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"The Psychological Predictors of Older Pre-Retirees' Financial Self-Efficacy"

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The Psychological Predictors of Older Pre-Retirees' Financial Self-Efficacy

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Abstract

This study investigates how psychological characteristics influence Financial Self-Efficacy (FSE) within a sample of 2,068 U.S. pre-retirees aged 50 to 70 from the Health and Retirement Study (HRS). In accordance with the 3M Model of Motivation and Personality, results revealed that FSE (i.e., a situational trait) can be supported through frequent positive affect, reduced negative affect, stronger mastery beliefs, and a higher task orientation (i.e., compound traits). Moreover, results revealed evidence for compound traits as a potential mediator between elemental traits (i.e., openness, conscientiousness, extroversion, agreeableness, and neuroticism) and FSE. Results suggest psychological attributes play an important role in shaping FSE. Implications for the psychological support of older pre-retirees as they prepare for retirement are discussed.

Keywords: Financial self-efficacy; Big five; 3M Model of Motivation and Personality; Older pre-retirees

Introduction

For older pre-retirees, there is a significant need to save as much as possible to adequately prepare for retirement (Munnell, Webb, & Golub-Sass, 2012). However, saving discretionary income presents a psychological challenge, as spending today is more desirable than spending tomorrow (Shefrin & Thaler, 1988). Thus, older pre-retirees must exercise significant control to overcome the mental costs associated with forgoing consumption. Given this competing demand on income (i.e., save vs. spend) and the concern about financial preparedness for retirement, the ability for older pre-retirees to exert control over their financial situation is paramount for retirement preparedness.

Self-efficacy is essential to engaging in and following through with tasks requiring self-regulation, as it promotes a sense of resilience, influence, and control (Bandura, 1991, 1997). Self-efficacy is unique to each life domain—such as health, relationships, and finances (Bandura, 1997)—with *financial* self-efficacy (FSE) the weakest and most susceptible to decline (McAvay, Seeman, & Rodin, 1996). While FSE has been linked to positive financial behavior (Farrell, Fry, & Risse, 2016; Lown, 2011), little is understood about how FSE can be supported.

The purpose of this study is to investigate the relationship between psychological characteristics and FSE to understand how older pre-retirees can support a sense of control and influence over their financial situation. This study builds upon existing literature by investigating the psychological characteristics associated with older pre-retiree's FSE using the 3M Model of Motivation and Personality (Mowen, 2000).

Literature Review

Self-Efficacy

Self-efficacy is defined as "…beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). The general self-efficacy literature suggests enactive mastery experiences and affective (i.e., emotional) states are psychological characteristics that significantly shape self-efficacy (Bandura, 1997; Baron, 1990).

According to Bandura (1977, 1997), enactive mastery experiences—the experience of past successes—provide the most powerful source of efficacy information. When individuals succeed amidst adversity, resiliency is developed and mastery beliefs are enhanced—providing a psychological buffer against future failures. Given the strong connection between mastery experiences and self-efficacy, perceived mastery has been utilized as a foundation for the development of general self-efficacy scales (Chen, Gully, & Eden, 2001). In addition to general mastery beliefs, domain specific ability provides individuals with mastery information related to specific tasks. For example, the ability to solve math problems had a significant positive effect on high school students' level of math self-efficacy (Pajares & Kranzler, 1995).

Affective states influence how people interpret their capabilities and are defined as the experience of positive and negative emotions. Negative emotional states—anxiety, stress, fear, and depression—can undercut perceived capability and expectations of success, resulting in poor task performance (Bandura, 1977, 1997). Positive emotions, on the other hand, enhance self-efficacy and enable individuals to more effectively cope with stress (Bandura, 1997; Baron, 1990).

Financial Self-Efficacy (FSE)

The psychological characteristics associated with general self-efficacy may also shape

FSE; however, this has not been tested within the literature. McAvay et al. (1996) provided insight into these characteristics by investigating changes in domain specific self-efficacy within a sample of 255 older American adults. McAvay et al. found higher depression levels and daily financial hassles to be associated with a decline in FSE—consistent with Bandura's (1977, 1997) proposition that negative affective states can harm self-efficacy.

Socio-demographic and economic factors have also been connected to FSE. Education and age were positively associated with FSE (Lown, 2011). Additionally, McAvay et al. (1996) found that women were more likely than men to experience a decline in FSE; however, whether women held higher or lower FSE at the initial interview was not reported. In regards to economic factors, McAvay et al. concluded that older adults with annual income above $11,000 were more likely to experience improved FSE over time. Thus, it is possible that the presence of increased financial resources (e.g., income and assets) may support FSE, whereas resource constraints (e.g., debt) may harm them.

Other socio-demographic and economic correlates of FSE have not been extensively investigated within the literature. However, given the positive connection between self-efficacy and financial behavior, research findings from the financial behavior literature may provide additional insight. For example, being White (Perry & Morris, 2005) and possessing a higher self-reported health status (O'Neill, Sorhaindo, Xiao, & Garman, 2005) were associated with positive financial behaviors—a similar relationship may exist with FSE. Moreover, homeowners, married individuals, and smaller households were more likely to report positive saving behavior (Hogarth, Beverly, & Hilgert, 2003).

Financial Self-Efficacy and Personality

Mowen (2000) suggested that broad personality traits provide the foundation for shaping

domain specific self-efficacy (e.g. FSE). While different approaches to personality exist, the personality psychology field generally recognizes that five broad traits (i.e., the *Big Five*) form the foundation of personality—openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (Costa & McCrae, 1992). The connection between the Big Five and FSE has not been tested within the literature; however, each Big Five trait has been connected to financial characteristics and financial behavior. Specifically, existing research indicates that higher levels of extroversion, openness to experience, and conscientiousness are associated with positive financial attributes and behavior (Hershey & Mowen, 2000; Mayfield, Perdue, & Wooten, 2008; Mowen & Spears, 1999; Nabeshima & Seay, 2015); whereas higher levels of agreeableness and neuroticism have been associated with negative financial attributes and behavior (Mowen & Spears, 1999; Nabeshima & Seay, 2015). This study investigates if a similar relationship exists between each Big Five trait and FSE.

The 3M Model of Motivation and Personality

This study employed the Meta-Theoretic Model of Motivation and Personality (3M) to investigate the psychological characteristics associated with FSE (Mowen, 2000). The 3M posits four trait levels (varying from the abstract to the concrete) explain consumer behavior (see Figure 1): (a) Elemental traits, (b) Compound traits, (c) Situational traits, and (d) Surface traits. Each trait level can be explained by the underlying trait levels; thus, FSE—a situational trait—can be explained by a combination of elemental and compound traits.

(INSERT FIGURE 1 HERE)

Elemental traits provide the broadest reference point for explaining consumer behavior and are defined as the "basic, underlying predispositions of individuals that arise from genetics and a person's early learning history" (Mowen, 2000, p. 20). Elemental traits include the Big

Five personality traits. Compound traits result from two or more elemental traits and are defined as "unidimensional dispositions emerging from the interplay of elemental traits, from the culture in which an individual lives, and from the learning history of the individual" (Mowen, 2000, p. 22). Compound traits are narrower than elemental traits and form general predispositions to behave within a variety of situational contexts. Perceived mastery, positive affect, negative affect, and task orientation align with the definition of a compound trait and were selected for analysis due to their connection with FSE (Bandura, 1977, 1997; Baron, 1990; McAvay et al., 1996; Mowen, 2000). Situational traits are defined as the "unidimensional predispositions to behave within a general situational context" (p. 21). Situational traits emerge when a combination of elemental traits and compound traits interact with situational forces to produce domain-specific traits, such as FSE. Situational traits tend to explain a high level of variance in surface level traits—i.e., specific behaviors—which lie at the top of the 3M. Surface traits were not included within this study given the current focus on FSE as a situational trait.

Hypotheses

The hierarchical structure of the 3M provided an integrated psychological framework for investigating FSE. Overall, this study investigated 11 hypotheses. First, the 3M suggests that each trait level should increase the explanatory power of the model above and beyond that of the previous traits—the first two hypotheses tested these relationships:

H1: Elemental traits (i.e., openness, conscientiousness, extroversion, agreeableness, and neuroticism) add explanatory power to the model investigating FSE.

H2: Compound traits (i.e., positive affect, negative affect, perceived mastery, and task orientation) add explanatory power to the model investigating FSE.

Second, the 3M suggests that elemental traits (i.e., the *Big Five*) may exhibit a direct relationship with situational traits (i.e., FSE). Thus, five additional hypotheses were developed for the Big Five traits based upon existing literature:

H3: Openness to experience is positively associated with FSE.

H4: Conscientiousness is positively associated with FSE.

H5: Extroversion is positively associated with FSE.

H6: Agreeableness is negatively associated with FSE.

H7: Neuroticism is negatively associated with FSE.

Third, the 3M indicates that compound traits are directly connected to FSE. Consequently, four additional hypotheses were developed and investigated based upon existing literature:

H8: Perceived mastery is positively associated with FSE.

H9: Positive affect is positively associated with FSE.

H10: Negative affect is negatively associated with FSE.

H11: Task orientation is positively associated with FSE.

Method

Data and Sample

Data were utilized from the 2010 and 2012 waves of the Health and Retirement Study (HRS). The 2012 RAND HRS file was paired with data from the 2010 and 2012 waves of the *Leave-Behind* Psychosocial and Lifestyle HRS Questionnaire (LB), which collected information related to personality and psychological characteristics. Each biennial collection cycle, the LB is administered to half of the HRS sample on a rotating basis after the primary in-person interview and subsequently returned via mail. Due to this rotating collection scheme, data were utilized

from both the 2010 and 2012 collection cycles to include information from the full sample. The sample was restricted to non-retired household financial respondents aged 50 to 70. An age limit of 70 was selected as labor force participation has been shown to become predominantly part-time at age 70 (U.S. Department of Health and Human Services, 2015). The final analytic sample included 2,068 observations, representing over 13 million pre-retirees when weighted.

Variable Measurement

Dependent Variable (Situational Trait)

FSE was operationalized through the following question obtained from the LB survey: "How would you rate the amount of control you have over your financial situation these days?" Responses ranged from 0 *(no control at all)* to 10 *(very much control)*. This operationalization of FSE is consistent with existing research (McAvay et al., 1996).

Block One: Individual Characteristics

Socio-demographic. Socio-demographic factors served as control variables informed by the existing FSE and financial behavior literature, and included age, race, gender, marital status, education level, and presence of children. Age was measured as a continuous variable. Race was measured with three categories: White, Black, and Other. Gender was combined with marital status into four categories: Single male, single female, married male, and married female. Education level included five categories: Less than high school, high school, some college, and college graduate. Respondents with *any* living children were coded as a 1; otherwise 0.

Financial characteristics. Several financial characteristics were included to control for resources and constraints that may affect FSE: natural logarithm of net-worth, natural logarithm of total household income, homeownership, presence of mortgage, and presence of other debt (e.g., credit card, intrafamily loans, life insurance loans, etc.). Additionally, bill pay difficulty—

measured on a 1 to 5 scale, with higher scores indicating greater difficulty—was included to control for financial stressors. Moreover, a measure of quantitative reasoning ability was incorporated as a measure of domain specific ability. Lastly, labor force status was included to control for respondents' working or non-working status. Non-working status was due to unemployment, disability, and other reasons unrelated to retirement.

Health status. Health serves as an important control variable within the financial domain that may also affect FSE. Consequently, perceived health was included in the model on a five-point scale, with higher scores representing better perceived health status.

Block Two: Elemental Traits

Elemental traits were operationalized through the Big Five personality traits: openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism. Data were obtained through the LB survey and were derived from the Midlife in the United States (MIDUS) national survey and the International Personality Item Pool (IPIP). The Big Five traits were measured on a Likert-type scale based upon the extent to which respondents felt 31 separate adjectives described them, ranging from 1 *(a lot*) to 4 (*not at all*). Each trait scale was created from 5 to 10 items in accordance with recommended methodology, such that higher scores indicated stronger identification with each trait. Each Big Five trait scale demonstrated adequate internal reliability based upon Cronbach's Alpha scores of .78 for openness, .75 for conscientiousness, .77 for extroversion, .81 for agreeableness, and .68 for neuroticism.

Block Three: Compound Traits

Perceived mastery. Perceived mastery was operationalized through an augmentation of the widely used Pearlin and Schooler's Mastery scale from the LB survey (Pearlin & Schooler,

1978). Respondents indicated the extent to which they agreed with five separate questions, with potential values ranging from 1 (*strongly disagree*) to 6 (*strongly agree*):

- I can do just about anything I really set my mind to.
- When I really want to do something, I usually find a way to succeed at it.
- Whether or not I am able to get what I want is in my own hands.
- What happens to me in the future mostly depends on me.
- I can do the things that I want to do.

The scores were averaged to create an index of mastery, ranging from 1 to 6, with higher scores reflecting higher levels of mastery. The mastery scale demonstrated adequate internal reliability with a Cronbach's Alpha score of .91.

Positive and negative affect. Data for positive and negative affect were obtained from the LB survey and measured based upon a set of emotions primarily from the *Positive and Negative Affect Schedule—Expanded Form* (PANAS-X). Respondents reported the extent to which they felt various emotions within the past 30 days, with scores ranging from 1 (*very much*) to 5 (*not at all*). In accordance with recommended methodology, responses to all items were reverse coded and averaged to create two separate positive and negative affect scales, with higher scores indicating stronger levels of affect. The positive and negative affect scales demonstrated adequate internal reliability with Cronbach's Alpha scores of .93 and .90, respectively.

Task orientation. Task orientation—"the enduring disposition to set task goals and to achieve high performance levels in completing tasks" (Mowen, 2000, p. 61)—was operationalized through a measure of purpose in life from the Ryff Measures of Psychological Well-being (Ryff, 1989). This measure aligns with Mowen's (2000) task orientation construct in

that it is long-term goal oriented, incorporates aspects of task completion, and emphasizes the importance placed on task completion. Respondents were asked the extent to which they agreed with seven statements, with potential responses ranging from 1 (*strongly disagree*) to 6 (*strongly agree*):

- I enjoy making plans for the future and working to make them a reality.
- My daily activities often seem trivial and unimportant to me.
- I am an active person in carrying out the plans I set for myself.
- I don't have a good sense of what it is I'm trying to accomplish in life.
- I sometimes feel as if I've done all there is to do in life.
- I live life one day at a time and don't really think about the future.
- I have a sense of direction and purpose in my life.

Questions 2, 4, 5, and 6 were reverse coded and scores were then averaged to create an index of purpose in life, ranging from 1 to 6 with higher scores reflecting higher levels of purpose in life. The purpose in life scale demonstrated adequate internal reliability with a Cronbach's Alpha score of .81.

Data Analysis

Given the bounded and ordinal nature of the FSE scale, an ordered logistic regression model was employed. The analysis was constructed as a three-block hierarchical model to estimate the probability of reporting higher FSE with the addition of each successive block (see Figure 2). Block one represented control variables (i.e., socio-demographic, health, and economic characteristics) to provide a foundation for the hierarchical model. Block two variables added elemental traits—the *Big Five*—to the model. Finally, block three added compound traits to the model: perceived mastery, positive affect, negative affect, and task orientation.

Furthermore, the Taylor series method (Wolter, 1985) was employed to incorporate the HRS's weighting and complex sampling design information when calculating estimates and the variances associated with those estimates in accordance with recommended methodology (Heeringa & Conner, 1995; Nielsen & Seay, 2014).

(INSERT FIGURE 2 HERE)

Results

Descriptive Statistics

Sample characteristics can be found in Tables 1 and 2. Due to the complex sampling techniques employed by the HRS, weighted percentages are provided. Overall, the sample held positive financial characteristics and demonstrated a relatively low financial strain score. Respondents exhibited higher FSE, with an average score of 7.18 on an 11-point scale. The personality scales revealed respondents identified more with the openness, conscientiousness, extroversion, and agreeableness traits; and less with the neuroticism trait. Respondents reported higher levels perceived mastery, task orientation, and positive affect; and lower levels of negative affect.

(INSERT TABLES 1 & 2 HERE)

Hierarchical Ordinal Logistic Results

Results of the three-block hierarchical ordinal logistic model can be found in Table 3. Overall, significant evidence is presented linking the elemental and compound traits to FSE.

(INSERT TABLE 3 HERE)

Model one (basic individual characteristics). Model one incorporated block one variables—socio-demographic, health, and economic factors—to establish a foundation for FSE. Model one performance statistics revealed a concordance ratio of 68.00 and a pseudo r-squared

of .23. Results revealed that married females (compared to married males), Black individuals (compared to Whites), high school educated or less (compared to college educated), and those with better subjective health were more likely to report higher FSE. Alternatively, individuals with greater quantitative reasoning scores and increased financial strain were more likely to report lower FSE.

Model two (elemental traits). Model two added the elemental traits (block two) to the individual characteristics (block one). Model two performance statistics revealed a concordance ratio of 69.60 and a pseudo r-squared of .28, reflecting an increase of 1.60 and .05, respectively, from model one. In support of hypothesis one, Wald test results revealed a significant F statistic—indicating the addition of the elemental traits significantly improved model fit.

Model two provided support for hypotheses three and seven. Results revealed that openness to experience and neuroticism were significantly associated with FSE. For every one-unit increase in the openness trait, the odds of reporting higher FSE increased by 49%, holding all else constant. As hypothesized, neuroticism was negatively associated with increased FSE (*OR = .61)*. The block one variables that were significant in model one continued to be significant in model two, except for a loss of the effect associated with race. Additionally, a new negative relationship between age and FSE was revealed.

Model three (compound traits). Model three added the compound traits (block three) to the model. Compound traits included perceived mastery, task orientation, positive affect, and negative affect. Model three performance statistics revealed an adequate model fit with a concordance ratio of 72.90 and a pseudo r-squared of .38, reflecting an increase of 3.30 and .10, respectively, from model two. In support of hypothesis two, Wald test results revealed a

significant F statistic—indicating the addition of the compound traits significantly improved model fit.

Results revealed that each of the compound traits were significantly associated with FSE, supporting hypotheses 8-11. Specifically, for every one-unit increase in perceived mastery, the odds of reporting higher FSE increased by 54%, holding all else constant. Similarly, task orientation (*OR = 1.26*) and positive affect (*OR = 1.50*) were positively associated with FSE. Alternatively, for every one-unit increase in negative affect, the odds of reporting higher FSE decreased by 48%, holding all else constant. Any effects associated with the elemental traits and FSE from block two were replaced by the effect of the compound traits from block three. The block one variables that were significant in model two continued to be significant in model three.

Discussion

This study investigated the relationship between psychological characteristics and FSE to understand how older pre-retirees can support a sense of control over their financial situation. This relationship was explored through a three-block hierarchical model based upon the 3M Model of Motivation and Personality (3M). Overall, results support the 3M hierarchical approach to investigating FSE (H1 and H2). Significant increases in predictive power were observed with the addition of each block, with the largest effect size derived from the addition of the compound traits in model three. Moreover, in support of the 3M, both elemental and compound traits were significantly associated with FSE; however, any effect associated with the elemental traits was removed after accounting for the compound traits. Thus, broad personality traits play a role in shaping FSE, yet compound traits may potentially mediate this relationship.

The results provided some support for a relationship between the *Big Five* traits (i.e., elemental traits) and FSE. Openness to experience was positively associated with FSE (H3).

Open individuals tend to be more creative and broad-minded, which may afford them the ability to develop more financial alternatives and feel more in control over their finances. The results did not reveal significant associations between conscientiousness, extraversion, or agreeableness with FSE—failing to support hypotheses 4-6. Consistent with the notion that negative emotional states can undermine self-efficacy (Bandura, 1977, 1997; McAvay et al., 1996), results revealed a negative relationship with FSE and neuroticism (H7).

Each compound trait was significantly associated with FSE, supporting hypotheses 8-11. A positive relationship between perceived mastery and FSE (H8) aligns with existing research, as mastery beliefs are developed over time because of successful and challenging life experiences (Bandura, 1977, 1977). Positive affect supports higher FSE (H9), which aligns with existing general self-efficacy research (Bandura, 1977, 1997; Baron, 1990). Positive affect may assist individuals in overcoming psychological states that can harm self-efficacy, such as stress, fear, and worry (Bandura, 1997). Greater negative affect is associated with lower FSE (H10). This finding aligns with existing literature that indicates negative affective states can harm FSE (Bandura, 1977, 1997; McAvay et al., 1996). Lastly, task orientation is positively associated with FSE (H11), a new finding that suggests those who value goal setting, have purpose in life, and enjoy completing daily tasks are more likely to report higher FSE.

There were limitations to the current study. Due to variable availability in the HRS, FSE was measured as a single item scale; however, Lown (2011) developed an FSE scale that suggests FSE is a multi-faceted construct. Future research could improve upon this study by utilizing a more comprehensive measurement of FSE.

Implications and Conclusion

FSE is central to navigating the saving and consumption dilemma in the years immediately preceding retirement; however, the FSE of older American adults have been shown to be weak and susceptible to decline (McAvay et al., 1996). Given this vulnerability, it is important for older pre-retirees—and those who work with them—to understand how to cultivate higher FSE. As viewed through the 3M, FSE is shaped by mastery perceptions, positive and negative affective states, positive valuation of daily task completion, and having purposeful goals for the future. Results of this study reveal several relevant implications for older pre-retirees, financial counselors, planners, and educators.

First, results demonstrate that older pre-retirees' may need psychological support as they prepare financially for retirement. Thus, policy supporting programs offering psychological services within the context of retirement planning are needed. For example, workplace education and counseling programs could be implemented that offer coaching and counseling services focused on retirement planning.

Second, domain specific mastery beliefs can be enhanced by breaking down larger financial goals into smaller more attainable ones, thereby promoting a more frequent experience of achievement. Moreover, global mastery beliefs may be built by engaging in general activities (e.g., hobbies, work, sports, etc.) that promote a sense of success and accomplishment. It is important to note that weak mastery beliefs might be difficult to overcome for older pre-retirees, as they have an extensive history of successes and failures that have shaped those beliefs.

Third, positive emotions help individuals overcome adversity and promote an optimistic valuation of one's capabilities. Several emotions were utilized in this study to produce an index of positive affect: determined, enthusiastic, active, proud, interested, happy, attentive, content,

inspired, hopeful, alert, calm, and excited. Older pre-retirees may be able to support higher FSE by increasing their experience of these positive affective states.

Fourth, FSE can be supported by effectively managing negative affective states (e.g., afraid, upset, guilty, scared, nervous, sad, distressed, etc.). This may be partially accomplished by focusing on enhancing positive affect. In addition, negative affective states can be managed by exploring potential sources of negative emotional experiences. Depending upon the situation, engagement of a mental health professional may be necessary to explore the cause of severe negative affect potentially causing more serious mental health issues—such as depression.

Fifth, establishing meaningful and purposeful retirement goals may support FSE. Consequently, establishing a clear direction and purpose for life in retirement may help older pre-retirees more successfully save for it. Once this vision has been established, relevant and actionable tasks can be created to make those goals a reality.

In summary, older pre-retirees must effectively navigate a challenging consumption and saving dilemma to adequately prepare for their financial future. FSE is an influential aspect of personal control that can be cultivated to manage competing demands on income (i.e., save vs. spend) in the years immediately preceding retirement. As viewed through the 3M, FSE can be enhanced and supported based upon an understanding of their psychological origins.

References

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review 84*(2), 191-215.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes, 50*(2), 248-287.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W.H. Freeman and Company.

Baron, R. A. (1990). Environmentally induced positive affect: Its impact on self- efficacy, task performance, negotiation, and conflict. *Journal of Applied Social Psychology, 20*(5), 368-384.

Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational research methods, 4*(1), 62-83.

Costa, P. T., Jr., & McCrae, R. R. (1992). *NEO-PI-R: Professional manual.* Odessa, FL: Psychological Assessment Resources.

Farrell, L., Fry, T .R. L., & Risse, L. (2016). The significance of financial self-efficacy in explaining women's personal finance behaviour. *Journal of Economic Psychology, 54*, 85-99.

Heeringa, S. G., & Conner, J. H. (1995, May). Technical description of the Health and Retirement Survey sample design. *Institute for Social Research: University of Michigan Survey Research Center*. Retrieved December 31, 2016 from http://hrsonline.isr.umich.edu/sitedocs/userg/HRSSAMP.pdf

Hershey, D. A., & Mowen, J. C. (2000). Psychological determinants of financial preparedness for retirement. *The Gerontologist, 40*(6), 687-697.

Hogarth, J. M., Beverly, S. G., & Hilgert, M. (2003). Patterns of financial behaviors: Implications for community educators and policy makers. *Federal Reserve System Community Affairs Research Conference*.

Lown, J. M. (2011). Development and validation of a financial self-efficacy scale. *Journal of Financial Counseling and Planning*, *22*(2), 54-63.

Mayfield, C., Perdue, G., & Wooten, K. (2008). Investment management and personality type. *Financial Services Review*, *17*, 219-236.

McAvay, G. J., Seeman, T. E., & Rodin, J. (1996). A longitudinal study of change in domain-specific self-efficacy among older adults. *Journal of Gereontology, 51B*(5), 243-253.

Mowen, J. C. (2000). *The 3M model of motivation and personality: Theory and empirical applications to consumer behavior*. Norwell, MA: Kluwer Academic Publishers.

Mowen, J. C., & Spears, N. (1999). Understanding compulsive buying among college students: A hierarchical approach. *Journal of Consumer Psychology, 8*(4), 407-430.

Munnell, A. H., Webb, A., & Golub-Sass, F. (2012). The national retirement risk index: An update. *Center for Retirement Research at Boston College*, *1*-9.

Nabeshima, G., & Seay, M. C. (2015). Wealth and personality: Can personality traits make your clients rich? *Journal of Financial Planning, 28*(7), 50-57.

Nielsen, R. B., & Seay, M. C. (2014). Complex samples and regression-based inference: Considerations for consumer researchers. *Journal of Consumer Affairs*, 1-17.

O'Neill, B., Sorhaindo, B., Xiao, J. J., & Garman, E. T. (2005). Financially distressed consumers: Their financial practices, financial well-being, and health. *Journal of Financial Counseling and Planning, 16*(1), 73-87.

Pajares, F., & Kranzler, J. (1995). Self-efficacy beliefs and general mental ability in mathematical problem-solving. *Contemporary educational psychology*, *20*(4), 426-443.

Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of health and Social Behavior*, 19, 2-21.

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

Ryff, C. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069-1081.

Shefrin, H. M., & Thaler, R. H. (1988). The behavioral life-cycle hypothesis. *Economic Inquiry*, 26(4), 609.

U.S. Department of Health and Human Services, National Institute on Aging, National Institutes of Health. (2015, January). *Growing older in America: The health and retirement study.* Retrieved December 31, 2016 from: https://www.nia.nih.gov/health/publication/growing-older-america-health-and-retirement-study/chapter-2-work-and-retirement

Wolter, K. M. (1985). *Introduction to variance estimation*. New York, NY: Springer.

Figure 1. 3M Hierarchical Personality Structure, adapted from Mowen (2000)

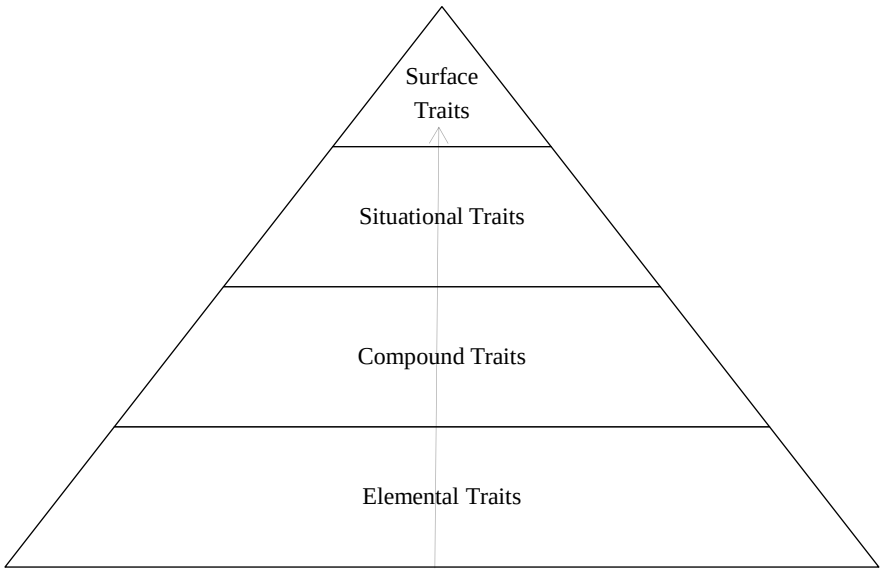

Figure 2. Empirical Model

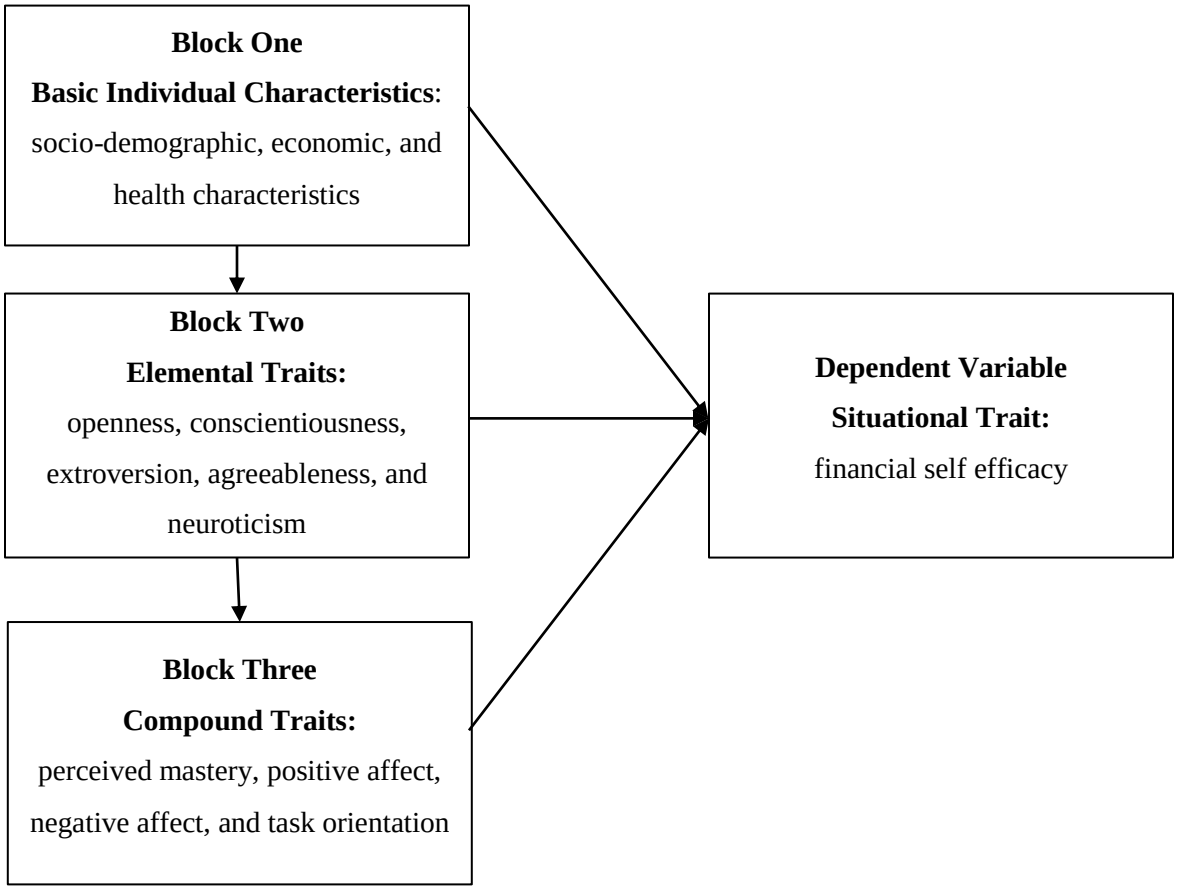

Table 1. Sample Characteristics of Categorical Variables

Variable	n	% (weighted)*
Race		
White	1504	87.69%
Black	382	6.92%
Other	182	5.38%
Labor force status		
Working	1866	91.97%
Not working	202	8.03%
Household status and gender		
Married male	705	38.83%
Married female	520	23.21%
Single female	612	24.86%
Single male	231	13.10%
Education		
Less than high school	161	3.99%
High school	576	27.73%
Some college	625	28.12%
College graduate	706	40.15%
Children		
Any living children	1834	86.90%
No living children	234	13.10%
Homeownership & mortgage debt status		
Homeowner with mortgage	952	51.48%
Homeowner without a mortgage	629	31.62%
Non Homeowner	487	16.90%
Presence of other debt		
Yes	793	38.61%
No	1275	61.39%
Total household income		
$0 to $24,999	371	12.81%
$25,000 to $49,999	411	17.25%
$50,000 to $74,999	377	18.31%
$75,000 to $99,999	256	13.67%
$100,000 and above	653	37.97%
Net Worth		
$0 to $24,999	468	15.07%
$25,000 to $99,999	424	19.36%

$100,000 to $249,999	459	23.00%
$250,000 to $499,999	338	19.11%
$500,000 and above	379	23.47%

* Weighted percentages are provided to account for the oversampling techniques utilized by the HRS. N of 2,068, representing 13,349,517 pre-retirees age 50 to 70 when weighted.

Table 2. Sample Characteristics of Scales and Continuous Variables*

Variable	Mean	se	Min	Max	Cronbach's Alpha
Dependent Variable					
Financial self-efficacy	7.18	0.06	0	10	-
Control Variables					
Age	58.32	0.14	52.00	70.00	-
Log net worth	11.73	0.07	0.00	16.98	-
Log household income	11.09	0.05	0.00	14.29	-
Quantitative reasoning	538.19	0.82	409.00	584.00	-
Self-report of health	3.63	0.03	1.00	5.00	-
Financial Strain	2.11	0.03	1.00	5.00	-
Elemental Traits					
Openness	3.04	0.02	1.00	4.00	0.78
Conscientiousness	3.31	0.01	1.00	4.00	0.75
Extroversion	3.20	0.02	1.00	4.00	0.77
Agreeableness	3.49	0.01	1.00	4.00	0.81
Neuroticism	2.01	0.02	1.00	4.00	0.68
Compound Traits					
Perceived mastery	4.91	0.03	1.00	6.00	0.91
Task orientation	4.82	0.02	1.00	6.00	0.81
Positive affect	3.64	0.02	1.00	5.00	0.93
Negative affect	1.79	0.02	1.00	5.00	0.90

* The Taylor series method (Wolter, 1985) was employed to incorporate the HRS's weighting and complex sampling design information. N of 2,068, representing 13,349,517 pre-retirees age 50 to 70 when weighted.

Table 3. Hierarchical Ordinal Logistic Results for Higher Reported Financial Self Efficacy

	Model 1			Model 2			Model 3		
Variable	*b*	*SE b*	*OR*	*b*	*SE b*	*OR*	*b*	*SE b*	*OR*
Intercept 1	2.78	1.55	-	1.32	1.62	-	-0.53	1.80	-
Intercept 2	3.64*	1.54	-	2.23	1.61	-	0.43	1.79	-
Intercept 3	4.72**	1.55	-	3.36*	1.62	-	1.65	1.79	-
Intercept 4	5.56***	1.56	-	4.23*	1.63	-	2.61	1.80	-
Intercept 5	6.19***	1.57	-	4.88**	1.64	-	3.33	1.81	-
Intercept 6	7.05***	1.58	-	5.77***	1.65	-	4.31*	1.81	-
Intercept 7	7.63***	1.57	-	6.36***	1.64	-	4.95**	1.80	-
Intercept 8	8.19***	1.56	-	6.92***	1.64	-	5.56**	1.80	-
Intercept 9	9.15***	1.57	-	7.89***	1.64	-	6.62***	1.80	-
Intercept 10	10.14***	1.61	-	8.88***	1.66	-	7.69***	1.81	-
Basic Individual Characteristics (Block 1)									
Age	-0.02	0.01	0.98	-0.03**	0.01	0.97	-0.03***	0.01	0.97
Race (white)									
Black	0.35*	0.17	1.41	0.25	0.18	1.29	0.07	0.18	1.07
Other	0.27	0.21	1.31	0.36	0.21	1.44	0.25	0.22	1.28
Household status (married male)									
Married female	0.34**	0.12	1.41	0.34**	0.12	1.40	0.37**	0.11	1.44
Single female	0.21	0.14	1.23	0.17	0.13	1.19	0.26	0.13	1.29
Single male	0.17	0.15	1.19	0.26	0.15	1.29	0.31	0.17	1.36
Education (college graduate)									
Less than high school	1.24***	0.27	3.46	1.36***	0.29	3.88	1.33***	0.31	3.78
High school	0.44**	0.15	1.55	0.49**	0.15	1.63	0.47**	0.15	1.61
Some college	0.22	0.12	1.24	0.20	0.12	1.22	0.19	0.14	1.21
Any living children	0.14	0.15	1.15	0.15	0.15	1.16	0.12	0.16	1.12
Working	-0.07	0.17	0.93	-0.05	0.17	0.96	-0.18	0.17	0.83
Total log net worth	0.03	0.03	1.03	0.03	0.03	1.04	0.03	0.03	1.03
Total log income	0.02	0.04	1.02	0.01	0.04	1.01	0.03	0.04	1.03
Homeownership and Mortgage									
Homeowner no mtg	-0.09	0.10	0.92	-0.05	0.10	0.95	-0.01	0.10	0.99
Non homeowner	0.09	0.17	1.10	0.07	0.17	1.07	0.14	0.17	1.16
Other debt	0.03	0.10	1.03	0.02	0.10	1.02	0.07	0.10	1.07
Quantitative reasoning	-0.01**	0.00	0.99	-0.01**	0.00	0.99	-0.01**	0.00	0.99
Self-reported health	0.35***	0.06	1.42	0.23***	0.06	1.26	0.15*	0.06	1.16
Financial strain	-0.89***	0.07	0.41	-0.84***	0.06	0.43	-0.71***	0.06	0.49
Elemental Traits (Block 2)									
Openness	-	-	-	0.40**	0.13	1.49	0.22	0.12	1.24
Conscientiousness	-	-	-	0.29	0.18	1.33	-0.04	0.19	0.97

Extroversion	-	-	-	0.18	0.13	1.20	-0.15	0.14	0.86
Agreeableness	-	-	-	0.13	0.14	1.14	0.10	0.15	1.10
Neuroticism	-	-	-	-0.49***	0.08	0.61	0.20	0.11	1.22
Compound Traits (Block 3)									
Perceived mastery	-	-	-	-	-	-	0.43***	0.05	1.54
Task orientation	-	-	-	-	-	-	0.23**	0.08	1.26
Positive affect	-	-	-	-	-	-	0.40***	0.09	1.50
Negative affect	-	-	-	-	-	-	-0.65***	0.11	0.52
Pseudo R^2			0.23			0.28		0.38	
Wald F Statistic			-			20.35***		61.71***	
Concordance ratio			68.00			69.60		72.90	

** p<.05, ** p<.01, *** p<.001*