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

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This study investigates the relationship between financial self-efficacy (FSE) 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 is positively related to saving behavior after controlling for sociodemographic attributes, financial characteristics, and saving motives. Understanding how FSE contributes to saving behavior is critical as older workers attempt to bridge the retirement saving gap. Financial counselors and planners can help this population save by cultivating and supporting clients' FSE throughout the financial planning and counseling process.

Keywords: financial self-efficacy, older pre-retirees, saving behavior, social cognitive theory of self-regulation

Many Americans are expected to enter retirement with insufficient financial resources to maintain their pre-retirement standard of living (Munnell, Hou, & Webb, 2014). Workers tend to experience peak lifetime earnings in their early to mid 50s (Guvenen, Karahan, Ozkan, & Song, 2015), which suggests older pre-retirees (defined as workers age 50 and over) are in a financial position to close the retirement preparedness gap, yet they have limited time to do so. 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, 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 personal beliefs about one's capability to exert control and influence over their situation central to the successful execution of self-regulatory behavior, such as saving behavior (Bandura, 1991). These "self-efficacy beliefs" are unique to each behavioral domain (e.g., life, health, financial) and

are fundamental to personal agency—the intentional engagement in behavior. Bandura (1997) specifically defines self-efficacy as "…beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3).

Financial self-efficacy (FSE) and general self-efficacy have been linked to saving behavior; however, studies have focused on niche samples (e.g., younger workers, college students, and women) leaving the relevance of FSE for the older pre-retiree population unknown. Additionally, general self-efficacy measures have been utilized to predict saving behavior (Chatterjee, Finke, & Harness, 2011; Lown, Kim, Gutter, & Hunt, 2015); however, self-efficacy has been shown to vary across behavioral domains (McAvay, Seeman, & Rodin, 1996). Thus, it is important to tailor self-efficacy measurement according to the behavioral domain of interest (Bandura, 1997). Given this backdrop, the purpose of this study is to investigate the relationship between FSE and the saving behavior of older pre-retirees. With persistently low saving rates in the United States (3.5% as of July 2017; U.S. Department of Commerce, 2017) and a significant number of workers age 50 and over lacking confidence in their financial preparations for retirement (Williams & Harrison, 2016), understanding how FSE influences saving

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behavior may help financial planners and counselors more effectively work to guide clients in the years preceding retirement.

This study contributes to the literature in two ways. First, it utilizes a sample of older U.S. pre-retirees from the Health and Retirement Study—a group that is struggling to prepare for retirement and for whom the relationship between FSE and saving behavior is unknown. Second, it operationalizes self-efficacy with an FSE measure, thereby increasing our understanding of the utility of domain specific self-efficacy beliefs.

Literature Review

Self-Efficacy and Financial Self-Efficacy

According to Bandura (1991), self-efficacy represents "… people's beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives" (p. 257). Bandura (1997) further described self-efficacy as personal influence, which entails "regulating one's own motivation, thought processes, affective states, and actions, or it may involve changing environmental conditions, depending on what one seeks to manage" (p. 3). Moreover, Bandura (1997) specifically defines self-efficacy as "…beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Based upon Bandura's descriptions and definition of self-efficacy, control and influence over one's life, actions, and outcomes are core components of self-efficacy.

While Bandura's (1991, 1997) descriptions and definition of self-efficacy are broadly defined and general in nature, it is essential for any measurement of self-efficacy to be specific to the sphere of behavioral activity under investigation (Bandura, 1997). This notion of a domain-specific self-efficacy measure was the impetus for Lown (2011) FSE scale. Bandura (1997) stated that measures of self-efficacy should incorporate the specific challenges associated with a particular behavioral domain, with self-regulation being a significant challenge for many areas of functioning. The ability to self-regulate and exert control and influence over financial behavior is a fundamental challenge for older pre-retirees struggling to prepare for retirement. Thus, this study is grounded in (Bandura's (1991, 1997)) descriptions and definition of self-efficacy. FSE can therefore be described as the amount of influence and control individuals believe they have over their financial situation and over financial events

that affect their lives. Lown, 2011 FSE scale encompasses these influence and control aspects of self-efficacy as defined by Bandura (e.g., adhering to a spending plan and how challenging it is to make progress toward financial goals). Lown's FSE scale also suggests that financial prudence (e.g., whether or not credit is used when unexpected expenses arise), confidence, worry about asset depletion, and problem-solving ability are important indicators of FSE.

Financial Self-Efficacy and Saving Behavior

Several studies have found a positive relationship between general self-efficacy and saving behavior. Chatterjee et al. (2011) employed perceived mastery as a non-domain specific proxy for self-efficacy and found that perceived mastery beliefs were positively associated with wealth creation over a 10-year period for young American savers entering the wealth accumulation phase. Similarly, Lown et al. (2015) utilized Sherer et al.'s (1982) general self-efficacy scale to investigate saving behavior within a sample of 826 low- to moderate-income individuals age 66 and younger. Lown et al. (2015) found those with greater general self-efficacy were more likely to spend less than they earned in the preceding year. However, Mauldin, Henager, Bowen, and Cheang (2016) did not find a connection between general self-efficacy and the likelihood of saving regularly using a similar sample of 757 low- to moderate-income households age 24 to 66.

Domain-specific FSE has also been connected to saving behavior and other behaviors conducive to wealth accumulation. Shim, Serido, and Tang (2012) found that a greater sense of financial control (a component of FSE) 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—measured through a five-item construct developed by the authors—was positively correlated to a larger expected equity allocation for a hypothetical $75,000 inheritance. Another study utilizing 500 college students found FSE—measured by Lown (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, measured according to Lown's six-item FSE scale, was a significant predictor of holding investment and savings products in a sample of 1,542 Australian women age 30 to over 60 years (Farrell, Fry, & Risse, 2016). Additionally, Australian women with higher FSE 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—as constructed and augmented from the Pearlin global mastery scale—was unrelated to the use of retirement saving plans (Dietz, Carrozza, & Ritchey, 2003). Lown (2011) posited that this lack of effect was due to limitations in the self-efficacy measure used by Dietz et al. (2003).

While general and domain-specific *FSE* have been connected to saving-related behaviors and outcomes, more research is needed to determine if FSE serves a role in saving behavior for older populations struggling to prepare for retirement.

Other Factors Affecting Saving Behavior
Sociodemographic. Several sociodemographic 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 et al., 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 5-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 & Montalto, 2010; Fisher & Anong, 2012).

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. Home-

ownership 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 & Montalto, 2010; Fisher & Anong, 2012; 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 affects 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 affects 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 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). Thus, self-efficacy plays a significant role in shaping behavior by influencing how individuals interpret and respond to the self-regulatory process—consequently, self-efficacy is expected to play a key role in saving behavior.

Rha, Montalto, and Hanna (2006) found that saving behavior was significantly affected by mechanisms that help households negotiate the self-regulatory process, such as having saving rules. Moreover, Xiao et al. (2004) provided evidence that FSE (operationalized through six measures of financial confidence) is an important component of the behavior change process. Overall, the existing FSE and saving behavior literature and the social cognitive theory of self-regulation suggest that FSE is a psychological mechanism that assists in self-regulation and supports saving behavior. Thus, the research hypothesis for this study is that FSE will demonstrate a positive association with the saving behavior of older pre-retirees after controlling for sociodemographic 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 HRS is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan. The RAND HRS version served as the core data file (RAND HRS Data, 2016). The RAND HRS Data file is an easy-to-use longitudinal data set based on the HRS data. It was developed at RAND with funding from the National Institute on Aging and the Social Security Administration. Data from the Leave-Behind Psychosocial and Lifestyle Questionnaire (LB) were utilized to operationalize the FSE and bill pay difficulty measures (Health and Retirement Study, 2016). 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 and bill pay difficulty, 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 (Palmer, 2017). The final analytic sample included 847 observations, representing just over six million pre-retirees after accounting for the weighting information provided within the HRS.

Variables
Dependent Variable: Saving Behavior. Saving behavior was measured based upon a 4-year change in total net worth (i.e., total assets minus total liabilities) from 2008 to 2012, providing a comprehensive view 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 only asset levels 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 (2006), 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 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 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: $\ln(W_{12}) - \ln(W_{08}) = \ln(W_{12}/W_{08})$. Given this computation, negative net-worth households were excluded from the analysis.

Financial Self-Efficacy. Financial self-efficacy (FSE) was operationalized based upon a self-efficacy measure from the LB survey (Smith et al., 2013): "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 individual feels they have over their financial situation and is supported by Bandura's description and definition of self-efficacy Bandura (1991, 1997). Moreover, this measure is in alignment with previous research as a measure of FSE (McAvay, Seeman, & Rodin, 1996).

Sociodemographic Attributes. Sociodemographic 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 CDs) by monthly total household income. Emergency funds that met the 3-month recommended guideline were coded as a one, with those that did not meet the 3-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 1 to 5 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 of $100,000 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 Ordinary Least Squares (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.

TABLE 1. Sample Characteristics of Categorical Variables (*N* = 847)

Variable	*n*	% (weighted)[a]
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%

(Continued)

TABLE 1. Sample Characteristics of Categorical Variables (*N* = 847) *(Continued)*

Variable	*n*	% (weighted)[a]
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		
3 months or more	244	30.79%
Less than 3 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%

[a]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.

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 3 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 1 to 5 scale. Respondents also exhibited high FSE, with an average score of 7.25 on a 0 to 10 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 1 to 5 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 was significantly and positively associated with saving behavior—the change of net worth from 2008 to 2012. More specifically, a one-unit increase in FSE was associated with a 4.08% greater change in net worth from 2008 to 2012, holding all else constant *(b = .04)*. Additionally, results revealed sociodemographic

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 = .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. (2011) found a greater change in net worth for the West region as compared to the Northeast region of the United States.

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 = .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 = .26)*. Difficulty meeting monthly payments had a negative impact on changes in net worth *(b = –0.18)*. Those with an adequate emergency

TABLE 2. Sample Characteristics of Scales and Continuous Variables (*N* = 847)[a]

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[b]	7.25	0.08	0.00	10.00
Difficulty paying bills[b]	2.02	0.04	1.00	5.00
Self-report of health	3.68	0.04	1.00	5.00

[a]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.
[b]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[a]	−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 R^2		0.29

Note. 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 $[100 + p100]$ (Benoit, 2011; Harness et al., 2009).

[a]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 the 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.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

fund saw a greater change in net worth (b = .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 & Montalto, 2010; Fisher & Anong, 2012), 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 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, however, 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 (i.e., FSE) significantly affects the self-regulatory process and is influential in achieving desired behavioral outcomes, such as saving behavior (Bandura, 1991).

Results of this study provide support for our hypothesis that FSE is important to saving behavior. Higher FSE was associated with an increased change in net worth over the 2008–2012 time period. That is, a one-unit increase in FSE 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 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, however, that the larger effect size is likely due to the domain-specific measure (Bandura, 1997). 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 and behavior tends 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 on financial behavior. Overall, this study builds upon existing literature by establishing a connection between domain specific self-efficacy and the saving behavior of older pre-retirees.

Limitations were present within this study. First, the Great Recession occurred during the analysis period, which significantly impacted the 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 is associated with greater positive changes in net worth from 2008 to 2012. Moreover, FSE is a multi-faceted construct (Bandura, 1997; Lown, 2011); however, multi-item FSE measures are often not widely available in secondary data sets and single item scales have been used as a proxy for FSE within the literature (for example, see Lim, Heckman, Letkiewicz, & Montalto, 2014). Lastly, Bandura (1997) indicates that while self-efficacy beliefs are often durable and stable, these beliefs can shift over time and accurate self-efficacy measures do not need to be temporally stable. The notion that FSE can change and that FSE has been found to be vulnerable for older adults (McAvay et al., 1996) suggests a full longitudinal analysis is needed to capture how a change in FSE may affect saving behavior.

Implications and Conclusion

The primary implication from this study is that FSE is important to saving behavior 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 plays in shaping clients' financial behavior. Consequently, financial planners and counselors should assist older pre-retirees with assessing and cultivating FSE.

To assess FSE, Lown's (2011) FSE scale could be administered during the data collection phase of the financial planning or counseling process. Lown's FSE scale is particularly relevant for older pre-retirees as it incorporates concern about asset depletion in retirement. Once FSE is assessed, there are several strategies that financial planners and counselors can employ to shape FSE. These strategies center on clients' psychological health and recommendations that minimize daily financial nuisances (McAvay et al., 1996).

For example, McAvay et al. (1996) found that prior period depression levels—measured according to the Depression Adjective Checklist (DACL; Lubin, 1965)—predicted declines in FSE 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 fear or worry that may exist. Moreover, it is important to be cognizant of how recommendations may increase daily financial hassles (McAvay et al., 1996). For example, changing banks for a higher yield savings account may make economic sense, yet may create unanticipated daily banking hassles that could have a negative effect on a client's FSE. 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 toward financial goals.

There are a number of benefits associated with FSE that will help clients move through the financial planning process. Individuals with higher FSE tend to establish aspirational goals and persevere toward them when confronted with difficulties (Bandura, 1991). By cultivating higher FSE, financial planners and counselors may help older pre-retirees resist temptation to spend, thereby promoting persistent progress toward saving goals. Similarly, individuals with high FSE handle failures in a way that makes them

less susceptible to stress, anxiety, and depression (Bandura, 1991). Higher FSE may help individuals effectively 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 and the saving behavior of older pre-retirees. FSE appears to be the weakest and most vulnerable to decline for older American adults when compared to self-efficacy in other behavioral domains (McAvay et al., 1996). Consequently, older pre-retirees may benefit from further research focused on the factors that shape and support higher FSE.

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