Does Overspending Harm Retirement Preparation?

Christina Lynn,[1] Stuart Heckman,[2] Michael Kothakota,[3] and Derek Lawson[4]

Abstract

This study addressed the research question of how overspending is related to retirement preparation. A commonsense answer to this question is this: overspending should negatively impact retirement preparation. However, the existing body of knowledge does not provide evidence to support or deny this assumption. The Behavioral Life Cycle Hypothesis was tested as a theoretical framework to answer this research question, providing valuable insight. Three data sets were used, including the Survey of Household Economic Decisionmaking (SHED), the Survey of Consumer Sciences (SCF), and the National Financial Capability Study (NFCS), to conduct logit and OLS regressions in testing the hypotheses. Because the overspending measurements were only negatively related to retirement preparation in a little over half the analyses, the results point to a new cultural norm where one's overspending behavior does not necessarily reflect one's retirement preparation behavior. Results provide support for policy actions related to tightening credit card policies, exposing a lack of awareness on overspending, providing practical approaches for avoiding overspending behavior, and the value of using multiple data sets as a robustness check.

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Introduction

Does the average American family feel stretched so thin they cannot afford to contribute to their retirement account? Is overspending to blame? This study examines the intricate relationship between overspending and retirement preparation using data from multiple sources, including the Survey of Household Economics and Decisionmaking (SHED), the Survey of Consumer Finances (SCF), and the National Financial Capability Study (NFCS). Guided by the Behavioral Life Cycle Hypothesis (BLCH) (Shefrin & Thaler, 1988), this research explores the dynamics of overspending and its impact on retirement preparation behaviors among average working adults in the United States.

Advisors may feel stumped when advising clients who habitually overspend. This issue is alarming, as many households are ill-prepared for retirement (Board of Governors of the Federal Reserve System, 2021). Additional challenges, such as longevity risk (Lim & Lee, 2021), rising

[1] Corresponding author (christinalynn0809@gmail.com). Kansas State University, Manhattan, KS, USA
[2] Kansas State University, Manhattan, KS, USA
[3] Kansas State University, Manhattan, KS, USA
[4] Kansas State University, Manhattan, KS, USA

inflation (Bennett, 2021), and a general lack of consumer awareness (Fan et al., 2022), exacerbate these concerns for advisors. While extensive research exists on retirement preparation, the specific effects of overspending remain underexplored. The assumed negative relationship between overspending and retirement readiness appears logical, yet academic evidence is scant. This study seeks to address the critical question: Does overspending significantly undermine retirement preparation?

Background Review and Theoretical Orientation

Retirement Preparation

Retirement preparation involves actions taken throughout one's working career to ensure financial wellbeing in retirement (Muratore & Earl, 2010; Muratore & Eckert, 2004). Saving for the future is a vital aspect of most households' personal finances. Given that retirement planning is highly individualized, there is no universal formula. The key to successful retirement preparation lies in adequately planning for one's goals and needs (Adams & Rau, 2011). However, inadequate retirement savings (Board of Governors of the Federal Reserve System, 2021; Oakley & Kenneally, 2019), longevity risk (Lim & Lee, 2021), inflation risk (Bennett, 2021), and a lack of consumer awareness (Fan et al., 2022) indicate a broader problem in retirement readiness. This study aims to better understand why the average household is underprepared for retirement, despite the critical importance of retirement planning.

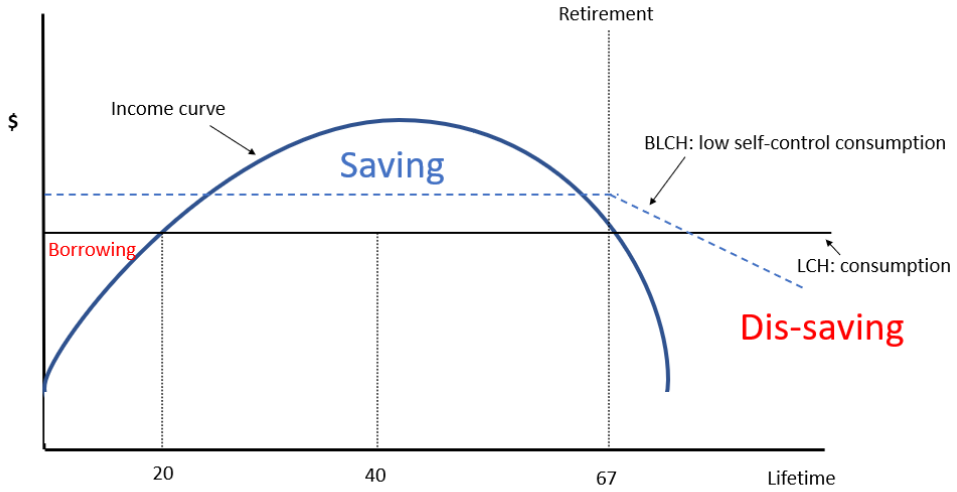
Overspending

There is no consensus in the literature on why overspending, a self-harming financial behavior, occurs. Possible explanations include spending preferences influenced by social norms and cultural trends (Cynamon & Fazzari, 2008), social comparison (Pahlevan Sharif et al., 2022; Watson, 2003), materialism (Kimiyagahlam et al., 2019), and budgeting behaviors (Choe & Kan, 2021; Sui et al., 2021). Other researchers highlight the concept of the "pain of payment" to explain overspending (Achtziger, 2022; Choe & Kan, 2021; Rick, 2018). "Pain of payment" refers to the discomfort associated with spending money, which can deter overspending when the anticipated financial consequences are significant (Choe & Kan, 2021). Despite these insights, little is known about the relationship between overspending and retirement preparation behavior.

Behavioral Life Cycle Hypothesis

The BLCH recognizes how people often act irrationally when it comes to money (Shefrin & Thaler, 1988). In contrast to the flat consumption line of the LCH, the consumption line under the BLCH model may not be straight. Consumption may be higher in pre-retirement, due to low levels of self-control leading to overspending, and then decline in later years due to deficient savings, as depicted in Figure 1. A dual preference framework explains the opposing forces of the *doer* and the *planner* preferences in consumption choices. A *doer* preference is associated with a short-term orientation, whereas *planner* preferences are associated with a long-term orientation. Among the three behavioral factors identified by the BLCH, self-control, framing, and mental accounting (Shefrin & Thaler, 1988), this study isolates self-control as the behavioral influence impacting consumption decisions.

Figure 1. BLCH and LCH Conceptual Models of Consumption



Note: Adapted from www.economicshelp.org LCH model.

Hypothesis

This study proposes the following hypothesis:

> *H_1: Overspending is negatively associated with retirement preparation.*

Methodology

Data Sets

This study utilized three separate cross-sectional datasets: the 2019 SHED, the 2019 SCF, and the 2018 NFCS. Using these nationally representative surveys adds to the credibility of the findings because each survey offers similar yet different measures of the constructs, enhancing the study's robustness. The samples were limited to full-time workers, assuming that individuals who were not working would not be actively preparing for retirement. This restriction was based on a respondent's employment status in each data set, ignoring the employment status of a spouse's working status. This restriction reduced the SHED sample size from 12,173 to 6,651 respondents, the SCF sample size from 5,777 to 3,361, and the NFCS sample size from 27,091 to 10,800. Operationalizations of each measure were based upon data set availability.

Overspending Variables

From an advisor's perspective, overspending is straightforward to measure: it occurs when spending exceeds income. To evaluate overspending, one subjective and three objective measures are utilized, offering different perspectives and enabling a comprehensive analysis of the phenomenon.

Spending More Than Income. Operationalizing overspending with spending more than income (SMTI) was consistent with prior research (Borsch-Supan & Lusardi, 2003).[5] If income exceeds expenditures, the household was assumed to be saving. If expenditures exceed income, the household was assumed to be overspending. The survey question used to operationalize SMTI was similar in all three data sets, and read as, "Over the past year, would you say your household's spending was less than, more than, or equal to your household's income?"

[5] A data limitation of this measurement was that researchers have operationalized it both as spending less than income (e.g., Borsch-Supan & Lusardi, 2003) as well as a retirement preparation measurement (e.g., Ferdous et al., 2010; Heckman & Hanna, 2015; Kim & Hanna, 2017; Yuh & Hanna, 2010). Because retirement preparation was not operationalized in this way in the current study, it was assumed to not cause any methodological concerns, but still warranted disclosure.

Only respondents that selected SMTI were treated as overspending. The 22 responses in the SHED and 290 in the NFCS of "don't know" or "prefer not to say" were treated as missing data.

Revolving Credit Card Debt. Experts suggest that credit cards facilitate overspending because they were easy to obtain and use, they reduce the pain of payment, and the credit limit and minimum payment due displayed on statements may act as anchors that induce higher levels of consumption Gärling & Ranyard, 2020. Revolving credit card debt (RCCD) was also considered financially damaging because of the interest and fees charged. All three surveys had similar questions to operationalize RCCD. If a respondent indicated that they had a credit card and did not pay off the balance every month, they were treated as RCCD. The measure had three categories: (a) credit card revolvers, (b) non-credit card revolvers, and (c) non-credit card holders. The 23 "don't know" or "prefer not to say" observations in the SHED and 190 in the NFCS were treated as missing data.

Alternative Financial Service Usage. Alternative financial services (AFS) usage was a third measure of overspending. AFS were high-cost debt instruments, such as payday loans or tax refund anticipation loans, (Robb et al., 2015) used to "…fund purchases of desired consumer products" (Gärling & Ranyard, 2020, p. 272). Because AFS products were egregiously financially disadvantageous to the consumer, utilizing them indicated spending beyond one's budget.

With the SHED, if a respondent indicated they had used either a payday loan, auto title loan, or a pawn shop loan, or a tax refund advance in the past 12 months, they were treated as overspending. The 26 "refused to answer" observations were treated as missing data. The SCF assesses whether a respondent had used a payday loan in the past year. In the NFCS, if a respondent had used either an auto title loan, payday loan, tax refund advance, pawn shop loan, or used a rent-to-own store in the past five years, they were treated as utilizing AFS. The 266 responses of "don't know" or "prefer not to say" were treated as missing data.

Absence of Emergency Fund. The absence of an emergency fund (AEF) was the final binary measurement of overspending. Maintaining an emergency fund was considered a critical component of managing personal finances to weather unexpected expenses or income dips (Farrell et al, 2019). The SHED question "Have you set aside emergency or rainy day funds that would cover your expenses for 3 months in the case of sickness, job loss, economic downturn, or other emergencies?" operationalizes AEF, where a "no" response indicated AEF. The 17 "refused to answer" observations were treated as missing data. The SCF question that captures AEF reads, "If tomorrow you experienced a financial emergency that left you unable to pay all of your bills, how would you deal with it?" If a respondent answered anything other than "spend out of savings or investments," they were treated as AEF. The question, "Have you set aside emergency or rainy-day funds that would cover your expenses for 3 months, in case of sickness, job loss, economic downturn, or other emergencies?" was used to operationalize AEF in the NFCS, where "no" responses were treated as AEF. The 406 "I don't know" and "prefer not to say" responses were treated as missing data.

Retirement Preparation Variables

Retirement preparation was a challenging construct to measure objectively because individuals have unique goals and requirements that necessitate adjustments to life events. To address this challenge, four measurements were used to operationalize retirement preparation: three were objective measures and one was subjective.

Retirement Account Ownership. Retirement account ownership was assumed to be a viable proxy for retirement preparation because researchers (e.g., Lim & Lee, 2021; Oakley & Kenneally, 2019; Sturr et al., 2021) consider defined contribution plans to be the foundational vehicle for funding retirement income. In the SHED, if a respondent indicated owning any of the following account types, they were treated as owning a retirement account: 401(k), 403(b), Keogh, other defined contribution plan through an employer, pension with a defined benefit, IRA, Roth IRA, savings outside a retirement account,

a business or real estate that will provide income in retirement, or other retirement savings. The 529 missing observations were treated as missing data. In the SCF, if a respondent had any of the following types of accounts, they were treated as owning a retirement account: Keoghs, pensions, retirement, or tax-deferred savings plans.

In the NFCS, if a respondent owned any of the following types of accounts, they were treated as owning a retirement account: A pension plan, a Thrift Savings Plan (TSP) or a 401(k), an IRA, Keogh, Simplified Employee Pension (SEP), or any other type of retirement account that they had set up themselves or through an employer. The 846 "don't know" or "prefer not to say" responses were treated as missing data.

Active Contribution to a Retirement Account. Active contribution to a retirement account (ACRA) was reflective of active household retirement savings, and thus is assumed to be a viable operationalization of retirement preparation (Sturr et al., 2021). In the SCF, if anyone in the household made contributions to IRAs or Keoghs in the previous year or contributed to a traditional pension, 401(k), 403(b), TSP, profit sharing plan, supplemental retirement annuity, cash balance plan, portable cash option plan, SEP, Simplified Incentive Match Plan for Employees (SIMPLE), money purchase plan, stock purchase plan (ESOP), 457 plan, or other retirement account, they were treated as ACRA. If respondents in the NFCS regularly contributed to a Thrift Savings Plan (TSP), 401(k), or IRA, they were treated as "yes" for ACRA. The 4,024 missing observations are treated as missing data. The SHED did not measure ACRA.

Retirement Account Assets. Retirement account assets require a large enough balance to sustain steady distributions for the duration of one's retirement. While there was no one formula to calculate the "right" amount of retirement account assets, retirement account assets can represent retirement preparation because they are a source of someone's future retirement income stream. In the SHED, retirement account assets were captured with the question: "Approximately how much money do you currently have saved for retirement?" The 1,702 missing observations were treated as missing data. In the SCF, retirement account assets were measured by the combination of Roth IRAs, roll-over IRAs, regular or other IRAs, Keoghs, and employer-sponsored plans balances. The log of retirement account assets was used to account for skewness associated with this measure. The NFCS did not measure retirement account asset balance.

Perceived Retirement Preparation. Perceived retirement preparation was measured by a subjective question capturing how well a respondent felt financially prepared for retirement. In the SHED, respondents were treated as "yes" for perceived retirement preparation if they answered yes to the question, "Do you think that your retirement savings plan is currently on track?" The 1,481 missing observations were treated as missing data.[6] The SCF question that captures perceived retirement preparation reads "How would you rate the retirement income you receive (or expect to receive) from all sources?" Respondents could respond on a five-point Likert type scale with a score of one indicative of the lowest level of perceived retirement preparation and five indicating the highest level of perceived retirement preparation. The NFCS question that captured perceived retirement preparation reads, "I worry about running out of money in retirement." Respondents could respond on a seven-point Likert-type scale, which was reverse coded to directionally align with measure in the SHED and SCF, such that one represents the lowest level of perceived retirement preparation and seven represents the highest. The 211 "don't know" and "prefer not to say" responses were treated as missing data.

Control Variables

Where possible, the following socio-economic and behavioral characteristics were controlled for: Age, marital status, race, gender, education

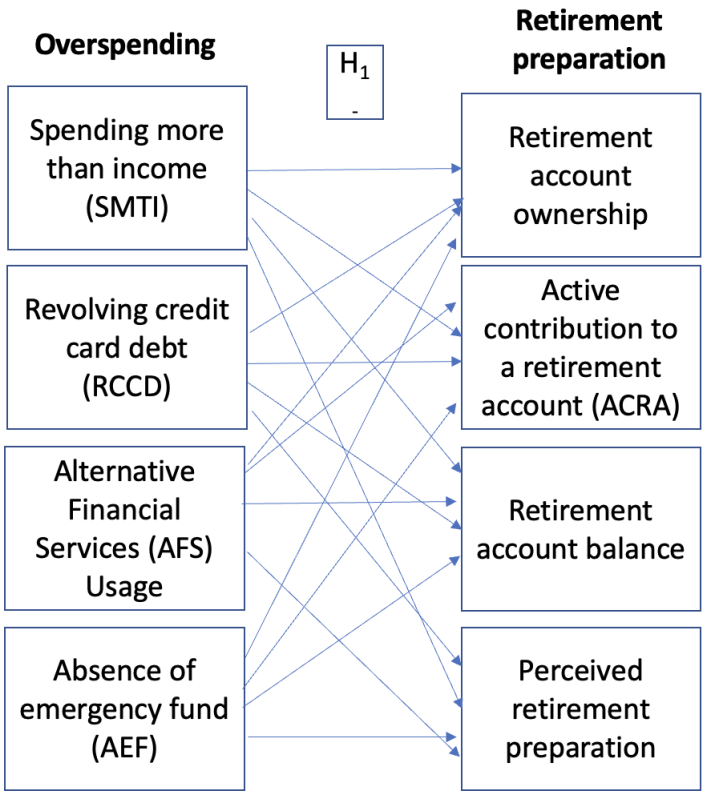
[6] In the SHED, respondents were asked if they considered themselves to be retired, which was separate from the employment status measure used to apply the sample restriction. Those who considered themselves to be retired were not asked the perceived retirement preparation question, which contributed to the missing observations of this measure.

of a respondent, parental education, income, health, objective and subjective financial knowledge, risk tolerance. Controlling for these factors which were known to be associated with retirement preparation (e.g., Muratore & Earl, 2010; Ozgen & Esiyok, 2020), help prevent their effects from being captured in the error term.

Analyses

Regressions were used in each data set to analyze the relationship between overspending (the independent variables) and retirement preparation (the dependent variables). Listwise deletion was used to handle missing data in the SHED and NFCS. The Repeated-Imputation Inference (RII) method as well as bootstrapped standard errors, was used to handle missing data in the SCF.

Figure 2. Empirical Model



Results

Descriptive Statistics

Overspending Descriptive Statistics. Table 1 displays the overspending descriptive statistics. In the SHED, only about one-sixth of the sample considered themselves to be overspending, as measured by SMTI (16%). Even fewer were overspending as measured by AFS usage (5%). Over half the respondents, however, were overspending as measured by RCCD (52%), and almost half the sample overspent as measured by AEF (47%). In the SCF, very few respondents were overspending as measured by SMTI (4%) and AFS usage (3%). Over one-third of the sample was overspending as measured by RCCD (38%). Half the sample overspent as measured by AEF (50%). In the NFCS, one-fifth the sample overspent, as measured by SMTI (20%). About one-third of the sample overspent, as measured by AFS usage in the past five years (32%). Almost half the sample overspent, as measured by AEF (46%), and over a third of the sample overspent, as measured by RCCD (36%).

Retirement Preparation Descriptive Statistics. Retirement preparation descriptive statistics were also listed in Table 1. In the SHED, over four-fifths of the sample owned a retirement account (84%), but a smaller portion felt on track for retirement (52%). Almost half of the sample had under $50,000 saved for retirement (46%), whereas almost a fourth of the sample had under $10,000 saved for retirement (24%). In the SCF, the majority of respondents owned a retirement account (64%), with about half of respondents ACRA (49%). On a scale from zero to $16,400,000, the median retirement account balance was $288,783. The average respondent reported moderate perceived retirement preparation (M = 3.03, SD = 1.25), on a scale from one to five. In the NFCS, four-fifths of the sample owned a retirement account (80%) and even more indicated ACRA (88%). Perceived retirement preparation had a mean of 3.21 on a scale of one to seven.

Regression Results: Retirement Account Ownership

The full list of results was displayed in Table 2. The SHED results show those who SMTI had 31% lower odds of owning a retirement account (OR = 0.69, $p < 0.001$); those who RCCD had 22% lower odds of owning a retirement account (OR = 0.78, $p < 0.001$); those with AEF had 65% lower odds of owning a retirement account (OR = 0.35, $p < 0.001$). The SCF results reveal that those who RCCD had 26% lower odds of owning a retirement account (OR = 0.74, $p < 0.001$); those with AEF had 30% lower odds of owning a retirement account (OR = 0.70, $p < 0.001$). The NFCS results show that those who RCCD had 33% lower odds of owning a retirement account (OR = 0.67, $p < 0.001$), and those with AEF had 53 percent lower odds of owning a retirement account (OR = 0.47, $p < 0.001$).

Table 1. Descriptive Statistics

	SHED, *N = 6,651*		SCF, *N = 3,361*					NFCS, *N = 10,800*				
Variable	*n*	*%*	*n*	*M/%*	*SD*	*min*	*max*	*n*	*M/%*	*SD*	*min*	*max*
Retirement preparation												
Owns a retirement account	5,104	83.50%	2,135	63.53%	-	-	-	8,012	80.49%	-	-	-
Actively contributes to a retirement account	-	-	1,652	49.15%	-	-	-	5,954	87.87%	-	-	-
Retirement account assets	-	-	3,361	$2,000	$288,783	0	$16,400,000	-	-	-	-	-
<$24,999	1,732	35.00%	-	-	-	-	-	-	-	-	-	-
$25,000-$249,999	1,902	38.43%	-	-	-	-	-	-	-	-	-	-
$250,000-$1,000,000+	1,314	26.57%	-	-	-	-	-	-	-	-	-	-
Perceived retirement preparation: on track	5,170	51.59%	3,361	3.03	1.25	1	5	10,589	3.21	1.93	1	7
Overspending												
Spends more than income	1,034	15.60%	123	3.67%	-	-	-	2,104	20.02%	-	-	-
Revolves credit card debt	3,437	51.87%	1,288	38.31%	-	-	-	3,766	35.50%	-	-	-
Uses AFS	351	5.30%	101	3.01%	-	-	-	3,356	31.86%	-	-	-
Absence of Emergency Fund	3,143	47.37%	1,678	49.93%	-	-	-	4,808	46.26%	-	-	-

Note. Analyses were weighted. Data from the 2019 SHED, 2019 SCF, and 2018 NFCS. Samples restricted to only those working as a paid employee.

Table 2. Binary Logistic Regression of Retirement Account Ownership

	SHED, *n* = 5,069			SCF, *n* = 3,361			NFCS, *n* = 9,114		
Variable	B	SE	OR	B	SE	*OR*	B	SE	*OR*
Intercept	0.39	0.34	1.48	-7.43***	0.87	0.00	-1.14***	0.3	0.32
Spends more than income	-0.36*	0.14	0.69	0.03	0.22	1.03	0.02	0.09	1.02
Revolves credit card debt	-0.25***	0.04	0.78	-0.30***	0.07	0.74	-0.40***	0.06	0.67
Uses AFS	0.14	0.23	1.15	0.14	0.19	1.15	-0.09	0.09	0.91
Absence of Emergency Fund	-1.05***	0.15	0.35	-0.35***	0.07	0.70	-0.75***	0.08	0.47
Control variables									
Age (under 35)	-	-	-	0.01**	0.00	1.01	-	-	-
35-44	0.54***	0.16	1.71	-	-	-	0.28**	0.10	1.32
45-54	0.74***	0.18	2.10	-	-	-	0.46***	0.11	1.59
55-64	0.92***	0.20	2.51	-	-	-	0.72***	0.15	2.06
65 or older	1.06*	0.43	2.90	-	-	-	0.42	0.30	1.53
Marital status (married)									
living with partner or never married	-0.49***	0.14	0.61	0.10	0.10	1.11	-0.32***	0.09	0.72
separated or divorced	-0.29	0.18	0.75	-0.01	0.11	0.99	-0.28*	0.13	0.75
widowed	1.53	0.96	4.63	-	-	-	-0.74**	0.27	0.48
Race of respondent (White)	-	-	-	-	-	-	-0.01	0.08	0.99
Black	0.10	0.18	1.11	-0.05	0.08	0.95	-	-	-
Hispanic	-0.12	0.17	0.95	-0.45***	0.13	0.64	-	-	-
Asian or other	-0.05	0.24	0.87	0.10	0.17	1.11	-	-	-
Gender of respondent (male)	0.15	0.12	1.17	0.12	0.10	1.13	0.38***	0.08	1.45
Education (high school degree)									
no high school degree	-0.79**	0.27	0.45	-0.76***	0.20	0.47	-0.69	0.37	0.50

some college	0.18	0.15	1.20	0.13	0.09	1.14	0.12	0.11	1.12
bachelor's degree	1.03***	0.18	2.80	0.62***	0.12	1.86	0.61***	0.15	1.85
advanced	-	-	-	0.90***	0.13	2.46	0.55**	0.19	1.74
Parental education (high school degree)									
no high school degree	0.01	0.23	1.01	-0.36**	0.12	0.70	0.02	0.19	1.02
some college	0.06	0.16	1.06	-0.08	0.11	0.92	-0.04	0.11	0.96
bachelor's degree	-0.14	0.17	0.87	0.03	0.10	1.03	-0.48***	0.13	0.62
advanced degree	0.13	0.22	1.14				-0.39*	0.17	0.67
Risk tolerance	0.08**	0.02	1.08	0.02	0.02	1.02	0.10***	0.02	1.10
Income (under $25,000)	-	-	-	0.64***	0.07	1.90	-	-	-
$25,000-$49,999	0.70***	0.18	2.02	-	-	-	0.67***	0.12	1.94
$50,000-$74,999	1.00***	0.19	2.71	-	-	-	1.27***	0.13	3.56
$75,000-$99,999	0.91***	0.22	2.46	-	-	-	2.00***	0.17	7.39
$100,000-$149,999	1.43***	0.24	4.20	-	-	-	2.15***	0.18	8.63
$150,000 or more	1.40***	0.30	4.04	-	-	-	2.43***	0.27	11.36
Objective financial knowledge	0.34***	0.06	1.41	0.17***	0.04	1.19	0.18***	0.03	1.20
Subjective financial knowledge	-	-	-	-0.01	0.02	0.99	0.01	0.03	1.01
Financial attitude	-	-	-	-	-	-	0.06**	0.02	1.06
Health (excellent)									
fair	-0.14	0.12	0.87	-0.16	0.09	0.85	-	-	-
poor	0.27	0.44		-1.18**	0.34	0.31	-	-	-
Model Fit Statistics	C-statistic	0.88		Log likelihood	-1,772		C-statistic	0.83	
	Pseudo R^2	0.32		Pseudo R^2	0.20		Pseudo R^2	0.24	

Note. Analyses were weighted. SCF income was logged. Data from the 2019 SHED, 2019 SCF, and 2018 NFCS. Restricted samples to only those working full-time. * p < .05; ** p < .01; *** p < .001.

Retirement Results: Active Contribution to a Retirement Account

The SCF results (Table 3) indicate that those who RCCD had 21% lower odds of ACRA (OR = 0.79, $p < 0.001$). The NFCS results show that those who reported AEF were associated with 37% lower odds of ACRA (OR = 0.63, $p < 0.001$).

Table 3. Binary Logistic Regression of Active Contributions to a Retirement Account

	SCF, *n* = 3,361			NFCS, *n* = 6,351		
Variable	B	SE	OR	B	SE	*OR*
Intercept	-6.16***	0.80	0.00	0.95***	0.44	2.57
Spends more than income	0.06	0.22	1.06	-0.16	0.13	0.86
Revolves credit card debt	-0.24***	0.06	0.79	-0.11	0.13	1.00
Uses AFS	-0.02	0.18	0.98	-0.46	0.11	0.89
Absence of Emergency Fund	-0.12	0.07	0.89	-0.11***	0.11	0.63
Control variables						
Age (under 35)	-0.01*	0.00	0.99	-	-	-
35-44	-	-	-	0.08	0.14	1.09
45-54	-	-	-	0.00	0.14	1.00
55-64	-	-	-	-0.35*	0.15	0.71
65 or older	-	-	-	-0.83**	0.24	0.44
Marital status (married)						
living with partner or never married	0.19*	0.08	1.21	0.13	0.12	1.15
separated or divorced	0.02	0.10	1.02	0.01	0.16	1.01
widowed	-	-	-	-0.37	0.34	0.69
Race of respondent (White)				0.01	0.11	1.01
Black	-0.09	0.09	0.91	-	-	-
Hispanic	-0.34**	0.12	0.71	-	-	-
Asian or other	0.28*	0.12	1.32	-	-	-
Gender of respondent (male)	0.23*	0.09	1.26	0.03	0.10	1.03
Education (high school degree)						
no high school degree	-0.76***	0.19	0.47	-0.73	0.58	0.48
some college	-0.09	0.08	0.91	-0.07	0.17	0.93
bachelor's degree	0.26**	0.09	1.30	-0.17	0.18	0.84
advanced	0.16	0.13	1.17	-0.50*	0.21	0.60
Parental education (high school degree)						
no high school degree	-0.33**	0.10	0.72	-0.29	0.23	0.74
some college	0.10	0.10	1.11	0.26	0.16	1.30
bachelor's degree	-0.04	0.08	0.96	0.07	0.15	1.07

advanced degree	-	-	-	0.20	0.19	1.23
Risk tolerance	0.01	0.02	1.01	0.03	0.02	1.03
Income	0.55***	0.06	1.73	-	-	-
$25,000-$49,999	-	-	-	0.60*	0.24	1.82
$50,000-$74,999	-	-	-	0.95***	0.25	2.58
$75,000-$99,999	-	-	-	1.10***	0.25	3.01
$100,000-$149,999	-	-	-	1.53***	0.27	4.60
$150,000 or more	-	-	-	2.18***	0.32	8.84
Objective financial knowledge	0.11*	0.04	1.12	0.00	0.04	1.00
Subjective financial knowledge	-0.01	0.01	0.99	0.07	0.05	1.08
Financial attitude	-	-	-	-0.06	0.03	0.94
Health (excellent)						
fair	-0.13	0.09	0.88	-	-	-
poor	-0.60	0.31	0.55	-	-	-
Model Fit Statistics	Log likelihood		-2,096	C-statistic	0.69	
	Pseudo R^2		0.10	Pseudo R^2	0.06	

Note. Analyses were weighted. SCF income was logged. Data from the 2019 SCF, and 2018 NFCS. Restricted samples to only those working full-time. * p < .05; ** p < .01; *** p < .001.

Regression Results: Retirement Account Balance

The SHED results (Table 4) reveal that RCCD (B = -0.29, $p < 0.001$) and AEF (B = -0.92, $p < 0.001$) had a significant negative relationship with retirement account balance. SMTI and AFS usage did not have a significant relationship with retirement account balance. The SCF results indicate that RCCD ($\beta = -0.05$, $p < 0.001$) and AEF ($\beta = -0.08$, $p < 0.001$) had significant negative relationships with retirement account balance.

Table 4. Ordinal (SHED) and OLS (SCF) Regressions of Retirement Account Asset Balance

	SHED, *n* = 4,207		SCF, *n* = 3,361		
Variable	B	SE	B	SE B	β
Intercept	-	-	-13.35***	1.33	-
Spends more than income	-0.18	0.12	-0.09	0.39	0.00
Revolves credit card debt	-0.29***	0.05	-0.64***	0.12	-0.05
Uses AFS	-0.27	0.28	-0.24	0.39	-0.01
Absence of Emergency Fund	-0.92***	0.09	-0.98***	0.15	-0.08
Control variables					
Age (under 35)	-	-	0.05***	0.01	0.12
35-44	1.74***	0.13	-	-	-
45-54	2.63***	0.14	-	-	-
55-64	3.21***	0.15	-	-	-
65 or older	3.39***	0.18	-	-	-
Marital status (married)					
living with partner or never married	-0.21*	0.11	0.27	0.17	0.01
separated or divorced	-0.30*	0.13	0.28	0.21	0.02
widowed	-0.43	0.26	-	-	-
Race of respondent (White)					
Black	-0.83***	0.15	-0.54*	0.22	-0.03
Hispanic	-0.42**	0.14	-0.90**	0.28	-0.05
Asian or other	0.07	0.16	0.43	0.31	0.02
Gender of respondent (male)	-0.20*	0.08	0.08	0.15	0.01
Education (high school degree)					
no high school degree	-0.07	0.46	-0.80**	0.31	-0.03
some college	0.01	0.13	-0.01	0.20	0.00
bachelor's degree	0.42	0.14	1.20***	0.21	0.09
advanced	-	-	1.47***	0.22	0.11
Parental education (high school degree)					
no high school degree	-0.33	0.17	-0.82***	0.23	-0.05
some college	-0.04	0.12	-0.13	0.21	-0.01
bachelor's degree or beyond	-0.02	0.12	0.08	0.18	0.01
advanced degree	-0.04	0.12	-	-	-
Risk tolerance	0.14***	0.02	0.13***	0.03	0.06
Income (under $25,000)	-	-	1.35***	0.12	0.43
$25,000-$49,999	0.53	0.34	-	-	-
$50,000-$74,999	1.27***	0.33	-	-	-
$75,000-$99,999	1.70***	0.34	-	-	-

$100,000-$149,999	2.19***	0.34	-	-	-
$150,000 or more	2.87***	0.35	-	-	-
Objective financial knowledge	0.19***	0.05	0.51***	0.09	0.07
Subjective financial knowledge	-	-	0.05	0.03	0.02
Health (excellent)					
fair	-0.16	0.08	-0.34	0.18	-0.03
poor	-0.22	0.48	-1.46*	0.64	-0.03
Model Fit Statistics	Pseudo R^2	0.34	R^2		0.30
			Adjusted R^2		0.29

Note. Analyses were weighted. SCF income was logged. Data from the 2019 SHED, 2019 SCF, and 2018 NFCS. Restricted samples to only those working full-time. * $p < .05$; ** $p < .01$; *** $p < .001$

Regression Results: Perceived Retirement Preparation

The SHED results (Table 5) show that those who SMTI had 43% lower odds of feeling on track for retirement (OR = 0.57, $p < 0.001$); those who RCCD had 23% lower odds of feeling on track for retirement (OR = 0.77, $p < 0.001$); and AEF had 65% lower odds of feeling on track for retirement (OR = 0.35, $p < 0.001$). The SCF results indicate that SMTI ($\beta = -0.06$, $p < 0.001$), RCCD ($\beta = -0.05$, $p < 0.001$), AFS usage ($\beta = -0.04$, $p < 0.001$), and AEF ($\beta = -0.06$, $p < 0.001$) had a significant negative relationship with perceived retirement preparation. The NFCS results indicate that only those who utilized AFS were more likely to perceive retirement preparation negatively ($\beta = -0.03$, $p = 0.003$).[7]

[7] Additional robustness checks were conducted, including (a) an unweighted sample, (b) multiple imputation, (c) excluding non-credit card holders, (d) an alternative STTP, and (e) and alternative measure for SMTI. Interaction effects were tested between overspending and income with retirement preparation, due to the suspicion that the relationship between overspending and retirement preparation may have depended on the level of income. To explore the reliability of overspending and retirement preparation constructs, additive scales, and confirmatory factor analyses (CFA) were employed. While the robustness checks reveal variation between data sets and various significant interaction effects between overspending and income with retirement preparation, there is not enough evidence to cause concern over the validity of the primary analyses. The results of robustness checks are available upon request.

Table 5. Logistic (SHED) and OLS (SCF and NFCS) Regression of Perceived Retirement Preparation

	SHED, *n* = 4,317			SCF, *n* = 3,361			NFCS, *n* = 9,524		
Variable	B	SE	OR	B	SE B	β	B	SE B	β
Intercept	-0.42	0.30	0.66	0.65*	0.27	-	6.27***	0.16	-
Spends more than income	-0.55***	0.12	0.57	-0.48***	0.11	-0.06	-0.04	0.05	-0.01
Revolves credit card debt	-0.26***	0.05	0.77	-0.15***	0.02	-0.05	0.01	0.03	0.00
Uses AFS	0.21	0.24	1.23	-0.36**	0.12	-0.04	-0.14**	0.05	-0.03***
Absence of Emergency Fund	-1.06***	0.09	0.35	-0.16***	0.04	-0.06	0.02	0.04	0.01
Control variables									
Age (under 35)	-	-	-	-0.00	0.00	0.00	-	-	-
35-44	0.13	0.12	1.14	-	-	-	-0.26***	0.05	-0.06***
45-54	0.09	0.13	1.09	-	-	-	-0.37***	0.05	-0.08***
55-64	0.36**	0.13	1.43	-	-	-	-0.34***	0.06	-0.06***
65 or older	0.32	0.21	1.38	-	-	-	-0.20	0.10	-0.02
Marital status (married)									
living with partner or never married	-0.24*	0.11	0.79	0.08*	0.04	0.03	0.05	0.05	0.01
separated or divorced	-0.32	0.14	0.73	0.04	0.05	0.01	0.01	0.06	0.00
widowed	0.13	0.47	1.14	-	-	-	0.07	0.16	0.00
Race of respondent (White)	-	-	-	-	-	-	-0.04	0.04	-0.01
Black	-0.10	0.15	0.91	0.22***	0.06	0.06	-	-	-
Hispanic	-0.57***	0.15	0.99	0.03	0.08	0.01	-	-	-
Asian or other	-0.01	0.18	0.56	-0.21**	0.06	-0.04	-	-	-
Gender of respondent (male)	-0.03	0.09	0.97	-0.12**	0.04	-0.04	-0.08*	0.04	-0.02*
Education (high school degree)									
no high school degree	-0.61	0.39	0.55	0.08	0.11	0.00	0.16	0.23	0.01
some college	-0.02	0.13	0.98	-0.04	0.06	0.00	0.02	0.06	0.01
bachelor's degree	0.32*	0.13	1.37	0.12	0.07	0.04	0.07	0.07	0.02

advanced degree	-	-	-	0.09	0.07	0.03	0.02	0.08	0.00
Parental education (high school degree)									
no high school degree	-0.05	0.20	0.95	-0.10	0.07	-0.02	0.09	0.10	0.01
some college	-0.11	0.12	0.90	-0.02	0.07	0.00	0.03	0.06	0.01
bachelor's degree or beyond	0.04	0.12	1.04	0.01	0.05	0.00	0.08	0.06	0.02
advanced degree	0.01	0.13	1.01	-	-	-	0.11	0.07	0.02
Risk tolerance	0.12***	0.02	1.12	0.06***	0.01	0.12	-0.01	0.01	-0.01
Income	-	-	-	0.19***	0.02	0.27	-	-	-
$25,000-$49,999	0.79***	0.22	2.19	-	-	-	-0.02	0.09	-0.00
$50,000-$74,999	0.98***	0.21	2.66	-	-	-	-0.07	0.09	-0.01
$75,000-$99,999	1.06***	0.22	2.89	-	-	-	-0.08	0.09	-0.02
$100,000-$149,999	1.08***	0.21	2.95	-	-	-	0.07	0.10	0.01
$150,000 or more	1.33***	0.23	3.79	-	-	-	0.34**	0.11	0.05
Objective financial knowledge	0.01	0.05	1.01	-0.01	0.03	-0.01	-0.03*	0.01	-0.02
Subjective financial knowledge	-	-	-	0.07***	0.01	0.11	0.05**	0.02	0.03
Financial attitude	-	-	-	-	-	-	-0.62***	0.01	-0.63
Health (excellent)									
fair	-0.49***	0.09	0.61	-0.24***	0.05	-0.09	-	-	-
poor	-1.03*	0.42	0.36	-0.73***	0.19	-0.07	-	-	-
Model Fit Statistics	C-statistic	0.81		R^2	0.16		R^2	0.42	
	Pseudo R^2	0.23		Adjusted R^2	0.15				

Note. The analyses were weighted. SCF income was logged. Data from the 2019 SHED, 2019 SCF, and 2018 NFCS. Samples restricted to only those working full-time. * p < .05; ** p < .01; *** p < .001.

Discussion

Out of all the retirement preparation analyses conducted, a significant negative relationship was found in many but not all the analyses, partially supporting H_1. The lack of consistency in results across the data sets temper the conclusions drawn.

Retirement Account Ownership

Overspending, as measured by SMTI, was found to have a significant negative relationship with retirement account ownership in the SHED analysis, but not in the SCF or NFCS analyses. RCCD was significant negatively related to retirement account ownership in the SHED, SCF, and NFCS analyses. AFS usage was not related to retirement account ownership in the SHED, SCF, or NFCS analysis. AEF was negatively associated with retirement account ownership in both the SHED, SCF, and the NFCS analyses. Because some overspending measures, but not all, exhibited a significant negative relationship with retirement account ownership, only partial support for H_1 was noted.

Active Contributions to a Retirement Account

Overspending, as measured by SMTI and AFS usage, was not related to ACRA in the SCF or NFCS analyses. RCCD was found to have a significant relationship with ACRA in the SCF analysis, but not the NFCS analysis. AEF was negatively associated with ACRA in the NFCS analysis, but not in the SCF analysis. As such, H_1 was partially supported.

Retirement Account Balance

Overspending, as measured by SMTI and AFS usage, were not related to a respondent's retirement account balance in the SHED analysis or the SCF. RCCD was negatively related to retirement account balances in the SHED and SCF analyses. AEF was negatively associated with retirement account balances in both the SHED and SCF analyses. Once again, H_1 was only partially supported.

Perceived Retirement Preparation

Overspending, as measured by SMTI and credit card revolving, was found to have a significant negative relationship with perceived retirement preparation in the SHED and SCF analyses, but not the NFCS analysis. Overspending, as measured by AFS usage, was negatively associated with perceived retirement preparation in the SCF and NFCS analyses, but not the SHED analysis. Overspending, as measured by AEF, was negatively related to perceived retirement preparation in both the SHED and SCF analyses, but not the NFCS analysis. Because some, but not all, overspending showed a significant negative relationship with perceived retirement preparation, H_1 could only be partially supported.[8]

Implications

Borrowing using credit cards is incredibly easy for the average consumer, both for those who can afford it and those who cannot. One policy implication is to make it more challenging to qualify or transact using consumer credit (Gärling & Ranyard, 2020). For example, lenders could

[8] A possible explanation for only about half of the overspending and retirement preparation analyses being significant is that overspending has become normalized in American culture. A few ideas are provided here to describe what normalized overspending behavior could look like. First, respondents may not realize they are spending more than their income. Second, credit cards could be considered necessary for some households to manage their cashflow, and thus does not significantly relate to retirement preparation behavior. Third, AFS usage could be seen by some as an acceptable financing resource to occasionally bridge cashflow gaps when needed and does not correspond to a shift in one's retirement preparation behavior. Fourth, an emergency fund may seem out of reach or not necessary for cash flow management by some but does not necessarily mean a household is not preparing for retirement. Fifth, overspending could be occurring simultaneously while preparing for retirement. Sixth, automatic enrollment and automatic contribution increases by employers could be the cause of a significant negative relationship between overspending and retirement preparation where the employer, rather than the respondent, is responsible for the respondent's retirement preparation behavior. In sum, the analyses may reveal a new normal where overspending does not necessarily reflect a respondent's retirement preparation behavior.

require setting credit limits with reference to a client's respective affordability level or limit the number of credit cards that may be issued to an individual (Gärling & Ranyard, 2020). Because credit limits and minimum payments have been found to unintentionally act as anchor points (Gärling & Ranyard, 2020; Tescher and Stone, 2022), tightening the minimum payment due formula could potentially help households get out of credit card debt faster than current standards (Tescher & Stone, 2022).

An industry implication to help promote the use of emergency funds is to implement the automatic enrollment of employees in savings accounts linked to their 401(k)s, which may potentially be matched by employers. This is now possible due to the recent passing of the Secure Act 2.0 (Senate Finance Committee, 2022). Studies have shown that automatic enrollment increases participation rates (see Beshears et al., 2010). Advisors can also make clients aware of this new opportunity.

Client overspending behavior is an occasional obstacle advisors face. Despite a financial planner's best efforts, it can seem like some clients at risk of running out of money fail to realize the consequences of overspending. One way to indirectly assist individuals who overspend is to focus on augmenting self-control levels, rather than focusing on cutting back overspending. This may be particularly impactful in youth. At the practitioner level, as a value-add to clients, advisors could provide clients with young children or grandchildren educational games or activities that teach self-control in personal finances. One such example is the CASHFLOW® Game. Some have suggested that potential life hacks may help increase levels of self-control when it comes to overspending. Gärling and Ranyard (2020) highlighted techniques originally tested by Karlsson (2003) as plausible modern solutions to help bolster self-control and thereby curbing overspending. Additionally, financial practitioners could coach their clients to limit themselves to owning only one credit card, rather than multiple credit cards, to simplify financial decisions where borrowers often make mistakes (Gärling & Ranyard, 2020). Alternatively, budgeting could be promoted as a tool to help prevent overspending. Simplistic budgeting techniques should be promoted over complex ones (Kim & Choi, 2018), such as minimizing the number of categories withing a budget (Kim, 2022). Budgeting using mental accounting could also be encouraged, as researchers have found it may help improve savings and consumption decisions (Sui et al., 2021; Xiao & O'Neill, 2018). Xiao and O'Neil (2018) also made the point that simply suggesting the practice of budgeting is not enough, because households may not know how to do so. Households would benefit from advisors teaching them budgeting techniques and being shown projections of the hypothetical impact of prioritizing savings in the budget.

Another practitioner implication is to ensure that all clients receive education on overspending. Clients may not realize that RCCD or AEF is a form of overspending. They may also not realize the negative implications of AFS usage or SMTI. Advisors should educate clients and prospects regarding the financial dangers of normalizing overspending. In this regard, because overspending may be a manifestation of a deeper psychological issue, it is important for advisors to be self-aware of their own limitations in providing help (Lutter, 2022) .

Conclusion

The results from this study suggest that overspending is negatively related to retirement preparation. Logically, it seems obvious that overspending should be negatively related to retirement preparation. The BLCH was found to be a valuable theoretical framework for the study of the relationship between overspending and retirement preparation. Because the overspending measurements were negatively related to retirement preparation in a little over half the analyses, it is possible that a new cultural norm where one's overspending behavior does not necessarily mean that the person is not also preparing for retirement may be existence. This possibility is worthy of future study.

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Appendix

Table A1
Sample Demographics of the SHED Sample (N = 6,651)

	unweighted			weighted				
Variable	*n*	*M/%*	*SD*	*n*	*M/%*	*SD*	*min*	*max*
Age								
Under 35	2,039	30.66%	-	2,328	35.00%	-	-	-
35-44	1,306	19.64%	-	1,454	21.87%	-	-	-
45-54	1,268	19.06%	-	1,158	17.41%	-	-	-
55-64	1,490	22.40%	-	1,310	19.69%	-	-	-
65+	548	8.24%	-	401	6.02%	-	-	-
Marital Status								
Married	3,700	55.63%	-	3,655	54.96%	-	-	-
Living w/ partner, single, never married	2,094	31.48%	-	2,241	33.69%	-	-	-
Separated/divorced	741	11.14%	-	651	9.79%	-	-	-
Widowed	116	1.74%	-	103	1.55%	-	-	-
Race								
White	4,495	67.58%	-	4,145	62.32%	-	-	-
Black	713	10.72%	-	797	11.98%	-	-	-
Hispanic	882	13.26%	-	569	8.56%	-	-	-
Other	561	8.43%	-	1,141	17.15%	-	-	-
Gender								
Male	3,605	54.20%	-	3,426	51.52%	-	-	-
Female	3,046	45.80%	-	3,225	48.49%	-	-	-
Education of respondent								
No high school degree	159	2.39%	-	420	6.32%	-	-	-
High school degree	1,244	18.70%	-	1,614	24.27%	-	-	-
Some college	1,990	29.92%	-	1,875	28.19%	-	-	-

Bachelor's degree or higher	3,258	48.99%	-	2,742	41.22%	-	-	-
Parental education *(higher of mother or father's)*								
No high school degree	544	8.52%	-	648	10.16%	-	-	-
Highschool degree	1,855	29.06%	-	1,856	29.09%	-	-	-
Some college	1,642	25.72%	-	1,618	25.34%	-	-	-
Bachelor's degree	1,272	19.93%	-	1,208	18.93%	-	-	-
Advanced degree	1,070	16.76%	-	1,052	16.49%	-	-	-
Income								
$0-$24,999	620	9.32%	-	564	8.47%	-	-	-
$25,000-$49,999	1,148	17.26%	-	1,088	16.35%	-	-	-
$50,000-$74,999	1,216	18.28%	-	1,129	16.97%	-	-	-
$75,000-$99,999	1,079	16.22%	-	998	15.01%	-	-	-
$100,000-$149,999	1,395	20.97%	-	1,372	20.63%	-	-	-
$150,000 or more	1,193	17.94%	-	1,501	22.56%	-	-	-
Health								
Excellent	3,208	54.94%	-	3,196	57.74%	-	-	-
Fair	2,550	43.67%	-	2,558	43.81%	-	-	-
Poor	81	1.39%	-	85	1.45%	-	-	-
Objective financial knowledge	6,651	1.93	1.08	6,651	1.84	1.10	0	3
Risk tolerance	6,628	4.59	2.53	6,628	4.58	2.56	0	10

Note: 2019 SHED. Restricted sample to only those working as a paid employee.

Table A2
Sample Demographics of the SCF Sample (N = 3,361)

	unweighted			weighted				
Variable	*n*	*M/%*	*SD*	*n*	*M/%*	*SD*	*min*	*max*
Age	3,361	47.46	13.40	3,361	43.96	13.02	18	90
Marital Status								
Married	1,913	56.91%	-	1,644	48.90%	-	-	-
Living with partner or never married	924	27.49%	-	1,136	33.78%	-	-	-
Separated/divorced	42	13.64%	-	509	15.15%	-	-	-
Widowed	66	1.96%	-	73	2.16%	-	-	-
Race			-			-	-	-
White	2,333	69.41%	-	2,169	64.54%	-	-	-
Black	436	12.98%	-	541	16.09%	-	-	-
Hispanic	362	10.78%	-	427	12.71%	-	-	-
Asian/other Households	229	6.82%	-	224	6.66%	-	-	-
Gender								
Male	2,168	64.50%	-	1,935	57.57%	-	-	-
Female	1,193	35.50%	-	1,426	42.43%	-	-	-
Education of respondent								
No high school degree	190	5.66%	-	217	6.46%	-	-	-
High school degree	576	17.14%	-	673	20.01%	-	-	-
Some college	809	24.07%	-	960	28.56%	-	-	-
Bachelor’s degree	938	27.91%	-	899	26.73%	-	-	-
Advanced degree	848	25.23%	-	613	18.23%	-	-	-
Parental education (higher of mother or father's)								
No high school degree	399	11.87%	-	441	13.11%	-	-	-
Highschool degree	1,003	29.84%	-	1,059	31.50%	-	-	-
Some college	568	16.90%	-	623	18.53%	-	-	-

Bachelor's degree or beyond	1,391	41.39%	-	1,239	36.85%	-	-	-
Health								
Excellent	2,819	83.88%	-	2,754	81.93%	-	-	-
Fair	503	14.98%	-	562	16.73%	-	-	-
Poor	39	1.15%	-	45	1.34%	-	-	-
Income (log)	3,361	$1,272,932	$13,000,000	3,361	$76,359	$557,981	0.00	$704,000,000
Objective financial knowledge	3,361	2.38	0.81	3,361	2.23	0.85	0.00	3.00
Subjective financial knowledge	3,361	7.42	1.99	3,361	7.11	1.98	0.00	10.00
Risk tolerance	3,361	5.27	2.54	3,361	4.78	2.51	0.00	10.00

Note: 2019 SCF. Restricted sample to only those working full-time.

Table A3
Sample Demographics of the NFCS Sample (N = 10,800)

	unweighted			weighted				
Variable	*n*	*M/%*	*SD*	*n*	*M/%*	*SD*	*min*	*max*
Age								
Under 35	3,540	32.78%	-	3,757	34.79%	-	-	-
35-44	2,648	24.52%	-	2,596	24.04%	-	-	-
45-54	2,532	23.44%	-	2,452	22.70%	-	-	-
55-64	1,757	16.27%	-	1,694	15.68%	-	-	-
65+	323	2.99%	-	301	2.79%	-	-	-
Marital Status								
Married	5,984	55.41%	-	5,798	53.69%	-	-	-
Single	3,499	32.40%	-	3,750	34.72%	-	-	-
Separated/divorced	1,169	10.82%	-	1,110	10.28%	-	-	-
Widowed/widower	148	1.37%	-	142	1.31%	-	-	-
Race								
White	7,737	71.64%	-	6,488	60.07%	-	-	-
Non-White	3,063	28.36%	-	4,312	39.93%	-	-	-
Gender								
Male	5,680	52.59%	-	6,292	58.26%	-	-	-
Female	5,120	47.41%	-	4,508	41.74%	-	-	-
Education of respondent								
No high school degree	88	0.81%	-	92	0.85%	-	-	-
High school degree	2,009	18.60%	-	2,281	21.12%	-	-	-
Some college	3,892	36.04%	-	4,203	38.92%	-	-	-
Bachelor’s degree	3,021	27.97%	-	2,599	24.06%	-	-	-
Advanced degree	1,790	16.57%	-	1,625	15.04%	-	-	-
Parental education *(higher of mother or father's)*								
No high school degree	482	4.52%	-	576	5.40%	-	-	-

Highschool degree	2,941	27.59%	-	3,064	28.75%	-	-	-
Some college	3,064	28.75%	-	3,174	29.78%	-	-	-
Bachelor's degree	2,643	24.80%	-	2,425	22.75%	-	-	-
Advanced degree	1,529	14.34%	-	1,420	13.32%	-	-	-
Income								
$0-$24,999	846	7.83%	-	966	8.94%	-	-	-
$25,000-$49,999	2,515	23.29%	-	2,540	23.52%	-	-	-
$50,000-$74,999	2,401	22.23%	-	2,446	22.64%	-	-	-
$75,000-$99,999	2,010	18.61%	-	1,964	18.19%	-	-	-
$100,000-$149,999	1,958	18.13%	-	1,877	17.38%	-	-	-
$150,000 or more	1,070	9.91%	-	1,008	9.33%	-	-	-
Objective financial knowledge	10,800	3.24	1.63	10,800	3.15	1.64	0	6
Subjective financial knowledge	10,591	5.22	1.27	10,591	5.23	1.29	1	7
Risk tolerance	10,584	5.59	2.57	10,584	5.71	2.62	1	10
Financial attitude	10,591	4.67	1.94	10,682	4.68	1.94	1	7

Note: 2018 NFCS. Restricted sample to only those working full time.

Statement of Conflict of Interest

One of the authors of this paper (Michael Kothakota) worked as the Head of Research at the Certified Financial Planner Board of Standards, Inc. and was a member of its Executive Leadership at the time of submission. He received no compensation for his role in preparing this manuscript.