63..... 10
64..... 11
65..... 12
66..... 13

67..... 14
68..... 15
69..... 16
70..... 17
71 years old or later 18
Don't know 98
Prefer not to say 99
D2) [IF Q.A10a = 2 INSERT: When you retired did you take a lump-sum payout from an employer or
union-provided retirement plan or pension?]
[IF Q.A10a = 3 INSERT: When your [spouse/partner] retired did he or she take a lump-sum payout
from an employer- or union-provided retirement plan or pension?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99

D3a) Which of the following are you [IF Q.A7a = 1 OR 2 INSERT: and your [spouse/partner]] using for
your living expenses? (Select an answer for each)
[DO NOT RANDOMIZE]

	Yes	No	Don't Know	Prefer not to Say
D3a_1) Social Security retirement payments	1	2	98	99
D3a_2) Pension plan payments	1	2	98	99
D3a_3) Withdrawals from savings, investments, or retirement accounts	1	2	98	99
D3a_4) Dividends or interest income from savings, investments, or retirement accounts	1	2	98	99
D3a_5) Salary, wages, or self-employment income	1	2	98	99
D3a_6) Rental income or proceeds from a sale of real estate	1	2	98	99
D3a_7) Payments from a reverse mortgage	1	2	98	99
D3a_8) Financial support from family	1	2	98	99

[IF Q.D3a_3 = 1 (YES TO WITHDRAWALS), ASK; OTHERWISE SKIP TO Q.D15]
D11) Have you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] calculated how much of your
savings and investments you can afford to withdraw each year?

Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
[IF Q.D11 = 1 (YES), ASK; OTHERWISE SKIP TO Q.D14]
[DISPLAY Q’S D12 & D13 ON SAME SCREEN]
D12) Approximately what percent of your savings and investments did you calculate that you can withdraw
each year?
5% or less.....1
Between 5-10%.....2
Between 10-15% 3
Between 15-20% 4
More than 20%.....5
Don’t know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 20
D13) Have you been able to stay within the range you calculated?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
D14) Have you changed the amount or frequency of your withdrawals from savings, investments, or
retirement accounts in response to current economic conditions?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
[IF Q.D3a_1 = 1 (YES SOCIAL) AND Q.A7a = 1 OR 2, ASK; OTHERWISE SKIP TO Q.D16]
D15) Who in your household is receiving Social Security payments?
You 1
Your [spouse/partner] 2
Both 3
Don’t know 98
Prefer not to say 99
[IF Q.D3a_1 = 1 (YES SOCIAL), ASK; OTHERWISE SKIP TO Q.D17]
D16) [IF Q.A7a = 3 (SINGLE) OR Q.D15 = 1 OR 3 INSERT: At what age did you begin to receive Social
Security retirement benefits?]
[IF Q.D15 = 2 INSERT: At what age did your [spouse/partner] begin to receive Social Security retirement benefits?]
61 or earlier.....1
62.....2
63.....3
64.....4

65.....5
66 or later.....6
Don’t know 98
Prefer not to say 99
D17) [END OF SECTION D]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 21
E) [BEGIN SECTION E]
Ea) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] currently own any of the following?
(Select an answer for each)
[DO NOT RANDOMIZE]
Yes No Don’t Know
Prefer notto
Say
Ea_1) Your home 1 2 98 99
Ea_2) Other real estate (for example, a second
home or investment property)
1 2 98 99
Ea_3) Part or all of a business or farm 1 2 98 99
[IF Q.Ea_1 = 1 (YES OWN HOME), ASK; OTHERWISE SKIP TO Q.E16]
E3a) Following are some questions about your home. If you own more than one home, please refer to your
primary residence.
E4) How long ago did you buy your current home?
Within the past 2 years 1
3-5 years ago 2
6-10 years ago 3
More than 10 years ago.....4
You did not purchase it.....5
Don’t know 98
Prefer not to say 99
[IF Q.E4 = 1 OR 2 (PAST 5 YEARS), ASK; OTHERWISE SKIP TO Q.E6]
E5) Approximately what percentage of the purchase price was your downpayment? Your best guess is
fine.
[_____]%
[EDIT: 0-100]
[TEXT BOX] Don’t know 98
[TEXT BOX] Prefer not to say 99
E6) If you were to sell your home today, about how much would it sell for? Your best guess is fine.
$[_____]
[EDIT: 0-999,999,999,999,999]
[TEXT BOX] Don’t know 98
[TEXT BOX] Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 22

[DISPLAY Q'S E7 & E8 ON SAME SCREEN]
E7) Do you currently have a mortgage on your home?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
E8) Do you have a home equity loan?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
[IF Q.E7 = 1 OR Q.E8 = 1 (YES), ASK; OTHERWISE SKIP TO Q.E10a]
E9) Approximately how much do you currently owe on your home [IF Q.E7 = 1 AND Q.E8 = 1 INSERT:
including mortgages and home equity loans]? Your best guess is fine.
$[_____]
[EDIT: 0-999,999,999,999,999]
[TEXT BOX] Don't know 98
[TEXT BOX] Prefer not to say 99
[IF Q.E7 = 1 (YES), ASK; OTHERWISE SKIP TO Q.E16]
E10a) Following are some questions about your mortgage. If you have more than one mortgage on your
main home, please refer to your primary mortgage.
[IF Q.E4 = 1 OR 2 (PAST 5 YEARS), ASK; OTHERWISE SKIP TO Q.E12]
[DISPLAY Q'S E10 & E11 ON SAME SCREEN]
E10) When you were getting your mortgage, did you compare offers from different lenders or mortgage
brokers?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
E11) When you were getting your mortgage, did you consider how much the monthly payments would be
as a percentage of your income?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 23
E12) Is your mortgage a fixed-rate mortgage or an adjustable-rate mortgage?
Fixed-rate mortgage 1
Adjustable rate mortgage 2
Don't know 98
Prefer not to say 99
E13) Approximately what interest rate are you paying on this mortgage at the moment?

Example: If rate is 8.5%, enter as 8.5
Example: If rate is 9 and 1/8, enter as 9.125
[_____]%
[ENTER RANGE 0.000 – 100.000]
[TEXT BOX] Don't know 98
[TEXT BOX] Prefer not to say 99
E14) Is this an interest-only mortgage or a mortgage with an interest-only option, or neither of these?
Yes – Interest only mortgage or interest-only option 1
No – Neither.....2
Don't know 98
Prefer not to say 99
E15) How many times have you been late with your mortgage payments in the last 2 years? (If you have
more than one mortgage on your home(s), please consider them all.)
Never 1
Once.....2
More than once.....3
Don't know 98
Prefer not to say 99
E16) Have you been involved in a foreclosure process on your home in the last 2 years?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
E17) [END OF SECTION E]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 24
F) [BEGIN SECTION F]
F1) How many credit cards do you have? Please include store and gas station credit cards but NOT debit
cards.
1.....1
2-3 2
4-8 3
9-12.....4
13-20.....5
More than 20 6
No credit cards 7
Don't know 98
Prefer not to say 99
[IF Q.F1 = 7 (None), 98 (DK), 99 (REF), SKIP TO F12]
F2) In the past 12 months, which of the following describes your experience with credit cards? (Select an
answer for each)
[DO NOT RANDOMIZE]
Yes No Don't Know

Prefer notto
Say
F2_1) I always paid my credit cards in full 1 2 98 99
F2_2) In some months, I carried over a balance
and was charged interest
1 2 98 99
F2_3) In some months, I paid the minimum
payment only
1 2 98 99
F2_4) In some months, I was charged a late fee
for late payment
1 2 98 99
F2_5) In some months, I was charged an over
the limit fee for exceeding my credit line
1 2 98 99
F2_6) In some months, I used the cards for a
cash advance
1 2 98 99
[IF Q.F2_1 NE 1 (YES ALWAYS PAID IN FULL), ASK; OTHERWISE SKIP TO Q.F9]
F8) Approximately what interest rate do you pay on the card where you have the largest balance? Your
best guess is fine.
Example: If rate is 10.25%, enter as 10.25
[_____]%
[ENTER RANGE 0.00 – 100.00]
[TEXT BOX] Don't know 98
[TEXT BOX] Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 25
[IF Q.F2_1 = 1 (YES ALWAYS PAID IN FULL), ASK; OTHERWISE SKIP TO Q.F10]
F9) Approximately what is the interest rate on the card you use most often? Your best guess is fine.
Example: If rate is 10.25%, enter as 10.25
[_____]%
[ENTER RANGE 0.00 – 100.00]
[TEXT BOX] Don't know 98
[TEXT BOX] Prefer not to say 99
F10) Thinking about when you obtained your most recent credit card, did you collect information about
different cards from more than one company in order to compare them?
Yes.....1
No.....2
Don't know 98
Prefer not to say 99
F11) Approximately how much do you [IF Q.A7a = 1 OR 2 INSERT: and your [spouse/partner]] currently
owe in total on all your credit cards? Your best guess is fine.

$0.....1
At least $1 but less than $1,000.....2
At least $1,000 but less than $5,000.....3
At least $5,000 but less than $10,000 4
At least $10,000 but less than $20,000 5
Over $20,000.....6
Don’t know 98
Prefer not to say 99
F12) [END OF SECTION F]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 26
G) [BEGIN SECTION G]
G1) [Do you/Does your household] currently have an auto loan? (This does not refer to an auto lease).
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
[IF Q.G1 = 1 (YES), ASK; OTHERWISE SKIP TO Q.G4]
G2) Thinking about your most recent auto loan, did you compare offers from different lenders?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
G3) Approximately what interest rate are you paying on your auto loan? (If you have more than one auto
loan, please consider your most recent one.)
Example: If rate is 8.5%, enter as 8.5
Example: If rate is 7 and 3/8, enter as 7.375
[_____]%
[ENTER RANGE 0.000 – 100.000]
[TEXT BOX] Don’t know 98
[TEXT BOX] Prefer not to say 99
G4) Have you declared bankruptcy in the last two years?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 27
G5) Please indicate if you have done any of the following in the past 5 years. (Select an answer for each)
[RANDOMIZE]
Yes No Don’t Know
Prefer not to
Say
G5_1) Have you taken out an auto title loan? 1 2 98 99
G5_2) Have you taken out a short term "payday" loan? 1 2 98 99

G5_3) 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)
1 2 98 99
G5_4) Have you used a pawn shop? 1 2 98 99
G5_5) Have you used a rent-to-own store? 1 2 98 99
G10) [END OF SECTION G]

H) [BEGIN SECTION H]
[DISPLAY Q’S H1, H2, H3, H4 ON SAME SCREEN WITH DROP DOWNS]
H1) Are you covered by health insurance?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
H2) Do you have homeowner’s or renter’s insurance?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
H3) Do you have a life insurance policy?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
H4) Do you have auto insurance?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
[IF Q.H1, Q.H2, Q.H3, OR Q.H4 = 1 (YES), ASK; OTHERWISE SKIP TO Q.H8]
H5) Have you ever purchased any type of insurance directly yourself, that is, not through an employer?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
[IF Q.H5 = 1 (YES), ASK; OTHERWISE SKIP TO Q.H7]
H6) Thinking about the last time you purchased insurance, did you compare offers from different
insurance providers?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99

H7) How often do you review your insurance coverage?
At least once a year 1
Once every few years 2
Rarely 3
Never 4
Don’t know 98
Prefer not to say 99
H8) [END OF SECTION H]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 30
M) [BEGIN SECTION M]
M1) The survey is almost done, there are just a few questions remaining.
How strongly do you agree or disagree with the following statements? Please give your answer on a
scale of 1 to 7, where 1 = “Strongly Disagree,” 7 = “Strongly Agree,” and 4 = “Neither Agree Nor
Disagree”. You can use any number from 1 to 7. (Select an answer for each)
[RANDOMIZE]
Strongly
Disagree
1 2 3
Neither
Agree nor
Disagree
4 5 6
Strongly
Agree
7
Don’t
Know
Prefer not
to Say
M1_1) I am good at dealing with day-today financial matters, such as
checking accounts, credit and
debit cards, and tracking expenses
1 2 3 4 5 6 7 98 99
M1_2) I am pretty good at math 1 2 3 4 5 6 7 98 99
M1_3) I regularly keep up with economic
and financial news
1 2 3 4 5 6 7 98 99
M4) On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your
overall financial knowledge?
Very Low
1 2 3 4 5 6
Very High
7

Don’t
know
Prefer not
to say
1 2 3 4 5 6 7 98 99
[IF Q.A5 NE 1 (Did not complete HS), ASK; OTHERWISE SKIP TO Q.M5a]
M5) In which state did you live during your senior year in high school?
[DROP DOWN STATE LIST]
Outside the U.S. 60
Don’t know 98
Prefer not to say 99
M5a) Following are some multiple choice questions. If you don’t know the answer, just select “don’t
know.”
M6) 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?
More than $102 1
Exactly $102 2
Less than $102 3
Don’t know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 31
M7) 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?
More than today 1
Exactly the same 2
Less than today.....3
Don’t know 98
Prefer not to say 99
M8) If interest rates rise, what will typically happen to bond prices?
They will rise 1
They will fall.....2
They will stay the same 3
There is no relationship between bond prices and the interest rate 4
Don’t know 98
Prefer not to say 99
M9a) There are two questions left, and the survey will be complete.
Following are two statements. Please indicate whether each statement is true or false. If you don’t
know, just select “don’t know.”
[RANDOMIZE Q.M9 AND Q.M10]
M9) 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.

True 1
False.....2
Don’t know 98
Prefer not to say 99
M10) Buying a single company’s stock usually provides a safer return than a stock mutual fund.
True 1
False.....2
Don’t know 98
Prefer not to say 99
M11) [END OF SECTION M]

Appendix G - 2009 NFCS Questionnaire

National Financial Capability Study

2009 State-by-State Survey Questionnaire

Sample Characteristics:

 N ≈ 500 respondents per state (plus D.C.)

 Quotas within each state by:

 Age

 Gender

 Income

 Ethnicity

 Education

Coding Notes

 For all questions in the survey except open ended numeric questions (see below):

 Code 98 = Don't know

 Code 99 = Refused

 For open-ended numeric questions E5, E6, E9, E13, F8, F9 & G3:

 Code -98 = Don't know

 Code -99 = Refused

Z) Thank you very much for participating in this research.

 Please be assured that all of your answers will be completely ANONYMOUS and CONFIDENTIAL. Therefore, please try to answer these questions as openly and honestly as possible.

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 2

A1a) [BEGIN SCREENER]

A2) Please enter your 5 digit home zip code.

[_____]

[EDIT: 00001-99998]

[LOAD ALL GEO INFORMATION TO DATA]

[CHECK STATE QUOTAS, IF FULL, TERMINATE & SKIP TO Q.1000]

A3) What is your gender?

Male.....1

Female 2

A3aw) What is your age?

[DROP DOWN BOX]

Under 18 1

18-24.....2

25-29.....3

30-34.....4

35-39 5

40-44.....6

45-49.....7

50-54.....8

55-59.....9

60-64..... 10

65 or older..... 11

Prefer not to say 99

[IF Q.A3aw = 1 (<18) OR 99 (REF), TERMINATE & SKIP TO Q.1000]

A3b) [BUILDER: CREATE GENDER/AGE NET FROM Q'S A3 & A3aw:

Male 18-24.....1

Male 25-34.....2

Male 35-44.....3

Male 45-54 4

Male 55-64.....5

Male 65+.....6

Female 18-24 7

Female 25-34 8

Female 35-44 9

Female 45-54 10

Female 55-64 11

Female 65+ 12

CHECK QUOTAS BY STATE, IF FULL, TERMINATE & SKIP TO Q.1000]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 3

A4) Which of the following best describes your race or ethnicity?

Select all that apply.

[M]

White or Caucasian 1

Black or African-American.....2

Hispanic or Latino/a 3

Asian/Pacific Islander.....4

Native American or Alaska Native.....5

Other.....6

Prefer not to say 99

[IF Q.A4 = 99 (REF), TERMINATE & SKIP TO Q.1000][CODE 99 EXCLUSIVE]

[IF MULTIPLE RESPONSES AT Q.A4 ASSIGN TO QUOTA BASED ON PRIORITY:

1) Asian

2) African American

3) Hispanic

4) Other – Other + Native American

5) White]

[CHECK QUOTAS BY STATE, IF FULL, TERMINATE & SKIP TO Q.1000]

A5) What was the last year of education that you completed?

Did not complete high school 1

High school graduate 2

Some college 3

College graduate.....4

Post graduate education 5

Prefer not to say 99

[IF Q.A5 = 99 (REF), TERMINATE & SKIP TO Q.1000]

[CHECK QUOTAS BY STATE, IF FULL, TERMINATE & SKIP TO Q.1000]

A6) What is your marital status?

Married 1

Single.....2

Separated.....3

Divorced 4

Widowed/widower 5

Prefer not to say 99

[IF Q.A6 = 99 (REF), TERMINATE & SKIP TO Q.1000]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 4

A7) Which of the following describes your current living arrangements?

I am the only adult in the household.....1

I live with my spouse/partner/significant other.....2

I live in my parents' home 3

I live with other family, friends, or roommates.....4

Prefer not to say 99

[IF Q.A7 = 99 (REF), TERMINATE & SKIP TO Q.1000]

A7a) BUILDER: PUNCH MARITAL STATUS VARIABLE:

If Q.A6 = 1, PUNCH MARRIED

If Q.A6 = 2 – 5 AND Q.A7 = 2, PUNCH LIVING WITH PARTNER

If Q.A6 = 2 – 5 AND Q.A7 = 1, 3, or 4, PUNCH SINGLE

Married 1

Living with partner.....2

Single.....3

If Q.A7a = 1, CVAR "spouse"

If Q.A7a = 2, CVAR "partner"]

IF Q.A7a = 1 OR 2, CVAR "Does your household"

IF Q.A7a = 3, CVAR "Do you"]

A8) What is your [IF Q.A7a = 1 OR 2) INSERT: household's] approximate annual income, including

wages, tips, investment income, public assistance, income from retirement plans, etc.? Would you

say it is…

Less than $15,000.....1

At least $15,000 but less than $25,000 2

At least $25,000 but less than $35,000 3

At least $35,000 but less than $50,000 4

At least $50,000 but less than $75,000 5

At least $75,000 but less than $100,000 6

At least $100,000 but less than $150,000 7

$150,000 or more 8

Don't know 98

Prefer not to say 99

[IF Q.A8 = 98 OR 99, TERMINATE & SKIP TO Q.1000]

[CHECK QUOTAS BY STATE, IF FULL, TERMINATE & SKIP TO Q.1000]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 5

A9) Which of the following best describes your current employment or work status?

Self employed 1

Work full-time for an employer 2

Work part-time for an employer.....3

Homemaker.....4

Full-time student 5

Permanently sick, disabled, or unable to work.....6

Unemployed or temporarily laid off.....7

Retired 8

Prefer not to say 99

[IF Q.A9 = 99, TERMINATE & SKIP TO Q.1000]

[IF Q.A7a = 1 OR 2, ASK; OTHERWISE SKIP TO Q.A10a]

A10) Which of the following best describes your [spouse/partner]'s current employment or work status?

Self employed 1

Work full-time for an employer 2

Work part-time for an employer.....3

Homemaker.....4

Full-time student 5

Permanently sick, disabled, or unable to work.....6

Unemployed or temporarily laid off.....7

Retired 8

Prefer not to say 99

[IF Q.A10 = 99, TERMINATE & SKIP TO Q.1000]

A10a) BUILDER: HOUSEHOLD RETIREMENT STATUS:

IF Q.A9 = 1 – 3, PUNCH NON-RETIRED HOUSEHOLD

IF ((Q.A7a = 3 AND Q.A9 = 4 – 7) OR (Q.A7a = 1, 2 AND Q.A9 = 4 – 7 AND Q.A10 = 1 – 7)), PUNCH NON-RETIRED HOUSEHOLD

IF Q.A9 = 8, PUNCH RETIRED-HOUSEHOLD – RESPONDENT RETIRED

IF Q.A7a = 1, 2 AND Q.A9 = 4 – 7 AND Q.A10 = 8, PUNCH RETIRED HOUSEHOLD – RESPONDENT NOT WORKING AND SPOUSE RETIRED

Non-retired household 1

Retired household--Respondent retired 2

Retired household--Respondent not working and spouse retired.....3]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 6

A11) How many children do you have who are financially dependent on you [IF Q.A7a = 1 OR 2 INSERT:

or your [spouse/partner]]? Please include children not living at home, and step-children as well.

1.....1

2.....2

3.....3

4 or more.....4

No financially dependent children 5

Do not have any children 6

Prefer not to say 99

[IF Q.A11 = 99, TERMINATE & SKIP TO Q.1000]

[IF Q.A7a = 1, 2, ASK; OTHERWISE SKIP TO Q.A16]

[DISPLAY Q'S A14 & A15 ON SAME SCREEN]

A14) Who in the household is most knowledgeable about saving, investing and debt?

You 1

Someone else 2

You and someone else are equally knowledgeable 3
Don’t know 98
Prefer not to say 99
A15) Who in your household usually handles the chore of bill paying?
You 1
Someone else 2
You and someone else share the responsibility.....3
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 7
J) [BEGIN SECTION J]
Ja) These days, a lot of people are thinking about financial issues. We are interested in your opinions on
some of these issues.
J1) 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.”
NotAt All
Satisfied
1 2 3 4 5 6 7 8 9
Extremely
Satisfied
10
Don’t
know
Prefer not
to say
1 2 3 4 5 6 7 8 9 10 98 99
J2) When thinking of your financial investments, how willing are you to take risks? Please use a 10-point
scale, where 1 means “Not At All Willing” and 10 means “Very Willing.”

NotAt All

Willing

1 2 3 4 5 6 7 8 9

Very Willing

10

Don’t

know

Prefer not

to say

1 2 3 4 5 6 7 8 9 10 98 99

J3) Over the past year, would you say your [IF Q.A7a = 1 OR 2 INSERT: household’s] spending was less

than, more than, or about equal to your [IF Q.A7a = 1 OR 2 INSERT: household’s] income? Please

do not include the purchase of a new house or car, or other big investments you may have made.

Spending less than income.....1

Spending more than income 2

Spending about equal to income.....3

Don’t know 98

Prefer not to say 99

J4) In a typical month, how difficult is it for you to cover your expenses and pay all your bills?

Very difficult.....1

Somewhat difficult 2

Not at all difficult 3

Don’t know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 8

J5) 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?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.A11 = 1, 2, 3, 4 (FINANCIAL DEPENDENT CHILD), ASK; OTHERWISE SKIP TO Q.J8]

J6) Are you setting aside any money for your children’s college education?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.J6 = 1 (YES), ASK; OTHERWISE SKIP TO Q.J8]

J7) Are you using a 529 Plan or Coverdell Educational Savings Account to save for college?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.A10a = 1 (NOT RETIRED), ASK; OTHERWISE SKIP TO Q.J9]

J8) Have you ever tried to figure out how much you need to save for retirement?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.A10a = 2, 3 (RETIRED), ASK; OTHERWISE SKIP TO Q.J10]

J9) [IF Q.A10a = 2 INSERT: Before you retired, did you try to figure out how much you needed to save
for retirement?]

[IF Q.A10a = 3 INSERT: Before your [spouse/partner] retired, did you try to figure out how much
you needed to save for retirement?]

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 9

J10) In the past 12 months, [IF Q.A7a = 3 INSERT: have you/ IF Q.A7a = 1 OR 2 INSERT: has your

household] experienced a large drop in income which you did not expect?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[DISPLAY Q’S J11 & J12 ON SAME SCREEN]

J11) In the past 12 months, have you obtained a copy of your credit report?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

J12) In the past 12 months, have you checked your credit score?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.J12 = 1 (YES), ASK; OTHERWISE SKIP TO Q.J14]

J13) What was your credit score the last time you checke

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 10

Ka) [BEGIN SECTION K]

K) In the last 5 years, have you asked for any advice from a financial professional about any of the

following? (Select an answer for each)

[RANDOMIZE]

Yes No Don’t Know

Prefer notto

Say

K_1) Debt counseling 1 2 98 99

K_2) Savings or investments 1 2 98 99

K_3) Taking out a mortgage or a loan 1 2 98 99

K_4) Insurance of any type 1 2 98 99

K_5) Tax planning 1 2 98 99

[IF Q.K_1, K_2, K_3, K_4, K_5 = 1 (YES), ASK; OTHERWISE SKIP TO Q.K8a]

K6) Typically, when looking for a financial professional, do you meet with or talk to more than one

advisor before making a choice?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

K7) Have you ever checked with a state or federal regulator regarding the background, registration, or

license of a financial professional?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 11

K8a) How strongly do you agree or disagree with the following statements? Please give your answer on a

scale of 1 to 7, where 1 = "Strongly Disagree," 7 = "Strongly Agree," and 4 = "Neither Agree Nor

Disagree". You can use any number from 1 to 7. (Select an answer for each)

[RANDOMIZE]

Strongly

Disagree

1 2 3

Neither
Agree nor
Disagree
4 5 6
Strongly
Agree
7
Don’t
Know
Prefer not
to Say
K8a_1) “I would trust financial
professionals and accept what
they recommend.”
1 2 3 4 5 6 7 98 99
K8a_2) “Financial professionals are too
expensive for me.”
1 2 3 4 5 6 7 98 99
K8a_3) “It is hard to find the right
financial professional for me.”
1 2 3 4 5 6 7 98 99
K11) [END OF SECTION K]
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 12
B) [BEGIN SECTION B]
[DISPLAY Q’S B1 AND B2 ON SAME SCREEN]
B1) [Do you/Does your household] have a checking account?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
B2) [Do you/Does your household] have a savings account, money market account, or CDs?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.B1 = 1 (YES), ASK; OTHERWISE SKIP TO Q.B5]

B3) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] use a debit card tied to your bank
account?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

B4) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] overdraw your checking account
occasionally?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 13

[IF Q.B1 AND B2 = 2 (NO), ASK; OTHERWISE SKIP TO Q.B14]

B5a) Which of the following are reasons why you do not have a checking or savings account? (Select an
answer for each)

[RANDOMIZE]

	Yes	No	Don’t Know	Prefer not to Say
B5a_1) Do not have enough money to make it worthwhile	1	2	98	99

B5a_2) Do not like dealing with banks 1 2 98 99

B5a_3) Bank fees are too high 1 2 98 99

B5a_4) Inconvenient hours or location 1 2 98 99

B5a_5) Banks would not let me open an
account
1 2 98 99

B5a_6) Do not want to share my personal
information
1 2 98 99

[DISPLAY Q'S B11, B12, B13 ON SAME SCREEN WITH DROP DOWN BOXES]

B11) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] sometimes go to a check cashing
store to cash checks?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

B12) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] sometimes cash checks at a grocery
store or supermarket?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

B13) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] sometimes pay your bills with money
orders?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 14

[IF Q.B1 OR B2 = 1, 98, 99 (YES, DK, REF), ASK; OTHERWISE SKIP TO Q.B16]

B14) Not including retirement accounts, [IF Q.A7a = 1 OR 2 INSERT does your household/IF Q.7a = 3

INSERT: do you] have any investments in stocks, bonds, mutual funds, or other securities?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

[IF Q.B14 = 1 (YES), ASK; OTHERWISE SKIP TO Q.B16]

B15) Not including retirement accounts, what is the total approximate current value of your [IF Q.A7a = 1

OR 2 INSERT: household's] investments in stocks, bonds, mutual funds and other securities? Would

you say it is…

Less than $10,000.....1

At least $10,000 but less than $50,000 2

At least $50,000 but less than $100,000 3

At least $100,000 but less than $250,000 4

More than $250,000 5

Don't know 98

Prefer not to say 99

B16) [END OF SECTION B]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 15

[IF Q.A10a = 1 (NON-RETIRED HH), ASK; OTHERWISE SKIP TO Q.D]

C) [BEGIN SECTION C]

Ca) The following are questions about retirement accounts and pensions. Please answer to the best of

your knowledge. If you really do not know the answer, please select "don't know."

C1) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] have any retirement plans through a

current or previous employer, like a pension plan or a 401(k)?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

[IF Q.C1 = 1 (YES) AND Q.A7a = 1 OR 2, ASK; OTHERWISE SKIP TO Q.C3]

C2) Were these plans provided by your employer or your [spouse/partner]'s employer, or both?

Your employer 1

Your [spouse's/partner's] employer.....2

Both your employer and your [spouse's/partner's] employer.....3

Don't know 98

Prefer not to say 99

[IF Q.C1 = 1 (YES), ASK; OTHERWISE SKIP TO Q.C4]

C3) Are any of these retirement plans the kind where you [IF Q.A7a = 1 OR 2 INSERT: or your

[spouse/partner]] get to choose how the money is invested?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

C4) Do you [IF Q.A7a = 1 OR 2 INSERT: 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?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

[IF Q.C3 = 1 OR Q.C4 = 1 (YES), ASK; OTHERWISE, SKIP TO Q.C12]

C5) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] regularly contribute to a retirement
account like a 401(k) or IRA?

Yes.....1
No.....2
Don't know 98
Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 16

C6) What is the total approximate current value of your [IF Q.A7a = 1 OR 2 INSERT: household's]
retirement accounts? Would you say it is…

Less than $10,000.....1
At least $10,000 but less than $50,000 2
At least $50,000 but less than $100,000 3
At least $100,000 but less than $250,000 4
More than $250,000 5
Don't know 98
Prefer not to say 99

C7) How much of your [IF Q.A7a = 1 OR 2 INSERT: household's] retirement portfolio is invested in
stocks or mutual funds that contain stocks?

More than half.....1
Less than half 2
None 3
Don't know 98
Prefer not to say 99

C8) Are your [IF Q.A7a = 1 OR 2 INSERT: household's] retirement assets primarily invested in a lifecycle or target-date fund?

Yes.....1
No.....2
Don't know 98

Prefer not to say 99

[IF Q.C8 = 2 (NO) OR 98 (DK), ASK; OTHERWISE SKIP TO Q.C10]

C9) How often do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] change or rebalance the
investments in your [IF Q.A7a = 1 OR 2 INSERT: household's] retirement account(s)?

At least once a year 1

Once every few years 2

Rarely 3

Never 4

Don't know 98

Prefer not to say 99

[DISPLAY Q'S C10 & C11 ON SAME SCREEN]

C10) In the last 12 months, have you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] taken a loan
from your retirement account(s)?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

C11) In the last 12 months, have you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] taken a
hardship withdrawal from your retirement account(s)?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

C12) In the last 12 months, have you received a statement from the Social Security Administration that tells
you how much money you can expect to receive from Social Security when you retire?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.C12 = 1 (YES), ASK; OTHERWISE SKIP TO Q.C16]

[DISPLAY Q’S C13 & C14 ON SAME SCREEN]

C13) Have you used the information to decide or adjust your decision about when to stop working?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

C14) Have you used the information to decide or adjust your decision about when to claim your Social

Security benefits?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

C16) [END OF SECTION C]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 18

[IF Q.A10a = 2, 3 (RETIRED HH), ASK; OTHERWISE SKIP TO Q.E]

D) [BEGIN SECTION D]

D1w) [IF Q.A10a = 2 INSERT: At what age did you retire?]

[IF Q.A10a = 3 INSERT: At what age did your [spouse/partner] retire?]

[DROP DOWN BOX]

54 years old or earlier 1

55.....2

56.....3

57.....4

58 5

59.....6

60.....7
61.....8
62.....9
63..... 10
64..... 11
65..... 12
66..... 13
67..... 14
68..... 15
69..... 16
70..... 17
71 years old or later 18
Don’t know 98
Prefer not to say 99
D2) [IF Q.A10a = 2 INSERT: When you retired did you take a lump-sum payout from an employer or
union-provided retirement plan or pension?]
[IF Q.A10a = 3 INSERT: When your [spouse/partner] retired did he or she take a lump-sum payout
from an employer- or union-provided retirement plan or pension?
Yes.....1
No.....2
Don’t know 98
Prefer not to say 99
National Financial Capability Study 2009 State-by-State Survey Questionnaire - 19
D3a) Which of the following are you [IF Q.A7a = 1 OR 2 INSERT: and your [spouse/partner]] using for
your living expenses? (Select an answer for each)
[DO NOT RANDOMIZE]
Yes No Don’t Know
Prefer not to

Say

D3a_1) Social Security retirement payments 1 2 98 99

D3a_2) Pension plan payments 1 2 98 99

D3a_3) Withdrawals from savings, investments,

or retirement accounts

1 2 98 99

D3a_4) Dividends or interest income from

savings, investments, or retirement

accounts

1 2 98 99

D3a_5) Salary, wages, or self-employment

income

1 2 98 99

D3a_6) Rental income or proceeds from a sale of

real estate

1 2 98 99

D3a_7) Payments from a reverse mortgage 1 2 98 99

D3a_8) Financial support from family 1 2 98 99

[IF Q.D3a_3 = 1 (YES TO WITHDRAWALS), ASK; OTHERWISE SKIP TO Q.D15]

D11) Have you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] calculated how much of your

savings and investments you can afford to withdraw each year?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.D11 = 1 (YES), ASK; OTHERWISE SKIP TO Q.D14]

[DISPLAY Q’S D12 & D13 ON SAME SCREEN]

D12) Approximately what percent of your savings and investments did you calculate that you can withdraw

each year?

5% or less.....1

Between 5-10%.....2

Between 10-15% 3

Between 15-20% 4

More than 20%.....5

Don’t know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 20

D13) Have you been able to stay within the range you calculated?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

D14) Have you changed the amount or frequency of your withdrawals from savings, investments, or

retirement accounts in response to current economic conditions?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.D3a_1 = 1 (YES SOCIAL) AND Q.A7a = 1 OR 2, ASK; OTHERWISE SKIP TO Q.D16]

D15) Who in your household is receiving Social Security payments?

You 1

Your [spouse/partner] 2

Both 3

Don’t know 98

Prefer not to say 99

[IF Q.D3a_1 = 1 (YES SOCIAL), ASK; OTHERWISE SKIP TO Q.D17]

D16) [IF Q.A7a = 3 (SINGLE) OR Q.D15 = 1 OR 3 INSERT: At what age did you begin to receive Social

Security retirement benefits?]

[IF Q.D15 = 2 INSERT: At what age did your [spouse/partner] begin to receive Social Security retirement benefits?]

61 or earlier.....1

62.....2

63.....3

64.....4

65.....5

66 or later.....6

Don’t know 98

Prefer not to say 99

D17) [END OF SECTION D]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 21

E) [BEGIN SECTION E]

Ea) Do you [IF Q.A7a = 1 OR 2 INSERT: or your [spouse/partner]] currently own any of the following?

(Select an answer for each)

[DO NOT RANDOMIZE]

	Yes	No	Don’t Know	Prefer notto Say
Ea_1) Your home	1	2	98	99
Ea_2) Other real estate (for example, a second home or investment property)	1	2	98	99
Ea_3) Part or all of a business or farm	1	2	98	99

[IF Q.Ea_1 = 1 (YES OWN HOME), ASK; OTHERWISE SKIP TO Q.E16]

E3a) Following are some questions about your home. If you own more than one home, please refer to your primary residence.

E4) How long ago did you buy your current home?

Within the past 2 years 1

3-5 years ago 2

6-10 years ago 3

More than 10 years ago.....4

You did not purchase it.....5

Don’t know 98

Prefer not to say 99

[IF Q.E4 = 1 OR 2 (PAST 5 YEARS), ASK; OTHERWISE SKIP TO Q.E6]

E5) Approximately what percentage of the purchase price was your downpayment? Your best guess is

fine.

[_____]%

[EDIT: 0-100]

[TEXT BOX] Don’t know 98

[TEXT BOX] Prefer not to say 99

E6) If you were to sell your home today, about how much would it sell for? Your best guess is fine.

$[_____]

[EDIT: 0-999,999,999,999,999]

[TEXT BOX] Don’t know 98

[TEXT BOX] Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 22

[DISPLAY Q’S E7 & E8 ON SAME SCREEN]

E7) Do you currently have a mortgage on your home?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

E8) Do you have a home equity loan?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.E7 = 1 OR Q.E8 = 1 (YES), ASK; OTHERWISE SKIP TO Q.E10a]

E9) Approximately how much do you currently owe on your home [IF Q.E7 = 1 AND Q.E8 = 1 INSERT:

including mortgages and home equity loans]? Your best guess is fine.

$[_____]

[EDIT: 0-999,999,999,999,999]

[TEXT BOX] Don't know 98

[TEXT BOX] Prefer not to say 99

[IF Q.E7 = 1 (YES), ASK; OTHERWISE SKIP TO Q.E16]

E10a) Following are some questions about your mortgage. If you have more than one mortgage on your

main home, please refer to your primary mortgage.

[IF Q.E4 = 1 OR 2 (PAST 5 YEARS), ASK; OTHERWISE SKIP TO Q.E12]

[DISPLAY Q'S E10 & E11 ON SAME SCREEN]

E10) When you were getting your mortgage, did you compare offers from different lenders or mortgage

brokers?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

E11) When you were getting your mortgage, did you consider how much the monthly payments would be

as a percentage of your income?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 23

E12) Is your mortgage a fixed-rate mortgage or an adjustable-rate mortgage?

Fixed-rate mortgage 1

Adjustable rate mortgage 2

Don’t know 98

Prefer not to say 99

E13) Approximately what interest rate are you paying on this mortgage at the moment?

Example: If rate is 8.5%, enter as 8.5

Example: If rate is 9 and 1/8, enter as 9.125

[_____]%

[ENTER RANGE 0.000 – 100.000]

[TEXT BOX] Don’t know 98

[TEXT BOX] Prefer not to say 99

E14) Is this an interest-only mortgage or a mortgage with an interest-only option, or neither of these?

Yes – Interest only mortgage or interest-only option 1

No – Neither.....2

Don’t know 98

Prefer not to say 99

E15) How many times have you been late with your mortgage payments in the last 2 years? (If you have

more than one mortgage on your home(s), please consider them all.)

Never 1

Once.....2

More than once.....3

Don’t know 98

Prefer not to say 99

E16) Have you been involved in a foreclosure process on your home in the last 2 years?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

E17) [END OF SECTION E]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 24

F) [BEGIN SECTION F]

F1) How many credit cards do you have? Please include store and gas station credit cards but NOT debit cards.

1.....1

2-3 2

4-8 3

9-12.....4

13-20.....5

More than 20 6

No credit cards 7

Don't know 98

Prefer not to say 99

[IF Q.F1 = 7 (None), 98 (DK), 99 (REF), SKIP TO F12]

F2) In the past 12 months, which of the following describes your experience with credit cards? (Select an answer for each)

[DO NOT RANDOMIZE]

	Yes	No	Don't Know	Prefer notto Say
F2_1) I always paid my credit cards in full	1	2	98	99
F2_2) In some months, I carried over a balance and was charged interest	1	2	98	99
F2_3) In some months, I paid the minimum payment only	1	2	98	99
F2_4) In some months, I was charged a late fee for late payment				

1 2 98 99

F2_5) In some months, I was charged an over
the limit fee for exceeding my credit line

1 2 98 99

F2_6) In some months, I used the cards for a
cash advance

1 2 98 99

[IF Q.F2_1 NE 1 (YES ALWAYS PAID IN FULL), ASK; OTHERWISE SKIP TO Q.F9]

F8) Approximately what interest rate do you pay on the card where you have the largest balance? Your
best guess is fine.

Example: If rate is 10.25%, enter as 10.25

[_____]%

[ENTER RANGE 0.00 – 100.00]

[TEXT BOX] Don’t know 98

[TEXT BOX] Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 25

[IF Q.F2_1 = 1 (YES ALWAYS PAID IN FULL), ASK; OTHERWISE SKIP TO Q.F10]

F9) Approximately what is the interest rate on the card you use most often? Your best guess is fine.

Example: If rate is 10.25%, enter as 10.25

[_____]%

[ENTER RANGE 0.00 – 100.00]

[TEXT BOX] Don’t know 98

[TEXT BOX] Prefer not to say 99

F10) Thinking about when you obtained your most recent credit card, did you collect information about
different cards from more than one company in order to compare them?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

F11) Approximately how much do you [IF Q.A7a = 1 OR 2 INSERT: and your [spouse/partner]] currently
owe in total on all your credit cards? Your best guess is fine.

$0.....1

At least $1 but less than $1,000.....2

At least $1,000 but less than $5,000.....3

At least $5,000 but less than $10,000 4

At least $10,000 but less than $20,000 5

Over $20,000.....6

Don't know 98

Prefer not to say 99

F12) [END OF SECTION F]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 26

G) [BEGIN SECTION G]

G1) [Do you/Does your household] currently have an auto loan? (This does not refer to an auto lease).

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

[IF Q.G1 = 1 (YES), ASK; OTHERWISE SKIP TO Q.G4]

G2) Thinking about your most recent auto loan, did you compare offers from different lenders?

Yes.....1

No.....2

Don't know 98

Prefer not to say 99

G3) Approximately what interest rate are you paying on your auto loan? (If you have more than one auto
loan, please consider your most recent one.)

Example: If rate is 8.5%, enter as 8.5

Example: If rate is 7 and 3/8, enter as 7.375

[_____]%

[ENTER RANGE 0.000 – 100.000]

[TEXT BOX] Don’t know 98

[TEXT BOX] Prefer not to say 99

G4) Have you declared bankruptcy in the last two years?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 27

G5) Please indicate if you have done any of the following in the past 5 years. (Select an answer for each)

[RANDOMIZE]

Yes No Don’t Know

Prefer not to

Say

G5_1) Have you taken out an auto title loan? 1 2 98 99

G5_2) Have you taken out a short term "payday" loan? 1 2 98 99

G5_3) 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)

1 2 98 99

G5_4) Have you used a pawn shop? 1 2 98 99

G5_5) Have you used a rent-to-own store? 1 2 98 99

G10) [END OF SECTION G]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 28

H) [BEGIN SECTION H]

[DISPLAY Q’S H1, H2, H3, H4 ON SAME SCREEN WITH DROP DOWNS]

H1) Are you covered by health insurance?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

H2) Do you have homeowner’s or renter’s insurance?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

H3) Do you have a life insurance policy?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

H4) Do you have auto insurance?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.H1, Q.H2, Q.H3, OR Q.H4 = 1 (YES), ASK; OTHERWISE SKIP TO Q.H8]

H5) Have you ever purchased any type of insurance directly yourself, that is, not through an employer?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

[IF Q.H5 = 1 (YES), ASK; OTHERWISE SKIP TO Q.H7]

H6) Thinking about the last time you purchased insurance, did you compare offers from different

insurance providers?

Yes.....1

No.....2

Don’t know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 29

H7) How often do you review your insurance coverage?

At least once a year 1

Once every few years 2

Rarely 3

Never 4

Don’t know 98

Prefer not to say 99

H8) [END OF SECTION H]

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 30

M) [BEGIN SECTION M]

M1) The survey is almost done, there are just a few questions remaining.

How strongly do you agree or disagree with the following statements? Please give your answer on a

scale of 1 to 7, where 1 = “Strongly Disagree,” 7 = “Strongly Agree,” and 4 = “Neither Agree Nor

Disagree”. You can use any number from 1 to 7. (Select an answer for each)

[RANDOMIZE]

Strongly

Disagree

1 2 3

Neither

Agree nor

Disagree

4 5 6

Strongly

Agree

7

Don’t

Know

Prefer not

to Say

M1_1) I am good at dealing with day-today financial matters, such as

checking accounts, credit and

debit cards, and tracking expenses

1 2 3 4 5 6 7 98 99

M1_2) I am pretty good at math 1 2 3 4 5 6 7 98 99

M1_3) I regularly keep up with economic

and financial news

1 2 3 4 5 6 7 98 99

M4) On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your

overall financial knowledge?

Very Low

1 2 3 4 5 6

Very High

7

Don't

know

Prefer not

to say

1 2 3 4 5 6 7 98 99

[IF Q.A5 NE 1 (Did not complete HS), ASK; OTHERWISE SKIP TO Q.M5a]

M5) In which state did you live during your senior year in high school?

[DROP DOWN STATE LIST]

Outside the U.S. 60

Don't know 98

Prefer not to say 99

M5a) Following are some multiple choice questions. If you don't know the answer, just select "don't

know.”

M6) 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?

More than $102 1

Exactly $102 2

Less than $102 3

Don’t know 98

Prefer not to say 99

National Financial Capability Study 2009 State-by-State Survey Questionnaire - 31

M7) 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?

More than today 1

Exactly the same 2

Less than today.....3

Don’t know 98

Prefer not to say 99

M8) If interest rates rise, what will typically happen to bond prices?

They will rise 1

They will fall.....2

They will stay the same 3

There is no relationship between bond prices and the interest rate 4

Don’t know 98

Prefer not to say 99

M9a) There are two questions left, and the survey will be complete.

Following are two statements. Please indicate whether each statement is true or false. If you don’t

know, just select “don’t know.”

[RANDOMIZE Q.M9 AND Q.M10]

M9) 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.

True 1

False.....2

Don’t know 98

Prefer not to say 99

M10) Buying a single company’s stock usually provides a safer return than a stock mutual fund.

True 1

False.....2

Don’t know 98

Prefer not to say 99

M11) [END OF SECTION M]