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Financial Self-Efficacy Beliefs and the Saving Behavior of Older Pre-Retirees

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Abstract

This study investigates the relationship between Financial Self-Efficacy (FSE) beliefs and saving behavior within a sample of 847 U.S. pre-retirees aged 50 to 70 from the Health and Retirement Study. In accordance with the Social Cognitive Theory of Self-Regulation, results revealed that FSE beliefs are positively related to saving behavior after controlling for socio-demographic attributes, financial characteristics, and saving motives. Understanding how FSE beliefs contribute to saving behavior is critical as older pre-retirees attempt to bridge the retirement saving gap. Financial counselors and planners can help this population save by cultivating and supporting their FSE beliefs throughout the financial planning and counseling process.

Keywords: Financial Self-Efficacy Beliefs, Saving Behavior, Older Pre-Retirees, Social Cognitive Theory of Self-Regulation

Introduction

Many Americans are expected to enter retirement with insufficient financial resources to maintain their pre-retirement standard of living (Munnell, Webb, & Golub-Sass, 2012). Older pre-retirees often experience lifetime high earnings (U.S. Census Bureau, 2013), which suggests they are in a financial position to close the retirement preparedness gap. With retirement on the immediate horizon, the motivation to save may also assist older pre-retirees in following through with their saving plans. This scenario, however, also presents a saving and consumption dilemma, as higher earnings increase the temptation to spend (Shefrin & Thaler, 1988). Consequently, older pre-retirees experience competing demands on their financial resources (i.e., save vs. spend) and require a significant amount of self-regulation to overcome the mental costs associated with forgoing consumption (Shefrin & Thaler, 1988).

The self-regulatory process is multifaceted, with self-efficacy beliefs serving a critical role (Bandura, 1991). Self-efficacy beliefs are fundamental to personal agency – the intentional engagement in behavior – and are defined as "…beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). These beliefs influence how the self-regulatory system functions, thereby affecting behavioral outcomes, such as saving behavior (Bandura, 1991).

Given this backdrop, the purpose of this study is to investigate the relationship between financial self-efficacy (FSE) beliefs and the saving behavior of older pre-retirees. With persistently low saving rates in the United States and older workers feeling financially unprepared for retirement (Gallup, 2014; U.S. Department of Commerce,

2015), understanding how FSE beliefs influence saving behavior may help financial planners and counselors more effectively work to guide clients in the years preceding retirement. This study builds upon the existing literature by utilizing a sample of older U.S. pre-retirees from the Health and Retirement Study and operationalizing self-efficacy beliefs through a domain specific measure of *financial* self-efficacy beliefs.

Literature Review

Financial Self-Efficacy Beliefs and Saving Behavior

Financial self-efficacy (FSE) and general self-efficacy beliefs have been positively linked to saving behavior; however, studies have focused on niche samples (e.g., young pre-retirees, college students, and women) leaving the relevance of FSE beliefs for other populations unknown. Additionally, general self-efficacy measures have been utilized to predict domain specific behaviors (Chatterjee, Finke, & Harness, 2011). Self-efficacy beliefs have been shown to vary across life functions (e.g., life, health, transportation, financial, etc.) (McAvay, Seeman & Rodin, 1996). Thus, it is important to tailor measurement according to the behavioral domain being explored (Bandura, 1997).

Chatterjee, Finke, and Harness (2011) employed a non-domain specific measure of perceived mastery and found that perceived mastery beliefs were positively associated with wealth creation and portfolio choice over a ten-year period for young American savers entering the wealth accumulation phase. Shim, Serido, and Tang (2012) found that perceived financial control, a proxy for FSE beliefs (McAvay et al., 1996), predicted both saving intention and self-reported saving behavior within a sample of 748 U.S. first-year undergraduate college students. Within another sample of 182 U.S. undergraduate college students, Montford and Goldsmith (2016) found that FSE beliefs – measured through a 5-

item construct developed by the authors – were positively correlated to a larger expected equity allocation for a hypothetical $75,000 inheritance. Another study utilizing 500 college students found FSE beliefs – measured by Lown's (2011) FSE scale – to play an important role in supporting positive financial management behavior (Qamar, Khemta, & Jamil, 2016).

Moreover, a recent study revealed that FSE beliefs, measured according to Lown's (2011) six-item FSE scale, were a significant predictor of holding investment and savings products in a sample of 1,542 Australian women ranging in age from 30 to over 60 years (Farrell, Fry, & Risse, 2016). Additionally, Australian women with higher FSE beliefs were less likely to hold debt-related products (Farrell et al., 2016). However, in a sample of 506 U.S. workers ranging in age from 18 to 95 ($m = 38.35$), FSE beliefs – as constructed and augmented from the Pearlin global mastery scale – were unrelated to the use of retirement saving plans (Dietz, Carrozza, & Ritchey, 2003). Lown posited that this lack of effect was due to limitations in the self-efficacy measure used by Dietz, Carrozza, and Ritchey (2003).

While general and domain-specific self-efficacy beliefs have been connected to saving-related behaviors and outcomes, more research is needed to determine if self-efficacy beliefs, particularly as measured within the financial domain, serve a role in saving behavior for older populations.

Other Factors Affecting Saving Behavior

Socio-Demographic. Several socio-demographic factors have been linked to saving behavior. Gender is relevant to saving behavior, as predictors of short-term saving and regular saving habits differ based upon gender (Fisher, 2010). Men reported higher

contribution rates than women (Hershey, Jacobs-Lawson, McArdle, & Hamagami, 2007),

and were more likely to save regularly than women (Mauldin, Henager, Bowen, &

Cheang, 2016). Married individuals were more likely to demonstrate positive patterns of

cash flow and saving behavior (Hogarth, Beverly, & Hilgert, 2003; Mauldin et al., 2016).

Saving, as operationalized through a five-year change in savings net worth, was the

greatest on average for Whites when compared to Black and Hispanic households

(Wakita, Fitzsimmons, & Liao, 2000). However, Mauldin et al. (2016) found that non-

Whites were more likely to save regularly than Whites, with regular saving

operationalized through a self-reported binary (yes/no) measure indicating if the

household saved regularly or not. In terms of education, those with a higher level of

education demonstrated a greater change in net worth (Wakita et al., 2000). Lastly, those

in poor health were less likely to save regularly and more likely to spend more than their

income (Fisher & Anong, 2012; Fisher & Montalto, 2010).

 Financial Characteristics. From a financial standpoint, a positive association

between income and saving behavior has been established within the literature

(Chatterjee et al., 2011; Fisher & Anong, 2012; Hershey et al., 2007). Additionally,

periods of unemployment were associated with lower levels of accumulated wealth

(Lusardi, 2000). Moreover, the unemployed were less likely to save regularly (Fisher &

Anong, 2012; Mauldin et al., 2016). Asset composition has also been linked to saving

behavior. Homeownership has been shown to have a positive relationship with saving

regularly and spending less than income over the previous year (Chatterjee et al., 2011;

Fisher & Montalto, 2010). Moreover, the presence of Individual Retirement Accounts

(IRAs) and self-employed Keogh retirement plans were associated with an increase in

household saving (Hubbard, 1984). Lastly, perceived financial strain – measured as a multi-item construct encompassing financial worry, money problems, and financial difficulty – has been found to have a negative association with the saving habits and level of total reported savings within a sample of low-income individuals (Loibl, Kraybill & DeMay, 2011). Similarly, Mauldin et al. (2016) found that those with perceived resource constraints were less likely to save.

      Saving Motives. Motivational forces associated with saving behavior have been well established within the literature. The likelihood of saving on a regular basis increased for respondents with an emergency saving motive and for those with a retirement saving motive (Fisher & Anong, 2012; Fisher & Montalto, 2010; Lee & Hanna, 2015). DeVaney, Anong, and Whirl (2007) proposed that emergency fund and retirement saving motives are connected, with individuals more likely to save for future retirement needs after they have saved adequately for short-term emergencies. Retirement goal clarity has been shown to be an important motivational factor indirectly linked to saving behavior through a pre-retiree's retirement planning activity level (Hershey et al., 2007). Additionally, a shorter future time perspective, as measured by smoking and lack of exercise, was negatively associated with saving behavior within a sample of older American adults (Lusardi, 2000). Moreover, American households with a bequest motive demonstrated a higher wealth accumulation profile than households without a bequest motive (Lusardi, 2000). This difference in wealth may be partially due to an ex ante bequest motive, although the effect size of such a motive has been shown to be small (Dynan, Skinner, & Zeldes, 2002). Lastly, older American households that expected to

receive an inheritance, as measured by living parents, tended to accumulate less wealth (Lusardi, 2000).

Social Cognitive Theory of Self-Regulation

The Social Cognitive Theory of Self-Regulation states that self-efficacy beliefs affect behavior by interacting with the psychological functions of the self-regulatory system. The self-regulatory system operates through self-observation and monitoring processes, positive and negative judgments about performance results, and personal reactions influenced by incentives and affective states (Bandura, 1991). As a result of this interaction, self-efficacy beliefs affect how an individual establishes goals, monitors behavior, judges behavioral outcomes, values activities, and reacts to positive or negative performance evaluations (Bandura, 1991). More specifically, individuals with higher self-efficacy beliefs in a particular task tend to set aspirational goals, persevere when confronted with difficulties and failures, attribute successes to personal capabilities and effort, consider transient personal and external contributions to failures, exhibit enduring interest in the task at hand, and are less susceptible to stress and anxiety in the face of adversity (Bandura, 1991, 1999). Thus, self-efficacy beliefs play a significant role in shaping behavior by influencing how individuals interpret and respond to the self-regulatory process (See Figure 1).

In accordance with the Social Cognitive Theory of Self-Regulation (Bandura, 1991), FSE beliefs are expected to positively influence the self-regulatory system and demonstrate a positive association with saving behavior after controlling for socio-demographic attributes, financial characteristics, and saving motives. Thus, the following research hypothesis was investigated:

H1: FSE beliefs are positively associated with the saving behavior of older pre-retirees after controlling for socio-demographic attributes, financial characteristics, and saving motives.

Method

Data and Sample

Data were utilized from the 2008, 2010, and 2012 waves of the Health and Retirement Study (HRS), a biennial panel study of over 26,000 Americans age 50 and above. The RAND HRS version served as the core data file, with data from the *Leave-Behind* Psychosocial and Lifestyle Questionnaire (LB) utilized to operationalize the measures for FSE beliefs and difficulty paying bills. The LB is administered via a rotating collection scheme to half of the HRS panel each collection cycle, requiring the use of the 2008 and 2010 waves to incorporate data from the full sample. All independent variables were measured in 2008, with the exception of FSE beliefs and difficultly paying bills, which were measured using a combination of 2008 and 2010 LB data. The dependent variable incorporated data from 2008 and 2012 to compute change in net worth as a proxy for saving behavior.

The sample was restricted to household financial respondents that were not fully retired and aged 50 to 70 in 2008. A maximum age limit of 70 was selected as workforce participation rates for those aged 65 and over have been increasing (Fleck, 2009). The final analytic sample included 847 observations, representing just over six million pre-retirees after accounting for the weighting information provided within the HRS.

Variable Measurement

Dependent Variable

Saving behavior was measured based upon a four-year change in total net worth (i.e., total assets minus total liabilities) from 2008 to 2012, providing a comprehensive picture of asset and liability changes. Change in net worth was chosen as it provides a comprehensive and objective measure of saving behavior (Fitzsimmons & Leach, 1994; Wakita et al., 2000). It is important to include liabilities as part of the saving formula, as older pre-retirees may focus on reducing debt prior to retirement (Rose, 2013), and are less likely to retire because of debt (Mann, 2011). Bryant and Zick (2006) stated that "… saving occurs when net worth increases and dissaving occurs when net worth declines. Paying off debts, then, is just as much saving as increasing one's bank balances" (p. 88). If asset levels only are utilized to measure saving behavior, then an incorrect conclusion may be drawn if the household uses assets or income to pay down debt. Using existing assets to pay down debt is a financially neutral transaction, which is accounted for by including liabilities in the saving formula. Moreover, as indicated by Bryant and Zick, using income for debt reduction is a form of saving. Thus, change in net worth provides a complete picture of asset and liability changes to measure household saving behavior.

Total net worth was defined as total assets minus total liabilities. Total assets included the value of the primary residence, secondary residence, other real estate, vehicles, businesses, retirement accounts, stocks, mutual funds, checking, savings, money market accounts, certificates of deposit, bonds, and any other existing assets. Total liabilities included the total value of all debt associated with the primary residence and

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secondary residence. Additionally, any other outstanding debt was included as a liability, such as credit card debt, medical debt, life insurance loans, and family loans. Consistent with existing literature (Harness, Finke, & Chatterjee, 2009), change in net worth was computed by subtracting 2008 log net worth from 2012 log net worth based upon the following equation for the quotient property of logarithms: $\ln(W_{12}) - \ln(W_{08}) = \ln(\frac{W_{12}}{W_{08}})$.

Given this computation, negative net-worth households were excluded from the analysis.

Financial Self-Efficacy Beliefs

Financial self-efficacy (FSE) beliefs were operationalized based upon responses to the following question: "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 question provides insight into the amount of influence an older pre-retiree feels they have over their financial situation and is in concert with previous research as a measure of FSE beliefs (McAvay et al., 1996).

Socio-Demographic Attributes, Financial Characteristics, and Saving Motives

Socio-Demographic Attributes. Socio-demographic attributes were included as control variables and consisted of: age, gender, race, marital status, and education status. Working status was also controlled for, with those working full or part-time coded as a one. If respondents reported they were unemployed, disabled, or not in the labor force they were coded as a zero. Additionally, census region was included to control for differences in regional prices and asset values that may affect saving needs. Lastly, perceived health status was included in the model with higher scores indicating a more positive perception of health.

Financial Characteristics. The level of household assets has been shown to account for participation rate differences in risky financial markets (Campbell, 2006). To control for this wealth effect, 2008 log net worth and the following indicator variables were included: homeownership, presence of mortgage debt, presence of non-mortgage debt (e.g., credit card, intrafamily loan, life insurance loan, etc.), presence of stocks and stock mutual funds outside of retirement accounts, and presence of IRA and Keogh plans. An emergency fund proxy was included and computed by dividing current cash assets (e.g., checking, savings, and CD's) by monthly total household income. Emergency funds that met the three-month recommended guideline were coded as a one, with those that did not meet the three-month guideline coded as a zero. Moreover, log 2008 income was included to control for access to financial resources that support saving behavior. Lastly, an individual's difficulty meeting monthly obligations was included as a measure of financial strain and perceived resource constraints. Difficulty meeting monthly bill payments was measured on a one to five scale, with higher scores representing greater difficulty meeting monthly bill payments.

Saving Motives. Motivational factors incorporated into the model were based on previous literature and included retirement goal clarity (Hershey et al., 2007), future time perspective (Lusardi, 2000), bequest motives (Lusardi, 2000), and inheritance motives (Lusardi, 2000). Retirement goal clarity was measured based upon respondents planned retirement date, with those that had established a retirement date coded as a one, otherwise zero. The presence of smoking behavior was utilized as a proxy for a shorter future time perspective, consistent with Lusardi (2000). Additionally, the likelihood of leaving a bequest was included to estimate a respondent's bequest motive. Based upon

the distribution of responses, the bequest motive variable was operationalized

categorically (see Table 1). Finally, consistent with Lusardi (2000), an inheritance motive

was operationalized through a dichotomous variable indicating the presence of living

parents to control for the likelihood of receiving an inheritance.

Data Analysis

This study utilized an OLS regression model given the continuous and unbounded

nature of the dependent variable, change in the natural logarithm of net worth. Model

assumptions were examined and revealed normally distributed errors and no

multicollinearity issues, with variance inflation factors for all variables less than three.

Overall performance statistics revealed an adequate fit of the model with an adjusted r-

squared of .29. The HRS's weighting and complex sampling design information was

incorporated into the descriptive statistics and regression model through the Taylor series

method (Wolter, 1985) in calculating estimates and associated variances in accordance

with recommended methodology (Heeringa & Conner, 1995; Nielsen & Seay, 2014).

Results

Descriptive Statistics

A summary of sample characteristics can be found in Tables 1 and 2. The

majority of the sample had annual income of $50,000 or more (73%), had accumulated a

net worth of $100,000 or more (71%), owned a home (88%), held a mortgage (58%), did

not possess forms of debt other than a mortgage (54%), and did not hold stocks or stock

mutual funds outside of retirement accounts (73%). The sample was split almost evenly

when it comes to having IRA or Keogh accounts, with 53% not holding these types of

accounts and 47% indicating they did. Moreover, 69% of the sample had not established

an adequate emergency fund of three months or more, indicating a majority of the sample

did not have sufficient cash on hand to cover short-term unexpected needs. Difficulty

paying bills, was relatively low across the sample, with an average score of 2.02 on a one

to five scale. Respondents also exhibited high FSE beliefs, with an average score of 7.25

on a zero to ten scale. From 2008 to 2012, respondents reported a positive average

change in net worth of $15,034 (range = -$4,469,164 to $7,085,000). Lastly, respondents

reported mostly positive views of their health, with an average self-reported health score

of 3.68 on a one to five scale.

OLS Regression Results

Table 3 provides a summary of the regression results. In support of the research

hypothesis, results revealed that an older pre-retiree's FSE beliefs were significantly and

positively associated with saving behavior – the change of net worth from 2008 to 2012.

More specifically, a one-unit increase in FSE beliefs was associated with a 4.08% greater

change in net worth from 2008 to 2012, holding all else constant *(b = 0.04)*. Additionally,

results revealed socio-demographic characteristics associated with change in net worth.

As compared to single individuals, being married was associated with a 25.86% greater

change in net worth *(b = 0.23)*. Those with a high school education saw a reduced change

in net worth as compared to college graduates (Wakita et al., 2000), *(b = -1.08)*. Pre-

retirees from the South *(b = -0.21)* and West *(b = -0.23)* U.S. regions experienced

reduced changes in net worth as compared to pre-retirees from the Northeast, holding all

else constant. Results related to marital status (Hogarth et al., 2003), education (Wakita et

al., 2000), and the South census region (Chatterjee et al. 2011) were consistent with

existing literature. However, Chatterjee et al. found a greater change in net worth for the West region as compared to the Northeast region of the U.S.

Financial characteristics and saving motives were significantly associated with changes in net worth from 2008 to 2012. Increased income had a positive relationship with change in net worth. For example, a 10% increase in 2008 log income increased changes in net worth by 1.05% *(b = 0.11)*, holding all else constant. Original net worth was negatively associated with changes in net worth *(b = -0.51)*. Not owning a home had a negative impact on change in net worth, as compared to mortgage holding homeowners *(b = -0.47)*. Holding an IRA or Keogh plan was positively associated with changes in net worth *(b = 0.26)*. Difficulty meeting monthly payments had a negative impact on changes in net worth *(b = -0.18)*. Those with an adequate emergency fund saw a greater change in net worth *(b = 0.34)*. Lastly, respondents with a 50% to 99% bequest likelihood had a reduced change in net worth as compared to those with a 100% bequest likelihood *(b = -0.14)*, holding all else constant. Results related to income (Chatterjee et al., 2011; Fisher & Anong, 2012; Hershey et al., 2007), original net worth (Chatterjee et al., 2011), homeownership (Chatterjee et al., 2011; Fisher & Montalto, 2010), having an IRA or Keogh plan (Hubbard, 1984), difficulty meeting monthly payments (Loibl et al., 2011; Mauldin et al., 2016), presence of an emergency fund (DeVaney et al., 2007; Fisher & Anong, 2012; Fisher & Montalto, 2010), and bequest motives (Dynan et al., 2002; Lusardi, 2000) were consistent with existing literature.

Discussion

The purpose of this study is to investigate the relationship between FSE beliefs and the saving behavior of older pre-retirees. Older pre-retirees' stage in the life cycle

indicates they are motivated to save given their proximity to retirement. Moreover, older

pre-retirees appear to be in a financial position to make significant progress in preparing

financially for their future. With an increased temptation to spend associated with peak

lifetime earnings levels, saving for retirement continues to require a significant amount of

self-control for this population (Shefrin & Thaler, 1988). The Social Cognitive Theory of

Self-Regulation states that domain specific self-efficacy beliefs significantly affect the

self-regulatory process and are influential in achieving desired behavioral outcomes

(Bandura, 1991).

Results of this study provide support for our hypothesis that FSE beliefs are

important to saving behavior. Higher FSE beliefs were associated with an increased

change in net worth over the 2008 to 2012 time period. That is, a one-unit increase in

FSE beliefs was associated with a 4.08% greater change in net worth from 2008 to 2012,

holding all else constant. This is slightly larger than the effect size found in a younger

sample (i.e., 2.74%) utilizing a general measure of self-efficacy beliefs with a similar

change in net worth dependent variable (Chatterjee et al., 2011). The larger effect size in

the current study may be due to the domain specific measure of self-efficacy, or

potentially the different population of interest (i.e., older pre-retirees).

Theory suggests that the larger effect size is likely due to the domain specific

measure (Bandura, 1997). More specifically, Bandura (1997) indicated that any

relationship between general self-efficacy and behavior is likely due to chance and an

overlap with the general and domain specific measurement. Thus, any effect between

general self-efficacy beliefs and behavior tend to be removed after accounting for domain

specific beliefs (Bandura, 1997). Consequently, it is important to include domain specific

measures of self-efficacy when estimating the effect of self-efficacy beliefs on financial behavior. Overall, this study builds upon existing literature by establishing a connection between domain specific self-efficacy beliefs and the saving behavior of older pre-retirees.

Limitations were present within this study. First, the Great Recession occurred during the time period of analysis, which significantly impacted household's net worth. With the significant amount of investment related volatility affecting net worth levels, it may be difficult to effectively isolate saving behavior using a change in net worth dependent variable. However, even with this noise, results suggest higher FSE beliefs are associated with greater positive changes in net worth from 2008 to 2012. Moreover, existing research suggests FSE beliefs are a multi-faceted construct (Lown, 2011), however, only a single item scale was available in the HRS.

Implications and Conclusion

The primary implication from this study is that FSE beliefs are an important aspect of personal control in the years preceding retirement when income peaks and competing demands on that income (save vs. spend) intensify (Shefrin & Thaler, 1988). This result finds grounding in the Social Cognitive Theory of Self-Regulation, which provides a lens for financial planners and counselors to understand the important role FSE beliefs play in shaping clients' behaviors. Consequently, financial planners and counselors should assist older pre-retirees in cultivating FSE beliefs.

To asses FSE beliefs, Lown's (2011) FSE scale could be administered during the data gathering phase of the financial planning or counseling process. More specifically,

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Lown's FSE scale includes the following components, rated on a Likert-type scale from 1 *(exactly true)* to 4 *(not at all true)*:

1. It is hard to stick to my spending plan when unexpected expenses arise.

2. It is challenging to make progress toward my financial goals.

3. When unexpected expenses occur I usually have to use credit.

4. When faced with a financial challenge, I have a hard time figuring out a solution.

5. I lack confidence in my ability to manage my finances.

6. I worry about running out of money in retirement.

Once assessed, there are several strategies that financial planners and counselors can use to help shape FSE beliefs. These strategies center on clients' psychological health and recommendations that minimize daily financial nuisances (McAvay et al., 1996). For example, McAvay found that prior period depression levels – measured according to the Depression Adjective Checklist (DACL) (Lubin, 1965) – predicted declines in FSE beliefs at the subsequent interview. The DACL encompasses a variety of adjectives describing depressive mood, feeling, and emotional states (Lubin, 1965). It is important to effectively manage these negative psychological states as it relates to personal finances, as research has shown that financial fear and worry can undermine saving behavior even in the presence of strong financial goals and motivating forces (Neukam & Hershey, 2003). Financial planners and counselors can explore the origin of clients' negative psychological states and recommend financial strategies (e.g., retirement plan projection and associated saving strategy), resources (e.g., an automated expense tracking program), and tools (e.g., a budget) that aid in calming any fear or worry that may exist.

Moreover, it is important to be cognizant of how recommendations may increase daily financial hassles. For example, changing bank accounts for a higher yield may make economic sense, yet may create unanticipated daily banking hassles that could have a negative effect on a client's FSE beliefs. In this case, the additional yield may not be worth the psychological cost. Moreover, financial planners and counselors can play a pivotal role in referring clients to mental health professionals when clients' negative psychological states hinder progress towards financial goals.

There are a number of benefits associated with FSE beliefs that will help clients move through the financial planning process. Individuals with higher FSE beliefs tend to establish aspirational goals and persevere towards them when confronted with difficulties (Bandura, 1991). By cultivating higher FSE beliefs, financial planners and counselors may help older pre-retirees resist temptation to spend, thereby promoting persistent progress towards targeted saving goals. Similarly, individuals with high FSE beliefs handle failures in a way that makes them less susceptible to stress, anxiety, and depression (Bandura, 1991). Higher FSE beliefs may help individuals better manage financial-related stress resulting from failures and difficulty that naturally occur throughout the financial planning and counseling process.

In summary, this study builds upon the existing literature by establishing a link between FSE beliefs and the saving behavior of older pre-retirees. FSE beliefs appear to be the weakest and most vulnerable to decline for older American adults when compared to self-efficacy beliefs in other life domains (McAvay et al., 1996). Consequently, older pre-retirees may benefit from further research focused on the factors that shape and support higher FSE beliefs.

References

Ando, A., & Modigliani, F. (1963). The 'life cycle' hypothesis of saving: Aggregate implications and tests. *The American Economic Review, 53*(1), 55-84.

Attanasio, O. P. (1993). A cohort analysis of saving behavior by US households (No. w4454). *National Bureau of Economic Research.*

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.

Benoit, K. (2011). *Linear regression models with logarithmic transformations.* Methodology Institute, London School of Economics. Retrieved from: http://www.kenbenoit.net/courses/ME104/logmodels2.pdf

Bryant, W. K., & Zick, C. D. (2006). *The economic organization of the household*, New York, NY: Cambridge University Press.

Campbell, J. Y. (2006). Household finance. *Journal of Finance, 61*, 1553-1604.

Chatterjee, S., Finke, M., & Harness, N. (2011). The impact of self-efficacy on wealth accumulation and portfolio choice. *Applied Economics Letters, 18*(7), 627-631.

Dietz, B. E., Carrozza, M., & Ritchey, P. N. (2003). Does financial self-efficacy explain gender differences in retirement saving strategies? *Journal of Women & Aging, 15*(4), 83-96.

DeVaney, S. A., Anong, S. T., Whirl, S. E. (2007). Household savings motives. *The Journal of Consumer Affairs, 41*(1), 174-186.

Dynan, K. E., Skinner, J., & Zeldes, S. P. (2002). The importance of bequests and life-cycle saving in capital accumulation: A new answer. *The American Economic Review, 92*(2), 274-278.

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.

Fisher, P. J., & Montalto, C. P. (2010). Effect of saving motives and horizon on saving behaviors. *Journal of Economic Psychology*, *31*(1), 92-105.

Fisher, P. J. (2010). Gender differences in personal saving behaviors. *Journal of Financial Counseling and Planning, 21*(1), 14-24.

Fisher, P. J., & Anong, S. T. (2012). Relationship of saving motives to saving habits. *Journal of Financial Planning and Counseling, 23*(1), 63-79.

Fitzsimmons, V. S., & Leach, L. J. (1994). Net Worth Change: Beginning and Expanding Life Cycle Stages. *Journal of Financial Counseling and Planning*, *5*(1). 1-19.

Fleck, C. (2009). *Is retirement even possible? Millions of people age 70+ are still on the job.* AARP Bulletin. Retrieved from: http://www.aarp.org/work/working-after-retirement/info-08-2009/no_rest_for_the_weary.html

Gallup. (2014). *Retirement remains Americans' top financial worry*. Retrieved from: http://www.gallup.com/poll/168626/retirement-remains-americans-top-financial-worry.aspx

Harness, N. J., Finke, M. S., & Chatterjee, S. (2009). The effects of the capital

    accumulation ratio on wealth. *Journal of Financial Counseling and Planning,*

    20(1), 44-57.

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 from http://

    hrsonline.isr.umich.edu/sitedocs/userg/HRSSAMP.pdf

Hershey, D. A., Jacobs-Lawson, J. M., McArdle, J. J., & Hamagami, F. (2007).

    Psychological foundations of financial planning for retirement. *Journal of Adult*

    Development, 14(1-2), 26-36.

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.

Hubbard, R. G. (1984). Do IRAs and Keoghs Increase Saving?. *National Tax Journal*,

    43-54.

Lee, J. M., Hannah, S. D. (2015). Savings goals and saving behavior from a perspective

    of Maslow's hierarchy of needs. *Journal of Financial Counseling and Planning,*

    26(2), 129-147.

Loibl, C., Kraybill, D. S., & DeMay, S. W. (2011). Accounting for the role of habit in

    regular saving. *Journal of Economic Psychology, 32*(4), 581-592.

Lown, J. M. (2011). Development and validation of a financial self-efficacy scale.

    Journal of Financial Counseling and Planning, *22*(2), 54-63.

Lubin, B. (1965). Adjective checklists for measurement of depression. *Archives of General Psychiatry*, *12*(1), 57-62.

Lusardi, A. (2000). *Precautionary saving and the accumulation of wealth*. Irving B. Harris Graduate School of Public Policy Studies, University of Chicago.

Mann, A. (2011). The effect of late-life debt use on retirement decisions. *Social Science Research, 40*, 1623-1637.

Mauldin, T. A., Henager, R., Bowen, C. F., & Cheang, M. (2016). Barriers and facilitators to saving behavior in low- to moderate-income households. *Journal of Financial Counseling and Planning, 27*(2), 231-251.

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.

Montford, W., & Goldsmith, R. E. (2016). How gender and financial self-efficacy influence investment risk taking. *International Journal of Consumer Studies, 40*(1), 101-106.

Munnell, A. H., Webb, A., & Golub-Sass, F. (2012). The National Retirement Risk Index: An Update. *Center for Retirement Research at Boston College*, 1 1-9.

Neukam, K. A., & Hershey, D. A. (2003). Financial inhibition, financial activation, and saving for retirement. *Financial Services Review, 12*(1), 19-37.

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

Qamar, M. A. J., Khemta, M. A. N., & Jamil, H. (2016). How Knowledge and Financial Self-Efficacy Moderate the Relationship between Money Attitudes and Personal

Financial Management Behavior. *European Online Journal of Natural and Social Sciences, 5*(2), 296-308.

Rose, J. (2013). *5 debts that can ruin your retirement.* Retrieved from: http://www.marketwatch.com/story/5-debts-that-can-ruin-your-retirement-2013-03-07

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

Shim, S., Serido, J., & Tang, C. (2012). The ant and the grasshopper revisited: The present psychological benefits of saving and future oriented financial behaviors. *Journal of Economic Psychology, 33*(1), 155-165.

U.S. Census Bureau. (2013). *Webinar on 2012 income, poverty and health insurance estimates from the current population survey*. Retrieved from: http://www.census.gov/newsroom/releases/pdf/20130917_ip_remarks.pdf

U.S. Department of Commerce. (2015). *News release: Personal income and outlays*. Retrieved from: http://www.bea.gov/newsreleases/national/pi/pinewsrelease.htm

Wakita, S., Fitzsimmons, V. S., & Liao, T. F. (2000). Wealth: Determinants of savings net worth and housing net worth of pre-retired households. *Journal of Family and Economic Issues, 21*(4), 387-418.

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

Figure 1. Social Cognitive Theory of Self-Regulation Conceptual Model, adapted from Bandura (1991).
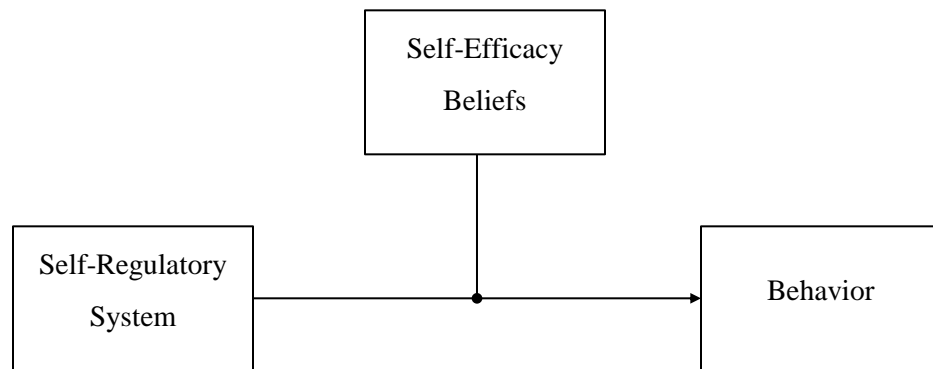
Table 1. Sample Characteristics of Categorical Variables (N = 847)

Variable	n	% (weighted)*
Census Region		
Northeast	147	18.29%
Midwest	233	28.82%
South	280	31.32%
West	187	21.58%
Gender		
Female	439	45.74%
Male	408	54.26%
Marital Status		
Married	531	65.69%
Single	316	34.31%
Race		
White	685	87.58%
Black	103	7.13%
Other	59	5.29%
Education		
Less than high school	65	5.28%
High school	238	26.40%
Some college	225	26.14%
College graduate	319	42.18%
Labor force status		
Working	818	96.67%
Not working	29	3.33%
Income		
$0 to $24,999	89	8.09%
$25,000 to $49,999	172	18.57%
$50,000 to $74,999	185	21.39%
$75,000 to $99,999	121	15.05%
$100,000 and above	280	36.91%
Net Worth		
$0 to $24,999	105	9.75%
$25,000 to $99,999	165	18.76%
$100,000 to $249,999	175	21.23%
$250,000 to $499,999	187	22.58%
$500,000 and above	215	27.69%
Homeownership & mortgage debt status		
Homeowner with mortgage	467	58.22%
Homeowner without a mortgage	263	30.13%

Non Homeowner	117	11.66%
Presence of other debt		
Yes	379	46.20%
No	468	53.80%
Presence of stocks/mutual funds		
Yes	210	26.57%
No	637	73.43%
Presence of IRA/KEOGH accounts		
Yes	407	52.65%
No	440	47.35%
Emergency Fund Ratio		
Three months or more	244	30.79%
Less than three months	603	69.21%
Currently smoke		
Yes	112	12.87%
No	735	87.13%
Retirement goal		
Yes	151	18.93%
No	696	81.07%
Bequest Motive		
0%	177	18.09%
1% to 49%	136	15.47%
50% to 99%	286	35.86%
100%	248	30.58%
Inheritance Motive		
Yes	383	47.40%
No	464	52.60%

* Weighted percentages are provided to account for the oversampling techniques utilized by the HRS.
The weighted sample represents 6,005,563 U.S. pre-retirees aged 50 to 70.

Table 2. Sample Characteristics of Scales and Continuous Variables (N = 847)*

Variable	Mean	se	Min	Max
Age	58.51	0.13	54.00	70.00
Income 2008	111,540.00	6,240.00	0.00	1,936,000.00
Log income 2008	11.21	0.05	0.00	14.48
Net worth 2008	508,334.00	34,750.00	0.00	16,582,000.00
Log net worth 2008	12.10	0.07	0.00	16.62
Net worth 2012	523,368.00	42,414.00	0.00	23,667,000.00
Log net worth 2012	12.10	0.07	0.00	16.98
Change in net worth (2008 to 2012)	15,034.00	29,547.00	-4,469,164.19	7,085,000.00
Log change in net worth (2008 to 2012)	0.00	0.04	-10.33	12.98
Financial self-efficacy beliefs**	7.25	0.08	0.00	10.00
Difficulty paying bills**	2.02	0.04	1.00	5.00
Self-report of health	3.68	0.04	1.00	5.00

* The Taylor series method (Wolter, 1985) was employed to incorporate the HRS's weighting and complex sampling design information. N of 847. The weighted sample represents 6,005,563 pre-retirees aged 50 to 70.

** Utilized 2008 and 2010 data from the Leave-Behind Psychosocial and Lifestyle Questionnaire.

Table 3. Regression Results Predicting Saving Behavior of Older U.S. Pre-Retirees (N = 847)

Variable	*B*	*SE B*
Intercept	4.65***	1.17
Financial self-efficacy beliefs	0.04*	0.02
Age	0.01	0.01
Female gender (Male)	0.06	0.09
Married (Single)	0.23*	0.09
Race (white)		
Black	-0.35†	0.20
Other	-0.08	0.23
Education (college graduate)		
Less than high school	-1.08**	0.35
High school	-0.08	0.08
Some college	-0.15†	0.09
Census region (Northeast)		
Midwest	-0.15	0.09
South	-0.21*	0.10
West	-0.23*	0.11
Working	-0.01	0.38
2008 log income	0.11*	0.05
2008 log net worth*	-0.51***	0.06
Homeownership and Mtg (Mtg holding homeowner)		
Homeowner without a mortgage	0.13	0.08
Non Homeowner	-0.47*	0.18
Other debt	-0.07	0.08
Stocks/Mutual funds	0.13	0.09
IRA/Keogh plan	0.26**	0.08
Emergency fund ratio	0.34***	0.07
Financial strain	-0.18**	0.06
Self-reported health	-0.05	0.05
Currently smoke	0.18	0.12
Bequest motive (100%)		
0%	-0.26	0.17
1% to 49%	-0.22†	0.11
50% to 99%	-0.14*	0.07
Inheritance motive	0.10	0.08
Retirement goal clarity	0.02	0.08
Adjusted R²		0.29

*†p<.10, * p<.05, **p<.01, ***p<.001*

Notes. Interpretation of parameter estimates of a log dependent variable: Percentage change in *Y* for every one-unit change in $X = (e^b - 1) * 100$. Interpretation of parameter estimates of a log dependent variable and a log independent variable: Percent change in Y for every p (percentage) change in $X = [(e^{a*b}) - 1] * 100$, where $a = \ln\left[\frac{100 + p}{100}\right]$ (Benoit, 2011; Harness et al., 2009).

* Although including original 2008 net worth introduced some possibility for imprecision, it is important to control for the prior period net worth level with a change in net worth dependent variable. Thus, 2008 net worth was included in accordance with prior literature using a similar dependent variable (Chatterjee et al., 2011; Harness et al., 2009). As a robustness check, we examined a parallel model that omitted 2008 net worth entirely to assess whether our results regarding FSE beliefs were consistent with, and without, the 2008 net worth variable. Without 2008 net worth, there was no change in statistical significance, the direction of the association remained the same, and there were no changes to model conclusions for FSE beliefs.