THE INFLUENCES OF FINANCIAL HELP-SEEKING AND OTHER INFORMATION SOURCES ON CONSUMER'S FINANCIAL MANAGEMENT BEHAVIOR

by

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(Under the Direction of Swarn Chatterjee)

ABSTRACT

Consumers apply multiple information sources when they make complicated financial decisions. The combination of sources that consumers select, relying on themselves or seeking help from others, can lead to either financial wellness or financial frustration. This study tends to explore the mechanism of the information search and help seeking process when consumers make sophisticated financial decisions. Using the 2012 National Financial Capability Study dataset, this dissertation aims to develop a consumer financial decision model of financial help-seeking behavior, including the possible influential factors and positive and negative outcomes of seeking help from financial professionals. This study uses structural equation modeling as the main statistical analysis method to examine the relationships among the variables included in the financial help-seeking behavior framework. Results indicate that seeking help from financial professionals was positively associated with desired financial management behaviors and negatively associated with risky financial management behaviors. The financial help-seeking behavior also worked as a significant mediator between the relationships of the internal

information sources (such as education, objective financial knowledge, financial stressors, and financial attitudes factors) and financial management behaviors. The additional multi-group structural equation modeling results showed that the influence of the internal and external information sources on financial behaviors varied largely by demographic characteristics. This study sheds light on the significance and value of financial planners, counselors, and other professionals who can positively influence consumers' financial behaviors. The significance of this study can help financial professionals improve their interactions with their clients when helping clients reach their financial goals. The findings from this study also challenge the policymakers to develop pathways that can enhance the national financial education programs and can create greater access to professional financial advice.

INDEX WORDS: Financial help-seeking, Financial professionals, Information search framework, External search, Internal search, Financial stressors, Financial attitude, Human capital, Financial management behavior, Financial planning services, Structural equation modeling, Mediation effect, Multi-group structural equation modeling

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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2017

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August 2017

ACKNOWLEDGEMENTS

I would never have been able to accomplish this dissertation without the guidance of my committee members and support from my family and friends.

I would like to express the deepest gratitude to my major professor Dr. Swarn Chatterjee, for his patience, motivation, and knowledge. He continually provided me with opportunities to learn and practice in research in the past four years. I could not have imagined having a better advisor and mentor for my doctoral study. Without his persistent guidance and help this dissertation would not have been possible.

I would like to thank my committee members, Dr. John Grable and Dr. Ann Woodyard, who patiently provided insightful comments and encouragement to improve my dissertation. I am very grateful for having Dr. Sheri Worthy as my teaching mentor in my doctoral study. She provided me with incredible opportunities to practice and improve my teaching skills and helped me learn innovative teaching methods and technologies. I would also like to thank Dr. Patryk Babiarz for guiding my research for the past several years and Dr. Pamela Turner for giving me the opportunity to work at the Extension Office.

Special thanks go to Dr. M.J. Kabaci and Dr. Brenda Cude, who introduced and recommended me to the department of Financial Planning, Housing and Consumer Economics. I would like to express my thankfulness to Dr. Robert Nielsen for giving me advice on doctoral study. I would also like to thank my peers, Judith Aboagye, Xuan Chen, Young Joo Choung, Sae Rom Chung, Dr. Robin Henager-Greene, Dr. Wookjae Heo, Ji-Young Jung, Dr. Jorge Ruiz-

Menjivar, Dr. Tae-Young Pak, Narang Park, Dr. Abed Rabbani, Aman Sunder, Michael Thomas, Dr. Lini Zhang, Haidong Zhao, for their collaboration, encouragement, and of course friendship.

Last but not least, I would like to thank my grandparents, Zhushan Fan and Xiulan Liu, my parents, Jing Fan and Huiying Fu, and my boyfriend, Yang Bai for their love, support, and encouragement.

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CHAPTER ONE

INTRODUCTION

Factors that influence the savings and investment decisions of households have long been important topics of interest for policymakers, practitioners, and scholars of household financial decision making. Various aspects of financial behavior have been studied across a number of disciplines, including financial planning, behavioral finance, economics, and psychology. The overall economic climate, especially since the 2008 economic recession and recovery, have created policy-related challenges for both policymakers and scholars, and has further put into focus the need for greater research on factors that can improve the financial capability and financial outcomes of households.

Retirement planning, investment planning, and tax planning are the three top motivations for financial help seekers (Grable & Joo, 2003). As the baby boomer generation approaches retirement and the millennial population approaches the wealth formation phase of their life-cycle, there has been a growing demand for professional financial advice across different areas of financial planning. While people need more information regarding everyday financial matters to meet their long-term and immediate financial goals, little has been studied about the resources that individuals use to access the financial information and help (Joo & Grable, 2001). There has been limited research investigating factors that influence individuals' information source preferences and help-seeking behavior when dealing with financial issues.

The various ways in which professional financial advice can help to improve clients' financial decisions are still either underestimated or under-researched. Effective financial advice

can manifest in the form of developing positive financial-related behavioral habits and improving household financial outcomes. Previous studies found that although friends, relatives, media, employers, and insurance agents rank higher as sources of financial information than financial planners, when it comes to the usefulness for providing substantial financial help, financial professionals and other experts outweigh all of the other sources (Grable & Joo, 2003; Loibl & Hira, 2007; Robb, Babiarz & Woodyard, 2012). Literature also indicated that some other sources of financial information, such as employer-offered financial education, school-provided personal finance courses, as well as homeownership and credit counseling programs may somewhat improve financial behavior (Martin, 2007).

Nevertheless, it is inevitable that there remains a gap between the ideal and practice, meaning that regardless of financial literacy and education level, the actual financial behaviors of households usually fail to follow rational decisions to maximize utility as would be suggested by conventional economic theory. Therefore, the values and benefits of seeking advice from financial professionals can be beneficial for households in meeting their specific financial goals and objectives, such as increasing wealth, preventing loss, smoothing out consumption, and bringing their financial decisions closer to the theoretical norms (Hanna & Lindamood, 2010).

Purpose of the Study

There are two main purposes of this study. The first purpose is to analyze how seeking help from financial professionals, as an external information source, can possibly improve consumers' financial management behaviors. In this study, there are two types of financial management behaviors – risky and desired. More specifically, the first research objective is to discover if using financial professional services is positively associated with desired behaviors and negatively associated with risky behaviors.

While the first research purpose is focused on the external influences, second purpose of this study is to examine the internal factors and consumer characteristics in three dimensions – human capital, financial stressors, and financial attitudes and their associations with household financial management behaviors. More specifically, the second research objective is to test if the internal information sources influence financial management behaviors directly and indirectly through seeking advice offered by financial professionals.

Significance

Consumers apply multiple information sources when they make complicated financial decisions. The combination of sources consumers select, relying on themselves or seeking help from others, could lead either to positive outcomes such as financial wellness or to negative outcomes such as financial frustration.

Unveiling the importance and influence of personal financial professionals and services contributes to the literature of financial help-seeking behavior, consumer information search mechanisms, and financial decision-making processes. The findings from this study also provide significant implications for financial professionals and educators, consumers, market analysts, and policymakers.

Previous studies have indicated that financial planners provide value to clients by reducing overall wealth volatility (Grable & Chatterjee, 2014a). A long-term engagement with financial planning professionals can improve clients' financial situation and various aspects of well-being along with higher levels of financial regulatory understanding and experience (Newton, Corones, Irving, & Thomas, 2015). However, some questions remain unanswered. For instance, the help and services provided by financial planners and professionals should not be considered isolated from the efforts made by the consumers and the consumers' previous and

current financial and non-financial situations and future needs. It is worth knowing how seeking help from financial advisors can interact with consumer-related characteristics, such as experience; knowledge, expectations, and familiarity with financial matters; habitual reactions and behaviors toward financial needs and changes, and if the combined efforts from all these sources improve consumers' financial behaviors and financial satisfaction.

Second, the widely used financial help-seeking model developed by Grable and Joo (1999) depicts consumers' help-seeking decision making in stages. This study further examines the nature and extent of this association along with other information sources that consumers use during the help-seeking decision process.

Previous studies have examined factors that lead to the demand for financial advice. Determinants, such as self-efficacy, financial stressors, financial education, and demographic characteristics lead people to seek financial help from professionals (Joo & Grable, 2001; Letkiewicz, Robinson, Domian, & Uborceva, 2015; Lim, Heckman, Letkiewicz, & Montalto, 2014). Financial knowledge and financial satisfaction have also been found to be associated with the likelihood of seeking help from financial professionals (Robb et al., 2012). However, it can be interesting to learn the consequences of getting professional help. It can be a significant addition to the current financial help-seeking model to find that those who use professional help show more responsible financial behaviors and less risky financial behaviors.

This study is motivated by the absence of empirical research on whether financial help-seeking behavior possibly influences consumers' actual financial management practices. Moreover, this study can expand Grable and Joo's (1999) financial help-seeking framework by applying professional help-seeking behavior as an external source, along with consumers'

internal sources, such as education attainment, financial difficulties, and financial attitudes, and the interactive influence of these factors on consumers' financial management behaviors.

The findings from this study also contribute to the literature of financial help-seeking behavior and analyses of general consumer financial practices. Financial service providers and professionals can use the findings in this study to recognize the different characteristics of consumers, such as fundamental knowledge and financial confidence, and the preference and method for finding new information and services. Moreover, this study also sheds light on the value of financial professionals and the financial service areas for which consumers seek help. It can be an opportunity for policymakers and financial educators to emphasize the importance of financial literacy and education in shaping positive financial attitudes and to create programs to help consumers reduce financial stress while acknowledging the value of financial professionals.

Research Questions

In order to address the above literature gaps, this study aims to answer the following research questions:

(1) Is financial help-seeking behavior, as an external information source, a significant indicator of desired and risky financial management behaviors? Specifically, is receiving professional financial help positively associated with desired behaviors and negatively associated with risky behaviors?

(2) How do internal information search factors, such as educational attainment, financial literacy, risk tolerance, etc. influence the desired and risky financial behaviors?

(3) Are the above relationships mediated by the financial help-seeking behavior? Do the external and internal sources have different significant influences on consumers'

financial management behaviors for different groups of people, for example, males vs. females, younger vs. older generations, married vs. unmarried people?

Introduction to the Theoretical and Conceptual Framework

This study applies Beales, Craswell, and Salop's (1981) information sources framework, shown in Figure 1, as the core theoretical background that differentiates the overall information search sources into internal and external processes. Internal information search refers to consumers' retrieval of memory, knowledge from previous search, experience with products, or passively acquired information through daily activities. External information search sources include consulting with friends, family, experts, sellers, and media.

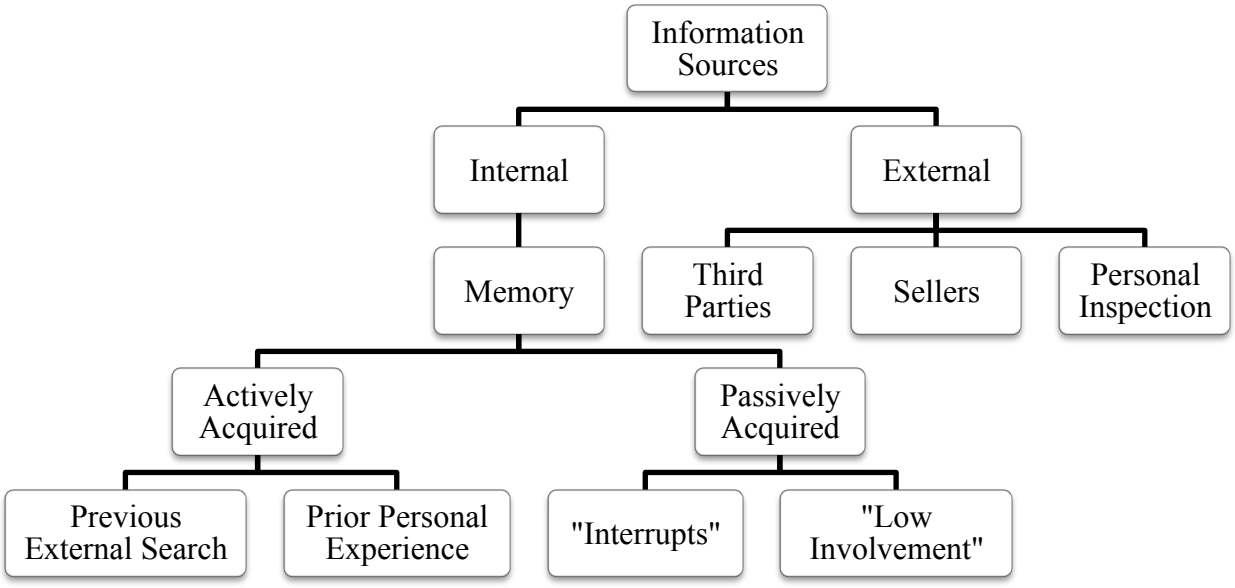

Figure 1. Information Sources Framework (Beales, Craswell, & Salop, 1981).

Stigler's (1961) cost of search theory also provides theoretical support for this study. According to Stigler, consumers typically search until the marginal cost from a unit of search is equal to or higher than the marginal benefit obtained from the search process. This cost-benefit

analysis occurs during a consumer's financial information search and help-seeking process. People who seek help of financial professionals to acquire financial information and services may experience a reduced marginal cost of searching when compared with those who use their own efforts to search financial information without any professional help (Collins, 2012; Evans, 2009).

Additional psychological factors, such as mental accounting and cognitive dissonance (Benartzi & Thaler, 2007) provide distortions to the consumers' rational decision-making processes, resulting in myopic decisions and mistakes. Instead, financial planners can provide objectively determined, customized, and tailored financial strategies based on each client's situation and financial goals.

The conceptual framework of this study is grounded in previous research and theoretical frameworks. Figure 2 illustrates the proposed relationships among the internal and external information sources and financial management behaviors. The three dimensions of the internal search sources – human capital, financial stressors, and financial attitude – constitute the set of predictors in the framework that determines financial help-seeking behavior, and have direct and indirect influences on financial management behaviors. Financial help-seeking behavior is an indicator of financial management practices and a mediator of the relationships between internal information source factors and financial management behaviors. In the Chapter Three, a more detailed framework of all the variables and proposed relationships are provided.

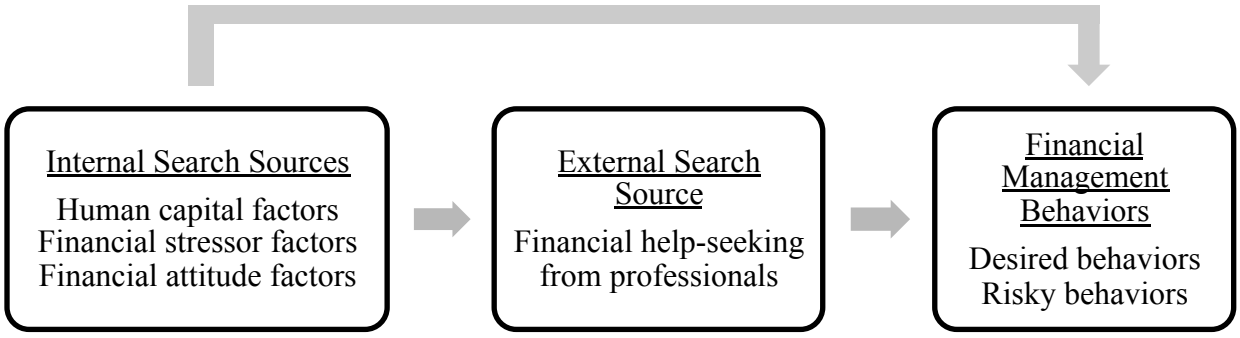

Figure 2. Conceptual framework of this study. This study uses the three dimensions of internal information sources and financial help-seeking behavior as the external information search source to estimate the desired and risky financial behaviors. The external search source is a mediator in the above relationships.

Definitions

Financial help-seeking behavior

Generally speaking, help-seeking is a term referring to the behavior of actively seeking help from others, including obtaining understanding, advice, information, treatment, and general support through communicating (Rickwood, Deane, Wilson, & Ciarrochi, 2005). It is a coping strategy and is a reflection of social relationships and interpersonal skills. Rickwood et al. (2005) also referred to seeking help of friends and family as an informal help-seeking behavior and seeking help of professionals as a formal help-seeking behavior.

Financial help-seeking behavior can also be defined as a problem-solving behavior that some individuals and households use to solve their financial issues and concerns (Grable & Joo, 2003). In Suchman's (1966) help-seeking framework, there are five stages of individuals' decision making processes, which was further developed in Grable and Joo's (1999) financial help-seeking process framework. These five stages are: exhibiting personal financial behavior,

evaluating and identifying causes of such behavior, making decisions to seek help, and comparing help-seeking alternatives.

Financial planning services

According to the Certified Financial Planning (CFP) Board, financial planning services provided by professionals to help-seekers are defined as the process of managing individuals' financial resources to meet their short-term and long-term goals. These service areas include financial statement preparation and analysis, insurance planning and risk management, employee benefits planning, investment planning, income tax planning, retirement planning, and estate planning. Other researchers categorized financial planning services into emergency fund management, debt management, insurable risk reduction, investment risk control, goal assessment, and tax and estate assessment (Warschauer, 2008).

Limitations, Assumptions, and Delimitations

This study is limited by the usage of a cross-sectional dataset that can provide solid associations but limited causal conclusions in terms of the relationships between internal and external search sources and financial management behaviors. With the nature of the dataset, findings of this study shed lights on the direction and strength of the relationships instead of identifying the cause-effect relationships among the variables and latent constructs, although these can be interesting topics for further research. Additionally, since this study uses a secondary dataset, the validity and reliability of the questionnaire are out of the researcher's control. Although this dataset has a relatively large sample size, there might be biases within the sample selection.

This study assumes consumers, both individuals and households, to be economic units in society. The internal information sources are considered to be within a microeconomic

environment where consumers can search or retrieve information from their memory, knowledge, beliefs, and experience. The external information sources, on the other hand, provide macro-level options for consumers to select, for instance, friends and family, professionals and experts, or the Internet to search or retrieve information. Another assumption of this study is that consumers would prefer higher benefits to higher costs. Consumers, either consciously or unconsciously, evaluate benefits and costs of each behavior and decision, and their beliefs and attitudes shape the evaluation process and final choice.

The scope of this study includes both people who have adopted financial professional services and those who did not in order to detect the effect of financial help-seeking on the desired and risky financial management behaviors. The population of interest includes all adults in the U.S.; however, this study excludes respondents who did not provide valid responses to the selected variables.

Summary

This chapter introduces the need for research on individuals' and households' financial help-seeking behavior. As mentioned, the value of financial professionals and the services they provide have hitherto been under-researched. To fill the literature gap of previous research and to investigate financial behaviors using a structural equation modeling perspective, this study aims to uncover the power of seeking help from financial professionals.

Chapter Two is focused on reviewing related literature in the areas of financial help-seeking behavior and associated factors such as financial literacy and knowledge, financial stressors, financial attitude, and other demographic and socioeconomic characteristics. Previous findings on the value of financial planning and services and its relationship to other financial outcomes are also summarized. Chapter Three describes the theoretical background to support

this study and develops the conceptual framework to generate hypotheses. The hypotheses are generated based on the literature and theoretical backgrounds covered in Chapters Two and Three. Chapter Four provides descriptions of the methodology used in this study, including the selected dataset, independent, dependent, moderated mediating variables' information, descriptive statistics, and statistical analysis processes. Chapter Five summarizes the results from the statistical analyses, offers an interpretation of the results, and discusses whether the results supported the hypothesized relationships. Chapter Six contains the discussion, implications, limitations, and future research suggestions. The last chapter also concludes the overall research.

CHAPTER TWO

REVIEW OF LITERATURE

This chapter reviews related empirical literature of financial help-seeking behavior and its associations with financial market participation, financial stressor events, and attitudes toward financial issues. Previous studies regarding significant predictors of financial help-seeking behavior and financial behaviors are also summarized in this chapter.

Financial Help-seeking Behavior

According to Grable and Joo (2003), the demand for professional financial help is driven by individuals, families, and small business owners who "have sought, or will seek, help for a financial planning issue, concern, or question" (p. 89). Financial planners are defined as professionals "who develop and implement retirement, estate and income tax reduction strategies" (Mason, 1993, p. 6). The Certified Financial Planning (CFP) Board[1] has defined financial planning as "a process of determining whether and how an individual can meet life goals through the proper management of financial resources" and identified six financial planning service areas: financial statement preparation and analysis, insurance planning and risk management, employee benefits planning, investment planning, income tax planning, and retirement and estate planning. Warschauer (2008) categorized financial services into six areas: emergency fund management, debt management, insurable risk reduction, investment risk

[1] The CFP Board is a non-profit organization, founded in 1985, to foster professional standards and ethics of personal financial planning. The board acts for the public interest and provides professional training, research, and certification opportunities to promote the value of competent and ethical personal financial planning practitioners. More details at *www.cfp.net*.

control, goal assessment, and tax and estate assessment. Additionally, the Warschauer study also noted that some of the benefits of financial advice are difficult to quantify objectively.

Assumptions within the financial planning and counseling profession include that financial planners are interested in the evaluation of different dimensions of a client's financial status and overall life situation and give recommendations related to cash flow, net worth, tax, insurance, investment, retirement, and estate topics to optimize clients' overall wealth and improve their financial behaviors. Financial planners also help to reduce wealth volatility within their clients' portfolios (Grable & Chatterjee, 2014a).

Help-seeking Framework

Suchman (1966) developed a conceptual framework for help-seeking behavior using a socio-psychological approach. This framework can be captured through a sequential five-stage decision-making process. In stage one, an individual experiences a symptom. The awareness and discussion of such symptom on the individual's socialization structure, which occurs during stage two, involves information-gathering behavior. In stage three, the individual seeks professional help and may feel dependent during stage four, followed by recovery and rehabilitation in stage five. Along this research line, a few previous studies have expanded the scope and investigated factors associated with help-seeking behaviors in the areas of financial decision-making (Grable & Joo, 1999, 2001, 2003; Goetz, Cude, Nielsen, Chatterjee, & Mimura, 2011; Joo & Grable, 2001).

Grable and Joo (1999) adapted Suchman's (1966) help-seeking process and developed a five-stage framework depicting and predicting an individual's mind-set for help-seeking behavior, as shown in Figure 3. During stage one, an individual exhibits (poor) financial behaviors, which negatively affect his or her life and work. Demographic and socioeconomic

characteristics, financial stressors, financial knowledge, and attitude are factors influencing the first stage. During stage two, the person evaluates the positive or negative consequences of such financial behavior and identifies possible causes of the behaviors during stage three. During stage four, the individual decides whether to seek professional financial help, which more or less involves an internal cost and benefit analysis by the individual (Joo & Grable, 2001). The costs may include fees, time, and effort associated with each information source. The anticipated benefits, such as positive outcomes, satisfaction, and utility maximization, can serve as criteria for selecting information sources and help providers. If individuals have access to a number of financial providers, the individual will select assistance from the provider who can bring the maximum expected outcome. Financial services or assistance providers in this research included counselors, planners, attorneys, friends, and colleagues. Joo and Grable (2001) added stage six to the process, which is modifying and adjusting future behaviors based on subjective feedbacks from choosing one of the help providers.

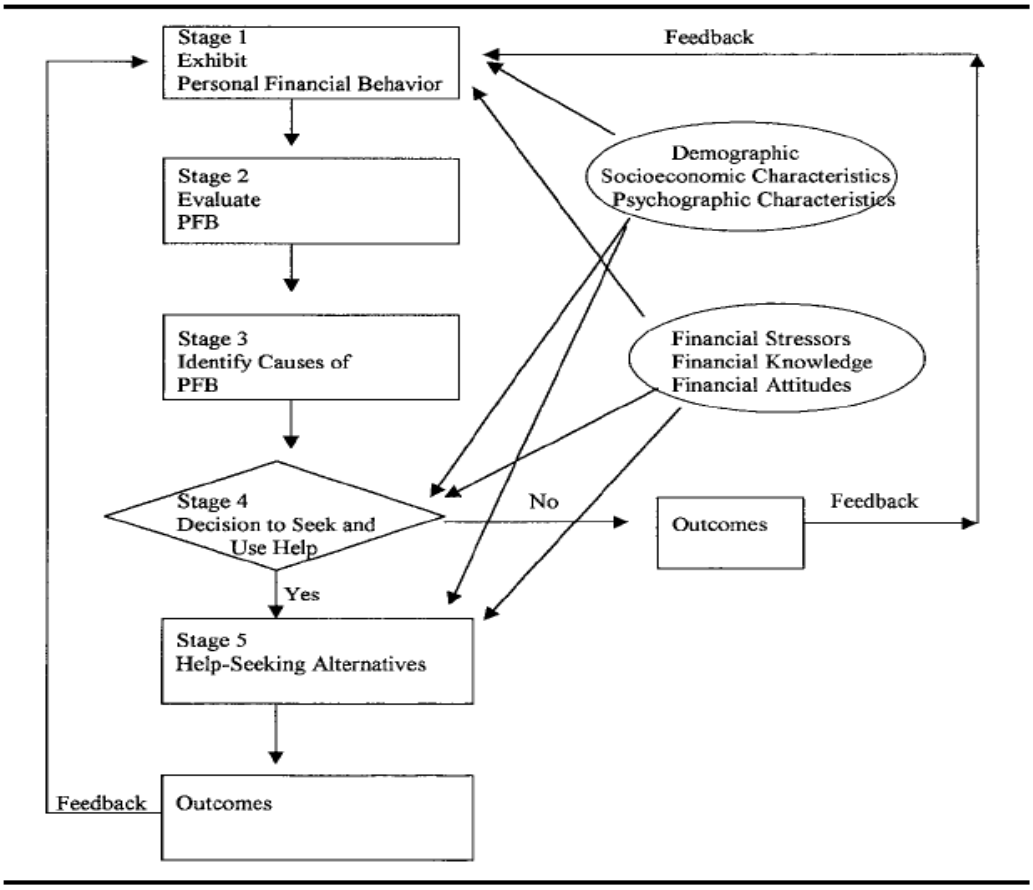

Figure 3. Financial Help-Seeking Framework (Grable & Joo, 1999).

Grable and Joo (2001) defined retirement planning-related help-seeking behavior as activities to "seek and use assistance from a secondary source for dealing with retirement and personal finance challenges" (p. 39). The findings of this study showed that homeowners and those with a higher level of financial satisfaction, higher risk tolerant, and older, and those who demonstrated positive financial behaviors were more likely to seek help from financial professionals. The financial professionals in their study referred to, for instance, financial planners, financial counselors, insurance agents, and stockbrokers.

Help-seeking as an external information source

Kwon (2004) summarized four types of information sources: personal-marketer controlled (such as salespersons and telemarketers), personal-non-marketer controlled (such as professional advice, friends, and family), impersonal-marketer controlled (such as advertising and promotions), and impersonal-non-marketer controlled (such as news and other neutral sources). The Kwon study found that friends and relatives were the most popular information sources for saving and investment-related advice (41%), followed by bankers (27%) and financial planners (21%). The researcher also found that households reporting high use of financial planners were relatively low users of traditional mass media, such as radio and television. Some households sought multiple sources of information. One source of information usually acted as a bridge to another. For example, friends and families, as an information source, may recommend financial planners who turn out to be a secondary source. Based on clients' needs and situations, some financial planners further recommend insurance agents, certified public accountants (CPAs), and estate planning attorneys, among others. Friends and families have also been frequently used sources of information in other studies (Baker & Nofsinger, 2002; Nagy & Obenberger, 1994). Using the 1998 Survey of Consumer Finances, Chang (2005) revealed that social networks were the most frequently used sources of information for financial matters among lower net worth households, while higher net worth households usually turned to financial professionals for saving and investment-related information.

Lee and Cho (2005) used the term "information intermediary" to include all potential sources of information, including human and nonhuman parties such as the Internet, media, financial advisors, insurance agents, and attorneys. Consumers showed a propensity to seek out intermediaries due to information overload and believed that the intermediaries could improve

their decision-making efficiency. The results from their study showed that financial expertise, the size of assets, and the high opportunity cost of time had a positive association with the use and value of information intermediaries, which in turn increased the amount of search and the likelihood of using other sources of information. More specifically, people who used the services of information intermediaries were more risk averse than those who did not. This finding conflicted with the results from a previous study reporting that the likelihood of seeking financial help was positively associated with risk tolerance (Joo & Grable, 2001).

Financial Education, Financial Literacy, and Numeracy

Financial knowledge, financial skills, and basic numeracy are necessary and required for making responsible financial decisions (Bernheim, 1995, 1998; Lusardi, 2008; Lusardi & Mitchell, 2007). Hanna (2011) found that education was positively associated with the likelihood of using a financial planner. In addition, levels of financial literacy varied across the education levels (Lusardi, 2008).

Researchers have studied the positive relationships among prior knowledge and information-processing behaviors, financial decisions, and predispositions (Chen & Volpe, 1998; Hilgert, Hogarth, & Beverly, 2003; Liebermann & Flint-Goor, 1996). Hilgert et al. (2003) developed a financial behavioral index for four areas of financial activities: cash-flow management, credit management, savings, and investment. The authors found that personal experience and knowledge had a significant association with financial practice. Other studies showed that the lack of financial knowledge contributed to peoples' credit-related behavioral mistakes (Courchane & Zorn, 2005). People with lower levels of educational attainment and income showed a lower likelihood of getting financial advice from professionals (Collins, 2012). Conversely, people with higher educational attainment were more likely to demonstrate positive

saving behaviors (Chatterjee, Fan, Jacobs, & Haas, 2017). For example, higher educational attainment was associated with a greater likelihood of having an emergency fund, and attainment of a college degree or higher was associated with a significantly higher likelihood of planning for retirement. Their study also found that higher levels of financial literacy and risk tolerance were positively associated with retirement planning and emergency fund savings.

Previous studies have shown that individuals with higher levels of financial knowledge were more likely to engage in responsible financial management behaviors, such as controlling spending, paying bills on time, planning for one's financial future, saving money, and providing for one's self and family (Perry & Morris, 2005). Xiao, Serido, and Shim (2012) suggested that offering financial education courses in high schools and colleges can increase subjective financial knowledge. However, participation in personal finance courses was not directly associated with an increase in the participants' objective financial knowledge. Other financial information sources, such as parents and other family members, may have potential influences on shaping students' objective financial knowledge and borrowing behaviors. Additionally, numeracy has been suggested as a separate but supportive factor when determining individuals' financial capabilities. Numeracy is also classified as another dimension of literacy skills, which include listening, speaking, reading, writing, and cultural knowledge (Almenberg & Widmark, 2011; Chen & Feeley, 2014). Huhmann and McQuitty (2009) provided a theoretical framework that explained financial numeracy, which has direct effects on financial management outcomes in terms of borrowing, savings, and tax decisions. Prior financial-related knowledge and familiarity with personal finance-related materials and services were categorized as memory-based financial literacy, while the ability to process and comprehend financial and statistical information was included as learning-based financial capability.

Sages and Grable (2010) reported that risk tolerance and age explained 5.8% of the variance in numeracy and that risk tolerance had a positive association with numeracy, net worth, and financial management skill satisfaction. Lower financial numeracy levels were more likely to be associated with certain demographic groups, such as women, the elderly, and people with lower levels of educational attainment (Lusardi, 2012).

Researchers from the field of health communications have investigated the relationships among numeracy, self-efficacy, and health-related information search behavior (Chen & Feeley, 2014). Their results showed that the information-searching behavior through multiple channels, including friends and family members, mass media, and professional providers, partially mediated the relationship between numeracy and self-efficacy in health-related behaviors. Numeracy was positively associated with the participation in stock and housing markets. People with lower levels of financial literacy were less likely to participate in the financial markets and less likely to purchase real estates (Almenberg & Widmark, 2011). Estrada-Mejia, de Vries, and Zeelenberg (2016) studied the relationship between numeracy and wealth accumulation. Financial numeracy was correlated with financial behavior and judgment, and it also affected individuals' risk perception and time preferences.

Financial Stressor Factors

Stressors refer to events that prompt a stress reaction. Financially catastrophic events that cause an unanticipated drop in household income, perils such as car accidents, and lawsuits are examples of stressors. Health-related problems, such as chronic diseases and disability, are examples of events that can bring financial, emotional, and even physical difficulties and stress. People with higher levels of financial stress are generally more likely to seek financial help, either from professionals or otherwise (Grable & Joo, 1999).

Joo (1998) classified all financial stressor events into four categories: life cycle events, job-related events, unexpected changes, and unfavorable financial situations. Her findings indicated that lower levels of financial capability and lower educational attainment can lead to financial stress. Additional negative consequences of financial distress included but were not limited to marital quality (Archuleta, Britt, Tonn, & Grable, 2011), low work productivity, and alcohol addiction. Tokunaga (1993) measured the effects of distressing events on credit behavior. The distressing events were positively associated with anxiety about money and led to more conservative money attitudes and behaviors.

Phillips and Murrell (1994) found that elderly individuals who have experienced undesirable events, such as the loss of family members, or been diagnosed with new diseases and illnesses were more willing to seek professional financial help. Financial stress also had a negative influence on physical and mental health. Cummings and James (2014) found that certain life and medical events were associated with help-seeking behavior. These included events such as losing a spouse, especially if the deceased spouse was the primary financial decision-maker prior to death, which might result in a reduction in household financial capability. Using 2009 National Financial Capability Study, Allgood and Walstad (2013) suggested that significantly negative changes in income were positively associated with costly credit card behavior, such as holding a revolving balance and being charged interest, late fees, and over-the-limit fees.

Almeida and Kessler (1998) found that women generally experienced more psychological distress than did men, which was mediated by the exposure to daily stressors such as family demands and financial problems. Financial stressor events, along with financial behaviors and individuals' characteristics, were significantly associated with financial well-being when

combined with financial counseling (Kim, Garman, & Sorhaindo, 2003). More specifically, financial stressors were negatively associated with perceived financial well-being, and those stressors included death of a family member, job change, and moving, among others. Negative associations also existed between financial stress and being solvent, the amount of savings, and contributions to retirement plans. Interestingly, those under financial stress were likely to make more payments toward their credit cards and installment loans (Joo, 1998).

Financial Attitudes

Grable (2000) defined financial risk tolerance as the "maximum amount of uncertainty that someone is willing to accept when making a financial decision" (p. 625). He examined some significant determinants of risk tolerance in his research. People who were male, younger, married, and employed in professional occupations and with more income and higher levels of education and investment knowledge were more risk tolerant.

Risk tolerance has been associated with households' financial decision-making. People who were young, male, and with higher levels of education tended to be more risk tolerant (Duasa & Yusof, 2013). Additionally, risk preferences were usually wealth dependent (Barber & Odean, 2001; Bluethgen, Gintschel, Hackethal, & Mueller, 2008). Three factors accounted for most of the variation in risk tolerance among individuals: habit formation, which explained routines of behavior and consumption patterns; sentiment, which indicated the overall feeling and attitude of the investors; and loss aversion (Guillemette & Nanigian, 2014). People with a higher level of risk tolerance (or risk seekers) were more likely to seek help from retirement professionals when making retirement or investment decisions (Joo & Grable, 2001). Those who were unwilling to take financial risks were much less likely to get a financial planner than those who were more willing to take average or above average risks (Hanna, 2011).

Fischer and Turner (1970) used factor analysis to identify four dimensions of attitudes related to psychological help-seeking behavior: recognition of need for psychotherapeutic help, stigma tolerance, interpersonal openness, and confidence in mental health practitioners. Their findings showed that being female and the attainment of higher socioeconomic status were associated with positive professional help-seeking attitudes. The authors also suggested that personality types and gender differences might explain some of the variance in the help-seeking measure. Lown and Cook (1990) used the Financial Counseling Attitude Scale to measure financial help-seeking attitudes based on the findings of Fischer and Turner (1970). Instead of the four factors, they identified three factors: confidence and willingness, stigma, and self-sufficiency. In their findings, females were generally more positive toward seeking financial help. Both of these studies agreed on there is a positive relationship between socio-economic status and attitudes toward help-seeking behavior.

Help-seeking from professionals has also been related to financial attitude. Joo and Grable (2001) found that people with a positive and proactive attitude toward retirement were more likely to seek help from retirement professionals. Another study of students' help-seeking behaviors in the classroom (Newman & Schwager, 1993) reported that the help providers (teachers and professionals), normative comparisons with peers (whether people around seek help and whether the help-seekers have positive outcomes), and the perceived usefulness of the help were influential factors that explained the help-seeking attitude. Additionally, females were more likely to seek help than men in both academic and non-academic domains (Newman & Goldin, 1990; Newman & Schwager, 1993). Using survey and experiment data from the RAND-USC American Life Panel, Burke and Hung (2015) found an association between financial trust and the likelihood of using financial advisory services.

Although the Credit Card Accountability Responsibility and Disclosure (CARD) Act of 2009 protects young adults under age 21, college students still have showed irresponsible credit card behaviors, which are believed to be associated with poorer school performance, including lower grades and higher drop-off rates, depression, and filing for bankruptcy (Mannix, 1999). Roberts and Jones (2001) reported that money attitudes and credit card use were associated with college students' credit abuse and compulsive buying behavior. Number of credit cards, lack of financial knowledge, and age had a positive association with debt level. In addition, attitude toward possessions and spending as well as income level (and expectation of future income) were also important predictors of debt (Norvilitis et al., 2006). Compared with non-debtors, debtors were more likely to have shorter time horizons and less money management facilities such as bank accounts (Lea, Webley, & Walker, 1995).

Demographic and Socioeconomic Characteristics

The income levels of African Americans and Hispanics were significantly lower than those of whites (Aizcorbe, Kennickell, & Moore, 2003). Compared with white households, black households were more likely to use a financial planner while Hispanic and Asian households were less likely to do so (Hanna, 2011). A recent study (White & Heckman, 2016) used the 2013 wave of the Survey of Consumer Finances and reported that black households were less willing to take financial risks, but more likely to use financial professional services than all other racial/ethnic groups. This study also identified a large net worth gap between black and Hispanic households and white and Asian/other racial/ethnic households, which may contribute to the lack of usage of financial professional services among black and Hispanic households. However, in Grable and Joo (1999), racial effects were not found to be significant factors in financial help-

seeking behavior; instead, age and homeownership were the only two demographic and socioeconomic factors associated with financial help-seeking behavior.

Good, Dell, and Mintz (1989) suggested that a negative relationship existed between the male role and help-seeking behavior from a variety of sources. Men tended to be socialized to seek power and control; however, seeking help was viewed as an action that contradicts this value, which directly influenced men's aversion to help-seeking attitudes and behaviors (Bluethgen et al., 2008; Joo & Grable, 2001). Another possible explanation is called the restrictive emotionality of being men, meaning that men are reluctant to express their feelings so they hesitate to seek help. Women were more likely to rely on financial professionals than men when making retirement plans and investment decisions, holding other factors constant. However, another report showed the opposite results indicating that men were slightly more likely than women to work with financial planners (McClune, 2010). Women were also less likely to use the Internet, financial planning software, and publications as information sources; rather, they preferred to turn to family and friends for financial advice (Loibl & Hira, 2007). Among those who were Internet-savvy, women were more likely to improve financial knowledge than men by learning retirement-specific information through self-learning on the Internet. Women displayed a lower level of financial knowledge (Lusardi, 2008) and were more risk averse than men in terms of investment decision-making (Bernasek & Shwiff, 2001; Hinz, McCarthy, & Turner, 1997; Jianakoplos & Bernasek, 1998; Powell & Ansic, 1997; Woodyard & Robb, 2012). Lower risk aversion among women led to a preference for low-risk and low-return investments that often prevented women from accumulating adequate money to meet their long-term financial needs (Bernasek & Shwiff, 2001; Loibl & Hira, 2007).

Jianakoplos and Bernasek (1998) reported that although women, especially single women, were generally more risk averse in their financial decision-making than single men, such gender differences were also influenced by age, race, and the number of children present in the household. Single black women, among all the races, held significantly riskier assets on average, even riskier than those of single men and married couples. Also, women generally held a lower proportion in stocks even within their defined contribution plans (Barber & Odean, 2001; Bernasek & Shwiff, 2001). Powell and Ansic (1997) found that men took longer to make decisions, and both risks and prices of insurance plans affected their decision process more frequently than they did women's. Additionally, men tended to apply more strategies and search more sources of information than women. Women were less likely to feel competent in financial matters while men were overconfident (Barber & Odean, 2001; Beyer & Bowden, 1997), especially when the available financial market information was ambiguous (Loibl & Hira, 2007). Such gender differences were more obvious for single men and women because married couples shared investment opinions so that risk tolerance and financial confidence of the couples balanced and intermediated to act as an economic unit (Powell & Ansic, 1997; Barber & Odean, 2001). Conversely, single females were more likely than married couples and single males to hire a financial planner (Hanna, 2011), which may be due to the lower financial confidence and lower levels of self-concealment among women.

Grable and Joo (1999) found that age is one of the two significant demographic characteristics that influenced financial help-seeking behaviors. Older individuals were less likely to seek financial help than younger individuals. Based on a recent report, younger people were more likely to seek professional financial help than older people (McClune, 2010). Conversely, another study found that older investors were more likely to seek financial advisors

(Bluethgen et al., 2008). People older than 45, married, college educated, and with a higher income were more likely to seek financial advice from professionals (Burke & Hung, 2015).

Income is an important indicator of information search behavior (Tseng, 2012) and seeking help from financial professionals (Joo & Grable, 2001). People with higher income and investable assets were more likely to have a financial planner (McClune, 2010). Low-income households, when compared with the highest income group (more than $75,000), were less likely to seek help from investment and retirement professionals (Joo & Grable, 2001). Individuals who have experienced an increase in income (Cummings & James, 2014) and net worth (Hanna, 2011) were more likely to seek financial advisors. Grable and Joo (1999, 2001) suggested that homeownership had a significant influence on financial help-seeking behavior. The authors found that homeownership, along with financial stressors, financial behavior, and age, was one of the strongest factors differentiating financial help-seekers from non-help-seekers (Grable & Joo, 1999).

Rehl, Moor, Leitz, and Grable (2016) reported that the average age for being widowed was 59.4 years and that a large number of married females faced the challenges of being a widow. Widows whose financial decisions were assisted by financial advisors reported higher levels of financial confidence than those who did not have financial help from professionals. Facing the complexity of tasks, such as estate administration, property retitling procedures, and payment of bills for final expenses, emotionally stressed new widows were more likely to get a financial advisor (Cummings & James, 2014).

Hanna (2011) found that compared with full-time employees, students (age 18-29) were more likely to pay their credit cards in full and less likely to be credit revolvers. Homemakers had positive credit usage behavior and effectively managed their credit cards. Retired individuals

also were less likely to demonstrate costly credit behavior (Allgood & Walstad, 2013). Research investigating subjective well-being found that unemployment was negatively associated with overall life satisfaction (Clark, Diener, Georgellis, & Lucas, 2006; Kahneman & Krueger, 2006).

Value of Financial Professional Services

Research has found that among all the respondents to a recent Financial Planning Association (FPA) survey, only 17% used professional financial planners; 10% said they were likely to find a financial planner, while 53% reported that they were unlikely to seek help from financial professionals (McClune, 2010). Hanna and Lindamood (2010) classified three types of benefits that planners provide: increasing wealth, preventing loss, and smoothing consumption. The value of financial advice depended on a client's risk aversion and the percentage of benefit (or loss) the client could make. Another benefit of financial advice was the effective reduction of risk for more risk-averse households. High-income and high-net-worth households were more likely to value the benefits of financial services. The authors also argued that financial planners' recommendations should provide equivalent or even more value for moderate-income households, especially those with lower levels of risk tolerance.

Consumers who sought financial counseling help were more likely to report positive changes in their credit borrowing profiles. Accessing credit counseling services can significantly reduce debt and account usage (Staten, Elliehausen, & Lundquist, 2002). When combined with debt management, credit counseling techniques effectively reduced financial stress and indirectly improved the client's financial well-being (Kim et al., 2003). Additionally, financial planners effectively improved their clients' financial attitudes, confidence, knowledge and skills, behaviors, and, eventually, financial satisfaction and well-being (Brenner, 1998; Grable & Joo, 2001, 2003; Hira & Mugenda, 1999; Mason, 1993).

Financial professionals provide external information that can reduce the marginal cost of searching for the average consumer (Evans, 2009; Collins, 2012). People who already had a financial planner were more likely to report a higher level of financial confidence (McClune, 2010). Similarly, having a trustworthy financial advisor was an important factor that increased the financial confidence of widows (Rehl et al., 2016). Warschauer and Sciglimpaglia (2012) further divided financial planners into four categories based on the types of valuation they can offer: "those that have positive net present value effects, those that have quantifiable and insurable risk-reduction effects, those that have risk-reduction effects that are not insurable, and those that have purely emotional or psychological effects that result in positive utility improvements" (p. 196). Most of the respondents answered that having a written comprehensive financial plan added moderate to extreme positive value to the overall financial services. Highly valued services provided by financial planners included advice and service on emergency funds, legal documents (e.g., trust, durable power of attorney), adequate health, disability, and long-term care insurance, diversified portfolios, analysis of investment goals, time horizons, and cash flow needs. It was surprising to find that respondents gave very low value to services such as insurance plan assessment, refinancing loans, and estate planning because respondents were more likely to think that they were capable of dealing with these issues by themselves (Warschauer & Sciglimpaglia, 2012).

While gender differences and age effects existed regarding how respondents valued financial services, marital status, income, and net worth also played important roles in the valuation of financial services. It is also worth noting that those who were using financial planners and those who managed their own financial issues valued differently the specific services provided by professionals (Warschauer & Sciglimpaglia, 2012). Thus, familiarity and

previous experience of financial planning also influenced respondents' perceived valuation process.

Consumers make different financial mistakes, sometimes due to lack of financial knowledge or financial confidence, or have difficulty clarifying their saving goals, so they rely on financial planners and professionals to solve their problems and they are willing to pay high fees to obtain financial services (Foerster, Linnainmaa, Melzer, & Previtero, 2014). Previous studies applied different techniques to quantify the value of financial planning services. Financial planners can potentially add a significant increase in portfolio efficiency over the use of simplistic strategies. Using Gamma, this benefit is equivalent to nearly 29% more that clients can spend in retirement on a risk-adjusted basis (Blanchett & Kaplan, 2013). Grable and Chatterjee (2014a) compared household wealth changes over time to determine whether financial advisors helped in reducing wealth volatility for clients. They found that the use of financial planners resulted in lower wealth volatility over time. Grable and Chatterjee (2014b) also found that people with the shortest financial planning horizons experienced lower risk-adjusted returns and greater wealth volatility.

Financial Management Behavior

Grablowsky (1975) examined consumers' financial management and its association with risk attitude and found that character was the most important predictor of propensity to repay debts. Character, by definition, is the "environmental force" that shapes the "permanent structure of an individual's personal attributes which are reflected in his drive and satisfaction" (p. 114). Furthermore, credit character has been examined to study the attitudes and behavioral patterns related to credit. Environmental factors, such as parents, school, and peer groups, were all important factors of credit character that influenced one's debt responsibility.

Previous studies have also confirmed a positive association between financial literacy and financial decision-making, including mortgage and refinancing behaviors, wealth accumulation, and debt management (Hilgerthet al., 2003; Lusardi & Tufano, 2009; Moore, 2003; Stango & Zinman, 2007). Perceived or subjective financial knowledge refers to consumers' self-assessed or perceived financial capability. The counterpart to subjective knowledge is objective knowledge, or measurable financial knowledge (Alba & Hutchinson, 1987, 2000; Bettman & Park, 1980). Research has shown that people with high subjective knowledge were more willing to choose risky investments and investments with complex options (Hadar, Sood, & Fox, 2013). Consumers' active-seeking information search was positively associated with individual investor behavior (Tseng, 2012). Certain poor financial behaviors, such as writing bad checks and spending more than income, were positively associated with financial help-seeking behavior (Grable & Joo, 1999).

Nagy and Obenberger (1994) found that classical wealth-maximization criteria were vital for investors, such as "expected earnings, diversification needs, and minimizing risk" (p. 64). Using factor analysis, the authors identified seven factors that significantly influenced investors' behavior. For example, the following were important factors: (1) a neutral-information factor such as general press information, recent stock index returns, and advisory recommendations, (2) an accounting-information factor such as a firm's financial statements, annual reports, valuation techniques, and expected earnings, (3) a classic factor such as expected dividends, tax consequences, affordability of share price, (4) a social-relevance factor, and (5) other factors such as advocate recommendation, self-image and firm-image coincidence, and personal financial needs.

Summary

This chapter reviews previous research investigating financial help-seeking behavior as an external information source and its associations with human capital, financial stressor events, and attitudes toward financial issues and credit, as well as demographic characteristics. The literature has provided the rationale and necessity of this study, which links the above factors and practices into one comprehensive framework to examine the complexity of associations related to consumers' financial help-seeking behavior. The related theories and theoretical backgrounds will be summarized in the next chapter. The conceptual framework developed based on the literature and theories, along with the hypotheses, will also be discussed in Chapter Three.

CHAPTER THREE

THEORETICAL BACKGROUND AND CONCEPTUAL FRAMEWORK

This chapter provides a thorough review of definitions, theories, and frameworks related to information search behavior. The conceptual framework is developed using concepts related to information structures, information imperfection, and cost-benefit analysis of information search behavior. The framework incorporates internal and external information sources. The conceptual framework for this study is followed by descriptions of hypotheses, which are tested for each path of the relationships.

Search Theories

According to Milgrom and Roberts (1987), there are three types of information structures in the market: complete information, incomplete information without asymmetry, and incomplete information with asymmetry. While the first two might be useful when studying risk management and investment decision-making, the last structure, which involves information asymmetries, can be useful for developing an understanding of individuals' strategic behavior.

Information imperfection occurs when consumers compare the marginal cost of an additional piece of information with the expected marginal benefit (Phlips, 1988). Stigler (1961) developed a theory of search which assumes that consumers decide on the number of search options and choose the best set of alternatives based on what they search. This theory is also focused on how long an individual searches before buying a good or service given that search has a cost in time and foregone earnings. According to Stigler, beyond a certain optimal point, continuation of the search process may be more costly than the expected gain. Typically, rational

consumers continue to search until the marginal cost from a unit of search is equal to the marginal benefit received from the search to maximize the utility of the search. When the cost is low enough or the benefit is high enough, consumers have positive utility from searching; otherwise, they stop searching when the marginal cost has exceeded the marginal benefit. The cost and benefit relationship can be either direct (money) or indirect (time). Stigler's search theory also acknowledges the presence of incomplete information in the market and that information is described as a special kind of commodity with marketable value. Information asymmetry is embedded within the market and obtaining it can be costly. This is why consumers weigh the cost-benefit from information search activities in order to choose the optimal information sources.

Johnson and Russo (1981) proposed three sources of search costs: gathering and collecting information, comprehending the information, and integrating the information. However, the satisficing theory (Simon, 1957) contradicts the cost of search theory by suggesting that people do not usually maximize or optimize their utility, meaning they do not search exhaustively until the marginal cost equals or exceeds the marginal benefit. Because people have cognitive limitations, maximizing or optimizing the search process is unrealistic. Instead, people put everything on a scale in terms of satisfaction and have a threshold of acceptability. They evaluate until the first set of goods or services exceeds this acceptability threshold. People do not prefer more to less because searching is costly. Due to the incomplete information, limited rationality, and diminishing marginal utility, the more people search the lesser the benefit they get from the search process and, ultimately, the cost may easily outweigh the benefit. Another point of view is that when searching for information, an individual tends "to minimize the probable average rate of his or her work-expenditure (over time)" (Zipf, 1949, p. 1)

or, in other words, applies the least amount of effort in their information search decisions. This is called the principle of least effort.

Perry (2012) used a qualitative study to profile different types of credit users based on their decisions: whether consumers' use of a cost-benefit analysis to compare credit offers and annual percentage rates (APRs) affected their information search behaviors and the roles that internal factors, such as self-control, motivations, and mental accounting, played in consumers' decisions. The study showed that the cost of information was significantly associated with consumers' evaluation of credit card offers. When consumers are at the pre-decision-making stage, searching activities can enhance the quality of the outcomes and result in satisfaction with the decision made. Some consumers view searching behavior itself as a way to gain success, confidence, and peer influence (Punj & Staelin, 1983) in the market for specific products and services.

In terms of shopping around for credit cards, the costs of searching include the opportunity cost of time and the physical and mental effort spent in the search process, while some of the benefits of search behavior include receiving lower interest rates; better money management skills, financial knowledge, and experience can also inform future inquiries (Chang & Hanna, 1992). Through the Dodd-Frank Act of 2010, consumers have more access to fair, transparent information about financial products, which may reduce search costs. However, with increases in the variety and complexity of the available credit-related products, and different bonus and reward features, the true cost of comparing may actually increase. Researchers have also mentioned other psychological aspects of search costs when shopping for credit cards, including possible embarrassment if rejected and, in turn, welfare delays and losses after the rejection (Peterson & Black, 1984).

Other information sources include advertising, family, and friends. Most consumers stop searching after they obtain information from the first source (Lee & Hogarth, 2000). Thus, finding a reliable source and searching extensively are important.

Internal and External Search

Beatty and Smith (1987) defined information search as "the degree of attention, perception, and effort directed toward obtaining environmental data or information related to the specific purchase under consideration" (p. 85). Similarly, Fodness and Murray (1997) defined information search as "an expressed need to consult various sources prior to making a purchase decision" (p. 505). Kelly (1978) defined information-seeking and -processing activities as forms of engagement that facilitate decision-making toward the attainment of one's goals and objectives. Information search is viewed as a strategy to reduce risk on which many consumers rely when making an important purchase or savings decision (Taylor, 1974).

The major determinants of a consumer's information search behavior include but are not limited to situational factors, such as difficulty, time constraints, number of alternatives, market environment, and uncertainty of the outcome, as well as consumer-related factors, such as perceived risk, prior knowledge and expertise, educational attainment, and involvement (Clark & Belk, 1979; Moore & Lehmann, 1980; Newman, 1977; Srinivasan & Ratchford, 1991).

Other factors such as prior knowledge or experience, personal preferences, and socio-economics status, also have strong associations with the consumer's selection of information sources. Additional influencers associated with a consumer's attitude toward information search behavior include information or help provider factors, such as trustworthiness and authoritativeness, and relationship characteristics between information seekers and providers in terms of similarities of personal characteristics and social norms (Zhang, 2013).

Beales et al. (1981) argued that information search behavior is composed of internal and external search components (see Figure 1). Internal information search refers to consumers' retrieval of memory, knowledge from previous searches, experience with products, and information passively acquired through daily activities. External information search sources include consulting with experts and professionals, friends and family, sellers, and the media.

Consumers apply a cost-benefit analysis approach when deciding whether to use internal, external, or a combination of both sources of information. For example, consumers with greater prior knowledge and experience have a lower incentive to search externally for information since the benefits of using one's prior knowledge and experience to search and analyze the information internally far outweigh the cost of relying on an external source of information (Kiel & Layton, 1981; Punj & Staelin, 1983).

Internal search

Variables such as beliefs and attitudes (Beatty & Smith, 1987), prior experience, and prior knowledge (Punj & Stealine, 1983; Alba & Hutchinson, 1987; Moorthy, Ratchford, & Talukdar, 1997) are considered internal information sources. Prior experience has a positive influence on processing new information. Knowledge and familiarity are formed by previously acquired and stored information, which reduce new search behaviors (Moore & Lehmann, 1980; Punj & Stealine, 1983).

Moorthy et al. (1997) examined the relationship between the amount of search and consumers' previous experience and knowledge (or "expertise"). The group of consumers with little prior knowledge was unable to differentiate between the available choice options and viewed all goods as relatively homogeneous. As a result, group members found little incentive to search for information. The second group of consumers, with some prior knowledge and

experience, was able to partially differentiate between choices and was aware of the attributes that helped in making finer distinctions. The third group was the most experienced and knowledgeable, and the participants from the third group were able to fully differentiate between the choices they were offered and showed very little uncertainty, meaning they had little incentive to search.

Punj and Staelin (1983) studied two types of knowledge associated with memory. The first type is the previously stored information (memory) of certain goods and services. The second type is information the consumer newly learns during the decision-making process. Information retrieved from memory can help the consumer indirectly in obtaining and processing newly acquired information. When consumers are faced with the alternatives and choices, the internally accessible knowledge (memory) and the externally available information were interchangeable.

External search

External search refers to the activities associated with the degree of "attention, perception, and effort directed toward obtaining environmental data or information related to the specific purchase under consideration" (Beatty & Smith, 1987, p. 85). Based on cost-benefit analysis, consumers engage in the external search process when they anticipate the benefits of conducting an external search to be greater than the costs associated with it. Clients also engage in external search when specific consumer-related factors, such as preferences and tastes, general needs and desires, and available alternatives, influence the decision to conduct an external search, which in turn affects the process of cost-benefit analyses. Some internally retrievable information sources, such as memory and prior knowledge, also influenced the motivation for external information search (Punj & Staelin, 1983).

Srinivasan (1987) adopted the cost-benefit approach and path analytic model to analyze the amount of external search for new automobiles. This study provided empirical results of consumers' search behaviors. It is not surprising to find that perceived benefits positively influenced the amount of external search, while the cost of search reduced the external search behavior; however, it is important to learn that besides costs and perceived benefits, consumers' involvement, prior beliefs and experience, and goal orientation were all indicators of the amount of external search.

Schmidt and Spreng (1996) developed an external information search framework in which the motivation to search and the perceived ability to search were the two primary indicators for actual external information search behavior. When it comes to the former indicator, results have shown that the perceived benefit of searching was positively associated with motivations to search whereas the perceived cost of searching was negatively associated. Furthermore, satisfaction and perceived financial sacrifices are negative determinants and perceived risk, situational involvement, information required, perceived product differences, need to justify decisions, and desire for optimum decision are positive determinants for perceived benefits of search. Information accessibility is a negative determinant of perceived costs of search, while evoked set size, product complexity, and time pressure are positive determinants. Other determinants of motivation to search include enduring involvement, need for cognition, and shopping enthusiasm, which are all positively associated with the motive to search. Another direct indicator, in addition to motivation to search, is the perceived ability to search, which is positively associated with the external information search activity. Higher levels of educational attainment and objective and subjective knowledge are proposed to increase consumers' perceived ability to search.

Conceptual Framework

A conceptual framework, grounded in previous research on financial help-seeking behavior and general financial behavior, is presented in Figure 4. Extant research on financial help-seeking behavior suggests that human capital, financial stressors, and financial attitude are associated with financial help-seeking behavior (Grable & Joo, 1999, 2001, 2003; Joo & Grable, 2001). According to internal and external information search theories and categorizations (Alba & Hutchinson, 1987; Beales et al., 1981; Moorthy et al., 1997; Punj & Stealine, 1983; Schmidt & Spreng, 1996), human capital, financial stressors, and attitudes are categorized as internal sources of information that influence financial behaviors; in contrast, financial help-seeking behavior is considered an external source that potentially improves financial behaviors. Based on the previously reviewed literature, financial planning services add valuable benefits to consumers, including but not limited to financial well-being, financial attitudes, confidence, knowledge and skills, behaviors, and, eventually, financial satisfaction (Brenner, 1998; Grable & Joo, 2001, 2003; Hira & Mugenda, 1999; Kim et al., 2003; Mason, 1993). This study further develops our understanding of another dimension of help-seeking behavior by examining whether it also has a moderating effect as an information source and explores its influence on the relationships among human capital, financial stressors and attitude, demographic and socioeconomic characteristics, and financial behaviors. Therefore, if help-seeking behavior plays a mediating role in consumers' financial decision-making, seeking financial help is expected to have distinct difference of the effect on desired and risky financial management behaviors.

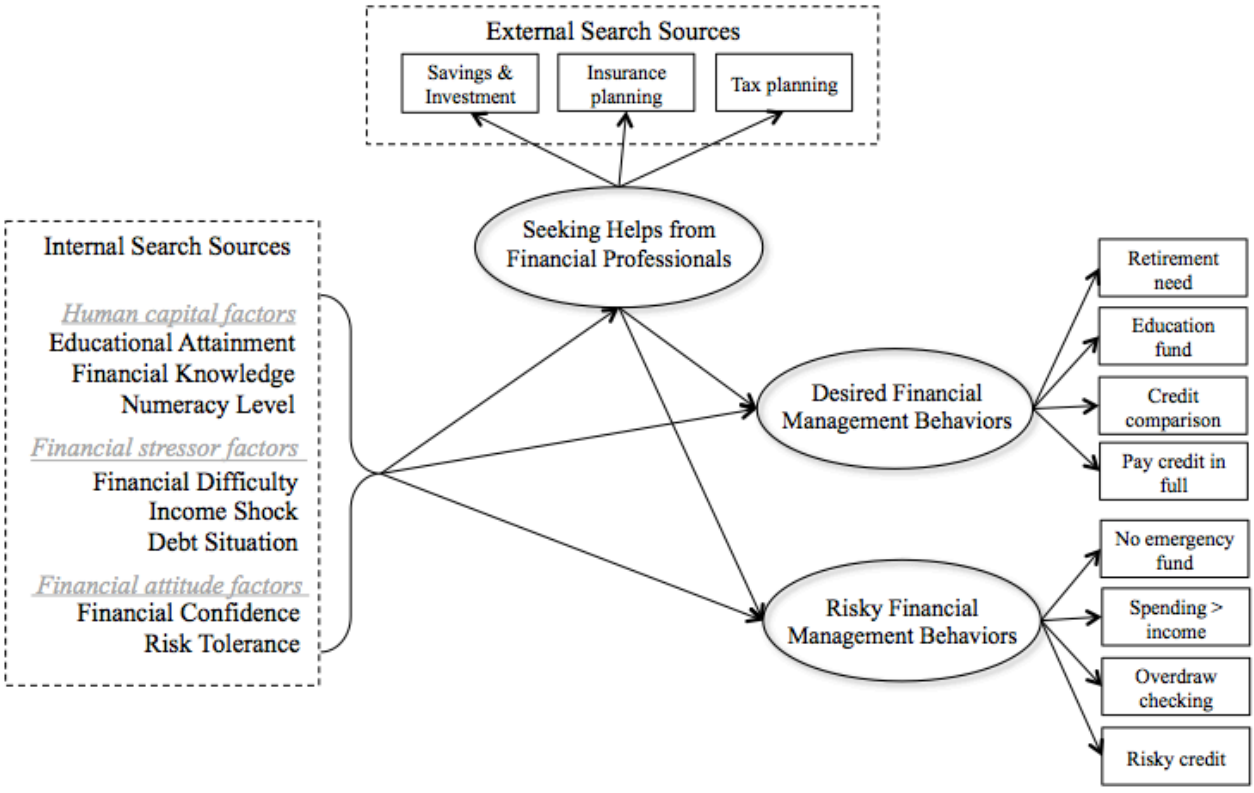

*Figure 4. D*etailed conceptual framework of this study, including the relationships of independent variables, observed items, and latent constructs.

Hypotheses

H 1.1.1: Educational attainment is positively associated with desired financial management behaviors.

H 1.1.2: Educational attainment is negatively associated with risky financial management behaviors.

H 1.2.1: Objective financial knowledge is positively associated with desired financial management behaviors.

H 1.2.2: Objective financial knowledge is negatively associated with risky financial management behaviors.

H 1.3.1: Higher numeracy level increases desired financial management behaviors.

H 1.3.2: Higher numeracy level decreases risky financial management behaviors.

H 1.4.1: Financial difficulty is negatively associated with desired financial management behaviors.

H 1.4.2: Financial difficulty is positively associated with risky financial management behaviors.

H 1.5.1: Income shock is negatively associated with desired financial management behaviors.

H 1.5.2: Income shock is positively associated with risky financial management behaviors.

H 1.6.1: Debt situation is negatively associated with desired financial management behaviors.

H 1.6.2: Debt situation is positively associated with risky financial management behaviors.

H 1.7.1: Financial confidence is positively associated with desired financial management behaviors.

H 1.7.2: Financial confidence is negatively associated with risky financial management behaviors.

H 1.8.1: Risk tolerance is positively associated with desired financial management behaviors.

H 1.8.2: Risk tolerance is negatively associated with risky financial management behaviors.

H 2.1: Educational attainment is positively associated with financial help-seeking behavior.

H 2.2: Objective financial knowledge is positively associated with financial help-seeking behavior.

H 2.3: Numeracy level is positively associated with financial help-seeking behavior.

H 2.4: Financial difficulty is positively associated with financial help-seeking behavior.

H 2.5: Income shock is positively associated with financial help-seeking behavior.

H 2.6: Debt situation is positively associated with financial help-seeking behavior.

H 2.7: Financial confidence is positively associated with financial help-seeking behavior.

H 2.8: Risk tolerance positively associated with financial help-seeking behavior.

H 3.1: Financial help-seeking behavior improves desired financial management behaviors.

H 3.2: Financial help-seeking behavior reduces risky financial management behaviors.

H 4.1: Financial help-seeking behavior mediates the relationship between educational attainment and desired and risky financial behaviors.

H 4.2: Financial help-seeking behavior mediates the relationship between objective financial knowledge and desired and risky financial behaviors.

H 4.3: Financial help-seeking behavior mediates the relationship between numeracy level and desired and risky financial behaviors.

H 4.4: Financial help-seeking behavior mediates the relationship between financial difficulty and desired and risky financial behaviors.

H 4.5: Financial help-seeking behavior mediates the relationship between income shock and desired and risky financial behaviors.

H 4.6: Financial help-seeking behavior mediates the relationship between debt situation and desired and risky financial behaviors.

H 4.7: Financial help-seeking behavior mediates the relationship between financial confidence and desired and risky financial behaviors.

H 4.8: Financial help-seeking behavior mediates the relationship between risk tolerance and desired and risky financial behaviors.

Summary

This chapter provides a rich review of literature to support the conceptual framework and hypotheses testing of this research, including previous studies in the areas of financial help-seeking behaviors and financial management behavior. A theoretical background of the search theories and the internal and external classifications of information sources are also discussed in this chapter. Educational attainment, objective financial knowledge, numeracy level, financial difficulty, income shock, debt situation, financial confidence, and financial risk tolerance are the proposed internal search sources in the conceptual framework of this study. A mediation effect of financial help-seeking behavior as an external search source is also proposed. Two sets of financial behaviors – desired and risky – are included in the framework as the dependent latent constructs. The next chapter discusses the descriptions of the dataset and sample, measures of variables, and statistical analyses used in this study.

CHAPTER FOUR

RESEARCH METHODS

The purpose of this study is to investigate the internal and external information sources and the mediating effect of help-seeking behavior on people's financial decision making. Using structural equation modeling (SEM) methods, this study examines whether internal information sources are associated with three latent constructs (i.e., financial help-seeking behaviors, desired financial behaviors, and risky financial behaviors) and whether the financial help-seeking behavior is a mediator intervening in these relationships. The analyses in this study use the 2012 National Financial Capability Study (NFCS), a national survey of adults 18 years of age or older that includes detailed information on people's financial attitudes and behaviors. This chapter provides descriptions of the dataset, including sampling and data collection methods, and detailed descriptions of the independent, dependent, mediating, and demographic variables. The rest of this chapter introduces SEM components, techniques, and process analyses, as well as additional analyses that include mediating effects and multi-group SEM.

Data and Sample

The NFCS is funded by the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation. Developed in collaboration with the U.S. Department of the Treasury and President George W. Bush's Advisory Council on Financial Literacy, this dataset aims at measuring financial well-being and financial capability, as well as financial decision making. This study uses the 2012 wave of the NFCS 'state by state' dataset. The dataset consists of 25,509 U.S. adults aged 18 and older. Respondents are randomly selected using non-probability

quota sampling and offered incentives for participating in the online survey. The quotas are set to be representative of the U.S. Census distributions. The survey includes rich data on households' demographic characteristics, financial attitudes and behaviors, utilization of financial advisors, money management behaviors, retirement account participations, sources of income, home and mortgages, credit cards, and other debt, insurance, and self-assessed financial literacy. To address the research questions in this study, the sample used in the SEM and multi-group SEM analyses are restricted to those who had financially dependent children, checking accounts, and at least one credit card at the time of the survey.

Measures

Internal search sources variables

This study uses a set of independent variables to analyze the effects of consumers' financial help-seeking behavior and financial management behaviors. Internal search sources are considered observed independent variables that include the following items: educational attainment, objective financial knowledge, numeracy level, financial difficulty, income shock, debt situation, financial confidence, and risk tolerance.

Educational attainment. Separate binary variables are constructed for "*less than high school*," "*high school,*" "*some college,*" "*college,*" and "*graduated from college.*"

Objective financial knowledge. The objective financial knowledge variable is based on participants' responses to the following financial literacy-related questions testing fundamental financial concepts, including interest rate, inflation, mortgage, bond, stock, and mutual fund. The questions are: (1) "*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?*", (2) "*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?", (3) "*If interest rates rise, what will typically happen to bond prices?*", (4) "*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.*", and (5) "*Buying a single company's stock usually provides a safer return than a stock mutual fund*." The objective financial knowledge variable is constructed by adding participants' correct responses to the above questions.

Numeracy level. Numeracy is measured using a self-reported scale ranging from 1 to 7, where 1=lowest level of self-reported mathematical proficiency and 7=highest level of mathematical proficiency.

Financial difficulty. A binary variable is constructed with 1=when respondents find it very difficult or somewhat difficult to pay their monthly bills and 0=otherwise.

Income shock. The question is: "*In the past 12 months, have you (or has your household) experienced a large drop in income which you did not expect?*" A binary variable is constructed with 1="*Yes*" and 0="*No.*"

Debt situation. Respondents assess their debt situation by answering a question measured on a scale of 1-7, "*I have too much debt right now*," where 1="*Strongly disagree*" and 7="*Strongly agree.*"

Financial confidence. Respondents are asked 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.*" Financial confidence is measured on a 1-7 Likert scale, where 1="*Least level of confidence* and 7="*Highest level of confidence.*"

Risk tolerance. A question measured on a 1-10 scale is given to respondents to measure their risk tolerance levels: "*When thinking of your financial investments, how willing are you to take risks?,*" where 1 ="*Not at all wiling*" and 10 ="*Very willing*."

Help-seeking behavior as mediator

Respondents' help-seeking from financial professionals is used as a mediator in this study. Three areas of financial advice are selected as the observed help-seeking behavior variables, including obtaining advice from financial professionals in terms of (1) savings or investments, (2) insurance of any type, and (3) tax planning. Respondents are asked if they have sought professional advice regarding the above financial matters in the past five years. Three separate binary variables are constructed with 1="*Yes*" and 0="*No.*"

Financial management behaviors as outcomes of search behaviors

This study created two financial management behavior latent variables to define participants' positive and negative financial management behaviors in multiple areas of day-to-day financial matters, ranging from spending habits and saving behaviors to borrowing behaviors.

Desired Financial Management Behaviors

Retirement needs. Respondents are asked the following retirement-related questions: "*Have you ever tried to figure out how much you need to save for retirement?*" and "*Before you retired, did you try to figure out how much you needed to save for retirement?*" Separate binary variables are created based on the participants' responses, with 1="*Yes*" and 0= "*No*."

Education fund. This question is asked of those who had at least one financially dependent child in their households at the time of the survey. A binary variable is created, with 1="*Yes*" and 0="*No*," to measure whether respondents saved for their children's education.

Credit comparison. Whether consumers searched for information before they applied for credit cards is included in the questionnaire by asking the following "*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?*" A binary variable is created with 1="*Yes*" and 0="*No.*" The respondents to this question are those who had credit card(s) at the time of survey.

Credit card payments. Respondents who had at least one credit card at the time of survey are asked whether they always paid off their credit cards in full. A binary variable is constructed based on the participants' responses with 1="*Yes*" and 0="*No.*"

Risky Financial Management Behaviors

Lack of emergency fund. A binary variable is constructed with 1= the respondents did not have an emergency fund and 0= otherwise.

Spending behaviors. Respondents are asked to answer the question, "*Over the past year, would you say your spending was less than, more than, or about equal to your income?*" Expenses related to new houses, cars, and big investments are not included. Among the options, only the "*Spending more than income*" is considered a risky behavior. The variable is coded as 1="*Yes*" and 0=otherwise.

Overdrawing checking account. Respondents are asked to answer the question, "*Do you overdraw your checking account occasionally?*" A binary variable is constructed based on the participants' responses, with 1="*Yes*" and 0="*No.*"

Risky credit behavior index. A series of questions is asked about respondents' risky credit card-using behaviors: "*carried over a balance and was charged interest,*" "*was charged a late fee for late payment,*" "*was charged an over-the-limit fee for exceeding my credit line,*" and

"*used the cards for a cash advance.*" Each response was coded as 1="*Yes*" and 0="*No.*" Then a risky credit behavior variable is created by adding the responses to the four variables.

Demographics and socioeconomic factors

Demographic and socioeconomic factors are used as control variables for this study. These variables include age, gender, ethnicity, marital status, employment status, and income level.

Age and gender. Six categorical variables are created for age that include: "*18-24,*" "*25-34,*" "*35-44,*" "*45-54*"; "*55-64,*" and "*65 or more.*" Gender includes two binary variables for "*Male*" and "*Female.*"

Ethnicity. A binary variable is constructed as 1="*non-Hispanic White*" and 0=otherwise.

Marital status. Four binary variables are constructed for marital status: "*Married,*" "*Single,*" "*Divorced or separated,*" and "*Widowed/widower.*"

Employment status. Binary variables are created to represent the following employment status-related responses: "*Self-employed,*" "*Work full-time,*" "*Work part-time,*" "*Homemaker*, *Full-time student*, *Permanently sick, disabled, or unable to work,*" "*Unemployed or temporarily laid off,*" and "*Retired.*"

Income. Income ranges are given in this questionnaire. The question was, "*What is your (or your household's) approximate annual income, including wages, tips, investment income, public assistance, income from retirement plans, etc.?*" The dataset then categorizes the income levels into different ranges from "*Less than $15,000*" to "*$150,000 or more.*" Binary variables are created for each level of income ranging from "*Less than $15,000*" to "*$150,000 or more"* for statistical analyses.

Appendices A and B summarize the characteristics of internal and external source variables, financial help-seeking behavior, financial management behaviors, and the demographic variables used in this study. All of the measured (observed) variables are listed, along with their variable types (categorical, continuous, or binary) and the variable code in the 2012 FINRA dataset (see Appendices).

Data Analysis Procedure

Descriptive information

The basic descriptions for each of the selected variables include sample size, mean (proportion if categorical data), standard deviation, and range (minimum and maximum). Invalid responses, such as "*Don't know*" and "*Prefer not to say,*" are treated as missing values and ignored along with other missing values in this process.

Additionally, correlation coefficients for each pair of the selected observed variables are provided, followed by correlations among the three latent constructs. Since some of the selected variables are categorical and binary, polychoric correlations are used (Muthen, 1983, 1984; Muthen & Kaplan, 1985).

Structural equation modeling

SEM is the main statistical analysis method employed in this study. SEM is a statistical method used to test hypotheses about relationships among variables. It has been widely used in psychology, behavioral finance, and sociology, among other areas (Hox & Bechger, 2007; MacCallum & Austin, 2000). Statistically speaking, SEM has two components: a measurement model and a structural model. The measurement model links the observed variables (indicators) with latent variables (constructs) while the structural model estimates the relationships among latent variables.

SEM is a combination of path analysis, developed by Wright (1923) in genetics then widely used in economics and sociology, and factor analysis, which is rooted in psychology (Spearman, 1904). These two analysis methods were merged in early 1970s by Hauser and Goldberger (1971), and since then, many disciplines have influenced the development of modern SEM methods, including biostatistics, econometrics, psychometrics, and social statistics.

Schumacker and Lomax (2010) summarized three advantages of using a SEM-based analysis: First, SEM uses a large number of variables that are analyzed to estimate more complicated phenomena than possible with traditional and basic statistical methods that use only a limited number of variables and are sometimes insufficient to examine complex theory; second, SEM techniques consider measurement error by including both observed, latent variables and measurement error in the model when analyzing data; third, advanced SEM models can handle sophisticated social and behavioral interactions and are increasingly used by researchers.

There are three assumptions in SEM. First, the sample size must be sufficiently large that is necessary to obtain reliable parameter estimates. The common rule of thumb for sample size is to have a least 200 participants. Second, the data need to be multivariate normal, which means that the observed variables should follow a multivariate normal distribution. Third, there should be a correct model specification. Last, the data file cannot contain missing values for analysis.

As mentioned above, there are two types of models in SEM, measurement and structural models. Measurement models show observed variables and the defined latent variable. Each observed indicator has its own measurement error (ε). For example, as a latent construct, financial help-seeking behavior has three measured items or observed variables: saving and investment service, tax planning, and insurance planning. Each of the three observed variables has its associated measurement error. Similarly, desired and risky financial management

behaviors are also defined with two different sets of observed variables with measurement errors. The relationship between the latent variable and its observed variables is determined based on the fact that there is covariance exists between observed variables. Factor loadings (λ) can be computed between a latent variable and its observed variables. By analyzing the covariances of these observed variables, the impact of a latent variable on the observed variables can be specified. For example, based on the covariances among the three financial service areas – saving and investment planning, tax planning, and insurance planning – the factor loadings from financial help-seeking behavior for these three observed financial service areas are determined.

In structural models, relationships among latent variables are examined. Structural coefficients (β) represent the relationships between latent variables. In this study, two relationships exist among three latent variables: the relationship between financial help-seeking behavior and desired financial management behaviors and the relationship between financial help-seeking behavior and risky financial management behaviors. Figure 5 illustrates the SEM path diagram containing both measurement and structural model components.

Furthermore, the variables in SEM analysis can be classified into two types, exogenous and endogenous. Exogenous variables are similar to independent variables. In this study, the eight internal information source factors are exogenous observed variables (x). On the other hand, endogenous variables are similar to dependent variables. Latent variables can be either exogenous or endogenous. As shown in Figure 5, the three latent variables in this study, including the mediator and two financial behavior latent constructs, are all endogenous latent variables (η), and the observed items defining the three latent endogenous variables are called observed endogenous variables (y).

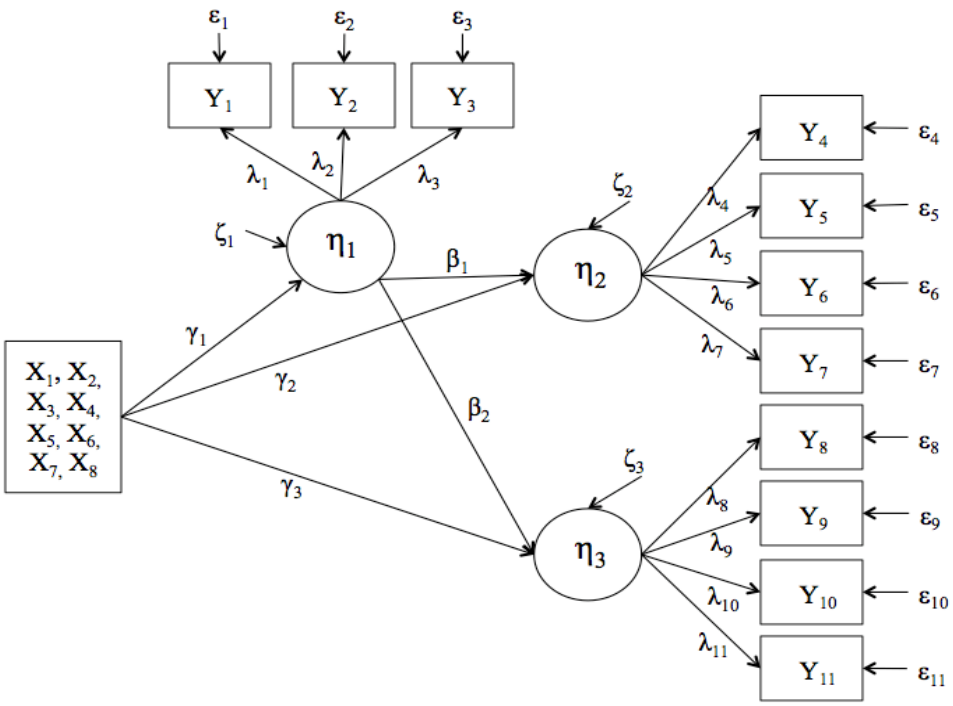

Figure 5. SEM path diagram using the financial help-seeking behavior framework developed in this study. X_i represents the independent internal search source variables; Y_j represents the measured (observed) items; and η_k represents the endogenous latent constructs.

The typical SEM process includes the following steps: (a) model conceptualization, (b) parameter identification and estimation, (c) model fit assessment, and (d) model modification (Muller & Hancock, 2008). In the stage of initializing the model, confirmatory factor analysis is usually applied when theoretical support for the model is lacking. Model identification and estimation usually can be performed with SEM software parameter techniques, such as maximum likelihood (ML) (Bollen, 1989), which assumes multivariate normality and continuity of the data. ML also requires a large sample size, usually more than 200. The model fit assessment stage has multiple fit criterion classes: (1) absolute indices, such as standardized root mean square residual (SRMR) and chi-square test, (2) parsimonious indices, including root mean

square error of approximation (RMSEA), Akaike information criterion (AIC), and adjusted goodness-of-fit index (AGFI), and (3) incremental indices, such as the comparative fit index (CFI) and normed fit index (NFI) (Mueller & Hancock, 2008). The purpose of the model fit assessment stage is to evaluate any discrepancy between the observed sample-based model covariance matrix and the sample estimation of the true population covariance matrix. The last stage of the SEM is model modification, which usually can be achieved by estimating the Lagrange multiplier statistics (modification indices).

Mediating Effects Tests in SEM

This study examines the influence of financial help-seeking behavior as an external source and several internal sources on consumers' financial management behaviors. The simplified mediation model and the mediation model of this study are shown in Figures 6 and 7. The relationships among variables are complex and sometimes more complicated than a simple relationship between a predictor and an outcome (MacKinnon & Fairchild, 2009).

The mediation model provides explanations of how the independent variable, *X*, or internal information sources, affects the dependent variable, *Y*, or desired and risky financial behaviors, when an intervening variable, *Me*, mediates the relationship (see Figure 6). In this study, the mediator to be examined is financial help-seeking behavior (*Me*), which is hypothesized to intervene in the relationship between the internal information sources (*X*) and desired and risky financial management behaviors (*Y*) (see Figure 7). The mediator is also shown in the conceptual framework in Chapter Three and includes three different financial service areas: savings and investments, insurance planning, and tax planning. In Figures 6 and 7, *c* represents the total effect from *X* to *Y*. After adding *Me* as the intervention intermediating between *X* and *Y*, a is the effect of *X* on *M*, b is the effect of *M* on *Y*, and *c'* is the effect of *X* on *Y*

controlling for *Me*, or the direct effect. The product of a*b is the indirect effect from *X* to *Y*. The total effect of *X* on *Y* is *c* = ab + *c'*. One purpose of this study is to investigate the indirect effect or, more precisely, the significance of the product of a*b in the relationship of internal information sources (*X*) and financial management behaviors (*Y*) through financial help-seeking behavior (*Me*), as shown in Figure 7.

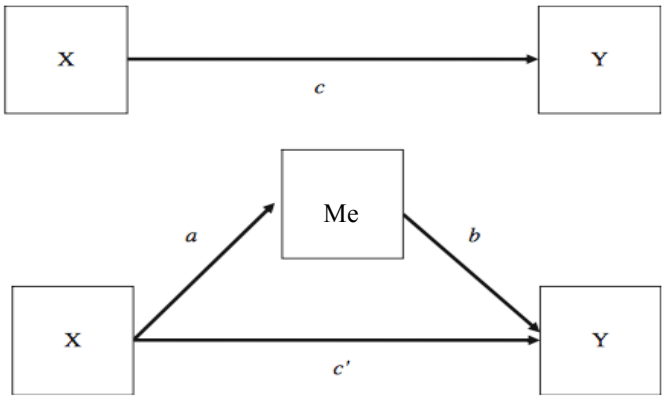

Figure 6. Path diagram of general mediation effect with a single mediator

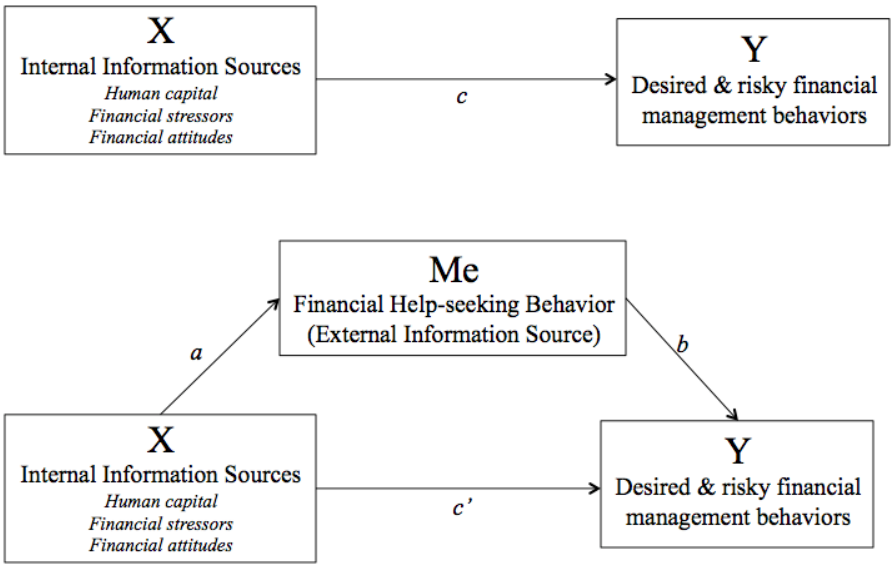

Figure 7. Path diagram of the mediation effect of financial help-seeking behavior in this study

Multi-group Analyses

The main purpose of multi-group SEM analysis is to compare the path coefficients between two specific groups of interest under the same proposed SEM model (Kock, 2014). The measurement and structural models must identical for the two groups in the multi-group SEM analysis (Qureshi & Compeau, 2009). After fitting a model to the overall sample, the factor loading and path coefficients are estimated for the separate pairs of groups, for example, younger vs. older generation, and female vs. male (e.g., Angulo-Ruiz & Pergelova, 2015). In this study, six multi-group analyses are conducted. The overall sample is separated into the following groups based on their demographic and socioeconomic characteristics: younger vs. older age cohorts, male vs. female, White vs. non-White, married vs. unmarried, full-time workers vs. non-full-time workers, and lower vs. higher income earners.

Specifically, the two age groups are ages 18-34 (younger age group) and ages 35 and above (older age group). Previous research has identified an age effect on the likelihood of seeking financial professional help (e.g., Bluethgen et al., 2008; Grable & Joo, 1999; McClune, 2010). Therefore, the division of the two groups in this study is aimed at highlighting the age differences in terms of financial help-seeking behavior and financial management behaviors. Moreover, the division of the younger and older age groups is supported by the life stage frameworks (Eriksen, 1959; Armstrong, 2008), where ages 18-34 refer to the early adulthood stage, with pursuing education and starting a career as the major life goals, and ages 35 and older refer to a midlife-mature adulthood stage, with assuming family responsibilities, parenting, building up wealth, and accomplishing life goals as the main concerns.

The effects of gender, race, marital status, and employment status on the likelihood of adopting professional financial services are also mentioned in the literature (e.g., Aizcorbe et al.,

2003; Hanna, 2011; Loibl & Hira, 2007; Lusardi, 2008; Rehl et al., 2016; White & Heckman, 2016). In this study, (1) male and female are the two gender groups, (2) White and non-White are the ethnicity/race groups, (3) married and unmarried (including single, separated, divorced, and widowed/widower) are the two marital status groups, (4) working full-time and not working full-time (including working part-time, self-employed, homemaker, disabled, retired, and full-time student) were the two employment status groups.

Finally, income is an important indicator for financial decision making and financial behaviors (e.g., Cummings & James, 2014; Hanna, 2011; Joo & Grable, 2001; McClune, 2010; Tseng, 2012). According the U.S. Census Bureau, in 2012 (when the FINRA 2012 survey was conducted), the median U.S. average household income is $51,371[2]; thus, the study uses the annual earnings of $50,000 as the cutoff point to divide the lower and higher income groups.

Summary

This chapter provides descriptions of the FINRA 2012 dataset, including sampling and data collection methods, detailed measures of endogenous, exogenous, and demographics variables, such as how these variables are assessed in the questionnaire, the coding of the options for each question, and the variable types. The second half of this chapter provides explanations of several statistical techniques used in this study. Results and findings of the statistical analyses will be provided in the next chapter, including descriptive statistics, correlation matrices, and SEM and multi-group SEM analyses.

[2] U.S. Census Bureau.
https://www.census.gov/content/dam/Census/library/publications/2013/acs/acsbr12-02.pdf

CHAPTER FIVE

ANALYSIS AND RESULTS

The statistical analyses and procedures utilized are described in this chapter, and significant results and findings are demonstrated. The statistical procedures include descriptive statistics for all variables, correlation matrices of observed variables and the latent constructs, SEM analyses with model fit and effect decomposition, and multi-group SEM with control variables. The statistical results are both summarized and presented in tables.

Statistical Analysis Procedure

As explained in the previous chapters, the main goal of this study is to evaluate the relationships among internal and external information sources, financial help-seeking behaviors, and financial management behaviors. STATA/SE 14 was used as the main statistical program to accomplish the analysis procedures. The reporting on the analysis results consists of (1) descriptive statistical results of the sample, (2) correlation matrices of observed variables and latent constructs that are included in the framework, (3) the main SEM factor loadings and path coefficients of the measurement and structural models along with model fit indices, and (4) multi-group SEM results and decomposition of effects.

Descriptive Statistics

The total sample in the FINRA 2012 dataset was 25,509 U.S. adults aged 18 and older at the time of the survey. Table 1 presents the descriptive information on the selected observed variables and control variables. Statistical results included in this table are the number of

observations, the means and ranges (for continuous variables), and proportions and standard deviations (for the binary and categorical variables).

Based on respondents' demographic characteristics, the majority of the respondents were female (55.38%), White (73.37%), and married (56.14%). The percentages of the age groups, from high to low, were 20.45% for ages 45-54, 19.01% for ages 55-64, and 16.82%, 16.81%, 16.79%, and 10.12% for ages 65 and older, ages 25-44, ages 25-34, and ages 18-24, respectively. There were three other marital statuses besides married, namely, single (26.52%), separated and divorced (13.35%), and widowed or widower (3.99%). Employment status categories showed that most of respondents were working full-time (36.15%), followed by unemployed, disabled or homemaker (23.72%), retired (18.67%), working part-time (9.43%), self-employed (7.75%), and full-time student (4.28%). The majority of the respondents had an income level from $50,000 to $75,000 (19.08%); only 6.62% of respondents had income higher than $150,000.

Of all the respondents, 31.10% had asked advice from financial professionals for savings and investments, 32.55% took professional advice on insurance planning, and 19.47% on tax planning. Those who answered "*Don't know*" and "*Prefer not to say*" were treated as missing values and ignored.

In terms of internal search sources variables, this study used only those that provided valid responses to each question, and those who answered "*Don't know*" and "*Prefer not to say*" were omitted. Some college educational experience had the largest percentage at 33%, followed by those who had a high school education (25.72%) and those with college degrees (20.95%). Those with post-graduate degrees were 12.87%, while the percentage of those who did not have high school degree totaled 7.46%. The score of objective financial knowledge was calculated by summing the number of correct responses to the five objective financial knowledge questions,

with a scale ranging from 0, if none of the five questions was answered correctly, to 5, if the respondent answered all five questions correctly.

The average objective financial knowledge score of all the respondents was 3.029 with a standard deviation of 1.437. The average score on the self-assessed numeracy level was 5.619 on a 1-7 scale. Of all the respondents, 15.69% felt it was very difficult to pay monthly bills and cover monthly expenses; 41.65% felt it was somewhat difficult; and 42.66% did not have those financial difficulties. Around 29% of the respondents had experienced an unexpected large income drop in the past year. The average score on self-assessed debt situation was 3.961, where 1 meant they did not think they had too much debt and 7 meant they agreed that they had too much debt. On two financial attitude questions, the average financial confidence was 5.709 on a 1-7 scale, and the mean score of financial risk tolerance was roughly 4.74 on a 1-10 scale.

For the four desired financial behaviors, 44.20% of respondents had calculated their retirement needs, more than half (50.27%) had paid off their credit cards in full, 34.81% had saved for education purposes, and 34.80% compared credit cards before they applied for one. On the other hand, for the four risky financial management behavior variables, 57.38% of respondents did not set aside enough emergency funds, and 18.96% even spent more than they could earn. Those who overdrew their checking accounts were 21.26% of all the respondents. A risky credit behavior index was created by summing up the number of risky credit card behaviors, including keeping credit card balance, being late on credit card payments, being charged an over-the-limit penalty, and taking cash advances from credit cards, where 0 meant the respondent did not do any of these behaviors and 4 meant they had conducted all four risky behaviors.

Table 1

Descriptive Statistics of Selected Variables

Variable	Obs	Mean (%)	Std. Dev.	Min	Max
External Search Sources					
Financial help-seeking services					
Savings & investments	24,923	31.10%			
Insurance planning	24,932	32.55%			
Tax planning	24,906	19.47%			
Internal Search Sources					
Educational attainment	25,509				
<High school	1,903	7.46%			
High school (Diploma/GED)	6,561	25.72%			
Some college	8,419	33.00%			
College (Associate/Bachelor's degree)	5,343	20.95%			
Post graduate degree	3,283	12.87%			
Objective financial knowledge	24,958	3.029	1.437	0	5
Numeracy level	25,216	5.619	1.650	1	7
Financial difficulty	24,793				
Very difficult	3,921	15.69%			
Somewhat difficult	10,411	41.65%			
Not at all difficult	10,663	42.66%			
Income shock	24,859	28.95%			
Debt situation	25,099	3.961	2.236	1	7
Financial confidence	25,146	5.709	1.576	1	7
Financial risk tolerance	24,692	4.741	2.641	1	10
Financial Management Behavior					
Desired financial behavior					
Retirement needs	24,405	44.20%			
Full credit card payment	18,356	50.27%			
Education fund	9,546	34.81%			
Credit comparison	17,451	34.80%			
Risky financial behavior					
No emergency fund	24,497	57.38%			
Spending > income	24,512	18.96%			
Overdrawing checking account	22,641	21.26%			
Number of risky credit behaviors	18,156	0.832	0.985	0	4
Demographics					
Age	25,509				

	18-24	2,581	10.12%
	25-34	4,284	16.79%
	35-44	4,288	16.81%
	45-54	5,217	20.45%
	55-64	4,848	19.01%
	>65	4,291	16.82%
Gender		25,509	
	Male	11,382	44.62%
	Female	14,127	55.38%
Ethnicity		25,509	
	White	18,715	73.37%
	Non-White	6,794	26.63%
Marital status		25,509	
	Married	14,320	56.14%
	Single	6,766	26.52%
	Separated/Divorced	3,406	13.35%
	Widowed/widower	1,017	3.99%
Employment status		25,509	
	Work full-time	9,222	36.15%
	Work part-time	2,405	9.43%
	Self-employed	1,977	7.75%
	Unemployed/disabled/homemaker	6,052	23.72%
	Full-time student	1,091	4.28%
	Retired	4,762	18.67%
Income		25,509	
	<15,000	3,383	13.26%
	12,000-25,000	2,982	11.69%
	25,000-35,000	2,885	11.31%
	35,000-50,000	3,749	14.70%
	50,000-75,000	4,867	19.08%
	75,000-100,000	3,089	12.11%
	100,000-150,000	2,865	11.23%
	>150,000	1,689	6.62%

Although a cause-effect relationship cannot be fully established by interpreting correlation coefficients, the correlation matrix does play an important role in SEM. It provides relationships between two variables that do not necessarily have a causal effect. Obtaining correlations and knowing how each two variables are correlated are useful to understand both

direct and indirect relationships and the relationships between latent variables and observed variables in a complex SEM model.

Since some of the selected variables were categorical and binary variables, the polychoric correlations technique was used (Muthen, 1983, 1984; Muthen & Kaplan, 1985). Table 2 shows the correlation matrix of all these selected observed variables, while Table 3 shows the correlation matrix of the three latent variables. The correlation between financial help-seeking and desired financial behaviors was 0.391, the correlation between financial help-seeking and risky financial behaviors was -0.129, and the desired and risky financial behaviors were negatively correlated (-0.417). The correlations between the three financial service areas, defining the financial help-seeking behavior latent construct, were highly correlated. The correlation between savings and investment and insurance planning services was 0.673, the correlation between savings and investment and tax planning services was 0.666, and the correlation between insurance planning and tax planning services was 0.598. Further, the observed desired financial behaviors and the observed risky financial behaviors had a negative correlation.

Table 2

Correlation Matrix of Observed Variables Including Internal and External Information Sources and Financial Service Areas

	1	2	3	4	5	6	7	8	9	10
1. Educational attainment	1.000									
2. Objective financial knowledge	0.332	1.000								
3. Numeracy level	0.196	0.294	1.000							
4. Financial difficulty	-0.210	-0.228	-0.177	1.000						
5. Income shock	-0.135	-0.219	-0.114	0.558	1.000					
6. Debt situation	-0.104	-0.145	-0.046	0.529	0.344	1.000				
7. Financial confidence	0.131	0.206	0.650	-0.298	-0.160	-0.197	1.000			
8. Risk tolerance	0.193	0.106	0.174	-0.159	-0.017	-0.074	0.119	1.000		
9. Savings & investment services	0.284	0.160	0.109	-0.210	0.007	-0.137	0.125	0.306	1.000	
10. Insurance planning services	0.168	0.080	0.078	-0.056	0.133	0.013	0.076	0.199	0.673	1.000
11. Tax planning services	0.224	0.089	0.084	-0.106	0.070	-0.069	0.101	0.263	0.666	0.598
12. Retirement needs	0.293	0.267	0.192	-0.246	-0.042	-0.167	0.203	0.289	0.519	0.348
13. Full credit card payment	0.259	0.113	0.105	-0.397	-0.175	-0.555	0.236	0.206	0.302	0.104
14. Education fund	0.316	0.097	0.140	-0.351	-0.178	-0.271	0.161	0.328	0.368	0.243
15. Credit comparison	0.092	0.034	0.083	-0.034	0.084	-0.022	0.101	0.219	0.296	0.284
16. No emergency Fund	-0.296	-0.183	-0.174	0.570	0.254	0.518	-0.290	-0.272	-0.433	-0.197
17. Spend > income	-0.088	-0.141	-0.098	0.543	0.366	0.387	-0.202	-0.077	-0.066	0.039
18. Overdrawing checking account	-0.079	-0.235	-0.176	0.476	0.383	0.415	-0.315	0.030	-0.011	0.086
19. Risky credit behavior	-0.139	-0.211	-0.086	0.458	0.362	0.518	-0.243	-0.007	-0.042	0.081

	11	12	13	14	15	16	17	18	19
1. Educational attainment									
2. Objective financial knowledge									
3. Numeracy level									
4. Financial difficulty									
5. Income shock									
6. Debt situation									

7. Financial confidence									
8. Risk tolerance									
9. Savings & investment services									
10. Insurance planning services									
11. Tax planning services	1.000								
12. Retirement needs	0.462	1.000							
13. Full credit card payment	0.287	0.276	1.000						
14. Education fund	0.327	0.287	0.385	1.000					
15. Credit comparison	0.284	0.288	0.134	0.240	1.000				
16. No emergency Fund	-0.354	-0.396	-0.645	-0.525	-0.195	1.000			
17. Spend > income	-0.011	-0.158	-0.251	-0.223	-0.009	0.356	1.000		
18. Overdrawing checking account	0.097	-0.101	-0.281	-0.097	0.076	0.372	0.342	1.000	
19. Risky credit behavior	0.001	-0.112	-0.672	-0.195	0.068	0.432	0.361	0.540	1.000

Table 3

Latent Construct Correlation Matrix

	Financial help-seeking behavior	Desired financial behaviors	Risky financial behaviors
Financial help-seeking behavior	1		
Desired financial behaviors	0.391	1	
Risky financial behaviors	-0.129	-0.417	1

Structural Equation Modeling

Structural equation modeling was then conducted. The standardized estimates for the hypothesized relationships and model fit indices are presented in Table 4. This table also shows the direct effects from the internal and external information search sources to financial behaviors, the indirect effects from the internal sources to financial behavior through financial help-seeking behavior, and the total effects of the internal and external information sources as a combination of direct and indirect effects.

The direct effects showed whether there was a significant relationship in the path diagram, if there was a direct arrow from one predictor either to a latent variable or from the latent mediating variable to latent endogenous variable. Based on the results, educational attainment was significantly and positively associated with desired financial behaviors and negatively associated with risky behaviors. Objective financial knowledge did not significantly influence desired behaviors; however, it was negatively associated with risky behaviors. Numeracy did not show any significant impact on desired or risky financial behaviors. Financial difficulty and debt situation had significantly negative influences on desired financial behaviors and significantly positive relationships with risky financial behaviors. Experiencing a large income drop may not influence desired financial behaviors, but it did significantly increase risky financial behaviors. Being more financially confident and risk tolerant was positively associated with more desired financial behaviors; however, high financial confidence negatively related to risky financial behaviors. Risk tolerance had little impact on risky financial behaviors.

Of all the independent variables, educational attainment, objective financial knowledge, income shock, financial confidence and risk tolerance were positively associated with seeking help from financial professionals. Whereas, having more financial difficulties and too much debt

decreased the likelihood to find financial professionals in areas of savings and investment, tax, and insurance planning. Numeracy skills again had little significant influence on financial help-seeking behavior.

Financial help-seeking behavior, as a mediator, had a significant relationship between risky and desired financial behaviors. The SEM results showed that seeking help from financial professionals had a significantly positive direct relationship with desired financial behaviors and a significantly negative direct relationship with risky behaviors.

Indirect effects are the indirect relationships between each of the eight independent variables with the desired and risky behaviors through the mediator, the financial help-seeking behavior in this particular model. Since the paths from eight predictors to financial help-seeking behavior and from financial help-seeking behavior to desired and risky financial behaviors were direct paths, there was no indirect effect of these paths. After being intervened by the mediator, the indirect effect of educational attainment was positively associated with desired financial behaviors and negatively associated with risky financial behaviors. Objective financial knowledge also showed the same influence on the two sets of financial behaviors. Numeracy did not have any significant impact on financial behaviors. Financial difficulty and debt situation had negative indirect influences while income shock had a positive indirect influence on desired financial behaviors. In terms of indirect effects on risky behaviors, the results showed that there was a positive relationship with financial difficulty and a negative relationship with income shock. Debt situation did not significantly affect risky behaviors. Higher financial confidence and risk tolerance increased desired financial behaviors; however, while there was a negative relationship between risky tolerance and risky financial behaviors, the influence of financial confidence on risky behaviors was weak.

Total effects in a mediation model are the sum of direct and indirect effects. For those relationships that do not have indirect effects, the total effects are equal to the direct effects. Thus, the total effects to be explored and interpreted are those effects and paths from the eight predictors to the desired and risky financial behaviors with the intervention from seeking professional helps as a mediator. The total effect of educational attainment on desired and risky behaviors did not change. Higher education still had a positive effect on desired financial behaviors and a negative effect on risky financial behaviors. Objective financial knowledge exhibited a limited effect on desired behaviors, but had a significantly negative influence on risky financial behaviors. Numeracy level showed a positive influence on risky financial behaviors, although it did not have significant direct or indirect influence on risky financial behaviors. Financial difficulty and debt situation were negatively associated with desired financial behaviors. However, income shock showed a positive total effect through both direct and indirect paths on desired financial behaviors. All three financial stressor related factors, financial difficulty, income shock, and debt situation, were positively associated with risky financial behaviors. Financial confidence and risk tolerance had positive total effects on desired financial behaviors. Financial confidence was negatively associated with risky financial behaviors, while risk tolerance did not show any significant influence on risky behaviors.

The current SEM model had a statistically significant Chi-square of 3716.138 with a degree of freedom of 106. The model goodness-of-fit indices generally showed a good model fit with a Root Mean Square Error of Approximation (RMSEA) of 0.078, where below 0.8 indicates a good model fit (MacCallum, Browne & Sugawara, 1996). Moreover, with a <0.08 as the deemed acceptable cutoff point for Standardized Root Mean Square Residual (SRMR) (Hu & Bentler, 1999), a 0.059 SRMR also indicated a good model fit in this study.

The path diagram of the structural equation for this model is illustrated in Figure 8. The illustration includes the path coefficients above the structural relationships for the predictors and latent variables, and the measurement relationships between each latent variable and its observed measurement items, as well as the error terms for the endogenous variables. The eight predictors are listed on the left in the graph. Financial help-seeking behavior is a latent variable with three observed items, which are shown in the middle top of the figure. Desired and risky financial behaviors, each measured by four observed variables, are on the left side of the figure.

Table 4

SEM Standardized Estimates & Model Fit Indices and Effect Decomposition

Hypotheses	Structural Relations	Direct Effects			Indirect Effects		Total Effects	
		Coef.	Std. Err.	Sig.	Coef.	Sig.	Coef.	Sig.
H1.1.1	Educational attainment --> DFB	0.184	0.017	***	0.090	***	0.275	***
H1.1.2	Educational attainment --> RFB	-0.038	0.014	**	-0.012	***	-0.051	***
H1.2.1	Objective financial knowledge --> DFB	-0.007	0.017		0.027	**	0.019	
H1.2.2	Objective financial knowledge --> RFB	-0.091	0.014	***	-0.003	*	-0.095	***
H1.3.1	Numeracy level --> DFB	0.004	0.020		-0.012		-0.008	
H1.3.2	Numeracy level --> RFB	0.031	0.016		0.001		0.033	*
H1.4.1	Financial difficulty --> DFB	-0.154	0.019	***	-0.051	***	-0.206	***
H1.4.2	Financial difficulty --> RFB	0.400	0.015	***	0.007	***	0.408	***
H1.5.1	Income shock --> DFB	0.009	0.017		0.067	***	0.076	***
H1.5.2	Income shock --> RFB	0.119	0.014	***	-0.009	***	0.110	***
H1.6.1	Debt situation --> DFB	-0.377	0.019	***	-0.018	*	-0.396	***
H1.6.2	Debt situation --> RFB	0.428	0.013	***	0.002		0.430	***
H1.7.1	Financial confidence --> DFB	0.097	0.019	***	0.022	*	0.119	***
H1.7.2	Financial confidence --> RFB	-0.183	0.016	***	-0.003		-0.186	***
H1.8.1	Risk tolerance --> DFB	0.237	0.017	***	0.141	***	0.379	***
H1.8.2	Risk tolerance --> RFB	0.021	0.014		-0.020	***	0.001	
H2.1	Educational attainment --> FHS	0.169	0.015	***	*no path*		0.169	***
H2.2	Objective financial knowledge --> FHS	0.051	0.016	**	*no path*		0.051	**
H2.3	Numeracy level --> FHS	-0.023	0.019		*no path*		-0.023	
H2.4	Financial difficulty --> FHS	-0.096	0.018	***	*no path*		-0.096	***
H2.5	Income shock --> FHS	0.125	0.016	***	*no path*		0.125	***
H2.6	Debt situation --> FHS	-0.034	0.016	*	*no path*		-0.034	*
H2.7	Financial confidence --> FHS	0.041	0.018	*	*no path*		0.041	*
H2.8	Risk tolerance --> FHS	0.264	0.014	***	*no path*		0.264	***

H3.1	FHS --> DFB	0.535	0.021	***	*no path*	0.535	***
H3.2	FHS --> RFB	-0.075	0.018	***	*no path*	-0.075	***

Model fit indices	
Chi-square (*df*)	3716.138 (*106*), P<0.0001
RMSEA	0.078
CFI[3]	0.770
SRMR	0.059
CD	0.905

Notes. *$p < .05$. **$p < .01$. ***$p < .001$

FHS = Financial help-seeking behavior

DFB = Desired financial management behavior

RFB = Risky financial management behavior

[3] Recent studies showed that a cutoff point of Comparative Fit Index (CFI) >0.90 (Hooper, Coughlan, & Mullen, 2008). Three attempts were conducted to improve the model and increase the current 0,77 CFI. By doing 1) model modification, 2) add/drop certain predictors, and 3) add another financial service area (mortgage), little improvement could be accomplished for CFI.

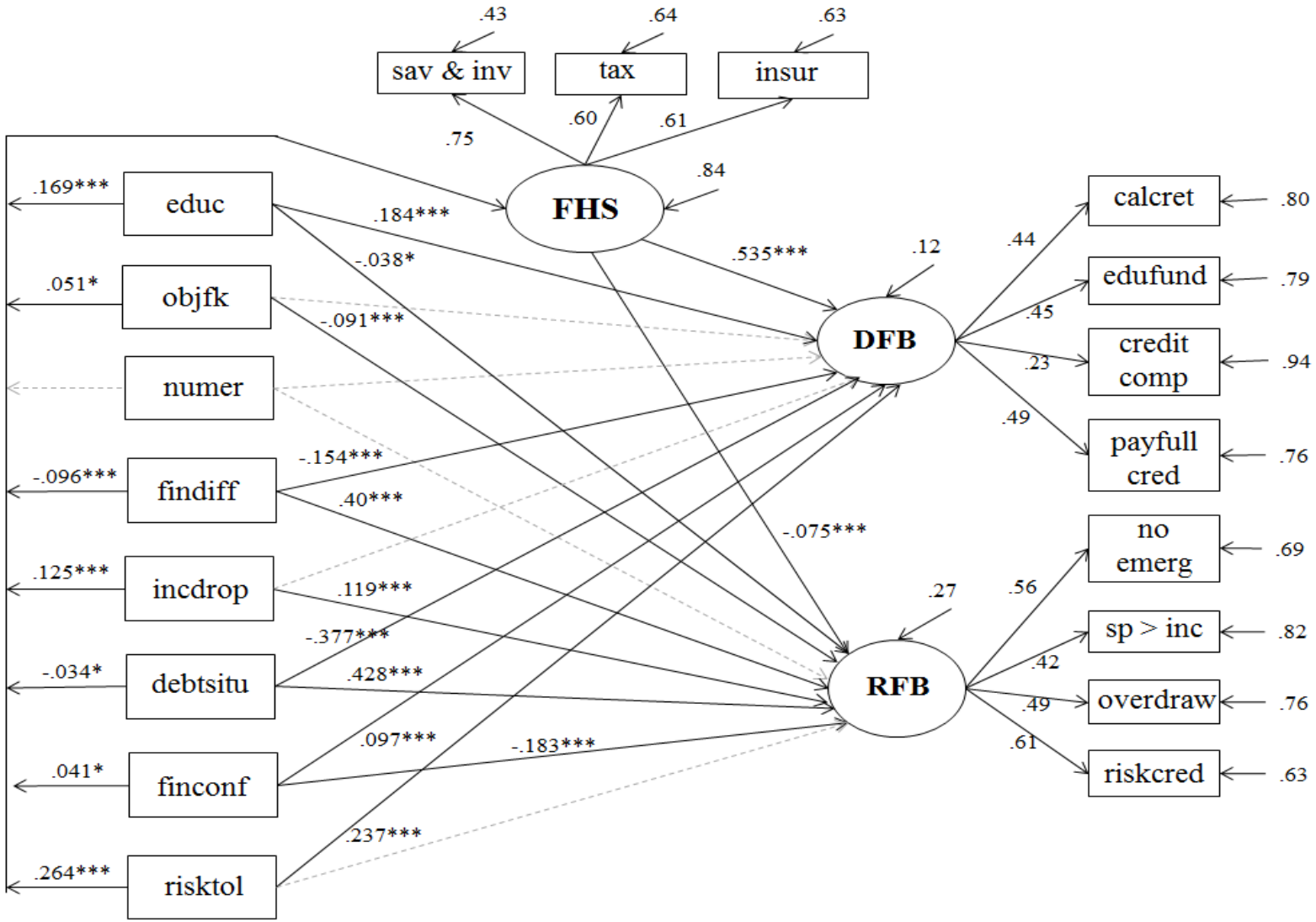

Figure 8. Path diagram and standardized SEM results for the financial help-seeking model (FHS=financial help-seeking behavior, DFB=desired financial behaviors, RFB=risky financial behaviors). The grey dotted lines indicate insignificant associations.

Additional Analyses – Multi-group SEM

The main SEM model was structured to test the relationships among the eight predictors, financial help-seeking behavior, and both desired and risky financial behaviors; however, there can be potential group differences embedded in these relationships. For example, the significant direct relationship between educational attainment and financial help-seeking behavior and the significant direct, indirect, and total effects of educational attainment on desired financial behaviors may change across male and female groups, age groups, and racial/ethnical groups. The additional SEM analyses were performed to further examine the main model with considerations of six control variables based on previous research, namely, age, gender, ethnicity/race, marital status, employment status, and income levels (Aizcorbe et al., 2003; Bluethgen et al., 2008; Good et al., 1989; Grable & Joo, 1999; Hanna, 2011; Joo & Grable, 2001; Loibl & Hira, 2007; Lusardi, 2008; McClune, 2010; Rehl et al., 2016; Woodyard & Robb, 2012).

Each of the six control variables was categorized into two mutually exclusive groups and added to the main SEM model one at a time. The age variable was separated into two groups of ages 18-34 (n=1,421) and ages 35 and older (n=4,123). Female (n=3,023) and male (n=2,521) were the two gender groups, and White (3,877) and non-White (n=1,667) were the two ethnical/racial groups. The marital status variable was categorized into married (n=4,272) and unmarried (n=1,272), which included separated, divorced, widowed, and single. Employment status was grouped into full-time worker (n=3,087) and non-full-time worker (n=2,457), which included part-time work, self-employed, unemployed, student, and retired. Lastly, income level categories were grouped into less than $50,000 (n=1,663) and equal to or more than $50,000 (n=3,881).

The standardized estimates and model fit indices of the SEM model with the multi-age groups are reported in Table 5. The predictors and effects of financial help-seeking behavior model were estimated for age group 1 (18-34) and age group 2 (35 and older). Educational attainment showed the same positive and significant direct effects on desired financial behaviors for both age groups. It had a negative direct effect on risky financial behaviors, but only for the younger age group; whereas for people who were age 35 and older, education attainment had little significant effect on risky financial behaviors. In terms of the total effect, which is the combination of direct effect of educational attainment to financial behaviors and indirect effect, educational attainment showed same positive influence on desired financial behaviors and a negative influence on risky financial behaviors for both age groups. Objective financial knowledge did not have any significant direct, indirect, or total effect on the two sets of financial behaviors for the younger age group. In contrast, for the older age group, objective financial knowledge showed significantly positive indirect and total effects on desired financial behaviors and negative direct, indirect and total effects on risky financial behaviors. There was no significant direct and indirect influence of numeracy level on financial behaviors for both age groups; however, there was a significant positive total effect of numeracy level on risky financial behaviors for the older age group.

In terms of the total effect and the direct effect, financial difficulty significantly and negatively affected desired financial behaviors and positively affected risky financial behaviors for both age groups. Compared with the older age group, the financial difficulty of those aged 18 to 34 had little indirect effect on risky financial behaviors through help-seeking. The relationship between income shock and financial behaviors was different across the age groups. For the younger age group, it had both positive and direct influences on desired and risky financial

behaviors; however, this positive effect was only effective for risky financial behaviors for the older adults. The total effect of income shock also showed the same discrepancy across the age groups. There was not much of an age group-related difference for debt situation that was negatively associated with desired financial behaviors and positively associated with risky financial behaviors.

There were positive influences of financial confidence on desired financial behaviors in both age groups and negative influences of financial confidence on risky financial behaviors in the direct and total paths. The indirect paths from financial confidence to desired and risky behaviors were not significant for younger adults, but they were significant for older adults. Risk tolerance had a consistent and positive influence on the desired financial behaviors for both age groups, but it did not significantly affect risky financial behaviors.

There was no age group difference for the positive effect of educational attainment on financial help-seeking behavior. Objective financial knowledge had a positive effect on financial help-seeking behavior only for the older age group. Numeracy did not have any significant influence on any of the age groups. Both groups experienced the negative effect of financial difficulty on financial help-seeking behavior, while income shock led to more financial help-seeking behavior. Debt situation did not have a significant impact on younger adults, but it did have any negative influence on older adults' help-seeking behavior. Similarly, financial confidence only had a significant and positive influence among older adults' help-seeking behaviors and it did not for younger adults. When controlling for age, seeking help from financial professionals remained a positive influence on desired financial behaviors for both age groups; however, the negative influence on risky financial behaviors only existed among older adults. The model fit for both age groups had $SRMR_{18\text{-}34}=0.08$, $SRMR_{35+}=0.056$, respectively.

Table 6 presents the SEM estimates and the decomposition of effects for males and females. Educational attainment did not show any gender difference in relation to desired and risky financial behaviors. It positively affected desired financial behaviors and negatively affected risky financial behaviors in total effects. However, there were differences across gender of the direct and indirect influences of education on risky financial behavior. Although a negative direct influence on risky behavior existed for male, this effect disappeared for women. Additionally, among males, the indirect influence from education towards risky behavior was not significant; however, it was significantly negative among women. Objective knowledge had the opposite effects for men and women in terms of the relationship with desired financial behaviors. It was negatively associated with desired behaviors in the direct and total paths for men, but positively associated with desired behaviors for women. Objective financial knowledge had a consistently negative effect on risky financial behaviors across both gender groups. Numeracy had no significant effect toward financial behaviors except for its direct effect on risky financial behaviors for men.

Financial difficulty did not show a gender difference in terms of the relationship with desired and risky financial behaviors. It negatively impacted desired and positively impacted risky financial behaviors. Income shock did not have any significant direct impact on the financial behaviors for both men and women; however, it showed a positive and significant influence on the desired and risky financial behaviors for both gender groups. Additionally, it had a significantly positive and direct influence on risky financial behaviors regardless of gender. The only gender difference for debt situation was found in its indirect effect. Men's financial behaviors were not indirectly impacted by debt situation through financial help seeking. Whereas for women, both desired and risky behaviors were indirectly affected by debt situation through

the process of seeking financial help. In both direct relationships and total effect relationships, the negative influence of debt situation toward desired behavior and the positive influence toward risky behavior were seen in both gender groups.

Financial confidence had direct and total effects on financial behaviors for both men and women, but it did not have any indirect effect on women's desired and risky financial behaviors. Higher financial confidence led to more desired financial behaviors and less risky financial behaviors regardless of gender. In terms of the total effect of risk tolerance, both men and women's desired financial behaviors were positively influenced. For men, higher risk tolerance also led to more risky financial behaviors, but these were not significant for women. The direct effects of risky tolerance on both desired and risky behaviors for men were positive, but for women, the direct positive effect was only significant for desired behaviors.

Among the eight predictors, educational attainment, income shock, financial confidence, and risk tolerance directly and positively affected men's financial help-seeking behavior, while financial difficulty negatively affected men's financial help-seeking behaviors. On the other hand, objective financial knowledge was positively associated and debt situation was negatively associated with women's financial help-seeking behavior; however, financial confidence was not effective for women.

People who sought more help from financial professionals had more desired financial behaviors, regardless of gender. The positive influence of financial help-seeking also reduced the risky financial behaviors among women, but not for men. The overall model for men had a 0.063 SRMR, while the model for women had a 0.058 SRMR.

The SEM standardized estimates of the ethnical/racial group comparisons are shown in Table 7. The direct effect of educational attainment on desired financial behavior was significant

and positive for both White and non-White respondents; however, it did show a discrepancy between the groups in terms of its direct effect on risky financial behaviors. For White respondents, education had a significantly positive influence; however, that influence was insignificant for non-Whites. The same discrepancy also existed for the total effects of education on risky financial behaviors for Whites and non-Whites. Having higher objective financial knowledge led to less risky financial behaviors for both Whites and non-Whites, and this effect held equally significant for both direct and total effects. The differences between the ethnic/racial groups were the indirect effects of objective financial knowledge on desired and risky financial behaviors. Objective financial knowledge had significantly indirect positive/negative influences on desired/risky financial behaviors Whites, but not for the non-Whites. Numeracy had no significant direct, indirect, or total influence on desired and risky financial behaviors for non-Whites. Whereas, numeracy level positively and directly increased the risky financial behaviors for Whites, and this effect held consistent for both the indirect and total relationships.

The influence of financial difficulty had a consistently negative influence on desired and positive influence on risky financial behaviors for both Whites and non-Whites for both the direct and total paths. However, for the indirect paths, financial difficulty did not have any significant influence on risky financial behaviors of non-Whites. Income shock had significant and positive direct influences on risky financial behaviors of both Whites and non-Whites, but no influence on desired behaviors in either of the ethnical/racial groups. In the indirect paths, income shock was positively associated with both desired and risky behaviors for Whites. For non-Whites, income shocks only had a positive association with desired financial behaviors, but had no significant influence on risky behaviors. For total effects, income shock increased both desired and risky behaviors for Whites and non-Whites. Lastly, debt situation was negatively

associated with desired financial behaviors and positively associated with risky financial behaviors for both Whites and non-Whites in both the direct and the total effect paths. However, it did not have any significant indirect effect for non-Whites.

Among Whites, financial confidence had positive impacts on desired and had negative impacts on risky financial behaviors in the direct, indirect, and total paths. For non-Whites, these impacts held consistent, except for the indirect effect on desired financial behavior, which was not significantly affected by financial confidence. The influence of risk tolerance on desired financial behaviors was positive for both Whites and non-Whites. In terms of risky financial behaviors, risk tolerance only showed its indirect effect on Whites.

Among the eight predictors, educational attainment, income shock, and risk tolerance had positive influences on financial help-seeking behavior for both ethnical/racial groups. Financial difficulty significantly and negatively affected financial help-seeking behavior for both racial groups. Objective financial knowledge only positively affected financial help-seeking behavior among Whites. This relationship was not significant among non-Whites. Numeracy level was negatively associated with financial help-seeking behavior among Whites, but not among non-Whites. Similarly, the negative effect of debt situation and the positive effect of financial confidence only showed among Whites, but not for non-Whites.

Both Whites and non-Whites who sought financial help showed more desired financial behaviors. However, only Whites, who did not use professional financial services, showed more risky financial behaviors. Seeking financial help did not affect non-Whites' risky financial behaviors. The SRMRs for both ethnical/racial groups were 0.056 for Whites and 0.069 for non-Whites, respectively.

Table 8 presents the multi-group SEM results for two groups – the married and unmarried respondents. Educational attainment consistently and positively increased desired financial behaviors for these two marital groups. It had a significantly negative influence on risky financial behaviors for the married respondents; however, such negative influence only showed indirectly among unmarried respondents. Objective financial knowledge had limited influence on desired behaviors, especially for unmarried people. Married people had a significant and indirect influence from objective knowledge on desired financial behaviors. Objective financial knowledge had a negative association with risky financial behaviors for married respondents. However, like the effect on desired behaviors of the unmarried, objective knowledge also had little influence on risky behaviors for unmarried respondents. Numeracy level only had direct and total effects on risky behaviors among married respondents.

Financial difficulty had a negative influence on desired financial behavior and had a positive influence on risky financial behaviors, which were the same across the two marital status groups. Income shock did not have any significant direct effect on both marital groups. While income shock had positive direct and total effects on risky financial behaviors for both groups, in the indirect paths, it showed significantly negative effects for both groups. Debt situation had negative direct and total influences on desired financial behaviors and positive direct and total influences on risky behaviors. Its indirect effects only had significance in terms of desired behaviors among married respondents.

Financial confidence was positively associated with desired financial behaviors for both married and unmarried people. The association was negative for risky financial behaviors. Financial confidence had little indirect influence on unmarried respondents' financial behaviors. Risk tolerance positively affected desired financial behaviors for both married and unmarried

people, but it only had significantly negative indirect effects on risky financial behaviors for both groups.

Among the eight predictors, educational attainment, income shock, and risk tolerance showed positive influences on financial help-seeking behaviors for both groups. The positive influences of objective financial knowledge and financial confidence and the negative influence of debt situation on financial help-seeking behavior only showed among married respondents, not among the unmarried respondents.

The positive association between financial help-seeking behavior and desired financial behaviors, and the negative associations between these two variables were consistent across the two marital status groups. The SRMR was 0.058 for the married group and 0.067 for the unmarried group.

Overall, the respondents were further divided into full-time workers and non-full-time workers according to their responses on employment status, and these results are presented in Table 9. There was no difference across the employment status groups in terms of the positive influence of educational attainment on desired financial behaviors and the negative influence on risky financial behaviors. Objective financial knowledge did not have any influence on desired financial behaviors for full-time workers; however, it did have positive indirect and total effects on desired behaviors for non-full-time workers, and it was negatively associated with risky financial behaviors for both employment groups. Numeracy level only had direct and total effects for full-time workers.

The influences of financial difficulty, income shock, debt situation, financial confidence, and risk tolerance on financial behaviors were the same across the two employment groups. Of all the relationships between predictors and financial help-seeking behavior, the positive

influences of educational attainment, income shock, and risk tolerance, and the negative influences of financial difficulty were also consistent across the two groups. However, numeracy, debt situation, and financial confidence did not have any significant impact on either group.

There was no discrepancy between the employment status groups in terms of the positive association between financial help-seeking behavior and desired financial behaviors and the negative association between financial help-seeking and risky financial behaviors. SRMRs for the SEM models for the two groups were 0.060 for the married group and 0.059 for the unmarried group, respectively.

Lastly, the final control variable in this study was income level, which was separated into two groups using $50,000 as the key threshold. These multi-group SEM results are presented in Table 10. Educational attainment had a positive relationship with desired financial behaviors for both income groups; however, the negative influence only showed for the higher income group. The lower income group experienced little influence from objective financial knowledge and numeracy level for either desired or risky financial behaviors. Objective knowledge was negatively associated and numeracy was positive associated with risky financial behaviors among only the higher income respondents.

The negative influence of financial difficulty and the positive influence of income shock on desired financial behaviors were the same across the two groups. Risky financial behaviors, for both the lower and higher income groups, were positively and directly influenced by financial difficulty and income shock. However, income shock had negative indirect effects on risky behavior only among those in the higher income group. Debt situation was negatively associated with desired financial behaviors and positively associated with risky financial behaviors, regardless of income levels.

Financial confidence did not have any influence on the lower income group's desired financial behaviors, but it was positively associated with desired behaviors in the higher income group, both on the direct and indirect paths and the total effects. The negative influences of financial confidence on risky financial behaviors were the same across both income groups. Risk tolerance had a positive influence on desired financial behaviors. In terms of risky financial behaviors, only the higher income group experienced indirect negative effects from risk tolerance.

The positive effects of educational attainment, income shock, and risk tolerance and the negative effects of financial difficulty on financial help-seeking behavior were the same across the two income groups. On the other hand, the positive effect of objective financial knowledge only showed in the lower income group, while the negative effect of debt situation and the positive effect of financial confidence only showed in the higher income group.

The positive influence of financial help-seeking behavior on desired financial behaviors was equally significant in these two employment status groups. However, the negative influence of financial help-seeking behavior only showed in the higher income group. The SRMR for the lower income group was 0.064; for higher income group, the SRMR was 0.061.

Summary

This chapter summarizes the results obtained from the statistical analyses and procedures used in this study. The key results include descriptive statistics for the selected variables, the correlation matrices of observed variables and latent constructs, and the standardized SEM results with goodness-of-fit indices. The mediating effects of financial help-seeking behavior were examined by estimating the indirect paths from the internal information sources to the desired and risky financial management behaviors. Effect decompositions are presented,

including direct effects, from both internal and external information sources on financial management behaviors; indirect effects through the mediator of financial help-seeking behavior; and total effects, which are combinations of direct and indirect effects for each structural relationship. Multi-group SEM findings are also presented in this chapter. The overall sample was grouped using demographic and socioeconomic characteristics. The results of the structural relations for the multi-group model comparisons are also illustrated and explained. Discussions of the major findings, the implications for financial scholars and policymakers, and limitations and future research directions will be included and discussed in Chapter Six.

Table 5

Multi-group SEM -- Age (Standardized Estimates & Effect Decomposition)

		Age 18-34 (N=1,421)							Age 35+ (N=4,123)						
		Direct Effects			Indirect Effects		Total Effects		Direct Effects			Indirect Effects		Total Effects	
		Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.
H1.1.1	Educational attainment --> DFB	0.142	0.032	***	0.081	***	0.223	***	0.192	0.019	***	0.086	***	0.279	***
H1.1.2	Educational attainment --> RFB	-0.075	0.031	*	0.005		-0.069	*	-0.029	0.015		-0.023	***	-0.052	***
H1.2.1	Objective financial knowledge --> DFB	-0.049	0.031		-0.002		-0.052		0.037	0.019		0.053	***	0.090	***
H1.2.2	Objective financial knowledge --> RFB	-0.058	0.031		-0.0001		-0.059		-0.069	0.015	***	-0.014	***	-0.083	***
H1.3.1	Numeracy level --> DFB	-0.041	0.037		0.001		-0.040		0.013	0.023		-0.020		-0.007	
H1.3.2	Numeracy level --> RFB	0.024	0.036		0.000		0.240		0.031	0.018		0.005		0.037	*
H1.4.1	Financial difficulty --> DFB	-0.108	0.032	***	-0.062	***	-0.171	***	-0.172	0.021	***	-0.044	***	-0.217	***
H1.4.2	Financial difficulty --> RFB	0.438	0.032	***	-0.004		0.434	***	0.394	0.016	***	0.011	***	0.406	***
H1.5.1	Income shock --> DFB	0.075	0.034	**	0.101	***	0.176	***	-0.023	0.019		0.049	***	0.026	
H1.5.2	Income shock --> RFB	0.179	0.033	***	0.006		0.185	***	0.098	0.015	***	-0.013	***	0.084	***
H1.6.1	Debt situation --> DFB	-0.308	0.033	***	0.002		-0.305	***	-0.417	0.021	***	-0.026	**	-0.444	***
H1.6.2	Debt situation --> RFB	0.398	0.032	***	0.0002		0.398	***	0.436	0.015	***	0.007	*	0.443	***
H1.7.1	Financial confidence --> DFB	0.104	0.034	**	0.016		0.121	***	0.098	0.022	***	0.027	*	0.125	***
H1.7.2	Financial confidence --> RFB	-0.171	0.033	***	0.001		-0.170	***	-0.184	0.017	***	-0.007	*	-0.191	***
H1.8.1	Risk tolerance --> DFB	0.283	0.034	***	0.203	***	0.486	***	0.203	0.019	***	0.109	***	0.312	***
H1.8.2	Risk tolerance --> RFB	0.001	0.034		0.013		0.014		0.016	0.015		-0.029	***	-0.012	
H2.1	Educational attainment --> FHS	0.141	0.029	***	*no path*		0.141	***	0.171	0.018	***	*no path*		0.171	***
H2.2	Objective financial knowledge --> FHS	-0.005	0.029		*no path*		-0.005		0.105	0.019	***	*no path*		0.105	***
H2.3	Numeracy level --> FHS	0.001	0.035		*no path*		0.001		-0.041	0.022		*no path*		-0.041	
H2.4	Financial difficulty --> FHS	-0.109	0.030	***	*no path*		-0.109	***	-0.088	0.020	***	*no path*		-0.088	***
H2.5	Income shock --> FHS	0.176	0.031	***	*no path*		0.176	***	0.098	0.019	***	*no path*		0.098	***
H2.6	Debt situation --> FHS	0.004	0.031		*no path*		0.004		-0.052	0.019	**	*no path*		-0.052	**
H2.7	Financial confidence --> FHS	0.028	0.032		*no path*		0.028		0.054	0.021	*	*no path*		0.054	*
H2.8	Risk tolerance --> FHS	0.353	0.027	***	*no path*		0.353	***	0.217	0.017	***	*no path*		0.217	***
H3.1	FHS --> DFB	0.575	0.041	***	*no path*		0.575	***	0.505	0.024	***	*no path*		0.505	***
H3.2	FHS --> RFB	0.037	0.042		*no path*		0.037		-0.134	0.019	***	*no path*		-0.134	***
	SRMR	0.080							0.056						
	CD	0.892							0.937						

Notes. *$p < .05$. **$p < .01$. ***$p < .001$

FHS = Financial help-seeking behavior

DFB = Desired financial management behavior

RFB = Risky financial management behavior

Table 6

Multi-group SEM -- Gender (Standardized Estimates & Effect Decomposition)

		Male (N=2,521)							Female (N=3,023)						
		Direct Effects			Indirect Effects		Total Effects		Direct Effects			Indirect Effects		Total Effects	
		Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.
H1.1.1	Educational attainment --> DFB	0.241	0.025	***	0.104	***	0.345	***	0.149	0.023	***	0.078	***	0.227	***
H1.1.2	Educational attainment --> RFB	-0.056	0.020	**	-0.003		-0.060	**	-0.024	0.018		-0.017	***	-0.041	*
H1.2.1	Objective financial knowledge --> DFB	-0.083	0.025	***	-0.017		-0.101	***	0.018	0.023		0.067	***	0.085	***
H1.2.2	Objective financial knowledge --> RFB	-0.098	0.020	***	0.001		-0.098	***	-0.063	0.018	***	-0.015	***	-0.078	***
H1.3.1	Numeracy level --> DFB	-0.033	0.031		-0.019		-0.053		0.004	0.026		-0.008		-0.003	
H1.3.2	Numeracy level --> RFB	0.094	0.025	***	0.001		0.095	***	0.002	0.021		0.001		0.004	
H1.4.1	Financial difficulty --> DFB	-0.139	0.027	***	-0.044	**	-0.183	***	-0.173	0.025	***	-0.060	***	-0.233	***
H1.4.2	Financial difficulty --> RFB	0.366	0.022	***	0.001		0.368	***	0.421	0.019	***	0.013	***	0.435	***
H1.5.1	Income shock --> DFB	0.000	0.026		0.082	***	0.082	**	0.022	0.023		0.055	***	0.078	**
H1.5.2	Income shock --> RFB	0.115	0.021	***	-0.002		0.112	***	0.120	0.019	***	-0.012	***	0.107	***
H1.6.1	Debt situation --> DFB	-0.395	0.027	***	-0.006		-0.401	***	-0.390	0.025	***	-0.031	*	-0.422	***
H1.6.2	Debt situation --> RFB	0.461	0.020	***	0.000		0.462	***	0.404	0.018	***	0.007	*	0.411	***
H1.7.1	Financial confidence --> DFB	0.150	0.030	***	0.034	*	0.185	***	0.079	0.025	**	0.012		0.092	***
H1.7.2	Financial confidence --> RFB	-0.250	0.024	***	-0.001		-0.251	***	-0.152	0.020	***	-0.002		-0.154	***
H1.8.1	Risk tolerance --> DFB	0.213	0.025	***	0.129	***	0.343	***	0.215	0.023	***	0.141	***	0.357	***
H1.8.2	Risk tolerance --> RFB	0.059	0.020	**	-0.004		0.054	**	0.009	0.018		-0.032	***	-0.022	
H2.1	Educational attainment --> FHS	0.189	0.022	***	*no path*		0.189	***	0.146	0.021	***	*no path*		0.146	***
H2.2	Objective financial knowledge --> FHS	-0.032	0.023		*no path*		-0.032		0.125	0.021	***	*no path*		0.125	***
H2.3	Numeracy level --> FHS	-0.036	0.029		*no path*		-0.036		-0.016	0.025		*no path*		-0.016	
H2.4	Financial difficulty --> FHS	-0.080	0.025	***	*no path*		-0.080	***	-0.112	0.023	***	*no path*		-0.112	***
H2.5	Income shock --> FHS	0.149	0.024	***	*no path*		0.149	***	0.104	0.022	***	*no path*		0.104	***
H2.6	Debt situation --> FHS	-0.011	0.025		*no path*		-0.011		-0.058	0.022	**	*no path*		-0.058	**
H2.7	Financial confidence --> FHS	0.062	0.028	*	*no path*		0.062	*	0.023	0.024		*no path*		0.023	
H2.8	Risk tolerance --> FHS	0.235	0.022	***	*no path*		0.235	***	0.265	0.019	***	*no path*		0.265	***
H3.1	FHS --> DFB	0.550	0.031	***	*no path*		0.550	***	0.534	0.030	***	*no path*		0.534	***
H3.2	FHS --> RFB	-0.019	0.026		*no path*		-0.019		-0.120	0.024	***	*no path*		-0.120	***
	SRMR	0.063							0.058						
	CD	0.917							0.904						

Notes. *$p < .05$. **$p < .01$. ***$p < .001$

FHS = Financial help-seeking behavior

DFB = Desired financial management behavior

RFB = Risky financial management behavior

Table 7

Multi-group SEM – Ethnicity/Race (Standardized Estimates & Effect Decomposition)

		White (N=3,877)							Non-White (N=1,667)						
		Direct Effects			Indirect Effects		Total Effects		Direct Effects			Indirect Effects		Total Effects	
		Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.
H1.1.1	Educational attainment --> DFB	0.205	0.019	***	0.097	***	0.302	***	0.143	0.031	***	0.072	***	0.216	***
H1.1.2	Educational attainment --> RFB	-0.041	0.016	**	-0.021	***	-0.063	***	-0.047	0.026		0.001		-0.046	
H1.2.1	Objective financial knowledge --> DFB	-0.001	0.020		0.038	***	0.036		-0.038	0.031		0.001		-0.037	
H1.2.2	Objective financial knowledge --> RFB	-0.079	0.016	***	-0.008	**	-0.088	***	-0.066	0.027	*	0.000		-0.066	*
H1.3.1	Numeracy level --> DFB	-0.010	0.023		-0.028	*	-0.038		0.036	0.037		0.021		0.058	
H1.3.2	Numeracy level --> RFB	0.059	0.019	**	0.006	*	0.065	***	-0.030	0.031		0.000		-0.029	
H1.4.1	Financial difficulty --> DFB	-0.177	0.021	***	-0.045	***	-0.223	***	-0.105	0.033	**	-0.058	***	-0.163	***
H1.4.2	Financial difficulty --> RFB	0.399	0.017	***	0.010	***	0.409	***	0.408	0.027	***	-0.001		0.407	***
H1.5.1	Income shock --> DFB	0.006	0.020		0.056	***	0.062	**	0.015	0.034		0.087	***	0.102	**
H1.5.2	Income shock --> RFB	0.083	0.016	***	-0.012	***	0.070	***	0.185	0.028	***	0.001		0.186	***
H1.6.1	Debt situation --> DFB	-0.389	0.021	***	-0.028	**	-0.417	***	-0.359	0.033	***	0.003		-0.355	***
H1.6.2	Debt situation --> RFB	0.443	0.015	***	0.006	*	0.450	***	0.392	0.027	***	0.000		0.392	***
H1.7.1	Financial confidence --> DFB	0.123	0.022	***	0.031	**	0.155	***	0.038	0.034		0.002		0.041	
H1.7.2	Financial confidence --> RFB	-0.210	0.018	***	-0.007	*	-0.217	***	-0.114	0.029	***	0.000		-0.114	***
H1.8.1	Risk tolerance --> DFB	0.215	0.020	***	0.135	***	0.351	***	0.275	0.031	***	0.149	***	0.425	***
H1.8.2	Risk tolerance --> RFB	0.024	0.016		-0.030	***	-0.005		0.004	0.027		0.001		0.006	
H2.1	Educational attainment --> FHS	0.187	0.018	***	*no path*		0.187	***	0.130	0.027	***	*no path*		0.130	***
H2.2	Objective financial knowledge --> FHS	0.073	0.019	***	*no path*		0.073	***	0.002	0.028		*no path*		0.002	
H2.3	Numeracy level --> FHS	-0.055	0.023	*	*no path*		-0.055	*	0.038	0.033		*no path*		0.038	
H2.4	Financial difficulty --> FHS	-0.088	0.021	***	*no path*		-0.088	***	-0.104	0.029	***	*no path*		-0.104	***
H2.5	Income shock --> FHS	0.108	0.019	***	*no path*		0.108	***	0.156	0.030	***	*no path*		0.156	***
H2.6	Debt situation --> FHS	-0.054	0.020	**	*no path*		-0.054	**	0.006	0.029		*no path*		0.006	
H2.7	Financial confidence --> FHS	0.060	0.022	**	*no path*		0.060	**	0.004	0.031		*no path*		0.004	
H2.8	Risk tolerance --> FHS	0.260	0.018	***	*no path*		0.260	***	0.269	0.025	***	*no path*		0.269	***
H3.1	FHS --> DFB	0.519	0.025	***	*no path*		0.519	***	0.556	0.038	***	*no path*		0.556	***
H3.2	FHS --> RFB	-0.116	0.021	***	*no path*		-0.116	***	0.007	0.033		*no path*		0.007	
	SRMR	0.056							0.069						
	CD	0.950							0.838						

Notes. *$p < .05$. **$p < .01$. ***$p < .001$

FHS = Financial help-seeking behavior

DFB = Desired financial management behavior

RFB = Risky financial management behavior

Table 8

Multi-group SEM – Marital Status (Standardized Estimates & Effect Decomposition)

		Married (N=4,272)							Unmarried (N=1,272)						
		Direct Effects			Indirect Effects		Total Effects		Direct Effects			Indirect Effects		Total Effects	
		Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.
H1.1.1	Educational attainment --> DFB	0.215	0.019	***	0.087	***	0.302	***	0.083	0.035	*	0.101	***	0.185	***
H1.1.2	Educational attainment --> RFB	-0.039	0.015	*	-0.009	**	-0.048	**	-0.031	0.029		-0.024	**	-0.056	
H1.2.1	Objective financial knowledge --> DFB	-0.023	0.019		0.025	**	0.002		0.012	0.036		0.029		0.041	
H1.2.2	Objective financial knowledge --> RFB	-0.108	0.015	***	-0.002	*	-0.111	***	-0.011	0.030		-0.007		-0.018	
H1.3.1	Numeracy level --> DFB	0.003	0.023		-0.015		-0.012		0.001	0.041		-0.003		-0.001	
H1.3.2	Numeracy level --> RFB	0.055	0.018	**	0.001		0.056	**	-0.022	0.034		0.001		-0.021	
H1.4.1	Financial difficulty --> DFB	-0.150	0.021	***	-0.044	***	-0.195	***	-0.134	0.037	***	-0.072	**	-0.206	***
H1.4.2	Financial difficulty --> RFB	0.370	0.017	***	0.005	*	0.375	***	0.467	0.030	***	0.017	*	0.484	***
H1.5.1	Income shock --> DFB	0.002	0.019		0.060	***	0.062	**	0.025	0.039		0.091	***	0.117	**
H1.5.2	Income shock --> RFB	0.113	0.015	***	-0.006	*	0.106	***	0.146	0.032	***	-0.022	**	0.123	***
H1.6.1	Debt situation --> DFB	-0.390	0.021	***	-0.023	*	-0.414	***	-0.361	0.038	***	0.007		-0.353	***
H1.6.2	Debt situation --> RFB	0.460	0.015	***	0.002		0.462	***	0.359	0.031	***	-0.001		0.357	***
H1.7.1	Financial confidence --> DFB	0.106	0.022	***	0.027	*	0.133	***	0.083	0.039	*	0.005		0.088	*
H1.7.2	Financial confidence --> RFB	-0.198	0.018	***	-0.003		-0.201	***	-0.163	0.032	***	-0.001		-0.165	***
H1.8.1	Risk tolerance --> DFB	0.233	0.019	***	0.125	***	0.358	***	0.247	0.038	***	0.210	***	0.458	***
H1.8.2	Risk tolerance --> RFB	0.009	0.015		-0.014	**	-0.004		0.059	0.031		-0.051	***	0.008	
H2.1	Educational attainment --> FHS	0.175	0.017	***	*no path*		0.175	***	0.149	0.030	***	*no path*		0.149	***
H2.2	Objective financial knowledge --> FHS	0.051	0.018	**	*no path*		0.051	**	0.042	0.033		*no path*		0.042	
H2.3	Numeracy level --> FHS	-0.031	0.022		*no path*		-0.031		-0.005	0.037		*no path*		-0.005	
H2.4	Financial difficulty --> FHS	-0.089	0.020	***	*no path*		-0.089	***	-0.106	0.033	***	*no path*		-0.106	**
H2.5	Income shock --> FHS	0.121	0.018	***	*no path*		0.121	***	0.135	0.034	***	*no path*		0.135	***
H2.6	Debt situation --> FHS	-0.047	0.019	*	*no path*		-0.047	*	0.011	0.034		*no path*		0.011	
H2.7	Financial confidence --> FHS	0.054	0.021	*	*no path*		0.054	*	0.007	0.035		*no path*		0.007	
H2.8	Risk tolerance --> FHS	0.251	0.017	***	*no path*		0.251	***	0.310	0.029	***	*no path*		0.310	***
H3.1	FHS --> DFB	0.499	0.023	***	*no path*		0.499	***	0.678	0.046	***	*no path*		0.678	***
H3.2	FHS --> RFB	-0.056	0.020	**	*no path*		-0.056	**	-0.166	0.041	***	*no path*		-0.166	***
	SRMR	0.058							0.067						
	CD	0.906							0.951						

Notes. *$p < .05$. **$p < .01$. ***$p < .001$

FHS = Financial help-seeking behavior

DFB = Desired financial management behavior

RFB = Risky financial management behavior

Table 9

Multi-group SEM – Employment Status (Standardized Estimates & Effect Decomposition)

		Full-time working (N=3,087)							Non-full-time working (N=2,457)						
		Direct Effects			Indirect Effects		Total Effects		Direct Effects			Indirect Effects		Total Effects	
		Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.
H1.1.1	Educational attainment --> DFB	0.181	0.021	***	0.079	***	0.261	***	0.168	0.026	***	0.107	***	0.275	***
H1.1.2	Educational attainment --> RFB	-0.042	0.017	*	-0.008	*	-0.051	**	-0.045	0.021	*	-0.018	***	-0.064	**
H1.2.1	Objective financial knowledge --> DFB	-0.023	0.022		-0.001		-0.024		0.013	0.027		0.073	***	0.087	**
H1.2.2	Objective financial knowledge --> RFB	-0.100	0.018	***	0.000		-0.100	***	-0.083	0.021	***	-0.012	**	-0.096	***
H1.3.1	Numeracy level --> DFB	-0.012	0.026		-0.005		-0.017		0.020	0.030		-0.017		0.002	
H1.3.2	Numeracy level --> RFB	0.043	0.021	*	0.001		0.044	*	0.008	0.024		0.003		0.011	
H1.4.1	Financial difficulty --> DFB	-0.146	0.023	***	-0.050	***	-0.197	***	-0.165	0.028	***	-0.052	***	-0.218	***
H1.4.2	Financial difficulty --> RFB	0.403	0.018	***	0.005	*	0.409	***	0.396	0.022	***	0.009	*	0.405	***
H1.5.1	Income shock --> DFB	0.012	0.022		0.072	***	0.085	***	0.012	0.027		0.053	***	0.065	*
H1.5.2	Income shock --> RFB	0.120	0.018	***	-0.008	*	0.112	***	0.138	0.022	***	-0.009	**	0.129	***
H1.6.1	Debt situation --> DFB	-0.387	0.023	***	-0.009		-0.397	***	-0.376	0.029	***	-0.025		-0.401	***
H1.6.2	Debt situation --> RFB	0.424	0.018	***	0.001		0.425	***	0.415	0.021	***	0.004		0.420	***
H1.7.1	Financial confidence --> DFB	0.119	0.025	***	0.022		0.141	***	0.074	0.029	*	0.014		0.088	**
H1.7.2	Financial confidence --> RFB	-0.201	0.020	***	-0.002		-0.204	***	-0.152	0.023	***	-0.002		-0.154	***
H1.8.1	Risk tolerance --> DFB	0.234	0.022	***	0.140	***	0.375	***	0.226	0.026	***	0.145	***	0.371	***
H1.8.2	Risk tolerance --> RFB	0.027	0.018		-0.015	*	0.012		-0.001	0.021		-0.025	***	-0.026	
H2.1	Educational attainment --> FHS	0.155	0.020	***	*no path*		0.155	***	0.184	0.023	***	*no path*		0.184	***
H2.2	Objective financial knowledge --> FHS	-0.002	0.021		*no path*		-0.002		0.126	0.024	***	*no path*		0.126	***
H2.3	Numeracy level --> FHS	-0.010	0.025		*no path*		-0.010		-0.030	0.028		*no path*		-0.030	
H2.4	Financial difficulty --> FHS	-0.099	0.022	***	*no path*		-0.099	***	-0.090	0.026	***	*no path*		-0.090	***
H2.5	Income shock --> FHS	0.141	0.021	***	*no path*		0.141	***	0.091	0.025	***	*no path*		0.091	***
H2.6	Debt situation --> FHS	-0.019	0.022		*no path*		-0.019		-0.044	0.025		*no path*		-0.044	
H2.7	Financial confidence --> FHS	0.044	0.024		*no path*		0.044		0.025	0.026		*no path*		0.025	
H2.8	Risk tolerance --> FHS	0.275	0.019	***	*no path*		0.275	***	0.250	0.022	***	*no path*		0.250	***
H3.1	FHS --> DFB	0.510	0.027	***	*no path*		0.510	***	0.580	0.033	***	*no path*		0.580	***
H3.2	FHS --> RFB	-0.057	0.023	*	*no path*		-0.057	*	-0.101	0.027	***	*no path*		-0.101	***
	SRMR	0.060							0.059						
	CD	0.886							0.951						

*Notes. *p < .05. **p < .01. ***p < .001*

FHS = Financial help-seeking behavior

DFB = Desired financial management behavior

RFB = Risky financial management behavior

Table 10

Multi-group SEM – Income Levels (Standardized Estimates & Effect Decomposition)

		Income < $50k (N=1,663)							Income $50k+ (N=3,881)						
		Direct Effects			Indirect Effects		Total Effects		Direct Effects			Indirect Effects		Total Effects	
		Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	SE	Sig.	Coef.	Sig.	Coef.	Sig.
H1.1.1	Educational attainment --> DFB	0.101	0.034	**	0.067	***	0.169	***	0.202	0.020	***	0.092	***	0.294	***
H1.1.2	Educational attainment --> RFB	-0.014	0.028		-0.008		-0.023		-0.032	0.015	*	-0.013	***	-0.045	**
H1.2.1	Objective financial knowledge --> DFB	-0.036	0.035		0.053	***	0.016		-0.025	0.020		0.007		-0.018	
H1.2.2	Objective financial knowledge --> RFB	0.007	0.029		-0.006		0.001		-0.129	0.016	***	-0.001		-0.130	***
H1.3.1	Numeracy level --> DFB	0.001	0.041		-0.003		-0.003		-0.003	0.024		-0.020		-0.023	
H1.3.2	Numeracy level --> RFB	0.031	0.034		0.000		0.031		0.038	0.019	*	0.002		0.041	*
H1.4.1	Financial difficulty --> DFB	-0.142	0.036	***	-0.057	***	-0.199	***	-0.136	0.022	***	-0.037	**	-0.173	***
H1.4.2	Financial difficulty --> RFB	0.447	0.030	***	0.007		0.454	***	0.367	0.017	***	0.005	*	0.372	***
H1.5.1	Income shock --> DFB	0.085	0.037	*	0.068	***	0.154	***	-0.011	0.021		0.073	***	0.061	**
H1.5.2	Income shock --> RFB	0.153	0.031	***	-0.008		0.144	***	0.105	0.016	***	-0.010	***	0.094	***
H1.6.1	Debt situation --> DFB	-0.338	0.037	***	0.008		-0.330	***	-0.427	0.022	***	-0.032	**	-0.460	***
H1.6.2	Debt situation --> RFB	0.398	0.030	***	-0.001		0.397	***	0.464	0.016	***	0.004	*	0.468	***
H1.7.1	Financial confidence --> DFB	0.071	0.039		-0.007		0.063		0.126	0.023	***	0.036	**	0.162	***
H1.7.2	Financial confidence --> RFB	-0.229	0.032	***	0.001		-0.228	***	-0.171	0.018	***	-0.005	*	-0.176	***
H1.8.1	Risk tolerance --> DFB	0.285	0.036	***	0.160	***	0.446	***	0.231	0.020	***	0.137	***	0.369	***
H1.8.2	Risk tolerance --> RFB	0.021	0.030		-0.019		0.001		0.024	0.016		-0.019	***	0.004	
H2.1	Educational attainment --> FHS	0.123	0.027	***	*no path*		0.123	***	0.163	0.018	***	*no path*		0.163	***
H2.2	Objective financial knowledge --> FHS	0.098	0.029	***	*no path*		0.098	***	0.012	0.019		*no path*		0.012	
H2.3	Numeracy level --> FHS	-0.007	0.034		*no path*		-0.007		-0.035	0.023		*no path*		-0.035	
H2.4	Financial difficulty --> FHS	-0.104	0.029	***	*no path*		-0.104	***	-0.066	0.020	***	*no path*		-0.066	***
H2.5	Income shock --> FHS	0.125	0.030	***	*no path*		0.125	***	0.130	0.019	***	*no path*		0.130	***
H2.6	Debt situation --> FHS	0.015	0.030		*no path*		0.015		-0.057	0.020	**	*no path*		-0.057	**
H2.7	Financial confidence --> FHS	-0.013	0.032		*no path*		-0.013		0.064	0.022	**	*no path*		0.064	**
H2.8	Risk tolerance --> FHS	0.292	0.027	***	*no path*		0.292	***	0.244	0.017	***	*no path*		0.244	***
H3.1	FHS --> DFB	0.547	0.046	***	*no path*		0.547	***	0.562	0.026	***	*no path*		0.562	***
H3.2	FHS --> RFB	-0.068	0.040		*no path*		-0.068		-0.079	0.020	***	*no path*		-0.079	***
	SRMR	0.064							0.061						
	CD	0.853							0.942						

Notes. *$p < .05$. **$p < .01$. ***$p < .001$

FHS = Financial help-seeking behavior

DFB = Desired financial management behavior

RFB = Risky financial management behavior

CHAPTER SIX

DISCUSSIONS AND CONCLUSIONS

This chapter includes discussions of the overall purposes of this study, an interpretation of the findings, and whether the key findings presented in the Chapter Five supported the research hypotheses developed based on previous research and the theoretical framework. The mediating effect of financial help-seeking behavior, specifically, accessing the services of financial planning professionals, is discussed. The effect is then compared across different control groups. Using a large national dataset and structural equation modeling methods, the findings based on the financial help-seeking model developed in this study provide contributions and implications for scholars, financial educators, and financial service providers and consumers. These implications are presented in this chapter. Additionally, the conclusions and limitations of this study are also included. The chapter closes with a discussion of further research directions.

Discussions

The primary objective of this study was to address the following research questions: 1) how does seeking help from financial professionals affect financial behaviors? 2) What are the internal search factors influencing whether people seek professional financial help? 3) Do these factors also have a direct influence on peoples' financial behaviors and/or whether these factors also have an indirect effect when mediated by accessing the services of financial advisors?

The following discussion is centered on these questions and the hypotheses derived from the theoretical model in Figure 4 in Chapter Three. Figure 4 (also presented below) represents a

framework of financial help-seeking behavior. It combines various internal and external search sources and financial behaviors into one integrated model.

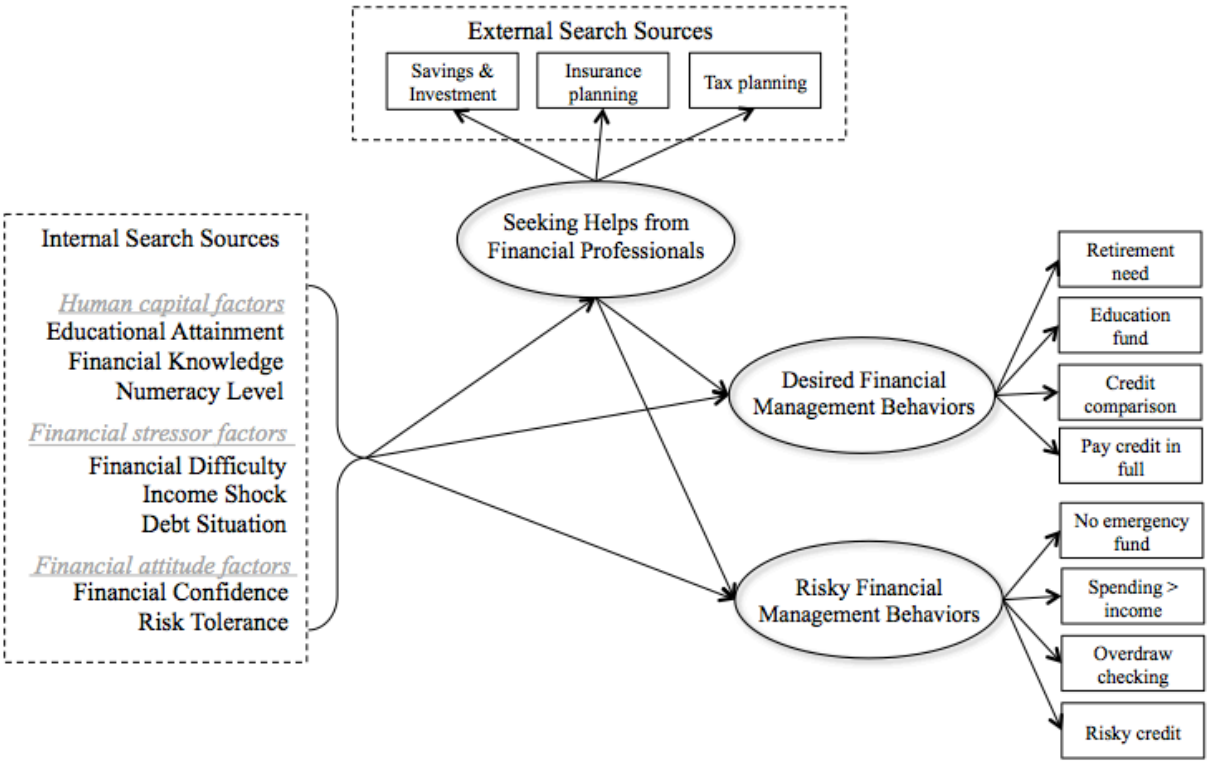

Figure 4. Conceptual model of this study

The first set of hypotheses was related to the direct relationships between internal search sources and factors associated with financial behavior. The internal search sources were comprised of three dimensions: human capital, financial stressors, and financial attitudes. Educational attainment, objective financial knowledge, and numeracy levels were categorized as human capital-related factors. Financial difficulty, income shock, and debt situation were financial stressors. Financial confidence and risk tolerance were included as financial attitude-related factors.

Based on the SEM standardized results, Hypotheses 1.1.1 and 1.1.2 were fully supported, meaning that educational attainment was positively associated with desired financial management behaviors and negatively associated with risky financial management behaviors. These findings further indicate that education and knowledge base are likely necessary for making better financial decisions (Bernheim, 1995, 1998; Chatterjee et al., 2017; Lusardi & Mitchell, 2007; Lusardi, 2008). Hypothesis 1.2 was partially supported. Findings from previous studies indicated that objective financial knowledge was positively associated with desired financial behavior (Hypothesis 1.2.1), although this association was not found significant in this study. The second part of Hypothesis 1.2, that higher objective financial knowledge led to less risky financial behaviors, was found significant. The findings from this study provided further evidence that higher objective knowledge reduced the likelihood of making financial behavioral mistakes. Unlike the findings from previous studies (e.g., Huhmann & McQuitty, 2009), numeracy level (Hypothesis 1.3) did not show any significant direct effect on financial behaviors in this study. This might be because the numeracy measure available in this study was based on a self-reported scale instead of an objective and comprehensive measure. It is also possible that although numeracy influenced information search behaviors (Chen & Feeley, 2014), it did not directly influence financial management behaviors.

Three financial stressor-related factors that were previously found to be significantly associated with risky financial behaviors (Allgood & Walstad, 2013; Tokunaga, 1993; Joo, 1998) were further confirmed in this study. Hypothesis 1.4 proposed that financial difficulty is negatively associated with desired financial management behaviors and positively associated with risky financial management behaviors. These associations were fully confirmed in this study. Hypothesis 1.5 was partially supported, with income shock being significantly and

positively associated with risky financial behaviors. However, no significant association between income shock and desired financial behaviors was found. According to the literature, financial attitudes are associated with personal financial decision making (Grable, 2000; Hanna, 2011; Burke & Hung, 2015). Thus, financial confidence and risk tolerance were examined in the SEM model. Hypotheses 1.6 and 1.7 proposed the relationships between these two factors and the two sets of financial management behaviors. Hypotheses 1.6.1 and 1.7.1 were fully supported, meaning that financial confidence, self-perceived financial management capability, and risk tolerance were significantly and positively associated with desired financial behaviors. Hypothesis 1.6.2, which hypothesized that financial confidence is negatively associated with risky financial behaviors, was also supported. This indicated that being more confident towards financial management skills not only increased the likelihood of practicing desired financial behaviors, but also reduced the likelihood of making financial behavioral mistakes.

The second set of the hypotheses focused on the direct effect of the eight predictors that were hypothesized to be associated with financial help-seeking behaviors. The related latent variable was measured by studying participation in three types of financial services: saving and investment, tax planning, and insurance planning services. Hypothesis 2.1 was fully supported by the SEM model results and confirmed previous research that education was positively associated with the likelihood of using a financial planner (Hanna, 2011). Hypothesis 2.2 was also supported with the finding that objective financial knowledge was positively associated with financial help-seeking behavior. Financial stressors were previously found to have a positive influence on seeking professional financial help (e.g., Cummings & James, 2014; Phillips & Murrell, 1994). This relationship was challenged in this study. Among the three stressors, only income shock was positively associated with financial help-seeking behavior (Hypothesis 2.5).

However, people who experienced financial difficulties and debt situations were not likely to seek help from financial professionals, which were contrary to Hypotheses 2.4 and 2.6. Although professional financial service providers can advise on individuals' and households' financial problems and help address their financial concerns, many households that are financially constrained and are experiencing difficulties in paying their monthly bills either perceive that they cannot afford to or are not willing to pay for professional financial advice. On the other hand, having a recent income shock may cause people to be more serious about their money and search for more information before they make decisions, which leads to higher demand for professional services.

According to the literature, financial attitudes can significantly influence help-seeking behaviors (Fischer & Turner, 1970). For example, positive and proactive financial attitudes and a higher level of risk tolerance were related to the likelihood to seek professional financial help (Joo & Grable, 2001). Hypotheses 2.7 and 2.8, that people who are more financially confident and risk tolerant are more likely to seek financial professional help, were supported by the findings of this study. However, there has been mixed evidence regarding the relationship between risk tolerance and financial help-seeking behavior. One study found that people with lower risk tolerance would search more and be more cautious when making decisions (Tseng, 2012). However, another study found that risk tolerance was positively associated with help-seeking behavior, meaning people with higher risk tolerance sought more help (Joo & Grable, 2001). This study confirmed the result in Joo and Grable's (2001) research that risk tolerance has a positive relationship with financial help-seeking behavior. People who are more willing to take financial risks usually expect higher returns. Since financial planners and service providers can

help clients optimize portfolios to reach this goal, it is not difficult to understand the positive relationship between risk tolerance and financial help-seeking behavior.

Third, the direct relationships between financial help-seeking behavior and financial management behaviors were estimated, and both were supported by the SEM estimates. These variables were represented by the three latent endogenous factors in this study. The external search sources included seeking financial professional services for: savings and investment, tax planning, and insurance planning. The desired financial behaviors included retirement need calculation, full credit card payment, building an education fund, and credit card comparison. The risky financial behaviors included having no emergency funds, spending more than income, overdrawing on a checking account, and risky credit card behavior. Results showed that seeking professional financial help was directly and positively associated with the desired behaviors and negatively associated with risky financial behaviors. Help-seeking behavior can be a complex decision making process (Grable & Joo, 1999, 2003). Financial help-seeking encompasses individuals' and households' search activities for information and searches for professional advice on managing personal financial issues. This study investigated the effectiveness of seeking help from financial professionals, which has long been a topic of interest among researchers and practitioners. The positive association between having professional financial help and desired financial behaviors found in this study further confirmed the value of financial practitioners.

Finally, the fourth set of hypotheses was about the mediation effect or the indirect effect of financial help-seeking behavior. After investigating the direct effect of eight internal search factors and one external factor on financial behaviors, it was deemed equally important to explore whether or not the external factor mediates or intervenes in the relationships between the

internal information sources and financial behaviors. First, Hypothesis 4.1 was fully supported by the SEM results. Educational attainment showed the same indirect effect on the two financial behaviors when mediated by seeking help from the financial professional variable. In other words, those with higher educational attainment were more likely to practice desired financial behaviors and less likely to practice risky financial behaviors with financial professionals' help. Hypothesis 4.2 was also supported. Although objective financial knowledge did not have a direct effect on desired financial behaviors, it showed a significant and positive indirect effect on desired behaviors when mediated by seeking help from financial professionals. Additionally, objective financial knowledge showed a negative indirect effect on risky financial behaviors with the intervention of financial help-seeking behavior. However, numeracy (Hypothesis 4.3) still did not have any significant indirect influence on the financial behaviors.

Financial stressors, if managed properly and when helped by financial professionals, may not always have an unfavorable effect on personal financial behaviors. The indirect effects of financial difficulty on financial behaviors were the same as the direct effects of financial difficulty, and thus Hypothesis 4.4 was fully supported. It is worth noting that income shock had the opposite influences on the desired and risky financial behaviors, contrary to the proposed relationships in Hypothesis 4.5. Under the intervention of financial help-seeking behavior, income shock showed a significant and positive indirect effect on desired financial behaviors and a negative indirect effect on risky financial behaviors. As discussed above, income shock would positively influence risky behaviors; however, financial professionals converted the effect of income shock into a hinder of risky financial behaviors and a catalyst for desired behaviors. Hypothesis 4.6 was partially supported. Debt situation is a long-term financial management and

counseling process. In this study, the indirect effect of debt situation, even when helped by the financial professionals, showed a negative influence on desired financial behaviors.

Financial help-seeking behavior boosted the positive effects of the two financial attitude factors, financial confidence and risk tolerance, on desired financial behaviors. With help from the financial services professionals, clients may feel more confident about managing their financial behaviors, increasing their willingness to take greater financial risk. The indirect and negative effect of risk tolerance on risky financial behaviors was significant under the intervention of financial services professionals. Thus, Hypothesis 4.7 was partially supported, and Hypothesis 4.8 was fully supported.

To sum up, seeking help from financial professionals could possibly and directly increase clients' positive behaviors and reduce clients' negative behaviors. Additionally, the mediation effect of financial help-seeking behavior had a stronger association with the relationships between internal search sources and desired financial behaviors when compared with the effect of reducing risky financial behaviors. Financial stressors, which were viewed as being adverse factors that negatively affected financial behavior and financial well-being, could be mitigated with help from financial advisors.

Additional SEM analyses were completed within different control variable binary groups. There were six pairs of control variables in this step, including younger and older age groups, male and female groups, White and non-White groups, married and unmarried groups, full-time worker and non-full-time worker groups, and lower and higher income groups.

Tables 11–13 illustrate the between-group comparisons using age, gender, ethnic/race, marital status, employment status, and income variables. Generally, the effects of internal and external information sources on financial behaviors varied largely depending on these six

demographic and socioeconomic factors. Moreover, the indirect effects of financial help-seeking behavior, or the intervening process of seeking professional help from financial practitioners, also presented differences across each of these six pairs of groups. In the tables below, only the significant structural coefficients were marked either positive (+) or negative (-).

Table 11

Direct Effects of Financial Help-Seeking Behavior on Financial Management Behaviors for Six Pairs of Groups

	Desired behaviors		Risky behaviors	
Age groups	Age 18-34	Age 35+	Age 18-34	Age 35+
	+	+		-
Gender groups	Male	Female	Male	Female
	+	+		-
Ethnic/race groups	White	Non-White	White	Non-White
	+	+	-	
Marital statuses	Married	Unmarried	Married	Unmarried
	+	+	-	-
Employment statuses	Full-time	Non-full-time	Full-time	Non-full-time
	+	+	-	-
Income groups	< $50k	$50k+	< $50k	$50k+
	+	+		-

Table 12

Significant Internal Information Source Predictors of Financial Help-Seeking Behavior for Six Pairs of Groups

	Age		Gender		Ethnicity		Marital		Employment		Income	
	18-34	35+	M	F	W	NW	M	UM	FT	NFT	< 50k	50k+
Education	+	+	+	+	+	+	+	+	+	+	+	+
Objective knowledge		+		+	+		+			+	+	
Numeracy					-							
Financial difficulty	-	-	-	-	-	-	-	-	-	-	-	-
Income shock	+	+	+	+	+	+	+	+	+	+	+	+
Debt situation		-		-	-		-					-
Financial confidence		+	+		+		+					+
Risk tolerance	+	+	+	+	+	+	+	+	+	+	+	+

Note. W=White, NW=non-White, M=married, UM=unmarried, FT=full-time worker, NFT=non-full-time worker

Table 13

Significant Internal Information Source Predictors of Desired and Risky Financial Management Behaviors for Six Pairs of Groups

Groups		For desired financial behaviors				For risky financial behaviors			
Age		Age 18-34		Age 35+		Age 18-34		Age 35+	
		Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
	Education	+	+	+	+	-			-
	Objective knowledge				+			-	-
	Numeracy								
	Financial difficulty	-	-	-	-	+		+	+
	Income shock	+	+		+	+		+	-
	Debt situation	-		-	-	+		+	+
	Financial confidence	+		+	+	-		-	-
	Risk tolerance	+	+	+	+				-
Gender		Male		Female		Male		Female	
		Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
	Education	+	+	+	+	-			-
	Objective knowledge	-			+	-		-	-
	Numeracy					+			
	Financial difficulty	-	-	-	-	+		+	+
	Income shock		+		+	+		+	-
	Debt situation	-		-	-	+		+	+
	Financial confidence	+	+	+		-		-	
	Risk tolerance	+	+	+	+	+			-
Ethnicity		White		Non-White		White		Non-White	
		Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
	Education	+	+	+	+	-	-		
	Objective knowledge		+			-	-	-	
	Numeracy		-			+	+		
	Financial difficulty	-	-	-	-	+	+	+	
	Income shock		+		+	+	-	+	
	Debt situation	-	-	-		+	+	+	

	Financial confidence	+	+			-	-	-	
	Risk tolerance	+	+	+	+		-		
Marital status		Married		Unmarried		Married		Unmarried	
		Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
	Education	+	+	+	+	-	-		-
	Objective knowledge		+			-	-		
	Numeracy					+			
	Financial difficulty	-	-	-	-	+	+	+	+
	Income shock		+		+	+	-	+	-
	Debt situation	-	-	-		+		+	
	Financial confidence	+	+	+		-		-	
	Risk tolerance	+	+	+	+		-		-
Employment status		Full-time		Non-full-time		Full-time		Non-full-time	
		Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
	Education	+	+	+	+	-	-	-	-
	Objective knowledge				+	-		-	-
	Numeracy					+			
	Financial difficulty	-	-	-	-	+	+	+	+
	Income shock		+		+	+	-	+	-
	Debt situation	-		-		+		+	
	Financial confidence	+		+		-		-	
	Risk tolerance	+	+	+	+		-		-
Income		< $50k		$50k+		< $50k		$50k+	
		Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
	Education	+	+	+	+			-	-
	Objective knowledge		+					-	
	Numeracy							+	
	Financial difficulty	-	-	-	-	+		+	+
	Income shock	+	+		+	+		+	-
	Debt situation	-		-	-	+		+	+
	Financial confidence			+	+	-		-	-
	Risk tolerance	+	+	+	+				-

Educational attainment, which showed a significant direct effect on seeking financial professional help and direct and indirect effects on financial behaviors, was further examined within each pair of control variable groups. For the younger age group (ages 18-34), educational attainment lost its negative indirect effect on risky financial behaviors under financial professional interventions. Other associations stayed the same between the two age groups. When it comes to gender, educational attainment's indirect effects also did not show any significance among males. Females, on the other hand, experienced little direct effect from education on their risky financial behaviors. Although this study did not focus on the comparison of risky financial behaviors between males and females, the findings may indicate that females' risky financial behaviors may stem from factors other than educational attainment. More research is necessary to examine this association in greater detail. Education levels also did not show any direct or indirect influence on non-Whites' and lower income respondents' risky financial behaviors and no direct effect on unmarried respondents' risky financial behaviors, with or without financial professionals' help. This disparate result between each control variable group challenged the findings in the literature that education and knowledge were necessary to make better financial decisions (Bernheim, 1995, 1998; Chatterjee et al., 2017; Lusardi & Mitchell, 2007; Lusardi, 2008). Although the general positive effect of education was confirmed, the associations varied by demographic and socioeconomic backgrounds.

Implications for Financial Planning Scholars and Practitioners

This study found that seeking help from financial advisors is an important external financial information resource for households. This effect of receiving professional financial advice was significant in terms of influencing the associations between some client-related factors, such as financial knowledge, educational attainment, risk tolerance, etc., and normative

financial behaviors. Additionally, this study also found a positive association between seeking professional financial advice and desired financial management behaviors, such as calculating for retirement, saving for children's education, and paying credit cards in full. Further, financial help-seeking behavior was also found to effectively mediate the relationships between education, financial knowledge, financial stressors, financial attitudes, and financial management behaviors.

This study found that individuals who were more confident about their financial management skills were less likely to be associated with risky financial behaviors. This finding has implications for financial professionals and practitioners when providing financial advice to their clients. Financial planners need to encourage their clients and use techniques that can help build clients' confidence in managing their personal financial issues.

This study discovered a positive indirect influence of financial help-seeking behavior on the association between educational attainment and objective financial knowledge. This indicates that financial practitioners have the potential to help clients more fully comprehend and employ the knowledge and skills they already possess to better solve their own financial problems. Moreover, the ultimate goal of financial practitioners and educators is not only to solve clients' current financial concerns and issues, but also to help build healthy behavioral habits and forge a transformed positive financial attitude that can lead to financial wellness. There are different factors, including human capital and financial stressors and attitudes that could possibly determine whether people prefer financial professionals as their first choice when they face financial problems. For those who choose financial professionals, their previous experience, current situation, and demographics could largely influence whether the experts' help can be effective. For example, the results showed that the intervention of financial professionals lost its influence in certain demographic groups. Therefore, when serving the client, financial

professionals should use different strategies and communication skills depending on the clients' socioeconomic and demographic backgrounds.

Financial planning policy makers, along with the findings confirming the effectiveness of financial professional services, have the opportunity to develop new policies that are focused on making financial services more affordable and accessible to all U.S. households. Currently, the high cost of hiring financial planners makes it difficult for low-income households and those who are currently under financial stress, essentially the groups that could potential benefit most from professional financial intervention, to access or afford the services of a financial planner.

Although there are some public programs currently available to provide temporary financial support for individuals during times of job loss or periods of income constraint, most of these public programs are financially strained themselves. Considering the results that financial stressors may force households to engage in risky financial behaviors, the findings from this study pose challenges and opportunities for both policy makers and financial institutions to either develop programs or risk management products that are either publicly funded or market driven to help those who just experienced income shock and face short-term but high temporary cash flow constraints. It may also be necessary to enhance current financial education programs to reach more constituencies, including kids, high school and college students, young adults, and retirees, to increase the overall U.S. population's financial literacy.

This study found that among young adults aged 18 to 34, objective financial knowledge did not show the expected influences on desired and risky financial behaviors, even under the intervention of financial professionals. This finding requires policy makers' attentions. It is not only important to educate young adults in fundamental financial knowledge, but also important to make it possible for the young adults to apply their knowledge and practice in the real world to

solve their financial problems. Perhaps finding ways to educate individuals about the importance of self-responsibility in managing their finances as part of their financial education program should be explored. Another suggestion is to have a multi-tiered financial education program where financial education courses are followed up with counseling programs that track the participants' financial behaviors and their ability to use the knowledge.

Conclusion, Limitations, and Further Direction

With the increasing demand of professional financial advice, this study aimed to answer the questions on whether financial professionals, as an external information source to individuals and households, can contribute to their client's day-to-day financial management behaviors, and how the internal information sources directly and indirectly influence financial management behaviors with and without intervention of financial professionals.

To address these questions, this study reviewed and summarized previous studies that closely examined the related variables and relationships, revisited search behavior theories and help-seeking theoretical backgrounds, and developed a conceptual model of a financial help-seeking framework that connects internal and external search sources with two different types of financial management behaviors that most U.S. households may encounter in their daily routines. Four sets of hypotheses were proposed to better answer the research questions. One unique methodological contribution of this study was the application of structural equation modeling as the core statistical analysis procedure to better understand and interpret the complex decision making process associated with financial help-seeking behavior. SEM was useful for examining the complex methodological framework of this study, which included a large sample size and multiple variables. Multi-group SEM further examined and compared the relationships between the different demographic groups of respondents.

The final SEM model is presented in Figure 8 (in Chapter Five) with significant path coefficients and factor loadings (Figure 8 is also presented below). The model was developed based on several theoretical backgrounds, such as Stigler's (1961) search theory, Grable and Joo's (1999, 2001) financial help-seeking framework, and internal and external search components (Beales et al., 1981). The search theory (Stigler, 1961) identifies households' motivations to search for information, which include lowering costs and increasing the potential benefit of information searching and collecting activities. Grable and Joo (1999, 2000) further examined peoples' likelihood of seeking help from financial professionals to solve their financial issues. The authors found that factors such as demographics, financial stressors, financial knowledge, and financial attitudes affected the overall financial help-seeking decision and behavior. Beales et al. (1981) referred to these factors as internal search sources. The SEM model was computed using this framework and findings from the previous literature.

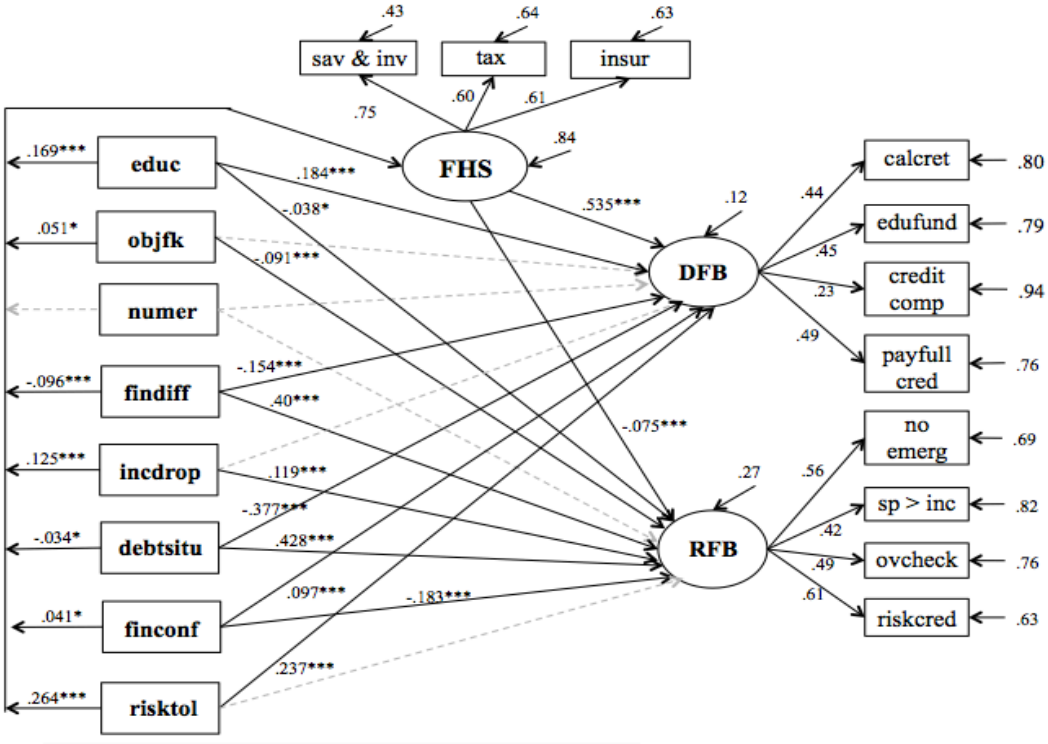

Figure 8. Path diagram of the financial help-seeking framework in this study.

Generally, this study confirmed the effectiveness and value of financial advice. Seeking help from financial professionals (external search sources in the help-seeking framework of this study) was positively associated with desired financial behaviors and negatively associated with risky financial behaviors. Specifically, the influence and effectiveness of seeking help from financial professionals on desired financial behaviors were consistent across different demographic groups, but its effect on risky financial behaviors varied by age, gender, ethnic/race, and income. Financial help-seeking behavior, as an external search source, mediated the relationships between some internal information sources and financial behaviors. The internal information sources included educational attainment, objective financial knowledge, financial stressors factors, financial confidence, and risk tolerance. Again, these mediating effects also varied based on demographic and socioeconomic backgrounds of the households.

Limitations

There are several limitations of this study. Although this study included a large number of variables, the number of available external and internal information sources in the dataset limited the analyses to some extent. It can be important to include respondents' previous experience with financial advisors and planning because previous experience and familiarity with using professional financial advice are also internal sources that may bias an individual's decision to seek professional financial services. Further, some internal sources, such as risk tolerance, numeracy, and debt situation were either self-reported or generated based on a perceived scale in the dataset. Lastly, it needs to be recognized that a number of factors may change over a five-year time span. Unfortunately, the most recent wave of the FINRA dataset (2015 wave) did not

have the financial help-seeking behavior questions, which compelled the author to use the 2012 wave.

The perceived and self-reported measures of certain variables in this study may also result in another issue of the model. In the final model, one of the goodness-of-fit indices showed a CFI (comparative fit index) of 0.770, which was slightly lower than the commonly used 0.90 criteria (Hooper, Coughlan, & Mullen, 2008). This study has applied the following three procedures to improve the model fit index: (1) model modifications by adding suggested covariance paths between certain observed items, (2) adding/dropping certain internal information source predictors as the exogenous observed variables, and (3) adding other financial service area(s) as the endogenous observed variables to measure financial help-seeking behavior. As a result of this, some incremental improvements to the goodness-of-fit indices of the model was achieved. Perhaps future studies can use another dataset, if available, with more objective measures of the observed variables with balanced and equal scales, to further improve upon the overall model that was used in this study.

Other limitations of this study included the cross-sectional nature of the dataset that was used. Although this is a national dataset, only three types of financial services were included in this study. Financial services other than saving and investment, tax, and insurance planning might have different effects on households' financial behaviors, and the internal search sources may vary as well. Due to constraints resulting from a limited number of available variables for the internal and external sources, this data was restricted to respondents who had dependent children, a bank account, and a credit card. Also, since the data was collected at one point in time instead of multiple times over a long period, it is impossible to track the individuals' financial behavioral changes across time. Those who recently adopted a financial advisor and had access

to professional help may need time to solve their financial problems and change their behaviors. For example, it might be hard to start contributing to retirement accounts and build an emergency fund under circumstances where a large amount of outstanding debt remained on credit cards without a repayment plan.

While the solid theoretical backgrounds and literature provided adequate support to the SEM model examined in this study, there could exist potential endogeneity that could not be examined due to the constraints of this dataset. Although SEM implies causal relationships among latent variables, using a cross-sectional dataset weakened the causality.

Finally, this dataset was collected in the U.S., which limits the findings in representing consumer's financial help-seeking behavior and information search in other countries and cultures. However, other countries with different economic backgrounds and personal financial policies may find this study, especially the financial help-seeking framework, useful to work with as a starting point for their financial behavior and information search study.

Further Directions

Further research should attempt to use a longitudinal dataset to track behavioral changes of households' financial management in order to better conclude a causal statement between financial help-seeking and financial behaviors. In order to assert that it is the financial planners and other financial service providers who increase the client's desired financial behaviors or reduce risky financial behaviors, longitudinal data collection methods or experimental designs are two options to continuously investigate along this research topic.

There is also room to examine the differences between demographic groups when receiving services and advice from financial professionals. This study found that the intervention effect of financial behaviors varies depending on age, gender, ethnic/race, marital, employment

status, and income level. Perhaps some groups of individuals are more likely to seek professional help when they have financial concerns, while others may choose other information sources. Similarly, perhaps among those who already hired financial professionals, some demographic characteristics or internal factors make them more easily or more willing to follow the advice or suggestions given by the experts, but others may have more obstacles to cooperate with financial experts. For example, more research is needed to investigate the difference of objective financial knowledge in different age groups, and whether this difference causes each age cohort to act differently on their daily financial issues.

Lastly, future research should examine additional internal and external factors that may affect households' financial help-seeking behavior and financial management behaviors, such as personality, previous experience with financial professionals, more comprehensive measure of financial knowledge and numeracy, etc. In future studies, it would be interesting to examine whether individuals and socio-demographic groups who are more Internet savvy are more likely to prefer web-based resources as external sources of financial information and advice.

REFERENCES

Aizcorbe, A. M., Kennickell, A. B., & Moore, K. B. (2003). Recent changes in U.S. family finances: Evidence from the 1998 and 2001 Survey of Consumer Finances. *Federal Reserve Bulletin, 89*, 1–32.

Alba, J. W., & Hutchinson, J. W. (1987). Dimensions of consumer expertise. *Journal of Consumer Research, 13*(4), 411-454.

Alba, J. W., & Hutchinson, J. W. (2000). Knowledge calibration: What consumers know and what they think they know. *Journal of Consumer Research*, *27*(2), 123-156.

Allgood, S., & Walstad, W. (2013). Financial literacy and credit card behaviors: A cross-sectional analysis by age. *Numeracy: Advancing Education in Quantitative Literacy, 6*(2), 1. doi:10.5038/1936-4660.6.2.3

Almeida, D. M., & Kessler, R. C. (1998). Everyday stressors and gender differences in daily distress. *Journal of personality and social psychology*, *75*(3), 670-680.

Almenberg, J., & Widmark, O. (2011). Numeracy, financial literacy and participation in asset markets. Retrieved from https://ssrn.com/abstract=1756674.

Angulo-Ruiz, F., & Pergelova, A. (2015). An empowerment model of youth financial behavior, *Journal of Consumer Affairs, 49*(3), 550-575.

Archuleta, K. L., Britt, S. L., Tonn, T. J., & Grable, J. E. (2011). Financial satisfaction and financial stressors in marital satisfaction. *Psychological reports*, *108*(2), 563-576.

Armstrong, T. (2008). *The human odyssey: Navigating the twelve stages of life*. New York: Sterling.

Baker, H. K., & Nofsinger, J. R. (2002). Psychological biases of investors. *Financial Services Review, 11*(2), 97-116.

Barber, B., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *The Quarterly Journal of Economics, 116*(1), 261-292.

Beales, H., Craswell, R., & Salop, S. (1981). Information remedies for consumer protection. *The American Economic Review, 71*(2), 410-413.

Beatty, S. E., & Smith, S. M. (1987). External search effort; An investigation across several product categories. *Journal of Consumer Research, 14*(1), 83-95.

Benartzi, S., & Thaler, R. (2007). Heuristics and biases in retirement savings behavior. *Journal of Economic Perspectives, 21*(3), 81-104.

Bernasek, A., & Shwiff, S. (2001). Gender, risk, and retirement. *Journal of Economic Issues, 35*(2), 345-356.

Bernheim, D. (1995). Do households appreciate their financial vulnerabilities? An analysis of actions, perceptions, and public policy. *Tax policy and economic growth, 3*, 11-30.

Bernheim, D. (1998). Financial illiteracy, education and retirement saving. In O. S.Mitchell & S. Schieber (Eds.), *Living with Defined Contribution Pensions* (pp. 38-68). Philadelphia: University of Pennsylvania Press.

Bettman, J. R., & Park, C. W. (1980). Effects of prior knowledge and experience and phase of the choice process on consumer decision processes: A protocol analysis. *Journal of consumer research*, *7*(3), 234-248.

Beyer, S., & Bowden, E. M. (1997). Gender differences in self-perceptions: Convergent evidence from three measures of accuracy and bias. *Personality and Social Psychology 23*(2), 157-172.

Blanchett, D., & Kaplan, P. (2013). Alpha, Beta, and Now… Gamma. *The Journal of Retirement*, *1*(2), 29-45.

Bluethgen, R., Gintschel, A., Hackethal, A., & Mueller, A. (2008). Financial advice and individual investors' portfolios. Retrieved from http://ssrn.com/abstract=968197

Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.

Brenner, L. (1998). When you need a financial expert. *New Choices, 38(*8), 81-82.

Burke, J., & Hung, A. A. (2015) Trust and financial advice (RAND Working Paper). Retrieved from http://dol.gov.edgekey-staging.net

Certified Financial Planning (CFP) Board. Retrieved from: http://www.cfp.net

Chang, M. L. (2005). With a little help from my friends (and my financial planner). *Social Forces, 83*(4), 1469-1498.

Chang, Y. R., & Hanna, S. (1992). Consumer credit search behavior. *Journal of Consumer Studies and Home Economics, 16*(3), 207-227.

Chatterjee, S., Fan, L., Jacobs, B., & Haas, R. (2017). Risk tolerance and goals-based savings behavior of households: The role of financial literacy. *Journal of Personal Finance*, *16*(1), 66-77.

Chen, H., & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. *Financial Services Review, 7*(2), 107–128.

Chen, Y., & Feeley, T. H. (2014). Numeracy, information seeking, and self-efficacy in managing health: an analysis using the 2007 Health Information National Trends Survey (HINTS). *Health communication*, *29*(9), 843-853.

Clark, A. E., Diener, E., Georgellis, Y., & Lucas, R. E. (2006). Lags and Leads in Life Satisfaction: A Test of the Baseline Hypothesis. *The Economic Journal, 529*, 222-243. doi:10.1111/j.1468-0297.2008.02150.x.

Clarke, K., & Belk, R. W. (1979). The effects of product involvement and task definition on anticipated consumer effort. *Advances in Consumer Research, 6*(1), 313-318.

Collins, J. M. (2012). Financial advice: A substitute for financial literacy? *Financial Service Review, 21*(4), 307-322.

Courchane, M., & Zorn, P. (2005). Consumer literacy and credit worthiness. In *Federal Reserve System Conference, Promises and Pitfalls: as consumer options multiply, who is being served and at what cost*. Retrieved from https://www.chicagofed.org/

Cummings, B. F., & James, R. N. (2014). Factors associated with getting and dropping financial advisors among older adults: Evidence from longitudinal data. *Journal of Financial Counseling and Planning, 25*(2), 129-147.

Duasa, J., & Yusof, S. A. (2013). Determinants of risk tolerance on financial asset ownership: A case of Malaysia. *International Journal of Business and Society*, *14*(1), 1-16.

Erikson, H. (1959). *Identity and the Life Cycle*. New York: International Universities Press.

Estrada-Mejia, C., de Vries, M., & Zeelenberg, M. (2016). Numeracy and wealth. *Journal of Economic Psychology, 54*, 53-63.

Evans, D. A. (2009). *The Predisposition of Women to Use the Services of a Financial Planner for Saving and Investing* (Doctoral dissertation). Columbus, OH: Ohio State University.

Fischer, E. H., & Turner, J. I. (1970). Orientations to seeking professional help: development and research utility of an attitude scale. *Journal of consulting and clinical psychology*, *35*(1), 79.

Fodness, D., & Murray, B. (1997). Tourist information search. *Annals of Tourism Research, 24*, 503-523. Retrieved from: http://dx.doi.org/10.1016/S0160-7383(97)00009-1

Foerster, S., Linnainmaa, J., Melzer, B., & Previtero, A. (2014). Retail financial advice: Does one size fit all? NBER Working Paper 20712. doi:10.3386/w20712

Goetz, J. W., Cude, B. J., Nielsen, R. B., Chatterjee, S., & Mimura, Y. (2011). College-based personal finance education: Student interest in three delivery methods. *Journal of Financial Counseling and Planning, 22*(1), 27-42.

Good, G. E., Dell, D. M., & Mintz, L. B. (1989). Male role and gender role conflict: Relations to help seeking in men. *Journal of Counseling Psychology, 36*(3), 295-300.

Grable, J. E. (2000). Financial risk tolerance and additional factors that affect risk taking in everyday money matters. *Journal of Business and Psychology, 14*(4), 625-630.

Grable, J. E., & Chatterjee, S. (2014a). Reducing wealth volatility: The value of financial advice as measured by zeta. *Journal of Financial Planning*, *27*(8), 45-51.

Grable, J. E., & Chatterjee, S. (2014b). Zeta Estimates of Wealth Volatility and Financial Planning Horizon. *Ewha Journal of Social Sciences*, *30*(2), 5-24.

Grable, J. E., & Joo, S. H. (1999). Financial help-seeking behavior: Theory and implications. *Journal of Financial Counseling and Planning, 10*(1), 14-25.

Grable, J. E., & Joo, S. H. (2001). A further examination of financial help-seeking behavior. *Journal of Financial Counseling and Planning*, *12*(1), 55.

Grable, J. E., & Joo, S. H. (2003). A snapshot view of the help-seeking market. *Journal of Financial planning, 16*(3), 88-94.

Grablowsky, B. (1975). An environmental model of risk in consumer credit. *Journal of Behavioral Economics*, *4*(1), 107-144.

Guillemette, M. A., & Nanigian, D. (2014). What determines risk tolerance? Retrieved from http://dx.doi.org/10.2139/ssrn.2393562

Hadar, L., Sood, S., & Fox, C. R. (2013). Subjective knowledge in consumer financial decisions. *Journal of Marketing Research*, *50*(3), 303-316.

Hanna, S. D. (2011). The demand for financial planning services. *Journal of Personal Finance, 10*(1), 36-62.

Hanna, S. D., & Lindamood, S. (2010). Quantifying the economic benefits of personal financial planning. *Financial Services Review, 19*(2), 111-127.

Hauser, R. M., & Goldberger, A. S. (1971). The treatment of unobservable variables in path analysis. *Sociological methodology*, *3*, 81-117.

Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. *Federal Reserve Bulletin, 89*, 309–322.

Hinz, R. P., McCarthy, D. D., & Turner, J. A. (1997). Are women conservative investors? Gender differences in participant-directed pension investments. In M. S. Gordon, O. S. Mitchell & M. M. Twinney (Eds), *Positioning pensions for the twenty-first century* (pp. 91-103). Philadelphia: University of Pennsylvania Press.

Hira, T. K., & Mugenda, O. M. (1999). The relationships between self-worth and financial beliefs, behavior, and satisfaction. *Journal of Family and Consumer Sciences, 91*(4), 76-82.

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modeling: Guidelines for determining model fit. *The Electronic Journal of Business Research Methods, 6*, 53-60.

Hox, J. J., & Bechger, T. M. (2007). An introduction to structural equation modeling. *Family Science Review, 11*, 354-373.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.

Huhmann, B. A., & McQuitty, S. (2009). A model of consumer financial numeracy. *International Journal of Bank Marketing*, *27*(4), 270-293.

Jianakoplos, N. A., & Bernasek, A. (1998). Are women more risk averse? *Economic Inquiry, 36*(4), 620-630.

Johnson, E. J., & Russo, E. (1981). Product familiarity and learning new information. *Advances in Consumer Research, 8*, 151-160.

Joo, S.-H. (1998). *Personal financial wellness and worker job productivity* (Doctoral dissertation). Retrieved from Virginia Tech Database. https://vtechworks.lib.vt.edu/

Joo, S.-H. and Grable, J. E. (2001), Factors associated with seeking and using professional retirement-planning help. *Family and Consumer Sciences Research Journal, 30*(1), 37–63. doi:10.1177/1077727X01301002

Kahneman, D., & Krueger, A. B. (2006). Developments in the measurement of subjective well-being. *The Journal of Economic Perspectives, 20*(1), 3-24.

Kelly, T. (1978). *Prices and consumer information: the benefits from posting retail gasoline prices*. Retrieved at SciTech Connect, EBSCOhost (accessed March 1, 2016).

Kiel, G. C., & Layton, R. (1981). Dimensions of consumer information seeking behavior. *Journal of Marketing Research, 18*(2), 233-239.

Kim, J., Garman, E. T., & Sorhaindo, B. (2003). Relationships among credit counseling clients' financial wellbeing, financial behaviors, financial stressor events, and health. *Journal of Financial Counseling and Planning*, *14*(2), 75-87.

Kock, N. (2014). Advanced mediating effects tests, multi-group analyses, and measurement model assessments in PLS-based SEM. *International Journal of e-Collaboration, 10*(1), 1-13.

Kwon, J. (2004). Clustering users of multiple source of information for saving and investment. *Journal of Personal Finance, 3*(4), 33-48.

Lea, S. E., Webley, P., & Walker, C. M. (1995). Psychological factors in consumer debt: Money management, economic socialization, and credit use. *Journal of Economic Psychology*, *16*(4), 681-701.

Lee, J., & Cho, J. (2005). Consumers' use of information intermediaries and the impact on their information search behavior in the financial market. *Journal of Consumer Affairs, 39*(1), 95-120.

Lee, J., & Hogarth, J. M. (2000). Relationships among information search activities when shopping for a credit card. *Journal of Consumer Affairs, 34*(2), 330-360.

Letkiewicz, J., Robinson, C., Domian, D. L., & Uborceva, N. (2015). Behavioral and wealth considerations for seeking professional financial planning help. Retrieved from https://ssrn.com/abstract=2666727

Liebermann, Y., & Flint-Goor, A. (1996). Message strategy by product-class type: A matching model. *International Journal of Research in Marketing, 13*, 237–249.

Lim, H., Heckman, S. J., Letkiewicz, J. C., & Montalto, C. P. (2014). Financial stress, self-efficacy, and financial help-seeking behavior of college students. *Journal of Financial Counseling and Planning, 25*(2), 148-160.

Loibl, C., & Hira, T. K. (2007). New insights into advising female clients on investment decisions. *Journal of Financial Planning, 20*(3), 68-75.

Lown, J. M., & Cook, J. (1990). Attitudes toward seeking financial counseling: Instrument development. *Financial Counseling and Planning*, *1*, 93-112.

Lusardi, A. (2008). Financial literacy: An essential tool for informed consumer choice? CFS Working Paper, No. 2008/19. Retrieved from http://nbn-resolving.de/urn:nbn:de:hebis:30-56927

Lusardi, A. (2012). *Numeracy, financial literacy, and financial decision-making* (No. w17821). National Bureau of Economic Research.

Lusardi, A., & Mitchell, O. S. (2007). Financial literacy and retirement preparedness: Evidence and implications for financial education. *Business Economics*, *42*(1), 35-44.

Lusardi, A., & Tufano, P. (2009). *Debt literacy, financial experiences, and overindebtedness* (No. w14808). National Bureau of Economic Research.

MacCallum, R. C., & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. *Annual review of psychology*, *51*(1), 201-226.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*(2), 130-49.

MacKinnon, D. P., & Fairchild, A. J. (2009). Current directions in mediation analysis. *Current Directions in Psychological Science, 18*(1), 16-20.

Mannix, M. (1999). The credit card binge. *U.S. News and World Report*, *127*(9), 89.

Martin, M. (2007). A literature review on the effectiveness of financial education (Working Paper No. 07-03. Retrieved from https://www.richmondfed.org/publications/

Mason, J. (1993). Financial counselors: The need has never been greater. *Financial Counseling and Planning, 4*, 5-10.

McClune, S. (2010). Consumer demographics: What do financial planning services consumers look like now? *Journal of Financial Planning*, *23*(3), 4-7.

Milgrom, P. R., & Roberts, J. (1987). Information asymmetries, strategic behavior and industrial organization. *American Economic Review, 77*(2), 184-193.

Moore, W. L., & Lehmann, D. R. (1980). Individual differences in search behavior for a nondurable. *Journal of consumer research, 7*(3), 296-307.

Moore, D. L. (2003). *Survey of financial literacy in Washington State: Knowledge, behavior, attitudes, and experiences*. Washington State Department of Financial Institutions.

Moore, W. L., & Lehmann, D. R. (1980). Individual differences in search behavior for a nondurable. *Journal of Consumer Research, 7*(3), 296-307.

Moorthy, S., Ratchford, B. T., & Talukdar, D. (1997). Consumer information search revisited: Theory and empirical analysis. *Journal of Consumer Research, 23*(4), 263-277.

Mueller, R. O., & Hancock, G. R. (2008). Best practice in structural equation modeling. In J. W. Osborne (Ed.), *Best practice in quantitative methods* (pp. 488-508). Thousand Oaks, CA: Sage.

Muthen, B. (1983). Latent variable structural equation modeling with categorical data. *Journal of Econometrics, 22*, 43–65.

Muthen, B. (1984). A general structural equation model with dichotomous, ordered categorical, and continuous latent variable indicators. *Psychometrika, 49*, 115–132.

Muthen, B., & Kaplan, D. (1985). A comparison of some methodologies for the factor analysis of non-normal Likert variables. *British Journal of Mathematical and Statistical Psychology, 38*, 171–189.

Nagy, R. A., & Obenberger, R. W. (1994). Factors influencing individual investor behavior. *Financial Analysts Journal, 50*(4), 63-68.

Newman, J. W. (1977). Consumer external search: Amount and determinants. In A. Woodside, J. Sheth & P. Bennett. (Eds.), *Consumer and Industrial Buying Behavior.* New York: North-Holland.

Newman, R. S., & Goldin, L. (1990). Children's reluctance to seek help with schoolwork. *Journal of Educational Psychology, 82*(1), 92-100.

Newman, R. S., & Schwager, M. T. (1993). Students' perceptions of the teacher and classmates in relation to reported help-seeking in math class. *The Elementary School Journal, 94*(1), 3-17.

Newton, C., Corones, S., Irving, K., & Thomas, D. (2015). The value of financial planning advice: Process and outcome effects on consumer well-being [Time 1 and 2 survey summary results]. Retrieved from: eprints.qut.edu.au.

Norvilitis, J. M., Merwin, M. M., Osberg, T. M., Roehling, P. V., Young, P., & Kamas, M. M. (2006). Personality factors, money attitudes, financial knowledge, and credit-card debt in college students. *Journal of Applied Social Psychology*, *36*(6), 1395-1413.

Perry, V. G. (2012). Charging ahead: An exploratory study of financial decision-making among millennial consumers. In D. J. Lamdin (Ed.), *Consumer knowledge and financial decisions: Lifespan perspectives* (pp. 129-144). New York, NY: Springer.

Perry, V. G., & Morris, M. D. (2005). Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behavior. *Journal of Consumer Affairs*, *39*(2), 299-313.

Peterson, R. L., & Black, D. A. (1984). Consumer credit search. J*ournal of Money, Credit & Banking, 16*(4), 527-535.

Phlips, L. (1988). *The economics of imperfect information*. New York: Cambridge University Press.

Phillips, M. A. & Murrell, S. A. (1994). Impact of psychological and physical health, stressful events, and social support on subsequent mental health help-seeking among older adults. *Journal of Consulting and Clinical Psychology, 62*(2), 270-275.

Powell, M., & Ansic, D. (1997). Gender differences in risk behavior in financial decision-making: An experimental analysis. *Journal of Economic Psychology, 18*(6), 605-628.

Punj, G. N., & Staelin, R. (1983). A model of consumer information search behavior for new automobiles. *Journal of Consumer* Research, *9*(4), 366-380.

Qureshi, I., & Compeau, D. (2009). Assessing between-group differences in information systems research: A comparison of covariance- and component-based SEM, *MIS Quarterly, 33*(1), 197-214. Retrieved from http://www.jstor.org/stable/20650285

Rehl, K. M., Moor, C. C., Leitz, L. Y., & Grable, J. E. (2016). Widows' voices: The value of financial planning. *Journal of Financial Service Professionals, 70*(1), 53-60.

Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian e-journal for the Advancement of Mental health*, *4*(3), 218-251.

Robb, C. A., Babiarz, P., & Woodyard, A. (2012). The demand for financial professionals' advice: The role of financial knowledge, satisfaction, and confidence. *Financial Services Review*, *21*(4), 291.

Roberts, J. A., & Jones, E. (2001). Money attitudes, credit card use, and compulsive buying among American college students. *Journal of Consumer Affairs*, *35*(2), 213-240.

Sages, R. A., & Grable, J. E. (2010). Financial numeracy, net worth, and financial management skills: Client characteristics that differ based on financial risk tolerance. *Journal of Financial Service Professionals*, *64*(6), 57-65.

Schmidt, J. B., & Spreng, R. A. (1996). A proposed model of external consumer information search. *Journal of the Academy of Marketing Science, 24*(3), 246-256.

Schumacker, R. E., & Lomax, R. G. (2010). *A beginner's guide to structural equation modelin*g (3rd ed.). New York, NY: Routledge/Taylor & Francis Group.

Simon, H. A. (1957). Theories of bounded rationality. *Decision and Organization, 1*(1), 161-176.

Spearman, C. (1904). General intelligence: Objectively determined and measured. *The American Journal of Psychology*, 15(2), 201-292.

Srinivasan, N. (1987). A path analytic model of external search for information for new automobiles. *Advances In Consumer Research*, *14*(1), 319-322.

Srinivasan, N., & Ratchford, B. T. (1991). An empirical test of a model of external search for automobiles. *Journal of Consumer Research, 18*(2), 233-242.

Stango, V., & Zinman, J. (2007). *Fuzzy math and red ink: When the opportunity cost of consumption is not what it seems*. Dartmouth College Working Paper.

Staten, M. E., Elliehausen, G., & Lundquist, E. C. (2002). The impact of credit counseling on subsequent borrower credit usage and payment behavior. *Credit Research Center Monograph*, *36*. 1-38.

Stigler, G. J. (1961). The economics of information. *The Journal of Political Economy, 69*(3), 213-225.

Suchman, E. A. (1966). Health orientation and medical care. *American Journal of Public Health, 56*, 97-105.

Taylor, J. W. (1974). The role of risk in consumer behavior. *Journal of Marketing, 38*(2), 54-60.

Tokunaga, H. (1993). The use and abuse of consumer credit: Application of psychological theory and Research. *Journal of Economic Psychology, 14*, 285-316.

Tseng, S. (2012). Information searches development in investment decisions. *International Journal of Business and Management, 7*(13), 109-124. doi:10.5539/ijbm.v7n13p109

U.S. Census Bureau. (2013). Household Income 2012: American Community Survey Briefs. Retrieved from: https://www.census.gov/content/dam/Census/library/publications/2013/acs/acsbr12-02.pdf

Warschauer, T. (2008). The economic benefits of personal financial planning. Conference paper presented at the 22nd annual meeting of the Academy of Financial Services, Anaheim, California.

Warschauer, T., & Sciglimpaglia, D. (2012). The economic benefits of personal financial planning. *Proceedings of the Academy of Financial Services*, *21*, 195-208.

White, K. J., & Heckman, S. J. (2016). Financial planner use among Black and Hispanic households. *Journal of Financial Planning*, *29*(9), 40–49.

Woodyard, A., & Robb, C. (2012). Financial knowledge and the gender gap. *Journal of Financial Therapy*, *3*(1), 1-16.

Wright, S. (1923). The theory of path coefficients: A reply to Niles' criticism. *Genetics, 20*, 239-255.

Xiao, J. J., Serido, J., & Shim, S. (2012). Financial education, financial knowledge, and risky credit behavior of college students. In D. J. Lamdin (Ed.), *Consumer knowledge and financial decisions: Lifespan perspectives* (pp. 113-128). New York, NY: Springer.

Zipf, G. K. (1949). *Human behavior and the principle of least effort; an introduction to human ecology*. Cambridge, Mass., Addison-Wesley Press.

Zhang, Y. (2013). Toward a layered model of context for health information searching: An analysis of consumer-generated questions. *Journal of the American Society for Information Science and Technology, 64*(6), 1158-1172.

APPENDICES

Appendix A

Characteristics of key variables

Variables	Variable Type	Code
Educational attainment	Categorical	Lower than high school High school graduate (diploma) High school graduate (GED) Some college Associate's degree Bachelor's degree Post graduate degree
Objective financial knowledge		
Interest rate	Categorical	More than $102 Exactly $102 Less than $102
Interest rate and inflation	Categorical	More than today Exactly the same Less than today
Interest rate and bond price	Categorical	They will rise They will fall They will stay the same There is no relationship between bond prices and the interest rate
Mortgage and interest paid	Binary	True False
Stock and mutual fund	Binary	True False
Numeracy level	Continuous	A 1-7 scale (1= strongly disagree, 7 = strongly agree)
Financial difficulty	Categorical	Very difficult Somewhat difficult Not at all difficult
Income shock	Binary	Yes

		No
Debt situation	Continuous	A 1-7 scale (1= strongly disagree, 7 = strongly agree)
Financial confidence	Continuous	A 1-7 scale (1= strongly disagree, 7 = strongly agree)
Risk tolerance	Continuous	A 1-10 scale (1= not at all willing, 10 = very willing)
Savings/investments	Binary	Yes No
Insurance planning	Binary	Yes No
Tax planning	Binary	Yes No
Retirement needs	Binary	Yes No
Full credit card payment	Binary	Yes No
Education fund	Binary	Yes No
Credit comparison	Binary	Yes No
No Emergency fund	Binary	Yes No
Spending > income	Categorical	Spending less than income Spending more than income Spending about equal to income
Overdrawing checking account	Binary	Yes No
Risky credit behavior index		
Keep credit card balance	Binary	Yes No
Late for credit payment	Binary	Yes No
Over credit limit	Binary	Yes No
Credit cards cash advance	Binary	Yes No

Note. "*Don't know*" and "*Prefer not to say*" are options for the above variables in the FINRA 2012 questionnaire. Education attainment does not have "*Don't know"* as an option, but only has "*Prefer not to say*".

Appendix B

Characteristics of control variables

Demographics Variables	Variable Type	Code
Age	Categorical	18-24
		25-34
		35-44
		45-54
		55-64
		65+
Gender	Binary	Male
		Female
Ethnicity	Binary	White
		Non-White
Marital Status	Categorical	Married
		Single
		Separated
		Divorced
		Widowed/widower
Employment Status	Categorical	Self-employed
		Work full-time
		Work part-time
		Homemaker
		Full-time student
		Permanently sick/ disabled
		Unemployed
		Retired
Income	Categorical	< $15,000
		$15,000- $25,000
		$25,000 -$35,000
		$35,000 - $50,000
		$50,000 - $75,000
		$75,000 - $100,000
		$100,000 - $150,000
		> $150,000

Note. "*Prefer not to say*" is an option for the above variables in the FINRA 2012 questionnaire. Income question also has "*Don't know*" as an option.