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Psychosocial Attributes and Financial Self-Efficacy Among Older Adults

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This study investigates the relationship between psychosocial characteristics and financial self-efficacy (FSE) within a sample of 9,187 U.S. individuals over age 50 from the Health and Retirement Study. Psychosocial factors were operationalized through the PERMA well-being construct from positive psychology: positive emotions, engagement, relationships, meaning, and accomplishment. Results of a second-order confirmatory factory analysis (CFA) within a structural equation modeling framework revealed that the PERMA construct was positively associated with FSE for the full sample, the spouse/partner sample, and the sample with children. Results also indicated that all individual PERMA elements were directly and positively associated with FSE except for engagement, which revealed a direct negative relationship. Researchers have found older adults' FSE to be vulnerable to a sustained decline; this study builds upon the literature by providing insight into how the psychosocial environment might contribute to or mitigate this decline.

Keywords: financial self-efficacy; older adults; PERMA well-being; positive psychology; psychosocial

INTRODUCTION

Researchers have found financial self-efficacy (FSE) to be a significant predictor of financial behavior and outcomes such as holding savings and investment products, holding debt products, exhibiting help-seeking behavior, planning, saving, wealth accumulation, equity investment allocation, and prudent financial management practices (Asebedo & Seay, 2018; Asebedo et al., 2019b; Farrell, Fry, & Risse, 2016; Lim, Heckman, Letkiewicz, & Montalto, 2014; Lown, 2011; Montford & Goldsmith, 2016; Qamar, Khemta, & Jamil, 2016). To date, researchers have focused primarily on the connection between FSE and financial behavior as there is a robust empirical and theoretical relationship between them. However, little is known about the factors that contribute to FSE beyond socio-demographic and economic characteristics (e.g., education, income, age, and gender), although evidence of psychological factors related to FSE has emerged (Asebedo, Seay, Archuleta, & Brase et al., 2019a; Asebedo et al., 2019b; McAvay, Seeman, & Rodin, 1996). Bandura (1997) suggested self-efficacy beliefs are formed and influenced by an individual's psychosocial environment through a combination of psychological and social factors. Thus, there is an opportunity to

build upon the body of research by investigating how the psychosocial environment is related to FSE.

Extending FSE research to psychosocial factors is particularly important for older adults as they face unique financial challenges when preparing for retirement and executing their financial plan within retirement. Empirical evidence has suggested FSE is weak for this population (as compared to self-efficacy in other life domains) and vulnerable to a sustained decline over time (McAvay et al., 1996). These empirical findings and the theoretical connection between the psychosocial environment and FSE form the motivation for this study: to investigate the psychosocial factors associated with FSE within an older adult population. The psychosocial environment was operationalized through the PERMA well-being construct (positive emotions, engagement, relationships, meaning, and accomplishment) from positive psychology (Seligman, 2012), as it provided a theoretical framework to integrate the psychological and social context of an individual (Butler & Kern, 2016).

LITERATURE REVIEW

Financial Self-Efficacy

Self-efficacy is central to the extent to which individuals feel they have influence and control over their environment (Bandura, 1991, 1997). Bandura (1991) described self-efficacy as “...people’s beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives” (p. 257). Self-efficacy serves as a productive and protective psychological characteristic as those with stronger self-efficacy tend to set aspirational goals and exhibit more resiliency to the negative psychological consequences associated with challenges and failures. This resiliency promotes continuity and progression in behavioral pursuits as those with higher self-efficacy tend to persist past obstacles, exhibit fewer stress symptoms when facing stressor events, and are less susceptible to depression (Bandura, 1991, 1997). Self-efficacy can vary according to the behavioral sphere within an individual’s broader environmental context (Bandura, 1997). Therefore, it is possible for self-efficacy to be strong within a particular life domain (e.g., relationships) but weak in another (e.g., finances).

The importance of domain-specific self-efficacy research for older adults has been noted in the literature. McAvay et al. (1996) investigated self-efficacy perceptions across eight life domains: productivity, health, transportation, family relationships, relationships with friends, finances, safety, and living arrangements. In their longitudinal study, McAvay et al. found that fewer older adults reported high FSE in the first three interviews and that respondents were the most likely to experience a decline in FSE over time, as compared to self-efficacy in other life domains. Results also revealed that FSE had the lowest percentage of older adults reporting improvements than self-efficacy in other life domains. Moreover, where improvements did exist, the stability rate for those improvements was the lowest for FSE.

McAvay and colleagues (1996) provided evidence that FSE for older adults is low, susceptible to decline, and the sustainability of improvements fragile. These results are concerning as FSE has a robust empirical connection to a variety of prudent financial behaviors, which underscores the need for further FSE research for the older adult population who experience substantial financial transitions due to retirement and health-related events that may prove challenging and stressful. Bandura's (1997) extensive work on self-efficacy suggests the psychosocial environment plays a key role in shaping self-efficacy beliefs. Furthermore, existing FSE research has uncovered sociodemographic, economic, and psychological factors related to FSE that may contribute to FSE levels for older adults. The following sections review existing findings and theory that connect socio-demographic, economic, psychological, and social factors to FSE.

Socio-demographic and Economic Factors Associated with FSE

Researchers have found gender and marital status to predict variation in FSE. In a sample of older pre-retirees, Asebedo et al. (2019a) found a 44% increase in the odds of reporting higher FSE for married women compared to married men; however, single men and single women weren't any more likely to report different FSE scores than married men. McAvay et al. (1996) also found that gender matters to FSE for older adults age 62 and over, with women more likely to experience a decline in FSE than men. Lown (2011) showed that education status had a positive correlation with FSE, with mean FSE scores increasing with education level. However, in a multivariate logistic regression model, Asebedo et al. (2019a) found a negative relationship between education and FSE: those with a high school education or less were more likely to report higher FSE scores than college graduates within an older pre-retiree population. Lown also reported a positive correlation of FSE with age; however, in an older pre-retiree sample, age demonstrated a negative relationship with FSE, all else held constant (Asebedo et al., 2019a). When it comes to economic characteristics, McAvay et al. found that income mattered to FSE, with higher income (more than \$11,000) associated with improvements in FSE. However, income, net worth, and debt were not statistically significant in a restricted older working adult sample, although those with higher levels of perceived financial strain were significantly less likely to report higher FSE (Asebedo et al., 2019a).

Psychosocial Factors Related to FSE

Bandura's (1997) self-efficacy research suggests that psychological and social factors combine within the psychosocial environment to influence self-efficacy through four sources of information: physiological and affective states (e.g., stress, energy, and emotions), vicarious experiences (e.g., learning from the experience of others), verbal persuasion (e.g., support and encouragement from others), and enactive mastery experiences (e.g., past personal success). Research connecting these psychosocial factors specifically to FSE has been limited, but two studies have shown significant results for psychological characteristics. McAvay et al. (1996) found that greater depression and perceived daily financial hassles were associated with FSE decline in older adults. The overall results from McAvay et al. (1996) align with Bandura; McAvay et al. noted that psychosocial characteristics emerged as the most consistent predictors of self-efficacy decline across life

domains overall. Asebedo et al. (2019a) found greater positive affect, reduced negative affect, stronger general mastery beliefs, and a stronger orientation towards goal setting and tasks to predict higher FSE levels in older pre-retirees. Asebedo et al. (2019b) also observed an indirect connection between the Big Five personality traits (openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism) and FSE through positive and negative affect. The remaining FSE literature has focused more heavily on the behavioral consequences of FSE across different samples.

WELL-BEING THEORY

Well-being theory (Seligman, 2012) provided the theoretical framework to test the relationship between psychosocial factors and FSE within this study for two reasons: First, the elements of well-being align with the psychosocial constructs most influential to self-efficacy (Bandura, 1997). Second, it provided a mechanism to investigate how psychosocial elements combine as an aggregate construct to predict FSE. According to well-being theory, well-being is a multi-item construct with five indicators: positive emotions, engagement, relationships, meaning, and accomplishment—referred to as “PERMA.” Positive emotions encompass past, present, and future positive affective states such as satisfaction, happiness, and optimism. Engagement refers to the psychological immersion into a task or activity that is pleasant while appropriately challenging to the individual (e.g., not too difficult nor too easy). Engagement within PERMA is synonymous with the concept of “flow,” originally introduced by Csikszentmihalyi (1997). When experiencing engagement, people tend to become so absorbed in the task or activity that they lose their sense of time and self-consciousness (Seligman, 2012). Thus, positive emotions generated from engagement are often retroactive and produced when reflecting upon past experiences (Seligman, 2012). The relationship element posits that the presence of close and supportive friends and family within the social environment contribute to a full and flourishing life. Meaning is the feeling of contributing to something greater than oneself and possessing purpose and direction in life. Last, accomplishment refers to a sense of success, achievement, mastery, and winning resulting from a variety of pursuits such as work or a hobby. According to well-being theory, the combined PERMA elements measure an individual’s overall well-being level and extent to which they are flourishing in life. Butler and Kern (2016) indicated that the PERMA framework is a useful tool to assess well-being across psychosocial domains.

Hypotheses

Informed by well-being theory (Seligman, 2012) and Bandura’s (1997) research on the psychosocial factors that shape self-efficacy, six hypotheses were investigated in this study:

H1: The PERMA construct is associated with higher FSE.

H2: Positive emotion is associated with higher FSE.

H3: Engagement is associated with higher FSE.

H4: Relationship support is associated with higher FSE.

H5: Meaning is associated with higher FSE.

H6: Accomplishment is associated with higher FSE.

METHOD

Data and Sample

Data were utilized from the Health and Retirement Study (HRS) as it provided the information about the psychosocial and financial characteristics of older adults necessary for this study. 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 Longitudinal File 2014 V2 (2018) was combined with data from the 2012 and 2014 waves of the HRS Leave-Behind (LB) Psychosocial and Lifestyle Questionnaire. The LB survey collects psychosocial and lifestyle information from half the HRS sample on a rotating basis at each collection cycle. Thus, 2012 and 2014 LB waves were incorporated to include information about PERMA well-being and FSE from the full HRS sample. The RAND HRS Data file is a user-friendly longitudinal data set based on the HRS data and was developed at RAND with funding from the National Institute on Aging and the Social Security Administration. All covariates (e.g., age, gender, wealth, income, etc.) were obtained from the RAND HRS Longitudinal File 2014 V2 (2018). The final analytic sample was restricted to the financial respondent of the household and included 9,187 observations. To incorporate the social context for married/partnered couples and for respondents with living children, two additional analyses were conducted that reduced this sample to (a) married and partnered couples only (n=8,394), and (b) any respondent with living children (n=4,353).

Variable Measurement

Financial Self-Efficacy. The outcome of interest for the analysis was financial self-efficacy (FSE), a multi-item construct with financial control, influence, and emotional resiliency central to its measurement (Bandura, 1997). The HRS does not include a multi-item FSE measure. However, three separate variables were available in the LB survey that estimated financial control, financial emotional resiliency, and perceived financial difficulties that were used as indicators to estimate FSE as a latent variable. Respondents rated the amount of perceived control over their financial situation on an 11-point scale (ranging from 0 = *no control at all* to 10 = *very much control* in response to this question: "How would you rate the amount of control you have over your financial situation these days?" Higher scores indicated higher levels of perceived financial control. Emotional financial resiliency was estimated based upon this question: "Please think about your life and situation right now. How satisfied are you with your present financial situation?" Responses ranged from 1 = *completely satisfied* to 5 = *not at all satisfied*. Responses were reverse coded so that higher scores indicated greater financial satisfaction. Perceived financial difficulties were measured based upon this question: "How difficult is it for (you/your family) to meet monthly payments on (your/your family's) bills? Responses ranged from 1 (*not at all difficult*) to 5

(*completely difficult*), with responses reverse coded so that higher scores indicated greater perceived ease in meeting monthly financial obligations.

PERMA Well-Being. All PERMA variables were obtained from the LB survey. Positive emotions (PERMA) were operationalized as a latent variable with indicators based upon a series of positive emotions from the *Positive and Negative Affect Schedule—Expanded Form* (PANAS-X). Respondents reported on a five-point Likert-type scale the extent to which they felt these 12 positive emotions within the past 30 days: determined, enthusiastic, active, attentive, excited, inspired, hopeful, alert, happy, content, proud, and interested. The positive affect construct demonstrated excellent internal reliability with a Cronbach's alpha (α) score of .93 in all samples.

Engagement (PERMA) is a difficult concept to measure with a valid proxy using HRS data (Asebedo & Seay, 2014), therefore two measures were tested. The primary measure utilized was cognitive enjoyment, operationalized as a latent variable with three indicators. On a scale of 1 (*not at all like me*) to 5 (*very much like me*), respondents reported the extent to which they identified with these three statements: (a) I like to have the responsibility of handling a situation that requires a lot of thinking; (b) I really enjoy a task that involves coming up with new solutions to problems; and (c) The notion of thinking abstractly is appealing to me. Higher scores indicated greater cognitive enjoyment. This cognitive enjoyment measure demonstrated good internal reliability with a Cronbach's alpha (α) of .82 in all samples; however, its validity as a measure of engagement within the PERMA framework was questionable. Therefore, an alternative engagement variable was tested as a robustness check within the full sample.

The Positive Psychology Center (2019) suggested that certain activities — such as sports, gardening, writing, reading, etc. — produce engagement. The LB survey asked respondents about the frequency of participation in a variety of activities. Of the 20 different activities, 10 were selected as activities that might reasonably lead to engagement for those that participated frequently in them. Respondents were asked to report how often, ranging from 1 (*daily*) to 7 (*never/not relevant*), they do each of these 10 activities: writing (e.g., letters, stories, or journal entries); read books, magazines, or newspapers; word games such as crossword puzzles or Scrabble; play cards or games such as chess; bake or cook something special; make clothes, knit, embroider, etc.; work on a hobby or project; home or car maintenance or gardening; play sports or exercise; and walk for 20 minutes or more. Responses were reverse coded so that higher scores indicated greater frequency participating in each of these 10 activities. These 10 activities were re-specified into three parcels according to recommended methodology (Little, 2013) that served as indicators of engagement as a latent construct. This alternative engagement proxy demonstrated questionable internal reliability with a Cronbach's alpha (α) of .66 in the full sample. The activities measure was also problematic because the participation in activities can vary significantly across individuals and participation may not necessarily produce the “flow” effect. Despite these drawbacks, the alternative engagement measure aligned well with activities that tend to produce engagement according to the Positive Psychology Center. The cognitive enjoyment measure was used in the full sample analysis, with the engagement

activities measure incorporated in a subsequent analysis for a robustness check within the full sample.

Supportive social relationships (PERMA) were operationalized through two separate measures that assessed perceptions of social support and relationship quality from (a) family, and (b) friends within the full, spouse/partner, and children samples. The family and friend measures were estimated as two separate latent constructs, each with three indicators. Respondents reported their perception of social support and relationship quality through these three indicators, measured on a scale of 1 (*a lot*) to 4 (*not at all*): (a) How much do they really understand the way you feel about things; (b) How much can you rely on them if you have a serious problem; and (c) How much can you open up to them if you need to talk about your worries? All indicators were reverse coded so that higher scores indicated greater relationship support and quality. Both the family and friend measures demonstrated good internal reliability with Cronbach's alpha (α) scores of .86 and .84 in all samples, respectively.

The family relationship measure did not encompass a spouse/partner or children. To examine the social context for married/partnered couples and for respondents with children, two separate additional follow-up analyses were conducted that reduced the sample to (a) married and partnered couples only, and (b) those with living children. The supportive spouse/partner and children relationship measures were estimated within these sub-samples as latent constructs based upon the same indicators as for the *family* and *friend* constructs outlined above. The three indicators were reframed in the LB survey to assess perceptions of social support and relationship quality specifically from a spouse/partner, and separately for children. All indicators were reverse coded so that higher scores indicated greater relationship support and quality. The spouse/partner measure demonstrated good internal reliability with a Cronbach's alpha (α) score of .80 in the spouse/partner sample. The children measure demonstrated good internal reliability with a Cronbach's alpha (α) score of .83 in the children sample.

Meaning (PERMA) was operationalized as a latent variable through a purpose in life measure from the Ryff (1989) Measures of Psychological Well-being in the LB survey. Respondents were asked seven questions, with responses ranging from 1 (*strongly disagree*) to 6 (*strongly agree*): (a) I enjoy making plans for the future and working to make them a reality; (b) My daily activities often seem trivial and unimportant to me;* (c) I am an active person in carrying out the plans I set for myself; (d) I don't have a good sense of what it is I'm trying to accomplish in life;* (e) I sometimes feel as if I've done all there is to do in life;* (f) I live life one day at a time and don't really think about the future;* and (h) I have a sense of direction and purpose in my life. Questions 2, 4, 5, and 6 were reverse coded with higher scores reflecting greater purpose in life. The purpose in life measure demonstrated acceptable internal reliability, with a Cronbach's alpha (α) score of .78 in the full and spouse/partner samples, and .77 in the children sample.

Accomplishment (PERMA) was operationalized as a latent variable based on an augmentation of Pearlin and Schooler's (1978) Mastery scale. Respondents indicated the extent to which they agreed with five questions, with responses ranging from 1 (*strongly*

disagree) to 6 (*strongly agree*): (a) I can do just about anything I really set my mind to; (b) When I really want to do something, I usually find a way to succeed at it; (c) Whether or not I am able to get what I want is in my own hands; (d) What happens to me in the future mostly depends on me; and (e) I can do the things that I want to do. Mastery demonstrated excellent internal reliability with a Cronbach's alpha (α) score of .91 in the full and children samples, and .92 in the spouse/partner sample.

Covariates. Socio-demographic and economic covariates were informed based upon existing literature and included age, working status, education level, coupled household status, gender, race, perceived health status, total income and net worth. Age was included as a continuous variable. Those who reported employment activity from full or part-time work were coded as 1; all other respondents were coded as 0. Married or partnered households were coded as 1; all other households were coded as 0. A dichotomous variable was included to control for gender, with females coded as 1 and males as 0. Race was controlled for by coding Whites as 1 and all other respondents as 0. Two categories were included for education: those with some undergraduate college education or higher were coded as 1, while those with a high school education or less were coded as 0. Perceived health status was controlled for given an older adult population and was measured on a Likert-type scale with potential values ranging from 1 (*poor*) to 5 (*excellent*). The economic covariates included in the model were the natural logarithm (Ln) of total household income and the inverse hyperbolic sine (IHS) of total net worth (total assets minus total liabilities). The IHS function was chosen to transform total net worth because it is defined for positive and non-positive values.

Data Analysis

A Structural Equation Model (SEM) with a first- and second-order Confirmatory Factor Analysis (CFA) was employed through *MPlus* version 8.2. A maximum likelihood estimator (MLR) with robust standard errors using a numerical integration algorithm was utilized for model estimation (Muthén & Muthén, 2017). Control variables were modeled with the full partial method (Little, 2013). The indicators for the positive emotion, engagement, meaning, and accomplishment PERMA elements were re-specified into parcels according to recommended methodology with the fixed factor method for scale setting (Little, 2013). Last, the HRS's weighting and complex sampling design information was incorporated in accordance with recommended methodology (Nielsen & Seay, 2014). List-wise deletion was utilized for the covariates. Of the covariates included in the model, missing data were present (but were minimal) and list-wise deleted for children, race, education, and perceived health. Missing data were not present for the wealth and income variables due to the imputation process conducted by the RAND Corporation. However, missing data was permitted for FSE and PERMA well-being. All available data were used to estimate each model using full information maximum likelihood (FIML). The covariance coverage ranged from .83 to 1.0 within the full sample, .85 to 1.0 within the spouse/partner sample, and .83 to 1.0 within the children sample.

RESULTS

Descriptive Statistics

The full and children samples were slightly skewed towards women (53%; see Table 1); however, the majority of the spouse/partner sample consisted of men (62%). The full sample was almost evenly allocated between coupled and single households; the sample with children included a slightly larger percentage of coupled households (55%). The majority of respondents in the full and spouse/partner samples had living children (87% and 94%, respectively). The majority of respondents in each sample were White (84%-89%), educated at the college level or beyond (54%-63%), and were not working full or part-time (62%-69%). The average age across samples ranged from 66 to 68 (range: 54-101). Subjective health was consistent across samples with averages ranging from 3.21 to 3.36 (range: 1-5). The spouse/partner sample demonstrated slightly higher income and total net worth than the full and children samples. FSE indicators were fairly consistent across samples (see Table 2), with the spouse/partner sample exhibiting slightly higher average financial control, financial satisfaction, and perceived bill pay ease. The spouse/partner sample demonstrated slightly higher average positive affect, cognitive enjoyment, purpose in life, and mastery scores than the full and children samples. However, average scores for perceived family and friend support were the lowest for the spouse/partner sample. Spouse/partner social support and relationship quality averaged 3.52 (range 1-4). Relationship quality and social support from children averaged 3.21 (range 1-4).

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Table 1.

Sample Characteristics of Categorical Variables

Variable	n	% (weighted)*	n	% (weighted)*	n	% (weighted)*
	Full Sample (N=9,187)		Spouse/Partner Sub-Sample (N=4,353)		Children Sub-Sample (N=8,394)	
Gender						
Female	5377	52.80%	1760	37.63%	4929	52.96%
Male	3810	47.20%	2593	62.37%	3465	47.04%
Household status						
Couple	4353	50.45%	4353	100.00%	4178	54.63%
Single	4834	49.55%	-	-	4216	45.37%
Living children						
Yes	8394	86.89%	4178	94.41%	8394	100.00%
No	793	13.11%	175	5.59%	-	-
Race						
White	6830	84.71%	3499	88.84%	6224	84.33%
Other	2357	15.29%	854	11.16%	2170	15.67%
Education						
Less than college	4613	44.09%	1892	37.01%	4321	45.72%
College or higher	4574	55.91%	2461	62.99%	4073	54.28%
Working status						
Working	2246	31.03%	1307	37.75%	2010	30.75%
Not working	6941	68.97%	3046	62.25%	6384	69.25%

Note: Weighted percentages are provided to account for the oversampling techniques utilized by the HRS. The weighted sample in the full sample represents 46,816,885 Americans over age 50; $N = 9,187$. The weighted sample in the married/partnered sub-sample represents 23,621,077 Americans over age 50; $N = 4,353$. The weighted sample in the children sub-sample represents 41,367,394 Americans over age 50; $N = 8,394$.

Table 2.

Sample Characteristics of Continuous Variables and Factor Indicators

Variable	Mean	se	Min	Max	α	Mean	se	Min	Max	α	Mean	se	Min	Max	α
	Full Sample (N=9,187)					Spouse/Partner Sub-Sample (N=4,353)					Children Sub-Sample (N=8,394)				
Age	67.98	0.28	54.00	101.00	-	66.26	0.26	54.00	96.00	-	68.34	0.29	54.00	101.00	-
Subjective health	3.21	0.02	1.00	5.00	-	3.36	0.02	1.00	5.00	-	3.20	0.02	1.00	5.00	-
Ln income	10.59	0.03	0.00	15.32	-	11.15	0.03	0.00	15.32	-	10.62	0.03	0.00	15.32	-
IHS net worth	10.83	0.11	-14.75	17.84	-	12.19	0.10	-14.14	17.71	-	10.93	0.12	-14.75	17.84	-
FSE indicators															
Financial control	8.33	0.04	1.00	11.00	-	8.45	0.04	1.00	11.00	-	8.37	0.04	1.00	11.00	-
Financial satisfaction	3.29	0.02	1.00	5.00	-	3.45	0.02	1.00	5.00	-	3.30	0.02	1.00	5.00	-
Perceived bill pay ease	4.00	0.02	1.00	5.00	-	4.13	0.02	1.00	5.00	-	3.99	0.02	1.00	5.00	-
PERMA elements^a															
P: Positive affect	3.54	0.01	1.00	5.00	0.93	3.64	0.01	1.00	5.00	0.93	3.55	0.01	1.00	5.00	0.93
E: Cog. enjoyment	3.46	0.01	1.00	5.00	0.82	3.58	0.02	1.00	5.00	0.82	3.45	0.02	1.00	5.00	0.82
E: Activities	3.62	0.02	1.00	7.00	0.66	-	-	-	-	-	-	-	-	-	-
R: Family support	2.86	0.01	1.00	4.00	0.86	2.78	0.02	1.00	4.00	0.86	2.85	0.01	1.00	4.00	0.86
R: Friend support	3.06	0.01	1.00	4.00	0.84	2.97	0.01	1.00	4.00	0.84	3.04	0.01	1.00	4.00	0.84
R: Spouse/partner support	-	-	-	-	-	3.52	0.01	1.00	4.00	0.80	-	-	-	-	-
R: Children support	-	-	-	-	-	-	-	-	-	-	3.21	0.01	1.00	4.00	0.83
M: Purpose in life	4.57	0.01	1.00	6.00	0.78	4.72	0.02	1.00	6.00	0.78	4.58	0.02	1.00	6.00	0.77
A: Mastery	4.72	0.02	1.00	6.00	0.91	4.81	0.02	1.00	6.00	0.92	4.73	0.02	1.00	6.00	0.91

Notes: The Taylor Series method was employed to incorporate the HRS' complex sampling design information (Muthén & Muthén, 2017). The weighted sample in the full sample represents 46,816,885 Americans over age 50; $N = 9,187$. The weighted sample in the married/partnered sub-sample represents 23,621,077 Americans over age 50; $N = 4,353$. The weighted sample in the children sub-sample represents 41,367,394 Americans over age 50; $N = 8,394$.

^a PERMA elements are shown as manifest variables here with the indicator scores averaged into scales to estimate the constructs for convenience; the PERMA elements were measured as latent variables in all models.

Full Sample

Measurement model and model fit. Results of the CFA measurement model for the full sample revealed positive and significant factor loadings above .30 across all first- and second-order indicators (see Figures 1 and 2; Brown, 2015). Model fit indices indicated an acceptable to very good fit of the data (Little, 2013), and are provided in Figures 1 and 2.

Structural model results. Structural model results are provided in Figures 1 and 2, and Table 3. Overall, each model explained 47% of the variability in FSE, with 26% of that variability attributed to the PERMA variables only. Results from the structural model with the second-order CFA provided evidence supporting hypothesis one: The PERMA construct was associated with higher FSE in the full sample ($\beta = .37$). The structural model results for the first-order CFA provided support for hypotheses two (**p**ositive emotions), four (**r**elationships), five (**m**eaning), and six (**a**ccomplishment). Positive affect ($\beta = .17$), family social support and relationship quality ($\beta = .06$), purpose in life ($\beta = .13$), and mastery ($\beta = .18$) were all significantly and positively associated with higher FSE. Perceived social support and relationship quality from friends had no relationship with FSE in the full sample. Results revealed a significant negative ($\beta = -.09$) relationship for cognitive enjoyment with FSE, providing partial support for hypotheses three (**e**ngagement) with the presence of a significant effect. Results did not support the expected (H3) *positive* relationship of cognitive enjoyment with FSE. Covariate effects are provided in Table 3.

Alternative model for engagement. The alternative engagement specification also revealed a negative relationship with FSE. There were minor differences regarding model fit and factor loadings between models. Given the minor differences between models and robustness of the engagement construct effects across models, the original cognitive enjoyment engagement measure was retained for the sub-sample analyses.

Table 3.

Full Sample: Structural Model for Direct Effects between PERMA and FSE with First- and Second-Order CFA

Parameter	Unstandardized		Standardized		Unstandardized		Standardized	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
	First-Order CFA				Second-Order CFA			
PERMA								
PERMA	-	-	-	-	0.50***	0.02	0.37***	0.02
PERMA elements								
P: Positive affect	0.22***	0.03	0.17***	0.03	-	-	-	-
E: Cognitive engagement	-0.11***	0.02	-0.09***	0.02	-	-	-	-
R: Family	0.07***	0.02	0.06***	0.02	-	-	-	-
R: Friend	0.002	0.02	0.001	0.02	-	-	-	-
M: Purpose in life	0.16***	0.04	0.13***	0.03	-	-	-	-
A: Mastery	0.24***	0.02	0.18***	0.02	-	-	-	-
Controls								
Age	0.04***	0.00	0.26***	0.01	0.04***	0.00	0.28***	0.01
Work	-0.17***	0.04	-0.12***	0.03	-0.13**	0.04	-0.09**	0.03
Education	-0.07*	0.04	-0.05*	0.03	-0.09**	0.04	-0.07**	0.03
Couple	0.10**	0.04	0.08**	0.03	0.15***	0.04	0.11***	0.03
Children	-0.23***	0.06	-0.17***	0.05	-0.18**	0.06	-0.13**	0.05
Female	-0.12**	0.04	-0.09**	0.03	-0.04	0.04	-0.03	0.03
Race-White	0.11*	0.04	0.08*	0.03	-0.07	0.04	-0.05	0.03
Perceived health	0.17***	0.02	0.13***	0.02	0.37***	0.02	0.28***	0.01
Ln income	0.14***	0.02	0.15***	0.02	0.16***	0.02	0.17***	0.02
IHS net worth	0.05***	0.00	0.24***	0.02	0.06***	0.00	0.27***	0.02
R ² Full Model	0.47				0.47			
R ² PERMA Only	0.26				0.26			

Note: All results were computed with Mplus. Standardized results are provided in STDYX standardization for continuous independent variables and STDY standardization for binary independent variables. All control variables were modeled based on the full-partial method (Little 2013).

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

Psychosocial Attributes and Financial Self-Efficacy Among Older Adults

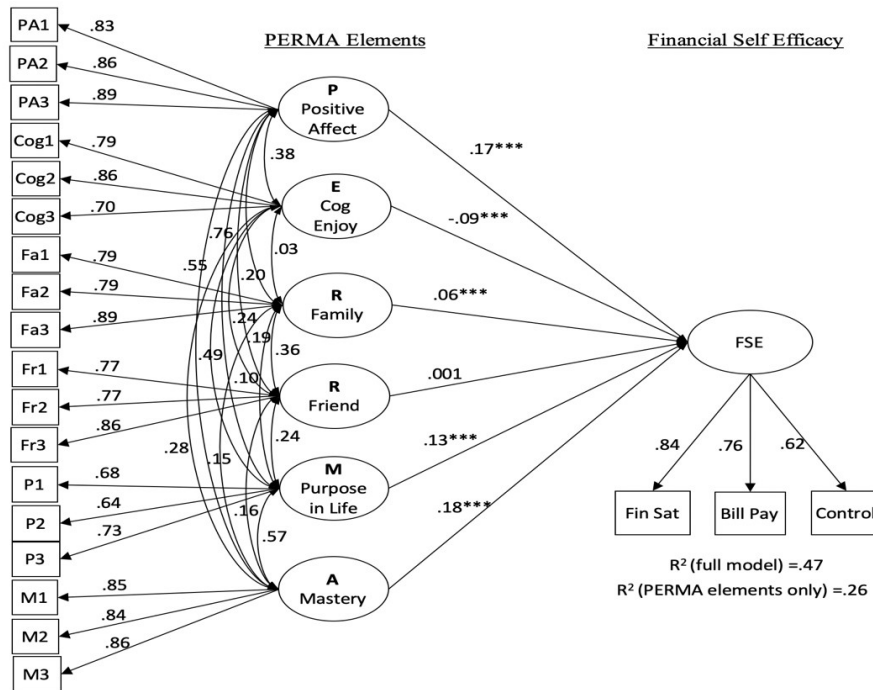


Figure 1. Full Sample: Structural Model with First-Order CFA

Note: Model fit indices for the first-order CFA model are: $\chi^2(308) = 3402.58$, $p < .001$; RMSEA = .033, 90% CI [.032, .034], CFI = .95, TLI = .93. $N=9,187$. The model was estimated with the control variables according to the full partial method (Little 2013). All unstandardized and standardized pattern coefficients are significant at $p < .001$. * $p < .05$. ** $p < .01$. *** $p < .001$.

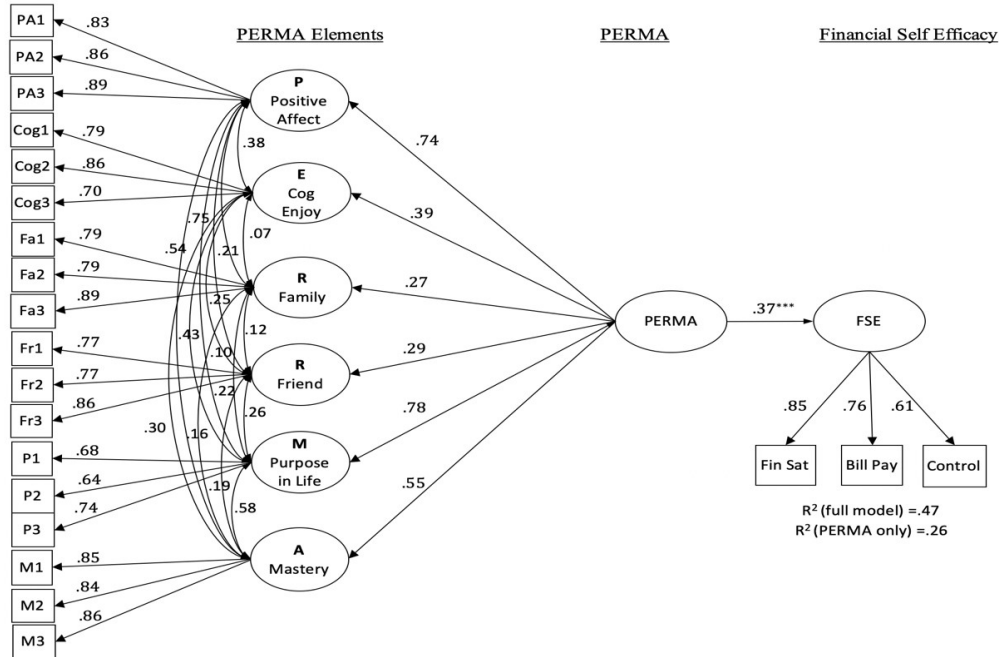


Figure 2. Full Sample: Structural Model with Second-Order CFA

Note: Model fit indices for the second-order CFA model are: $\chi^2(322) = 3848.45, p < .001$; RMSEA = .035, 90% CI [.034, .036], CFI = .94, TLI = .92. $N=9,187$. The model was estimated with control variables according to the full partial method (Little 2013). All unstandardized and standardized pattern coefficients are significant at $p < .001$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Spouse/Partner Sample

Measurement model and model fit. Results of the CFA measurement model revealed positive and significant factor loadings across all first- and second-order indicators (see Figures 3 and 4). A measure for perceived spouse/partner social support and relationship quality was added to the models for the spouse/partner sample with strong standardized factor loadings (0.67 to 0.86). In the second-order CFA model, the standardized factor loadings for the latent PERMA construct were at or above the .30 level for all elements except for friend relationships (0.28). The model fit statistics suggested an acceptable to good/close model fit (Little, 2013), and are provided in Figures 3 and 4.

Structural Model Results. Structural model results are provided in Figures 3 and 4, and Table 4. Overall, each model explained a substantial proportion of variance in FSE, with an r-squared of 0.48 (PERMA only: 0.31) and 0.49 (PERMA only: 0.32). Consistent with the full sample results, results from the spouse/partner sample supported hypothesis one: The PERMA construct was associated with higher FSE ($\beta = .43$). All other results for the individual PERMA elements were consistent with results in the full sample except for supportive family relationships. In the spouse/partner sample, supportive family relationships were not statistically significant when accounting for supportive spouse/partner relationships. In the spouse/partner sample, positive affect (H2; $\beta = .22$), spouse/partner social support and relationship quality (H4: $\beta = .06$), purpose in life (H5: $\beta = .12$), and mastery (H6: $\beta = .20$) were all significantly and positively associated with higher FSE. Consistent with the full sample results, cognitive enjoyment revealed a significant negative ($\beta = -.07$) relationship with FSE (partial support for H3).

Table 4.

Spouse/Partner Sample: Structural Model for Direct Effects between PERMA and FSE with First- and Second-Order CFA

Parameter	Unstandardized		Standardized		Unstandardized		Standardized	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
	First-Order CFA				Second-Order CFA			
<u>PERMA</u>								
PERMA	-	-	-	-	0.60***	0.03	0.43***	0.02
<u>PERMA elements</u>								
P: Positive affect	0.28***	0.04	0.22***	0.03	-	-	-	-
E: Cognitive engagement	-0.09**	0.03	-0.07**	0.02	-	-	-	-
R: Spouse/partner	0.09*	0.03	0.06*	0.03	-	-	-	-
R: Family	0.02	0.03	0.02	0.02	-	-	-	-
R: Friend	-0.02	0.03	-0.02	0.02	-	-	-	-
M: Purpose in life	0.14**	0.04	0.12**	0.04	-	-	-	-
A: Mastery	0.26***	0.04	0.20***	0.03	-	-	-	-
<u>Covariates (controls)</u>								
Age	0.03***	0.00	0.21***	0.02	0.04***	0.00	0.24***	0.02
Work	-0.12*	0.06	-0.09*	0.05	-0.07	0.07	-0.05	0.05
Education	0.03	0.05	0.02	0.04	0.05	0.06	0.04	0.04
Children	-0.22*	0.10	-0.16*	0.07	-0.17	0.09	-0.13	0.07
Female	0.00	0.06	0.00	0.04	0.03	0.06	0.02	0.04
Race-White	0.13	0.07	0.10	0.05	-0.12	0.08	-0.01	0.05
Perceived health	0.16***	0.03	0.11***	0.02	0.39***	0.03	0.28***	0.02
Ln income	0.16***	0.04	0.14***	0.03	0.18***	0.04	0.16***	0.04
IHS net worth	0.06***	0.01	0.25***	0.02	0.08***	0.01	0.28***	0.02
R ² Full Model	0.48				0.49			
R ² PERMA Only	0.31				0.32			

Note: All results were computed with *Mplus*. Standardized results are provided in STDYX standardization for continuous independent variables and STDY standardization for binary independent variables. All control variables were modeled based on the full-partial method (Little 2013). * $p < .05$. ** $p < .01$. *** $p < .001$.

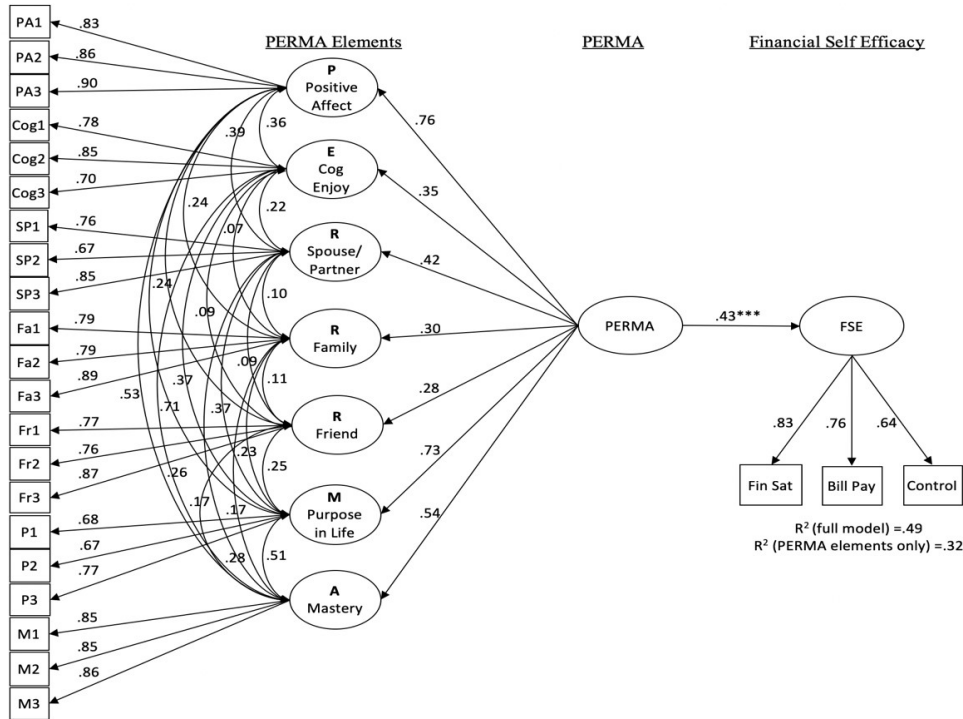


Figure 4. Spouse/Partner Sample: Structural Model with Second-Order CFA

Note: Model fit indices for the second-order CFA model are: $\chi^2(388) = 2463.84$, $p < .001$; RMSEA = .035, 90% CI [.034, .036], CFI = .93, TLI = .92. $N=4,353$. The model was estimated with control variables according to the full partial method (Little 2013). All unstandardized and standardized pattern coefficients are significant at $p < .001$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Children Sample

Measurement model and model fit. Results of the CFA measurement model revealed positive and significant factor loadings across all first- and second-order indicators (see Figures 5 and 6). A measure for perceived relationship quality and social support from children was added to the models for the sample with living children with strong factor loadings (0.76 to 0.85). In the second-order CFA model, the standardized factor loadings for the latent PERMA construct were at or above the .30 level for all elements. The model fit statistics suggested an acceptable to good/close model fit (Little, 2013), and are provided in Figures 5 and 6.

Structural model results. Structural model results are provided in Figures 5 and 6, and Table 5. Overall, each model explained a substantial proportion of variance in FSE, with an r-squared of 0.46 (PERMA only: 0.26) and 0.47 (PERMA only: 0.25). Consistent with previous results, the PERMA construct was associated with higher FSE (H1; $\beta = .37$). All other results for the PERMA elements were consistent with the full and spouse/partner models except for the social constructs. Consistent with the spouse sample results, the supportive family relationship construct was not statistically significant when accounting for supportive children relationships. In the children sample, positive affect (H2; $\beta = .17$), perceived social support and relationship quality from children (H4; $\beta = .09$), purpose in life (H5; $\beta = .11$), and mastery (H6; $\beta = .18$) were all significantly and positively associated with higher FSE. Consistent with the full and spouse/partner sample results, cognitive enjoyment revealed a significant negative (H3; $\beta = -.08$) relationship with FSE.

Table 5.

Children Sample: Structural Model for Direct Effects between PERMA and FSE with First- and Second-Order CFA

Parameter	Unstandardized		Standardized		Unstandardized		Standardized	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
	First-Order CFA				Second-Order CFA			
PERMA								
PERMA	-	-	-	-	0.51***	0.03	0.37***	0.02
PERMA elements								
P: Positive affect	0.21***	0.04	0.17***	0.03	-	-	-	-
E: Cognitive engagement	-0.10***	0.02	-0.08***	0.02	-	-	-	-
R: Child	0.12***	0.03	0.09***	0.02	-	-	-	-
R: Family	0.04	0.02	0.03	0.02	-	-	-	-
R: Friend	-0.01	0.02	-0.01	0.02	-	-	-	-
M: Purpose in life	0.14***	0.04	0.11***	0.03	-	-	-	-
A: Mastery	0.23***	0.03	0.18***	0.02	-	-	-	-
Covariates (controls)								
Age	0.04***	0.00	0.25***	0.01	0.04***	0.00	0.28***	0.01
Work	-0.14***	0.04	-0.11***	0.03	-0.13**	0.05	-0.09**	0.03
Education	-0.05	0.04	-0.04	0.03	-0.07	0.04	-0.05	0.03
Couple	0.11**	0.03	0.08**	0.03	0.16***	0.04	0.12***	0.03
Female	-0.15***	0.04	-0.11***	0.03	-0.05	0.04	-0.04	0.03
Race-White	0.11*	0.05	0.08*	0.03	-0.06	0.04	-0.05	0.03
Perceived health	0.16***	0.02	0.12***	0.02	0.35***	0.02	0.27***	0.02
Ln income	0.13***	0.02	0.14***	0.02	0.15***	0.02	0.16***	0.02
IHS net worth	0.05***	0.00	0.23***	0.02	0.06***	0.00	0.26***	0.02
R ² Full Model	0.46				0.47			
R ² PERMA Only	0.26				0.25			

Note: All results were computed with Mplus. Standardized results are provided in STDYX standardization for continuous independent variables and STDY standardization for binary independent variables. All control variables were modeled based on the full-partial method (Little 2013).

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

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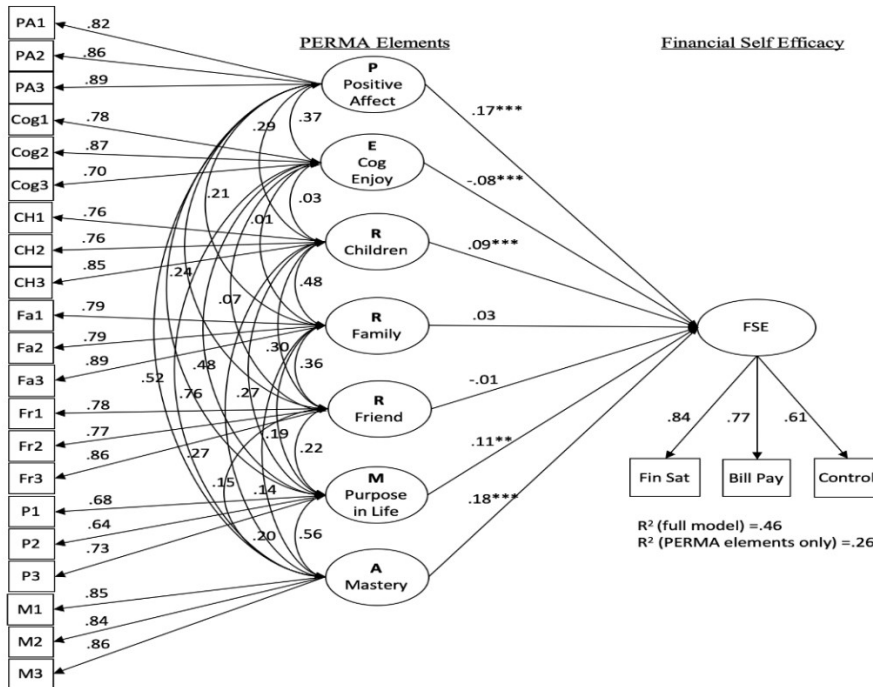


Figure 5. Children Sample: Structural Model with First-Order CFA

Note: Model fit indices for the first-order CFA model are: $\chi^2(368) = 3958.55, p < .001$; RMSEA = .034, 90% CI [.033, .035], CFI = .94, TLI = .92. $N=8,394$. The model was estimated with control variables according to the full partial method (Little 2013). All unstandardized and standardized pattern coefficients are significant at $p < .001$. * $p < .05$. ** $p < .01$. *** $p < .001$.

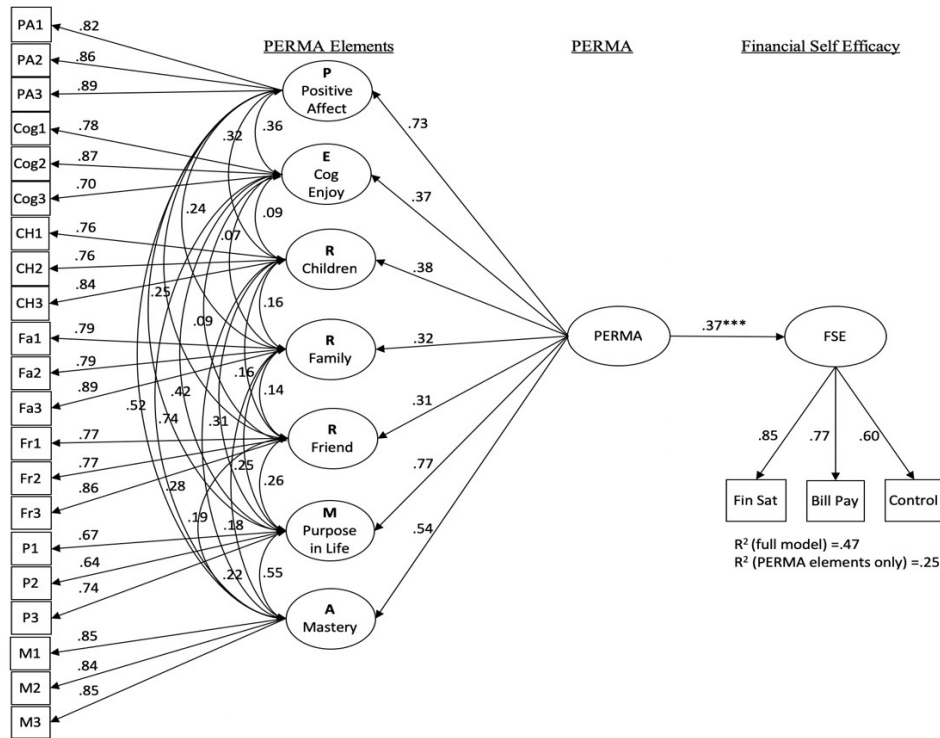


Figure 6. Children Sample: Structural Model with Second-Order CFA

Note: Model fit indices for the second-order CFA model are: $\chi^2(388) = 4948.80$, $p < .001$; RMSEA = .037, 90% CI [.036, .038], CFI = .92, TLI = .90. $N=8,394$. The model was estimated with control variables according to the full partial method (Little 2013). All unstandardized and standardized pattern coefficients are significant at $p < .001$. * $p < .05$. ** $p < .01$. *** $p < .001$.

DISCUSSION

The purpose of this study was to investigate the psychosocial attributes related to financial self-efficacy (FSE) for older adults. The relationship between psychosocial attributes and FSE was investigated within three different samples to test the effects within different social dimensions: (a) full sample (b) spouse/partner sample, and (c) children sample. The PERMA construct emerged as a significant and positive predictor of FSE in each sample, with the greatest effect size for the spouse/partner sample ($\beta = .42$). The standardized factor loading on the PERMA construct was also the strongest for supportive spouse/partner relationships (0.42) in the spouse/partner sample (as compared to family relationships in the full sample and child relationships in the children sample). These results suggest perceived support and relationship quality with one's spouse or partner plays the largest role in the experienced well-being (measured by PERMA) and FSE of older adults compared to perceived support and relationship quality from children, other family, or friends. It is important to note that the standardized factor loading for supportive children relationships (0.38) in the children sample was also stronger than the standardized factor loading for supportive family (0.27) and friend (0.29) relationships in the full sample. Overall, results from the second-order CFA model in each sample suggests that supportive spouse/partner and children relationships contribute more information to experienced well-being than supportive other family and friend relationships for the older adult population. Thus, it is necessary to account for different social dimensions for future measurement and analysis of PERMA well-being and its relationship with FSE.

Results for the relationship between FSE and positive affect, purpose in life, and mastery were consistent with existing literature (Asebedo et al. 2019a, 2019b). This study builds upon the literature with evidence that suggests supportive family relationships are associated with higher FSE in the full sample. However, when accounting for the spouse/partner and children social dimensions, the supportive family relationship construct was not significant. Instead, supportive spouse/partner relationships were associated with higher FSE in the spouse/partner sample, and supportive children relationships were associated with higher FSE in the children sample. In all samples, there was no significant effect for friend relationships with FSE. Consistent with Bandura (1997), these results suggest that the composition of the social environment is important to FSE, and that social interactions with a spouse/partner and children play a more significant role in shaping FSE than social interactions with other family members or friends for the older adult population. It may be that influences from vicarious experiences and verbal persuasion are stronger when they are derived from a spouse/partner or children than from other family or friends.

This result might be explained by the social network dynamics of older adults. Luong, Charles, and Fingerman (2011) provided an extensive review of the social relationship literature and concluded that older adults tend to purposefully reduce their social contacts to a smaller number, but increase the proportion of close relationships that produce a greater level of consistent support, satisfaction, and positive emotions than the social networks of young adults. Of this social network, close family members tend to be particularly important for older adults' life satisfaction because of the emotional support provided through these relationships (Luong, Charles, & Fingerman, 2011), which is

consistent with Socioemotional Selectivity Theory (Carstensen, Isaacowitz, & Charles, 1999). Because money can evoke an array of emotions where increased emotional support may be needed, older adults might rely more on the closest familial relationships within their inner circle for support when it comes to money. Even though older adults tend to report better relationship quality with an array of social partners including spouses/partners, children, and friends than do younger adults, this study suggests it is the closest relationships that matter most for developing a sense of control and resiliency over the financial environment (i.e., financial self-efficacy).

Last, results revealed a consistent negative relationship between cognitive enjoyment (engagement proxy) and FSE. Due to the validity concerns of the cognitive enjoyment measure, an alternative engagement specification was employed in the full sample as a robustness check for significance and direction of effects. The alternative engagement measure aligned well with activities that tend to produce engagement according to the Positive Psychology Center (2019), but revealed internal reliability concerns along with weaker factor loadings and model fit compared to the cognitive enjoyment measure. Results of this robustness check supported a consistent negative direct relationship between the alternative engagement measure and FSE. The negative relationship with both measures was surprising as the experience of engagement ought to produce retrospective positive emotions (Seligman 2012; Csikszentmihalyi; 1997), which are theoretically connected to higher self-efficacy beliefs (Bandura, 1997). It is possible that the activities that tend to produce engagement are associated with an increase in financial burden or daily financial hassles (McAvay et al. 1996) that undermine FSE for older adults who need to prepare for retirement or are living in retirement on fixed and/or variable income. However, it is important to note that the results for engagement may reflect measurement error as the two measures employed in this study do not capture the core meaning of engagement. Due to this proximal measurement issue, results for this relationship should be interpreted with caution. Researchers will need to use a more valid engagement measure in future studies to replicate this result before reliable inferences can be made.

Limitations were noted in this study. The second-order standardized factor loadings for the social support measures onto the PERMA construct were weak overall (although the supportive spouse/partner relationship measure was stronger), suggesting the measures employed within this study are suboptimal measures of relationship quality and support under the PERMA framework. Butler and Kern (2016) developed a brief PERMA assessment measure called the "PERMA-Profiler," which demonstrated strong psychometric characteristics. The PERMA-Profiler indicators have a positive orientation, whereas the indicators employed within this study focus more on social interactions about problems and worries: It is possible that these framing differences account for the weaker effect size of the standardized factor loadings for the social support constructs than well-being theory suggests. This study provides evidence that the social environment is associated with FSE; however, more research is needed to understand the significance and effects of this relationship. Additionally, this study utilized data from the financial respondent only. Future studies could utilize the dyadic data available in the HRS to investigate how characteristics from both spouses/partners relate to FSE. Last, this study was conducted within a sample of older adults age 50 and over while controlling for age. Future studies could examine more

nuanced cohort differences within the older adult population by investigating sub-samples by age group (e.g., young-old, mid-old, and old-old).

IMPLICATIONS AND CONCLUSIONS

Existing research suggests that older adult's FSE is weak and vulnerable to decline, with depression and daily financial hassles contributing to that decline (McAvay et al. 1996). This study builds upon McAvay et al. by providing insight into psychosocial attributes that might support FSE levels for older adults. Moreover, FSE is related to an array of financial behaviors relevant to older adults. Due the connection between FSE and financial behavior, older adults might improve their financial situation and ability to cope with financial uncertainty by employing strategies designed to boost their psychosocial functioning and in turn, their FSE. Positive psychology research offers evidence for empirically validated positive psychological interventions (PPIs) designed to enhance well-being under the PERMA framework. Future research can investigate the extent to which PPIs are effective in altering FSE levels. Future research could also aim to replicate the McAvay et al. study in a more recent and diverse sample of older adults to deepen our understanding of factors affecting self-efficacy over finances in addition to other life domains.

While the PERMA construct was related to higher FSE, the engagement construct individually predicted lower FSE and requires further research. The pursuit of engagement might undermine FSE for an older population; however, this implication is tentative given the proxy measurement of engagement in this study. If this is the case, however, PPIs designed to boost engagement while simultaneously addressing financial strategies that support the pursuit of engagement are necessary. Engagement is a worthy pursuit as it is theoretically connected to improved psychosocial functioning; however, results of this study imply more support might be necessary to translate the pursuit of engagement into a positive financial experience for older adults. For example, if an older adult pursues a new hobby with the intent of increasing the experience of engagement, then a financial budget allocating the necessary funds towards the new hobby while ensuring other needs and goals are met may assist in translating the experience into a positive one. This guidance and encouragement may be particularly important for those transitioning to and living in retirement as it is a new and complex phase of life to navigate, with multiple—and potentially overwhelming—decisions that need to be made (e.g., Medicare, Social Security, portfolio distributions, required minimum distributions, etc.).

Last, results provided evidence that the social environment is related to FSE, with a stronger effect associated with relationships that are closer in nature, such as with a spouse, partner, and children. As noted above, this may be a reflection of the social relationship dynamics of older adults. This may also be due to the privacy people exert around money. It is possible that older adults have more conversations about money with their spouse/partner and/or children than they do with other family members and friends. Future research could also investigate the extent to which interactions with a professional financial planner or financial therapist affect FSE. A professional financial planner or financial therapist becomes part of a client's social environment within the context of a professional client relationship and often becomes one of the client's most trusted and influential advisors

when that relationship is built upon trust and rapport. While financial planners and financial therapists possess different skillsets and expertise, both have potential to play a key role in shaping client's FSE given their influential role within the client's financial social environment. Financial therapists will have the training and expertise to effectively discuss and counsel clients on fostering and strengthening their social support network for the purposes of enhancing FSE. Financial planners that procure a therapeutic skill set can also be effective in this endeavor while practicing within the bounds of their expertise. Because FSE is highly predictive of positive financial behavior, clients embarking upon financial behavior change will benefit from professional support that addresses both the interior (e.g., relationships, emotions, psychology) and exterior (e.g., technical, economic, legal) factors related to FSE (Klontz, Kahler, & Klontz, 2016).

In conclusion, this study extends our knowledge of the psychosocial attributes related to FSE within a population that is preparing for and living in retirement. The selection of psychosocial attributes was guided by Bandura (1997) and operationalized through the PERMA well-being construct from positive psychology (Seligman, 2012), as it provided a theoretical framework to integrate the psychological and social context of an individual (Butler and Kern 2016). Greater well-being (PERMA) suggests an individual is optimizing their life experience and *flourishing* in life (Seligman 2012). Butler and Kern (2016) define flourishing as "a dynamic optimal state of psychosocial functioning that arises from functioning well across multiple psychosocial domains [PERMA]" (p. 2). The results of this study suggest that older adults with strong psychosocial functioning who are *flourishing* in life also have higher FSE. Overall, the PERMA well-being construct was effective in operationalizing the psychosocial environment and predicting FSE levels in older adults.

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