Less Satisfied When Knowing More? Addressing the Connoisseur Effect

Abstract

Recent studies document a counterintuitive negative association between objective financial knowledge and perceived financial wellbeing. We extend the reference-dependent perspective to financial knowledge and wellbeing to offer an explanation for this pattern. Greater financial knowledge may improve financial circumstances, but it may also make individuals more discerning by raising the benchmark against which those circumstances are evaluated. The connoisseur effect arises when the latter association dominates. Using data from the National Financial Capability Study (NFCS), we examine predictions from this framework using financial satisfaction and the CFPB financial wellbeing index. The negative conditional association between objective knowledge and wellbeing is stronger among respondents with more unfavorable financial status and weaker among higher-income and older respondents across both wellbeing measures. Evidence for other conditioning factors varies across outcomes and specifications. Our overall findings are consistent with a reference-dependent interpretation in which financial knowledge is associated not only with financial circumstances but also with how those circumstances are evaluated.

JEL Codes: D14; G53; I31

Keywords: Financial Knowledge; Financial Wellbeing; Connoisseur Effect

1 Introduction

Financial wellbeing depends not only on what individuals have, but also on the benchmark against which they evaluate what they have. This idea is closely related to reference-dependent evaluation in prospect theory: individuals evaluate economic outcomes relative to a reference point rather than solely in absolute terms (Kahneman and Tversky, 1979; Tversky and Kahneman, 1991). Applied to financial wellbeing, individuals with similar financial circumstances may therefore report different levels of wellbeing because they evaluate those circumstances against different standards. We build on this insight and propose that financial knowledge itself may shape the relevant evaluation benchmark. Greater financial knowledge may make individuals more aware of financial risks, foregone opportunities, and deficiencies in saving, investment, insurance, and retirement preparation, thereby raising the standard against which they evaluate their own financial position. We refer to the resulting negative association between objective financial knowledge and subjective financial wellbeing as the *connoisseur effect*.

This argument is particularly relevant because objective and subjective financial knowledge are positively correlated but conceptually distinct. Objective financial knowledge captures factual knowledge measured by quiz-style questions, whereas subjective financial knowledge reflects self-assessed knowledge and is closely related to perceived financial capability. Because subjective knowledge also incorporates individuals' beliefs about their own competence, the two measures are only imperfectly aligned, giving rise to overconfidence and underconfidence (e.g. Tufano, 2009; Lusardi and Mitchell, 2014; Xia et al., 2014; Porto and Xiao, 2016; Kim et al., 2022). Xiao et al. (2011) show that subjective financial knowledge plays a more important role than objective financial knowledge in shaping financial attitudes and behaviors, while Allgood and Walstad (2016) show that perceived and actual financial knowledge capture distinct but complementary dimensions of financial knowledge. Similar distinctions between objective and subjective financial knowledge have been documented in other consumer domains (e.g. Ellen, 1994; Raju et al., 1995).

This distinction has important implications for subjective financial wellbeing. Prior re-

search emphasizes that financial wellbeing reflects individuals' subjective evaluation of their financial circumstances, including their ability to maintain desired living standards, financial security, and financial freedom (Brüggen et al., 2017; Netemeyer et al., 2018). Studies using the National Financial Capability Study (NFCS) generally find that subjective financial knowledge is more strongly associated with financial wellbeing than objective financial knowledge. In contrast, the relationship between objective financial knowledge and financial wellbeing is less straightforward. Xiao et al. (2014) and Xiao and Porto (2017), for example, emphasize the role of financial behavior in connecting financial knowledge to financial wellbeing, while Fan and Henager (2022) document important indirect relationships among financial knowledge, financial behavior, financial stress, and financial wellbeing.

Building on these literatures, we examine whether reference-dependent evaluation can help explain the connoisseur effect in financial wellbeing. Our central argument is that objective financial knowledge can operate through two competing channels. Greater knowledge may improve financial circumstances by facilitating better financial decisions, but it may also raise the evaluation benchmark against which those circumstances are judged. The connoisseur effect arises when the latter outweighs the former. We therefore examine not only whether objective financial knowledge is negatively associated with subjective financial wellbeing, but also whether this association varies systematically with individuals' financial constraints and their capability to act on what they know.

Our findings indicate that the conditional association between objective financial knowledge and subjective financial wellbeing varies across financial and demographic circumstances. The association is more negative among respondents reporting more unfavorable financial status and less negative among higher-income respondents and those aged 65 or older across both outcomes and the separate and joint interaction specifications. Evidence concerning income drops, financial confidence, younger age, and education is less consistent across outcomes and specifications. These findings provide qualified support for the framework's predictions about constraints and capability, while leaving the underlying mechanisms unresolved. This conditionality constitutes the first main implication of our study.

In addition, we provide evidence on a further implication of the framework by examining subjective financial wellbeing after accounting for observable financial and socioeconomic circumstances. Specifically, we regress financial satisfaction and the CFPB financial wellbeing index on favorable and unfavorable financial status, family income, age, and education indicators and refer to the estimated residual as residual financial wellbeing. We find that residual financial wellbeing is negatively associated with objective financial knowledge but positively associated with subjective financial knowledge. This contrasting pattern is consistent with our framework. Greater objective financial knowledge may be associated with more demanding benchmarks for evaluating one's financial circumstances, whereas greater subjective financial knowledge may reflect greater perceived financial capability and a more favorable evaluation of those circumstances. This analysis examines whether the contrasting knowledge–wellbeing associations also appear in variation unexplained by the selected observable financial and socioeconomic circumstances.

In summary, the primary contribution of this study is to explain the connoisseur effect with a reference-dependent view of subjective wellbeing. Building on the idea that individuals evaluate outcomes relative to reference points rather than solely in absolute terms (Kahneman and Tversky, 1979) and subsequent work emphasizing the role of comparison standards in subjective wellbeing (Michalos, 1985; Kahneman, 1992; Kahneman and Krueger, 2006), we propose that financial knowledge can affect subjective financial wellbeing through two opposing channels. Greater objective financial knowledge may improve financial circumstances, but it may also raise the benchmark against which those circumstances are evaluated. The connoisseur effect arises when the latter outweighs the former.

This framework generates two main empirical implications. First, the connoisseur effect should be conditional on individuals' circumstances. We find that the negative conditional association between objective financial knowledge and subjective financial wellbeing varies across financial and demographic characteristics. The most consistent patterns across both outcomes are a more negative association among respondents reporting more unfavorable financial status and a less negative association among higher-income and older respondents.

These findings provide qualified support for the framework's moderation predictions. Second, we examine whether objective and subjective financial knowledge have contrasting associations with the component of subjective financial wellbeing unexplained by observable financial and socioeconomic circumstances. Objective financial knowledge is negatively associated with the remaining component of subjective financial wellbeing, whereas subjective financial knowledge is positively associated with it. This contrasting pattern is consistent with objective financial knowledge being associated with more demanding evaluation standards and subjective financial knowledge with more favorable perceptions of financial capability.

Together, these findings extend prior evidence that objective and subjective financial knowledge can have different associations with subjective financial wellbeing (e.g. Xiao and Porto, 2022; Hwang and Park, 2023). Rather than viewing the negative association between objective financial knowledge and subjective financial wellbeing as uniform, the connoisseur framework explains why its strength may depend on both individuals' capability to improve their financial circumstances and the benchmarks against which those circumstances are evaluated. In this way, the study integrates financial knowledge with a reference-dependent conception of subjective financial wellbeing and provides a unified framework for understanding when greater financial knowledge is associated with higher or lower subjective financial wellbeing.

2 Hypotheses

Financial knowledge is generally viewed as beneficial because it can help individuals make more informed financial decisions, engage in more prudent financial behaviors, and improve their financial circumstances. However, financial wellbeing depends not only on objective financial circumstances but also on how individuals evaluate those circumstances. A central insight from research on reference-dependent evaluation is that individuals evaluate outcomes relative to reference points, anchors, and norms rather than solely in absolute terms (Kahneman and Tversky, 1979; Kahneman, 1992). Related research on subjective wellbeing emphasizes that reported wellbeing reflects individuals' perceptions and evaluations of their

circumstances and therefore need not correspond directly to objective conditions (Michalos, 1985; Kahneman and Krueger, 2006).

This reference-dependent perspective also appears in the financial wellbeing literature. Brüggen et al. (2017), for example, conceptualize financial wellbeing in terms of individuals' perceived ability to sustain their current and anticipated *desired* living standards and financial freedom, highlighting the importance of personal goals and reference standards. Similarly, Netemeyer et al. (2018) distinguish subjective financial wellbeing from objective financial circumstances and emphasize subjective assessments of current financial stress and future financial security. Taken together, these perspectives suggest that two individuals facing similar financial circumstances may experience different levels of financial wellbeing because they evaluate those circumstances against different benchmarks.

Building on this literature, we conceptualize subjective financial wellbeing as reflecting financial circumstances relative to the benchmark against which those circumstances are evaluated:

$$\textit{Subjective Financial Wellbeing} = \textit{Financial Circumstances} - \textit{Evaluation Benchmark}. \quad (1)$$

Objective financial knowledge may affect both components. The conventional channel operates through financial circumstances. Greater knowledge can facilitate better financial decisions and thereby improve an individual's financial position. Consistent with this view, objective financial knowledge has been associated with retirement planning, saving, investment participation, and other financial behaviors (Lusardi and Mitchell, 2014; Lind et al., 2020).

We propose a second, potentially opposing, channel: objective financial knowledge may also affect the benchmark against which individuals evaluate their financial circumstances. Research on consumer expertise suggests that knowledgeable individuals possess richer cognitive structures and engage in more differentiated information processing (Alba and Hutchinson, 1987). Applied to personal finance, greater objective financial knowledge may increase awareness of financial risks, trade-offs, foregone opportunities, and shortfalls in saving, invest-

ment, insurance, or retirement preparation. More knowledgeable individuals may therefore apply more demanding standards when evaluating their own financial circumstances. In this sense, financial knowledge may influence not only *what individuals have*, but also *the benchmark against which they judge what they have*.

The two channels can be summarized as follows:

$$\begin{aligned} \textit{Objective Financial Knowledge} \longrightarrow & \begin{cases} \textit{Better financial circumstances} & (+) \\ \textit{Higher evaluation benchmark} & (-) \end{cases} \\ & \longrightarrow \textit{Subjective Financial Wellbeing.} \end{aligned} \tag{2}$$

We refer to the second channel as the *connoisseur mechanism*. The *connoisseur effect* arises when the higher evaluation benchmark associated with greater objective financial knowledge outweighs its beneficial association with financial circumstances, resulting in a negative association between objective financial knowledge and subjective financial wellbeing. Thus, the connoisseur effect can be understood as a reference-dependent phenomenon: greater knowledge may change not only financial outcomes but also the standards used to evaluate those outcomes.

This framework also helps distinguish objective from subjective financial knowledge. Prior research shows that the two are related but distinct constructs and need not have the same relationships with financial status and wellbeing. Objective financial knowledge captures demonstrated financial competence, whereas subjective financial knowledge reflects individuals' perceptions of what they know and is closely related to perceived financial capability. Subjective financial knowledge is often more strongly associated with financial status and subjective financial wellbeing than objective financial knowledge (Lind et al., 2020; Hwang and Park, 2023). This distinction is important for the connoisseur framework because the proposed mechanism specifically concerns objective financial knowledge: knowing more may improve financial circumstances while simultaneously making individuals more discerning evaluators of those circumstances.

These competing channels imply that greater objective financial knowledge need not

translate into greater subjective financial wellbeing. Prior studies indeed document different relationships between objective and subjective financial knowledge and subjective financial outcomes (Xiao et al., 2014; Lind et al., 2020; Hwang and Park, 2023). We extend this literature by proposing a reference-dependent explanation for why greater objective financial knowledge may be associated with lower subjective financial wellbeing: objective financial knowledge may affect both financial circumstances and the benchmark against which those circumstances are evaluated. This framework also generates predictions about the conditions under which the connoisseur effect should become stronger or weaker.

Hypothesis 1. ***Connoisseur Effect****: Objective financial knowledge is negatively associated with subjective financial wellbeing, conditional on financial circumstances.*

Subjective financial knowledge, in contrast, reflects perceived knowledge and is closely related to perceived financial capability and is expected to be positively associated with subjective financial wellbeing. This contrasting association is not required for the connoisseur effect in Hypothesis 1, but provides a useful comparison between demonstrated and subjective financial knowledge.

2.1 When Is the Connoisseur Effect Stronger?

The reference-dependent framework implies that the connoisseur effect should not operate uniformly across individuals. If subjective financial wellbeing depends on financial circumstances relative to an evaluation benchmark, the effect of objective financial knowledge should depend on both the benchmark it informs and individuals' ability to bring their financial circumstances closer to that benchmark. Thus, the connoisseur effect should be stronger when greater knowledge makes financial deficiencies more apparent but individuals have limited ability to address them.

Financial constraints provide such a setting. Greater objective financial knowledge may make financially constrained individuals more aware of the consequences of insufficient savings, excessive borrowing, inadequate insurance, or weak retirement preparation.

In reference-dependent terms, greater knowledge may sharpen the benchmark against which current financial circumstances are evaluated, making the gap between actual and desired financial conditions more salient (Kahneman, 1992; Michalos, 1985). At the same time, financial constraints limit individuals' ability to use their knowledge to improve their circumstances and narrow this gap. Thus, constraints weaken the beneficial financial-circumstances channel while leaving the evaluation-benchmark channel relevant.

Financial constraints can arise from both changes in available resources and difficulties meeting existing financial commitments. A decline in income may reduce the resources available to maintain spending, saving, or debt repayments. Unfavorable financial status encompasses a broader set of spending, borrowing, and repayment practices that may be associated with financial pressures even without a recent income decline. Although some indicate difficulty meeting obligations, others may reflect liquidity management or temporary borrowing needs and do not necessarily imply binding constraints. These dimensions can overlap, but they describe different aspects of individuals' financial circumstances. When these circumstances involve financial pressures, greater knowledge may heighten awareness of financial shortfalls, while those pressures constrain corrective actions. This distinction motivates examining income-related constraints and unfavorable financial status separately.

This reasoning is consistent with research showing that subjective financial wellbeing reflects not merely available financial resources but also individuals' perceived ability to manage current financial demands and achieve future financial security (Brüggen et al., 2017; Netemeyer et al., 2018; Kahneman and Krueger, 2006). More generally, financial constraints can limit households' ability to adjust consumption, saving, and other financial decisions in response to information (Deaton, 1991; Campbell, 2006). We therefore expect the negative association between objective financial knowledge and subjective financial wellbeing to be stronger when individuals face greater financial constraints or stress.

Hypothesis 2. ***Constraint-Amplified Connoisseur Effect****: The negative association between objective financial knowledge and subjective financial wellbeing is stronger among individuals facing greater financial constraints or financial stress.*

2.2 When Is the Connoisseur Effect Weaker?

The same reference-dependent framework generates the opposite prediction when individuals have greater capability to translate knowledge into action. Greater knowledge may still inform or raise the benchmark against which financial circumstances are evaluated, but individuals with greater resources and flexibility are better able to respond to recognized financial shortfalls. They can adjust saving, borrowing, investment, insurance, or retirement decisions and thereby bring their financial circumstances closer to their evaluation benchmark. As the gap between circumstances and the benchmark narrows, the negative evaluation channel becomes less likely to dominate the beneficial financial-circumstances channel.

Perceived capability may also matter. Financial confidence reflects perceived ability to manage financial matters, whereas subjective financial knowledge concerns perceptions of what one knows (Lind et al., 2020; Hwang and Park, 2023). Individuals who both understand financial issues and perceive themselves as capable of acting on that knowledge may be better positioned to translate knowledge into financial decisions. Similarly, higher income and financial flexibility can make corrective actions more feasible by providing resources to adjust saving, borrowing, or investment in response to recognized financial shortfalls.

Life-cycle circumstances and human capital may also shape the ability to use financial knowledge. Older individuals may have accumulated experience and resources that facilitate financial decisions, while education may support the interpretation and application of financial information. Age and education capture these circumstances imperfectly and are not direct measures of capability. These dimensions may overlap, but need not condition the relationship between financial knowledge and subjective financial wellbeing in the same way.

The framework therefore predicts that the connoisseur effect should weaken as knowledge becomes more actionable. When individuals have sufficient capability to respond to what they know, improvements in financial circumstances can narrow the gap between actual conditions and evaluation benchmarks. In sufficiently favorable circumstances, the beneficial financial-circumstances channel may outweigh the evaluation-benchmark channel, and the

association between objective financial knowledge and subjective financial wellbeing may become positive.

Hypothesis 3. ***Capability-Conditioned Connoisseur Effect****: The negative association between objective financial knowledge and subjective financial wellbeing weakens, and may reverse, among individuals with greater capability to act on their financial knowledge.*

2.3 Financial Knowledge and Evaluation Benchmarks

The connoisseur framework proposes that objective financial knowledge can be associated with subjective financial wellbeing through two opposing channels: financial circumstances and the evaluation benchmark. Greater objective knowledge may help individuals improve their financial circumstances, thereby increasing wellbeing, but it may also make them more discerning and raise the benchmark against which those circumstances are evaluated, thereby reducing wellbeing. From a reference-dependent perspective, individuals facing similar financial circumstances may therefore report different levels of wellbeing because they apply different benchmarks when evaluating their circumstances (Kahneman, 1992; Michalos, 1985).

The distinction between objective and subjective financial knowledge is particularly informative in this setting. Objective financial knowledge captures demonstrated knowledge of financial concepts and may make individuals more aware of financial risks, foregone opportunities, and deficiencies relative to desirable financial standards. Greater objective knowledge may therefore be associated with a more demanding evaluation benchmark and lower subjective financial wellbeing for a given financial position. Subjective financial knowledge, by contrast, reflects individuals' perceptions of their own financial knowledge and is closely related to perceived financial capability (Lind et al., 2020; Hwang and Park, 2023). It may therefore be positively associated with subjective financial wellbeing beyond what can be explained by observable financial circumstances.

These arguments suggest that objective and subjective financial knowledge may explain different aspects of wellbeing that remain unexplained by observable financial circumstances. We refer to this remaining component as *unexplained financial wellbeing*. If greater objec-

tive knowledge is associated with a more demanding evaluation benchmark, it should be negatively associated with unexplained financial wellbeing. Subjective knowledge, reflecting individuals' perceptions of their own financial knowledge, is instead expected to be positively associated with unexplained financial wellbeing. Observing these contrasting associations would be consistent with the evaluation-benchmark interpretation, although unexplained financial wellbeing does not directly measure the evaluation benchmark and may also reflect unobserved financial circumstances and other individual characteristics.

Hypothesis 4. ***Unexplained Wellbeing Prediction****: Objective and subjective financial knowledge have contrasting associations with the component of subjective financial wellbeing unexplained by observable financial circumstances: objective financial knowledge is negatively associated with unexplained financial wellbeing, whereas subjective financial knowledge is positively associated with unexplained financial wellbeing.*

3 Data

NFCS is a nationally representative, cross-sectional survey of approximately 25,000 respondents conducted by the FINRA Investor Education Foundation. It was first launched in 2009 and has been administered approximately every three years, with the most recent wave from 2024. We use all available survey waves for descriptive analyses, but restrict our hypothesis-testing and regression analyses to the 2024 NFCS U.S. state-by-state survey data. We exclude respondents with "don't know" or "prefer not to say" responses to financial satisfaction, subjective financial knowledge, or financial confidence. The regression samples contain 24,757 observations for financial satisfaction and 23,683 observations for CFPB financial wellbeing. Analyses using the latter measure additionally require valid responses to all five component questions.

An important financial wellbeing measure is financial satisfaction, measured on a 10-point scale. Respondents were asked, "*Overall, thinking of your assets, debts, and savings, how satisfied are you with your current personal financial condition?*" Responses range from 1

(not at all satisfied) to 10 (extremely satisfied). It is widely regarded as a subjective measure of financial wellbeing. As an alternative measure of subjective financial wellbeing, we use a five-item index of self-assessed financial wellbeing. This measure is the sum of the recoded item scores of the five CFPB short-form items included in the NFCS.[1] The resulting index ranges from 0 (lowest wellbeing) to 20 (highest wellbeing). The CFPB financial wellbeing measure captures multiple dimensions of individuals' understanding of and ability to manage their financial situation, including perceived control, capability to absorb shocks, and confidence about the future. Relative to a single-item financial satisfaction measure, it is less purely evaluative and more closely anchored to concrete financial capabilities and conditions. Details on the construction of the CFPB financial wellbeing measure are provided in Tables 1 and A1.

Financial confidence, also referred to as "perceived financial capability" (Xiao et al., 2014), captures individuals' perceived ability to manage everyday financial matters, whereas subjective financial knowledge captures their assessment of how much they know about financial matters. The two constructs may overlap, but they refer to different aspects of perceived financial competence. In this paper, financial confidence is measured on a 7-point Likert-type scale. Respondents were asked, "*How strongly do you agree or disagree with the following statement? I am good at dealing with day-to-day financial matters, such as checking accounts, credit and debit cards, and tracking expenses.*" Responses range from 1 (strongly disagree) to 7 (strongly agree).

Financial knowledge is measured using two sets of variables: subjective financial knowledge and objective financial knowledge. Subjective financial knowledge is measured on a 7-point scale based on the question, "*On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?*" Objective financial knowledge is measured using seven financial knowledge questions covering interest

[1]See the CFPB Financial Wellbeing Scale User Guide: https://files.consumerfinance.gov/f/201512_cfpb_financial-well-being-user-guide-scale.pdf.

rates, inflation, bond prices, mortgages, stocks, and probabilities.[2] Each question is coded as 1 if the respondent provided the correct answer and 0 otherwise. An index of objective financial knowledge is constructed by summing the number of correct answers, yielding a score ranging from 0 to 7.

We follow the existing literature and quantify favorable and unfavorable financial status using two sets of variables. Four variables are identified as favorable financial status: having an emergency fund, having an education fund, having ever calculated retirement needs, and having an employer-sponsored retirement plan. Each variable is recoded as a binary indicator, equal to 1 if the corresponding condition or practice is reported and 0 otherwise. An index of favorable financial status is then constructed by summing these indicators, with values ranging from 0 to 4.

Nine variables capture potentially risky conditions and practices and are recoded as binary indicators: spending more than income, overdrawing a checking account, taking a 401(k) loan, carrying a credit card balance, making only the minimum credit card payment, being late on a credit card payment, exceeding the credit limit, using a credit card cash advance, and being late on a mortgage payment. We construct the unfavorable financial status index by summing these indicators, yielding values from 0 to 9. The classification of favorable and unfavorable financial status follows the prior literature (e.g. Hilgert et al., 2003; Xiao et al., 2014), subject to the availability of corresponding questions in the most recent NFCS wave.[3] Because these indices may themselves be related to financial knowledge, their inclusion as regression controls yields conditional associations rather than identifying a causal pathway.

[2]The NFCS originally included five objective financial knowledge questions from 2009 onward. A sixth question was added in the 2015 wave, and a seventh was added in 2021. To ensure consistency and comparability over time, we construct the objective financial knowledge measure in Table 2 using only the original five questions. In the remaining analyses, which focus on the most recent wave, we use all seven questions available in 2024 to obtain a broader measure of objective financial knowledge.

[3]It is important to note that the labels "favorable" and "unfavorable" are descriptive rather than universally normative. The equally weighted indices count the listed conditions and practices without implying equal economic importance or capturing their frequency or severity. Individual components may reflect respondents' resources and life-cycle circumstances. We assess sensitivity to narrower index definitions in Section 4.4.

Other control variables are based on single survey questions. These controls include indicators for age group, male, white, married, having at least one dependent child, education group, currently working, family income group, whether the respondent experienced an income drop in the past year, having securities investment, homeownership, having a mortgage, having an auto loan, and having at least one credit card. A detailed variable specification is reported in Table 1.

Age, family income, and education are reported as categorical variables in the NFCS dataset. Following Xiao et al. (2014), we consolidate the six original age categories into three groups: under 35, 35–64, and 65 or older. Similarly, we aggregate the original family income categories into three groups: below $35,000, $35,000-$74,999, and $75,000 or more. Education is classified into three categories: high school or less, some college, and college or higher. These groupings preserve the boundaries of the original survey categories and facilitate comparisons with prior research, while providing a parsimonious way to examine differences across life-cycle stages and income levels.[4] The groups enter the regressions through indicator variables, without assuming equal intervals between categories.

The dependent variables are financial satisfaction and CFPB financial wellbeing, and the key explanatory variables are objective and subjective financial knowledge. Income drop, unfavorable status, financial confidence, income, age, and education enter as covariates and additionally serve as moderators through interactions with objective financial knowledge in the heterogeneity analyses. Favorable financial status and the remaining demographic and financial characteristics serve as controls. We do not estimate mediation effects through financial status. The interaction analyses assess variation in conditional associations, while the two proposed channels remain theoretical explanations rather than empirically identified mediation pathways.

[4]We also examine alternative age and income groupings based on the available survey categories and obtain qualitatively similar results.

4 Empirical Results

4.1 Trends in Financial Knowledge

Table 2 Panel A shows that subjective financial knowledge, measured by respondents' self-assessed financial knowledge on a 1–7 scale, has remained relatively stable over time. The average self-rating rose from 4.99 in 2009 to a peak of 5.26 in 2015, before gradually declining to 4.92 in 2024. Standard deviations remained within a narrow range (1.20–1.38), indicating that the distribution of responses has not changed substantially across survey waves. Overall, these patterns suggest that individuals' subjective financial knowledge has been broadly stable over time, with only modest variation.

Panel B of Table 2 reports the corresponding statistics for objective financial knowledge. In contrast to the relatively stable pattern observed for subjective financial knowledge in Panel A, we observe an overall decline in the average number of correct answers computed using the same set of five questions across all waves. Specifically, the average score fell from 3.12 out of 5 in 2009 to 2.73 out of 5 in 2024. Likewise, the proportion of respondents answering at least four out of five questions correctly declined from 46.2% in 2009 to 35.1% in 2024. Moreover, the share of "I don't know" responses increased monotonically over time, from 23.86% in 2009 to 29.65% in 2024, suggesting a growing lack of familiarity with or confidence in key financial concepts.

Taken together, these trends indicate a gradual decline in measured objective financial knowledge across NFCS waves, consistent with prior evidence in the literature (e.g. Xiao et al., 2024; Yu and Xiao, 2025). From 2021 to 2024, subjective financial knowledge declined slightly, while objective financial knowledge increased modestly.

4.2 Summary Statistics and Correlations

Turning to the cross-sectional distribution in 2024, Panel A of Table 3 reports summary statistics for subjective financial knowledge, objective financial knowledge, financial satisfaction, and CFPB financial wellbeing short form, including the number of observations (N),

mean, 25th percentile, median, 75th percentile, and standard deviation.

On average, respondents report a subjective financial knowledge score of 4.93 on the 1–7 scale, indicating a moderate to relatively high level of perceived financial knowledge. In contrast, the mean objective financial knowledge score is 3.44 out of seven, suggesting that respondents answer fewer than half of the objective questions correctly on average. The average financial satisfaction score is 5.20 on the 1–10 scale, indicating a moderate level of overall satisfaction with personal finances. Finally, the mean CFPB financial wellbeing score is 9.74 on the constructed 0–20 scale, with substantial dispersion across respondents (Std. Dev. = 5.58), reflecting considerable heterogeneity in subjective financial conditions.

Panel B reports the pairwise Pearson correlations between these variables. All correlations are positive and statistically significant at the 1% level. Notably, the correlation between subjective and objective financial knowledge is 0.25, indicating that perceived and actual financial knowledge are related but far from perfectly aligned. Moreover, the correlations between subjective financial knowledge and financial satisfaction and CFPB financial wellbeing are 0.43 and 0.38, respectively, which are substantially larger than the corresponding correlations for objective financial knowledge, at 0.17 for financial satisfaction and 0.25 for CFPB financial wellbeing. This contrast already suggests that subjective knowledge may be more closely linked to financial wellbeing than objectively measured knowledge.

4.3 Financial Knowledge, Subjective Financial Wellbeing, and Individual Characteristics

The reference-dependent framework suggests that subjective financial wellbeing depends on both individuals' financial circumstances and the benchmark against which those circumstances are evaluated. Neither component is directly observable in our data. We therefore use observable socioeconomic, financial, and behavioral characteristics to characterize important dimensions of respondents' financial circumstances and examine the association between financial knowledge and subjective financial wellbeing conditional on these characteristics. In particular, the connoisseur effect predicts that objective financial knowledge is negatively

associated with subjective financial wellbeing after accounting for observed financial circumstances.

Following the literature, we use unweighted regressions to examine these associations. We denote subjective financial wellbeing by W and consider two alternative measures: financial satisfaction and the CFPB financial wellbeing index. Our primary explanatory variables are objective financial knowledge (OK), which measures demonstrated financial knowledge based on respondents' answers to financial literacy questions, and subjective financial knowledge (SK), which measures respondents' perceptions of their own financial knowledge.

The full regression specification is:

$$\begin{aligned} W_i &= \alpha + \beta_1 OK_i + \beta_2 SK_i + \beta_3 \mathbb{I}_{\{Income_i < \$35k\}} + \beta_4 \mathbb{I}_{\{Income_i \geq \$75k\}} + \beta_5 \mathbb{I}_{\{Age_i < 35\}} + \beta_6 \mathbb{I}_{\{Age_i > 64\}} \\ &+ \beta_7 \mathbb{I}_{\{Edu_i \leq High\ School\}} + \beta_8 \mathbb{I}_{\{Edu_i \geq College\ Graduate\}} + \beta_9 \mathbb{I}_{\{Income\ drop_i = 1\}} + \beta_{10} Confidence_i \\ &+ \beta_{11} Favorable_i + \beta_{12} Unfavorable_i + \boldsymbol{\gamma}' \boldsymbol{c}_i + \varepsilon_i. \end{aligned} \tag{3}$$

In addition to OK and SK, the specification includes indicators for family income, age, and education groups, as well as measures of financial confidence, favorable financial status, and unfavorable financial status. We use the income, age, and education groupings described in Section 3 and Table 1. The vector $\boldsymbol{c}_i$ contains additional respondent characteristics, including indicators for gender, race, marital status, dependent children, current employment status, investment holdings, homeownership, mortgage borrowing, auto loans, and credit-card ownership.

We first use financial satisfaction as the measure of W. Table 4 reports a sequence of OLS regressions illustrating how the conditional association between objective financial knowledge and financial satisfaction changes as additional covariates are introduced. Column (1) includes only objective financial knowledge, which is positively associated with financial satisfaction, with a coefficient of 0.25 (t-statistic = 26.46). Column (2) adds subjective financial knowledge. The coefficients on SK and OK are 0.85 (t-statistic = 69.76) and 0.10 (t-statistic = 10.71), respectively. Thus, both measures are positively associated with financial satis-

faction, although the coefficient on objective financial knowledge declines substantially after subjective financial knowledge is included.

Columns (3)–(5) progressively introduce socioeconomic and financial characteristics. Column (3) adds income, age, and education indicators, at which point the coefficient on objective financial knowledge becomes negative and statistically significant (-0.05, t-statistic = -5.50). Column (4) adds indicators for gender, race, marital status, dependent children, and employment, and the coefficient decreases to -0.07 (t-statistic = -7.76). Column (5) further controls for an income drop, investment holdings, homeownership, mortgage borrowing, auto loans, and credit-card ownership. The coefficient on objective financial knowledge becomes more negative, reaching -0.13 (t-statistic = -14.49).

Thus, the estimated association between objective financial knowledge and financial satisfaction changes substantially after observable socioeconomic and financial differences are taken into account. This pattern is consistent with the reference-dependent perspective that subjective evaluations depend not only on individuals' circumstances but also on the reference points or benchmarks against which those circumstances are evaluated (Kahneman and Tversky, 1979; Kahneman, 1992). Once observable differences in financial circumstances are more extensively controlled for, the remaining negative association with objective financial knowledge is consistent with our connoisseur framework: greater knowledge may be associated with a more demanding evaluation of otherwise similar financial circumstances. We emphasize, however, that the coefficient reversal does not by itself identify this mechanism, as it may also reflect correlations among the included covariates or other unobserved differences across respondents.

In contrast, subjective financial knowledge remains positively and significantly associated with financial satisfaction throughout Columns (3)–(5), although its coefficient declines from 0.72 to 0.58 as additional covariates are introduced. The two knowledge measures therefore exhibit distinct conditional associations with financial satisfaction: Greater objective knowledge is associated with lower satisfaction after observable socioeconomic and financial characteristics are taken into account, whereas greater subjective knowledge remains associated

with higher satisfaction. This contrasting pattern is consistent with the connoisseur framework: objective knowledge may be associated with a more demanding evaluation of one's financial circumstances, whereas subjective knowledge may be associated with a more favorable perception of one's financial capability. These regressions, however, do not establish that differences in evaluation benchmarks account for the contrasting associations.

Columns (6)-(8) extend Column (5) by introducing financial confidence and favorable and unfavorable financial status. Column (6) adds financial confidence, yielding an OK coefficient of -0.14 (t-stat = -16.41). The SK coefficient declines from 0.58 to 0.43, consistent with shared explanatory variation between subjective financial knowledge and financial confidence. Column (7) instead adds favorable and unfavorable financial status to Column (5), yielding an OK coefficient of -0.18 (t-stat = -20.75). Column (8) includes confidence and favorable and unfavorable financial status jointly. The OK coefficient remains -0.18 (t-stat = -21.62), while SK remains positively associated with financial satisfaction.

The status measures have the expected associations with financial satisfaction. Favorable financial status is positively associated with satisfaction (0.55, t-statistic = 34.60), whereas unfavorable financial status is negatively associated with satisfaction (-0.27, t-statistic = -30.63). Within our reference-dependent framework, favorable financial status is expected primarily to be associated with better financial circumstances, whereas unfavorable financial status may additionally make financial shortfalls relative to an evaluation benchmark more salient. We treat these variables primarily as controls, however, and do not interpret their coefficients as tests of these mechanisms.

Overall, Table 4 documents a negative conditional association between objective financial knowledge and financial satisfaction after observable socioeconomic and financial characteristics are taken into account. The association remains negative when financial confidence and favorable and unfavorable financial status are introduced. The coefficient reversal across specifications should nevertheless be interpreted cautiously. It may partly reflect statistical adjustment arising from correlations among the included variables and does not establish that greater objective financial knowledge causes lower financial satisfaction or that evalua-

tion benchmarks generate the negative association. Suppression, omitted factors, and reverse causality remain possible explanations in this cross-sectional setting.

We next use the CFPB financial wellbeing index as the alternative measure of W. Table 5 reports the same sequence of specifications. Compared with financial satisfaction, the negative association with objective financial knowledge emerges only after a more extensive set of financial characteristics is included. The OK coefficient is positive and statistically significant in Columns (1)–(4), statistically insignificant in Columns (5)–(6), and significantly negative in Columns (7)–(8). Column (7), which includes favorable and unfavorable financial status without confidence, yields an OK coefficient of -0.09 (t-statistic = -5.78). When confidence and favorable and unfavorable financial status are included jointly in Column (8), the coefficient is -0.10 (t-statistic = -6.35). In this specification, favorable financial status is positively associated with CFPB wellbeing (0.96, t-statistic = 31.41), while unfavorable financial status is negatively associated with it (-0.87, t-statistic = -51.82).

The negative association between objective financial knowledge and CFPB wellbeing is therefore more sensitive to the conditioning set than the corresponding association with financial satisfaction. This difference may reflect the distinct dimensions captured by the two measures. Financial satisfaction provides an overall evaluation of one's financial situation, whereas the CFPB index incorporates a broader set of self-reported assessments related to financial strain, perceived control, and future financial security. Both, however, are subjective measures of financial wellbeing; the CFPB index should not be interpreted as an objective measure of financial circumstances. Comparing Columns (7) and (8) of Tables 4 and 5 shows how the association with subjective financial knowledge changes when financial confidence is added. The SK coefficient declines from 0.48 to 0.39 for financial satisfaction and from 0.63 to 0.46 for CFPB financial wellbeing, while remaining positive and statistically significant for both outcomes. This attenuation is consistent with shared explanatory variation between perceived knowledge and confidence. When including both measures in the regression, the SK coefficient describes the association between subjective financial knowledge and wellbeing conditional on financial confidence, whereas the confidence coefficient describes the

association between perceived ability to manage day-to-day financial matters and wellbeing conditional on SK, holding the remaining covariates constant. This attenuation does not establish mediation or identify separate causal effects.

4.4 Robustness

To assess sensitivity to the construction of the financial status indices, we first reconstruct the indices using narrower sets of components. The alternative favorable index retains only emergency savings sufficient to cover three months of expenses and past attempts to determine retirement savings needs. The alternative unfavorable index retains checking-account overdrafts, credit-card late-payment and over-limit fees, and late mortgage payments within the past 12 months. As reported in Appendix Tables A2 and A3, the negative OK and positive SK coefficients remain statistically significant in the fully adjusted specifications, consistent with the baseline results.

As a further robustness analysis, we re-estimate the baseline specifications using the 2016 CFPB National Financial Wellbeing Survey data.[5] The results are reported in Tables A4 and A5 in the Appendix. Although the sample is smaller than the NFCS sample, the survey provides a more comprehensive measure of financial wellbeing. Most variables used in Table 4 have close counterparts in this dataset, allowing us to conduct comparable analyses. We use life satisfaction and financial wellbeing as dependent variables and the Lusardi and Mitchell financial knowledge score, based on the "Big Three" questions on interest, inflation, and risk diversification, as the measure of objective financial knowledge. The financial wellbeing specification provides a robustness check on the NFCS findings, while the life satisfaction specification extends the analysis to a broader evaluative outcome.

Specifically, both tables show a positive association between OK and the dependent variable in Column (1), followed by negative coefficients in the more extensively adjusted specifications. In Column (8) of Table A4, the OK coefficient is -0.10 (t-stat $= -2.91$), while the SK coefficient is 0.09 (t-stat $= 4.62$). The corresponding coefficients in Table A5 are

[5] https://www.consumerfinance.gov/data-research/financial-well-being-survey-data/.

-0.63 (t-stat $= -2.95$) and 0.64 (t-stat $= 4.32$), respectively. Thus, both outcomes exhibit significantly negative OK coefficients and significantly positive SK coefficients in the fully adjusted specifications. These results support the robustness of the contrasting conditional associations across samples and measures.

4.5 Heterogeneity in the Knowledge–Wellbeing Association

4.5.1 Interaction Results

The pattern reported in Table 4 appears puzzling but has been noted before (e.g. Xiao et al., 2014; Tani et al., 2022) and is often interpreted through the lens of the connoisseur effect (Michalos, 2008; Fan and Henager, 2022) in wellbeing studies, which posits that individuals who know more may become less satisfied because they evaluate their circumstances more critically. Our hypotheses predict that this association varies with financial constraints and individuals' capability to act on what they know. To examine these predictions, we conduct interaction analyses in Tables 6 and 7, using financial satisfaction and CFPB financial wellbeing, respectively.

We extend the baseline OLS specification by incorporating interactions between objective financial knowledge and selected moderators, retaining the control set in Column (8) of Table 4. These interactions allow us to assess whether the conditional association between objective financial knowledge and financial wellbeing varies in the directions predicted by Hypotheses 2 and 3. They examine heterogeneity in observed associations rather than

directly identifying the proposed mechanisms. The joint specification is:

$$
\begin{aligned}
W_i \;=\;& \alpha + \beta_1 OK_i + \beta_2 SK_i + \beta_3 \mathbb{I}_{\{Income_i < \$35k\}} + \beta_4 \mathbb{I}_{\{Income_i \geq \$75k\}} + \beta_5 \mathbb{I}_{\{Age_i < 35\}} + \beta_6 \mathbb{I}_{\{Age_i > 64\}} \\
&+ \beta_7 \mathbb{I}_{\{Edu_i \leq High\ School\}} + \beta_8 \mathbb{I}_{\{Edu_i \geq College\ Graduate\}} + \beta_9 \mathbb{I}_{\{Income\ Drop_i = 1\}} + \beta_{10} Confidence_i \\
&+ \beta_{11} Favorable_i + \beta_{12} Unfavorable_i \\
&+ \begin{bmatrix}
\beta_{13} \mathbb{I}_{\{Income\ drop_i = 1\}} + \beta_{14} Unfavorable_i \\
+ \beta_{15} Confidence_i + \beta_{16} \mathbb{I}_{\{Income_i < \$35k\}} + \beta_{17} \mathbb{I}_{\{Income_i \geq \$75k\}} \\
+ \beta_{18} \mathbb{I}_{\{Age_i < 35\}} + \beta_{19} \mathbb{I}_{\{Age_i > 64\}} + \beta_{20} \mathbb{I}_{\{Edu_i \leq High\ School\}} \\
+ \beta_{21} \mathbb{I}_{\{Edu_i \geq College\ Graduate\}}
\end{bmatrix} \cdot OK_i + \boldsymbol{\gamma}' \boldsymbol{c_i} + \varepsilon_i
\end{aligned}
\tag{4}
$$

Columns (1) to (6) include objective-knowledge interactions for one moderator family at a time, while retaining the other baseline variables as controls. Column (7) includes interactions for all six moderator families jointly. Unfavorable status enters these regressions as a continuous index ranging from 0 to 9. According to the constraint-amplified connoisseur effect proposed in Hypothesis 2, we expect β_{13} and β_{14} to be negative. Based on the capability-conditioned connoisseur effect stated in Hypothesis 3, we expect β_{15}, β_{17}, β_{19}, and β_{21} to be positive, and β_{16}, β_{18}, and β_{20} to be negative.

Table 6 reports these interaction results and illustrates how the conditional association between objective financial knowledge and financial satisfaction varies across observed financial circumstances, perceived capability, and demographic characteristics.

Columns (1) and (2) examine heterogeneity associated with income shocks and unfavorable status. The interaction coefficients are -0.05 (t-stat = -2.96) in Column (1) and -0.04 (t-stat = -9.83) in Column (2), indicating that the negative conditional association between objective financial knowledge and financial satisfaction is more pronounced among respondents experiencing an income drop and those reporting more unfavorable status. The signs of these interactions are consistent with the constraint-related predictions in Hypothesis 2. These patterns also relate to the evidence on financial vulnerability and financial stress discussed by Xiao and Kim (2022). However, the estimates do not establish that greater

knowledge heightens awareness of unfavorable status or that such awareness explains the observed associations.

Columns (3) to (5) examine heterogeneity associated with confidence, income, and age. Column (3) interacts objective financial knowledge with financial confidence and yields a positive and statistically significant coefficient (0.02, t-stat = 3.27), indicating that the estimated OK slope becomes less negative as confidence increases. Column (4) shows a positive interaction for high-income households (0.06, t-stat = 3.15), while the interaction for low-income households is negative but statistically insignificant (-0.01, t-stat = -0.53). Column (5) documents life-cycle heterogeneity. Using respondents aged 35–64 as the benchmark group, the interaction with being under 35 is significantly negative (-0.07, t-stat = -3.73), whereas the interaction with being over 64 is significantly positive (0.15, t-stat = 7.87). These patterns are consistent with several of the directional predictions associated with Hypothesis 3. Nevertheless, positive interactions indicate attenuation rather than necessarily a reversal of the negative association. Using the reported rounded coefficients, the estimated OK slopes for high-income respondents in Column (4) and respondents over 64 in Column (5) are -0.14 and -0.05, respectively. Both point estimates remain negative.

Column (6) explores heterogeneity by education level. The interaction with lower education is negative but statistically insignificant (-0.03, t-stat = -1.32), while the interaction with college or higher education is positive but also statistically insignificant (0.02, t-stat = 1.00). This specification therefore provides no statistically significant evidence of differences in the conditional OK association across the education groups. Prior research documents a relationship between educational attainment and financial knowledge (e.g., Lusardi and Mitchell, 2014). The present estimates concern educational differences after accounting for measured knowledge and the other included characteristics; they do not establish that formal education is unimportant for financial wellbeing or that it cannot complement financial capability.

Column (7) includes interactions for all six moderator families jointly. The unfavorable status interaction remains significantly negative (-0.04, t-stat = -8.06), whereas the income-

drop interaction becomes statistically insignificant (0.02, t-stat = 1.00). The high-income interaction remains significantly positive (0.05, t-stat = 2.57), as does the interaction with age over 64 (0.13, t-stat = 6.72). The interaction with age under 35 remains significantly negative (-0.06, t-stat = -3.11). By contrast, the confidence interaction is no longer statistically significant, and the low-income and education interactions are also insignificant. Thus, the joint specification retains several of the patterns observed separately, particularly those associated with unfavorable status, high income, and age. The evidence for income-drop and confidence-related heterogeneity is more sensitive to whether the other interactions are included.

Table 7 reports the corresponding analysis using CFPB financial wellbeing to examine whether these heterogeneity patterns extend to a broader measure of subjective financial wellbeing. In the separate specifications, the income-drop interaction (-0.12, t-stat = -3.39) and the unfavorable status interaction (-0.05, t-stat = -6.25) are both significantly negative, consistent with the directional predictions in Hypothesis 2. The confidence interaction is significantly positive (0.07, t-stat = 7.55), as are the interactions with high income (0.16, t-stat = 4.62) and age over 64 (0.17, t-stat = 4.74). The interaction with age under 35 is significantly negative (-0.08, t-stat = -2.16). These signs broadly resemble those in the corresponding satisfaction specifications and are consistent with several of the predictions associated with Hypothesis 3.

There are also differences between the outcomes. The college interaction is significantly positive for CFPB wellbeing (0.11, t-stat = 3.07), whereas it is statistically insignificant for satisfaction. The low-income and lower-education interactions are statistically insignificant for both outcomes. These patterns distinguish the evidence obtained for an overall assessment of financial satisfaction from that obtained for the broader financial strain, perceived control, and future financial security reflected in the CFPB measure. Nevertheless, differences in statistical significance do not themselves establish statistically significant differences between the coefficients across outcomes, and the raw coefficient magnitudes are expressed on different outcome scales.

Column (7) of Table 7 includes all moderator interactions jointly, using the same control set as the preceding columns. The confidence interaction remains significantly positive (0.04, t-stat = 4.22), as do the interactions with high income (0.13, t-stat = 3.48) and age over 64 (0.12, t-stat = 3.27). The unfavorable status interaction also remains significantly negative (-0.03, t-stat = -3.55), while the income-drop interaction becomes statistically insignificant (0.00, t-stat = 0.08). The low-income, age-under-35, and education interactions are also insignificant. Comparing the joint specifications, high income and older age exhibit consistently positive interactions across both outcomes. Unfavorable status retains a significantly negative interaction for both outcomes, whereas younger age retains a significantly negative interaction only for financial satisfaction. Confidence retains a significantly positive interaction only for CFPB wellbeing. The positive college interaction in the separate CFPB specification does not remain statistically significant in the joint model. These findings show that some heterogeneity patterns persist across outcomes and specifications, while others depend on the wellbeing measure and the other interactions included.

Overall, the results provide evidence of heterogeneity in the conditional association between objective financial knowledge and reported financial wellbeing, with qualified support for the constraint and capability predictions. High income and older age display the most consistent positive interaction patterns across the two outcomes and the separate and joint specifications. Unfavorable status consistently exhibits a negative interaction across these specifications, indicating a more negative OK association among respondents reporting more unfavorable status. The evidence associated with income shocks, confidence, and other demographic characteristics is less uniform. These differences underscore the value of examining both financial satisfaction and CFPB wellbeing, while distinguishing the predictions supported by individual specifications from those that persist in the joint models. The estimates do not directly identify awareness, evaluative standards, or the ability to act on knowledge as underlying mechanisms. Correlations among the moderators, omitted factors, and potentially reciprocal relationships among knowledge, financial circumstances, and wellbeing remain possible explanations for the observed patterns.

4.5.2 Graphical Illustration

Figures 1–5 provide a visual summary of selected heterogeneity patterns in Tables 6 and 7. The figures use pooled OLS models with subgroup indicators, their interactions with objective financial knowledge, and the remaining baseline controls, considering one grouping variable at a time. Panel A of each figure reports results for financial satisfaction, while Panel B reports results for CFPB financial wellbeing. For each outcome, the left side plots predicted values across objective financial knowledge scores, holding the remaining control variables at their full-sample means, while the right side reports the subgroup-specific objective-knowledge slopes. Shaded bands and error bars indicate 95% confidence intervals.

Figures 1 and 2 illustrate the constraint-related patterns. The objective-knowledge slopes are more negative among respondents reporting an income drop for both outcomes. For unfavorable status, Figure 2 replaces the continuous index used in the tables with three categories: no unfavorable status (0), moderate unfavorable status (1–2), and high unfavorable status (3–9). For both outcomes, the estimated slope becomes progressively more negative across these categories. The CFPB wellbeing slope is close to zero and statistically insignificant among respondents reporting no unfavorable status, but significantly negative in the moderate- and high-unfavorable-status groups.

Figures 3–5 highlight the distinction between attenuation and reversal. For financial satisfaction, the estimated slopes remain negative in every income, age, and education group, although the point estimates become less negative as income, age, and education increase. For CFPB wellbeing, the point estimates are positive in the highest-income and oldest groups, but their confidence intervals include zero. The estimate for college-educated respondents is slightly negative and statistically indistinguishable from zero. Thus, the patterns associated with higher income, older age, and greater education do not imply a positive objective-knowledge association for both outcomes.

These figures illustrate the qualified support for Hypotheses 2 and 3 discussed above. Because each figure considers one grouping variable at a time, the graphical patterns should be interpreted alongside the joint specifications rather than as evidence that every subgroup

difference persists when the other interactions are included. High income and older age are consistently associated with a less negative objective-knowledge slope across outcomes and specifications, while unfavorable status is consistently associated with a more negative slope. These patterns do not imply that the association between objective financial knowledge and wellbeing becomes positive in the higher-income or older groups.

4.6 Financial Knowledge and Residual Financial Wellbeing

We next examine the contrasting associations predicted by Hypothesis 4. Our framework proposes that objective financial knowledge may be associated with more demanding evaluation benchmarks, whereas subjective financial knowledge may be positively associated with wellbeing beyond observable financial circumstances. We examine whether both patterns appear in residual financial wellbeing.

We implement this analysis in two stages. In the first stage, we regress subjective financial wellbeing on observable characteristics intended to capture important differences in individuals' financial and socioeconomic circumstances. Prior research shows that wellbeing varies systematically with socioeconomic characteristics such as income, age, and education (e.g., Frey and Stutzer, 2002; Blanchflower and Oswald, 2008). Financial status also provides information about individuals' realized financial circumstances (Hilgert et al., 2003; Lusardi and Mitchell, 2014). We therefore include indicators for family income, age, and education groups, together with measures of favorable and unfavorable financial status. Specifically, we estimate:

$$\begin{aligned} W_i &= \alpha + \beta_1 \mathit{Favorable}_i + \beta_2 \mathit{Unfavorable}_i + \beta_3 \mathbb{I}_{\{\mathit{Income}_i < \$35k\}} + \beta_4 \mathbb{I}_{\{\mathit{Income}_i \geq \$75k\}} \\ &+ \beta_5 \mathbb{I}_{\{\mathit{Age}_i < 35\}} + \beta_6 \mathbb{I}_{\{\mathit{Age}_i > 64\}} + \beta_7 \mathbb{I}_{\{\mathit{Edu}_i \leq \mathit{High\ School}\}} + \beta_8 \mathbb{I}_{\{\mathit{Edu}_i \geq \mathit{College\ Graduate}\}} + \varepsilon_i, \quad (5) \end{aligned}$$

where W is alternatively measured by financial satisfaction and the CFPB financial wellbeing index. The estimated residual, $\widehat{\varepsilon}_i$, termed *residual financial wellbeing*, captures variation unexplained by the first-stage covariates and measures the unexplained financial wellbeing

described in Hypothesis 4. A positive (negative) residual indicates higher (lower) reported wellbeing than predicted by this specification. This is a statistical transformation of each outcome, rather than a distinct wellbeing construct.

The choice of first-stage variables is deliberately parsimonious. Compared with Tables 4 and 5, we do not include the full set of individual characteristics and financial outcomes.[6] Residual financial wellbeing should not be interpreted as a direct measure of an individual's evaluation benchmark. Unobserved financial circumstances, psychological traits, response tendencies, and measurement error may also contribute to the residual. The first stage removes the fitted association with selected covariates, but does not eliminate all differences in financial circumstances or isolate the evaluation-benchmark channel. We therefore interpret the analysis as an exploratory assessment of the associations predicted by Hypothesis 4.

In the second stage, we examine whether objective and subjective financial knowledge are differently associated with residual financial wellbeing:

$$\widehat{\varepsilon}_i \quad = \quad \alpha + \beta_1 SK_i + \beta_2 OK_i + u_i. \tag{6}$$

Hypothesis 4 predicts opposite associations for the two forms of financial knowledge. If greater objective financial knowledge is associated with a more demanding evaluation benchmark, objective financial knowledge should be negatively associated with residual financial wellbeing ($\beta_2 < 0$). In contrast, subjective financial knowledge captures perceived knowledge and is closely related to perceived financial capability and should be positively associated with residual financial wellbeing ($\beta_1 > 0$). The second-stage coefficients allow us to assess whether the associations with the two knowledge measures have the predicted signs.

The first-stage regression results are reported in Panel A of Table 8. Column (1) uses

[6]Specifically, the baseline first-stage specification does not include indicators for *Male*, *White*, *Married*, *Have dependent children*, *Working*, *Experience income drop*, *Have investment*, *Own home*, *Have mortgage*, *Have auto loan*, and *Have credit card*. The resulting residual is therefore specific to the selected first-stage covariates. Some primarily capture demographic heterogeneity, whereas others may themselves be outcomes associated with financial knowledge. As a robustness check, we re-estimate the first stage using the broader set of controls employed in Tables 4 and 5, excluding financial confidence, and obtain qualitatively similar results. Financial confidence is excluded because it measures perceived capability and is conceptually related to the subjective assessments considered here.

financial satisfaction as the dependent variable, while Column (2) employs CFPB financial wellbeing as the dependent variable. All included covariates are statistically significant at the 1% level in the financial satisfaction regression. In the CFPB specification, the status indices, income indicators, and older-age indicator are significant at the 1% level, whereas the younger-age and education indicators are statistically insignificant. Favorable status is positively associated with both outcomes, with coefficients of 0.87 for financial satisfaction and 1.44 for CFPB wellbeing. The corresponding coefficients on unfavorable status are -0.35 and -1.01, respectively. All four estimates are significant at the 1% level. Moreover, the coefficients on income, age, and education dummies are consistent in direction with those reported in Columns (5) and (6) of Tables 4 and 5. The adjusted R^2 values are 0.32 and 0.40, respectively, indicating that the selected covariates account for part of the variation in both outcomes.

Panel B of Table 8 presents the second-stage regression results for residual financial wellbeing, using residual financial satisfaction in Column (1) and residual CFPB financial wellbeing in Column (2). We report that objective financial knowledge is significantly negatively associated with residual financial wellbeing, with coefficients of -0.15 (t-stat $= -19.57$) and -0.08 (t-stat $= -5.27$), respectively, while subjective financial knowledge is positively associated with both residual outcomes, with coefficients of 0.52 (t-stat $= 48.91$) and 0.70 (t-stat $= 33.75$), respectively. All four coefficients are statistically significant at the 1% level.

The direction of these associations is consistent with the negative OK coefficients and positive SK coefficients in the fully adjusted specifications of Tables 4 and 5. Because only the outcome is residualized before the original knowledge measures enter the second stage, these estimates describe associations with residual wellbeing and are not equivalent to the fully adjusted coefficients in Tables 4 and 5. Table 8 complements these regressions by documenting the same contrast in the component of each wellbeing measure left unexplained by the selected first-stage covariates. Thus, the distinction between demonstrated and subjective financial knowledge also appears in their associations with residual financial wellbeing.

Taken together, these results support both predictions in Hypothesis 4 across the two

wellbeing measures: objective financial knowledge is negatively associated with residual financial wellbeing, whereas subjective financial knowledge is positively associated with it. The negative OK association is consistent with more demanding evaluation standards, while the positive SK association is consistent with perceived knowledge being related to wellbeing beyond observable financial circumstances. These associations remain descriptive and do not identify the mechanisms underlying either relationship.

5 Conclusions

This paper examines the relationship between financial knowledge and perceived financial wellbeing by considering two distinct forms of financial knowledge: objective knowledge, which reflects demonstrated financial knowledge, and subjective knowledge, which reflects individuals' perceptions of their own financial knowledge. Using recent data from the NFCS, we document a robust conditional negative association between objective financial knowledge and subjective financial wellbeing after accounting for standard covariates, financial status, and subjective financial knowledge. We interpret this pattern through the connoisseur framework: greater objective financial knowledge may improve financial circumstances while also making individuals more discerning in evaluating those circumstances.

Our findings contribute to the financial knowledge literature by providing a framework for understanding why greater objective financial knowledge need not uniformly translate into higher subjective financial wellbeing. This interpretation is consistent with the broader idea of reference-dependent evaluation, whereby individuals assess economic outcomes relative to a reference point rather than solely in absolute terms (Kahneman and Tversky, 1979; Tversky and Kahneman, 1991). Applied to financial wellbeing, greater financial knowledge may affect not only financial decisions and circumstances but also the benchmark against which individuals evaluate those circumstances. Our results document heterogeneity in the conditional association between objective financial knowledge and subjective financial wellbeing that is consistent with several predictions of this framework, although the evidence differs across moderators and outcomes.

More broadly, our results highlight that subjective financial wellbeing reflects both financial circumstances and individuals' evaluations of those circumstances. This distinction is well established in the subjective and financial wellbeing literatures, which emphasize the roles of aspirations, comparison standards, desired living standards, and subjective financial security in wellbeing evaluations (Campbell et al., 1976; Michalos, 1985; Brüggen et al., 2017; Netemeyer et al., 2018). Our residual-based analysis provides supplementary evidence of contrasting knowledge associations: objective financial knowledge is negatively associated with residual financial wellbeing, whereas subjective financial knowledge is positively associated with it across both outcomes. We do not interpret this residual as a direct measure of the evaluation benchmark, but these contrasting associations are consistent with the different roles of demonstrated and perceived knowledge in our framework.

A central implication of our findings is that the conditional association between objective financial knowledge and subjective financial wellbeing varies across financial and demographic circumstances. The negative association is less pronounced among higher-income respondents and those aged 65 or older across both outcomes, and more pronounced among respondents reporting more unfavorable financial status. The evidence concerning income drops, financial confidence, younger age, and education varies across outcomes and specifications. These patterns highlight the importance of distinguishing among dimensions of constraints and capability when interpreting the knowledge-wellbeing association. From a practical perspective, these findings motivate further research on whether financial education is more effective when knowledge acquisition is accompanied by resources and tools that help individuals act on that knowledge.

Several limitations should be noted. First, our measure of objective financial knowledge relies on a limited set of quiz-style questions and may not capture the full breadth of individuals' financial understanding, while subjective financial wellbeing and subjective financial knowledge are self-reported and may reflect unobserved psychological traits or response styles. Second, our analysis is based on cross-sectional survey data and therefore does not establish causal relationships or directly identify the proposed evaluation-benchmark mecha-

nism. Reverse causality is possible, as financially dissatisfied individuals may seek additional financial knowledge, while omitted characteristics such as pessimism or anxiety may influence both knowledge acquisition and wellbeing evaluations. Measurement error in quiz-based knowledge may also affect the estimated relationships. Third, although our residual-based analysis removes variation associated with observable financial and socioeconomic characteristics, the remaining variation may also contain unobserved objective circumstances, psychological characteristics, measurement error, and response tendencies. Future research using panel data, experimental designs, and direct measures of financial evaluation benchmarks could more clearly identify the mechanisms underlying the connoisseur effect.

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Table 1: Variable Descriptions

This table defines the variables used in the analyses of the 2024 NFCS U.S. state-by-state survey. Income drop, unfavorable financial status, financial confidence, income, age, and education also serve as moderators in the interaction analyses. The remaining demographic and financial characteristics enter as controls.[7]

Variable	Definition
Main Dependent Variables	
Financial Satisfaction	Responses to question J1 are measured on a 10-point scale ranging from 1 (not at all satisfied) to 10 (extremely satisfied). Observations with responses of "Don't know" or "Prefer not to say" are removed from our sample.
CFPB Financial Wellbeing	The measure is constructed from three questions in J41 and two questions in J42. We reverse-code all questions except J42_1 because they are negatively worded. Each item is coded from 0 to 4, with higher values indicating greater wellbeing. The index is the sum of the five items and ranges from 0 (lowest wellbeing) to 20 (highest wellbeing). If any of the five questions has a response of "Don't know" or "Prefer not to say", the financial wellbeing measure is set to missing.
Key Explanatory Variables	
Subjective Financial Knowledge (SK)	Responses to question M4 are measured on a 7-point scale ranging from 1 (very low) to 7 (very high). Observations with responses of "Don't know" or "Prefer not to say" are removed from our sample.
Objective Financial Knowledge (OK)	Defined as the total number of correct answers to questions M6–M10, M31 (added in the 2015 wave), and M50 (added in the 2021 wave). For each question, responses of "Don't know" or "Prefer not to say" are coded as incorrect. The index ranges from 0 (lowest knowledge) to 7 (highest knowledge).
Moderators and Control Variables	
Confidence	Financial confidence is measured using responses to question M1 on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Observations with responses of "Don't know" or "Prefer not to say" are removed from our sample.
Favorable Financial Status	Defined as the sum of affirmative (Yes) responses to questions C1, J5, J6, and J8. The index ranges from 0 (lowest) to 4 (highest). More details in Section 3.
Unfavorable Financial Status	Defined as the sum of nine binary indicators: affirmative responses to B4, C10, and F2_2–F2_6; spending more than income in J3; and at least one late mortgage payment in E15. The index ranges from 0 (lowest) to 9 (highest). More details in Section 3.

Continued on next page

[7]The survey questionnaire is available at: https://finrafoundation.org/sites/finrafoundation/files/2025-07/NFCS-2024-State-by-State-Questionnaire.pdf.

Continued from previous page

Variable	Definition
Age	Respondents aged 35–64 serve as the reference category in the regressions. *Age Under 35* and *Age Over 64* are indicator variables constructed from responses to question A3.
Male	Indicator equal to 1 if the respondent is male, based on question A50, and 0 otherwise.
White	Indicator equal to 1 if the respondent identifies as white, based on question A4, and 0 otherwise.
Married	Indicator equal to 1 if the respondent is married, based on responses to question A6, and 0 otherwise.
Have Dependent Children	Indicator equal to 1 if the respondent has at least one dependent child, based on question A11, and 0 otherwise.
Education	Respondents with some college education or an associate's degree serve as the reference category. *High School or lower* and *College graduate or higher* are indicator variables constructed from responses to question A5.
Working	Indicator equal to 1 if the respondent is self-employed, employed full-time, or employed part-time, based on question A9, and 0 otherwise.
Family Income	Respondents with family income between $35k and $75k serve as the reference category. *Income under $35k* and *Income $75k or more* are indicator variables constructed from responses to question A8.
Experience Income Drop	Indicator equal to 1 if the respondent experienced an income drop in the past 12 months, based on question J10, and 0 otherwise.
Have Investment	Indicator equal to 1 if the respondent holds stocks, bonds, mutual funds, or other securities, based on question B14, and 0 otherwise.
Own Home	Indicator equal to 1 if the respondent currently owns their home, based on question Ea_1, and 0 otherwise.
Have Mortgage	Indicator equal to 1 if the respondent currently has a mortgage, based on question E7, and 0 otherwise.
Have Auto Loan	Indicator equal to 1 if the respondent currently has an auto loan, based on question G1, and 0 otherwise.
Have Credit Card	Indicator equal to 1 if the respondent currently holds at least one credit card, based on question F1, and 0 otherwise.

Table 2: Subjective and Objective Financial Knowledge

Panel A of Table 2 reports the mean and standard deviation of subjective financial knowledge, which ranges from 1 to 7. Panel B reports measures of objective financial knowledge, including the average number of correct answers computed using the same set of five questions across all waves, the share of respondents who answered at least four questions correctly, and the share of responses coded as "I don't know." All statistics are computed separately for each survey year.

Panel A: NFCS Subjective Financial Knowledge Statistics

Year	Average self-rating (1–7)	Standard deviation	N
2009	4.99	1.29	27,210
2012	5.17	1.28	24,514
2015	5.26	1.20	26,639
2018	5.13	1.35	26,025
2021	5.07	1.34	26,193
2024	4.92	1.38	24,854

Panel B: NFCS Objective Financial Knowledge Statistics

Year	Average correct (out of five)	Percentage ≥4 correct	Percentage answering "I don't know"
2009	3.12	46.2	23.86
2012	2.99	42.1	24.93
2015	2.95	40.6	25.18
2018	2.80	36.8	26.81
2021	2.66	34.0	28.91
2024	2.73	35.1	29.65

Table 3: Summary Statistics of Key Variables

Panel A of Table 3 reports the summary statistics of subjective financial knowledge (SK), objective financial knowledge (OK), financial satisfaction, and CFPB financial wellbeing in the 2024 NFCS sample. The statistics include the number of respondents with valid responses (N), mean, 25th percentile, median, 75th percentile, and standard deviation for each variable. Panel B reports the pairwise Pearson correlations between these variables. ***, **, * indicate the 1%, 5%, and 10% significance level, respectively.

Panel A: Summary Statistics

	N	Mean	P25	Median	P75	Std. Dev.
SK (1-7)	24,757	4.93	4	5	6	1.38
OK (0-7)	24,757	3.44	2	3	5	1.86
Satisfaction (1-10)	24,757	5.20	3	5	7	2.83
Wellbeing (0-20)	23,683	9.74	5	9	14	5.58

Panel B: Pearson Correlation Results

Variables	(1)	(2)	(3)	(4)
(1) SK	1.00			
(2) OK	0.25***	1.00		
(3) Satisfaction	0.43***	0.17***	1.00	
(4) Wellbeing	0.38***	0.25***	0.70***	1.00

Table 4: Determinants of Financial Satisfaction

This table reports the baseline OLS regression results for financial satisfaction in the 2024 NFCS sample. All variables are defined in Table 1. The t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OK	0.25***	0.10***	-0.05***	-0.07***	-0.13***	-0.14***	-0.18***	-0.18***
	(26.46)	(10.71)	(-5.50)	(-7.76)	(-14.49)	(-16.41)	(-20.75)	(-21.62)
SK		0.85***	0.72***	0.70***	0.58***	0.43***	0.48***	0.39***
		(69.76)	(60.78)	(59.55)	(51.82)	(34.70)	(44.81)	(32.97)
Income $<$ \$35k			-0.71***	-0.66***	-0.41***	-0.40***	-0.24***	-0.25***
			(-17.65)	(-15.86)	(-10.24)	(-10.17)	(-6.42)	(-6.53)
Income $\geq$ \$75k			0.97***	0.91***	0.64***	0.62***	0.36***	0.37***
			(25.23)	(23.10)	(16.95)	(16.84)	(10.14)	(10.49)
Age $<$ 35			0.22***	0.24***	0.40***	0.45***	0.39***	0.43***
			(5.66)	(6.13)	(10.97)	(12.42)	(11.40)	(12.36)
Age $>$ 64			1.13***	1.04***	0.59***	0.50***	0.57***	0.52***
			(29.01)	(23.65)	(13.98)	(12.03)	(14.19)	(13.01)
High School or Lower			0.38***	0.34***	0.36***	0.37***	0.36***	0.37***
			(9.39)	(8.34)	(9.49)	(10.01)	(10.13)	(10.47)
College Graduate or Higher			0.53***	0.54***	0.32***	0.32***	0.14***	0.15***
			(14.00)	(14.29)	(9.11)	(9.13)	(4.05)	(4.37)
Male				0.39***	0.31***	0.35***	0.33***	0.35***
				(12.23)	(10.55)	(12.14)	(11.75)	(12.74)
White				-0.21***	-0.33***	-0.33***	-0.33***	-0.33***
				(-5.87)	(-9.78)	(-9.90)	(-10.51)	(-10.47)
Married				0.36***	0.24***	0.23***	0.12***	0.12***
				(9.97)	(6.97)	(6.86)	(3.58)	(3.72)
Have Dependent Children				-0.35***	-0.15***	-0.12***	-0.21***	-0.19***
				(-10.04)	(-4.70)	(-3.65)	(-6.60)	(-6.11)
Working				-0.00	0.02	0.04	-0.16***	-0.14***
				(-0.03)	(0.69)	(1.26)	(-4.85)	(-4.37)
Experience Income Drop					-1.22***	-1.11***	-0.87***	-0.83***
					(-34.86)	(-32.02)	(-25.46)	(-24.51)
Have Investment					0.92***	0.87***	0.57***	0.56***
					(27.01)	(25.99)	(17.39)	(17.17)
Own Home					1.07***	1.00***	0.78***	0.76***
					(26.05)	(24.84)	(19.95)	(19.56)
Have Mortgage					-0.66***	-0.64***	-0.52***	-0.52***
					(-16.67)	(-16.32)	(-13.74)	(-13.84)
Have Auto Loan					-0.49***	-0.47***	-0.28***	-0.29***
					(-14.65)	(-14.08)	(-8.83)	(-9.04)
Have Credit Card					0.44***	0.39***	0.84***	0.75***
					(10.74)	(9.54)	(19.71)	(17.59)
Confidence						0.32***		0.21***
						(29.49)		(19.62)
Favorable Status							0.58***	0.55***
							(36.07)	(34.60)
Unfavorable Status							-0.30***	-0.27***
							(-34.91)	(-30.63)
Adj R^2	0.03	0.19	0.27	0.28	0.37	0.40	0.44	0.45
N	24,757	24,757	24,757	24,757	24,757	24,757	24,757	24,757

Table 5: Determinants of CFPB Financial Wellbeing

This table reports the baseline OLS regression results for CFPB financial wellbeing. All variables are defined in Table 1. The t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OK	0.75***	0.49***	0.15***	0.11***	0.02	-0.01	-0.09***	-0.10***
	(39.30)	(26.44)	(7.90)	(5.98)	(1.09)	(-0.47)	(-5.78)	(-6.35)
SK		1.40***	1.09***	1.06***	0.85***	0.52***	0.63***	0.46***
		(56.41)	(45.63)	(44.88)	(37.70)	(20.99)	(30.18)	(20.14)
Income < $35k			-1.40***	-1.47***	-1.10***	-1.08***	-0.78***	-0.79***
			(-17.23)	(-17.59)	(-13.77)	(-13.78)	(-10.71)	(-10.84)
Income ≥ $75k			2.20***	2.22***	1.78***	1.75***	1.16***	1.17***
			(28.72)	(28.33)	(23.76)	(23.80)	(16.83)	(17.19)
Age < 35			0.09	0.07	0.37***	0.47***	0.35***	0.40***
			(1.18)	(0.92)	(5.10)	(6.47)	(5.27)	(6.07)
Age > 64			2.81***	2.33***	1.50***	1.31***	1.32***	1.23***
			(36.10)	(26.42)	(17.82)	(15.88)	(17.14)	(16.09)
High School or Lower			0.25***	0.18**	0.19**	0.22***	0.18**	0.19***
			(3.00)	(2.18)	(2.50)	(2.91)	(2.57)	(2.81)
College Graduate or Higher			0.65***	0.68***	0.29***	0.28***	-0.12*	-0.11*
			(8.63)	(9.05)	(4.10)	(3.99)	(-1.90)	(-1.68)
Male				0.58***	0.44***	0.52***	0.48***	0.52***
				(9.19)	(7.37)	(8.90)	(8.90)	(9.72)
White				-0.62***	-0.84***	-0.83***	-0.88***	-0.88***
				(-8.69)	(-12.45)	(-12.65)	(-14.47)	(-14.47)
Married				0.53***	0.39***	0.38***	0.12*	0.12**
				(7.36)	(5.76)	(5.63)	(1.85)	(1.97)
Have Dependent Children				-1.29***	-0.86***	-0.78***	-0.77***	-0.74***
				(-18.50)	(-13.02)	(-12.15)	(-12.54)	(-12.18)
Working				-0.29***	-0.21***	-0.17**	-0.47***	-0.44***
				(-4.05)	(-3.08)	(-2.54)	(-7.41)	(-6.97)
Experience Income Drop					-2.83***	-2.59***	-1.80***	-1.73***
					(-40.38)	(-37.45)	(-27.44)	(-26.55)
Have Investment					1.54***	1.45***	0.84***	0.83***
					(22.80)	(21.79)	(13.33)	(13.16)
Own Home					1.73***	1.59***	1.04***	1.00***
					(21.16)	(19.75)	(13.90)	(13.45)
Have Mortgage					-1.31***	-1.25***	-0.87***	-0.87***
					(-16.61)	(-16.20)	(-12.07)	(-12.11)
Have Auto Loan					-1.09***	-1.04***	-0.47***	-0.48***
					(-16.36)	(-15.79)	(-7.69)	(-7.86)
Have Credit Card					0.51***	0.40***	1.97***	1.81***
					(6.13)	(4.88)	(23.78)	(21.86)
Confidence						0.66***		0.36***
						(30.95)		(17.81)
Favorable Status							1.01***	0.96***
							(32.78)	(31.41)
Unfavorable Status							-0.93***	-0.87***
							(-56.13)	(-51.82)
Adj R^2	0.06	0.17	0.28	0.30	0.39	0.41	0.50	0.50
N	23,683	23,683	23,683	23,683	23,683	23,683	23,683	23,683

Table 6: Determinants of Financial Satisfaction with Interactions

This table reports the extended OLS regression results for financial satisfaction, incorporating interaction terms between objective financial knowledge and key variables based on Column (8) of Table 4 using the 2024 NFCS sample. All variables are defined in Table 1. The t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. For brevity, results for selected control variables are omitted.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
OK	-0.17***	-0.12***	-0.27***	-0.20***	-0.20***	-0.18***	-0.11***
	(-18.22)	(-11.04)	(-9.86)	(-14.62)	(-18.03)	(-13.63)	(-3.03)
SK	0.39***	0.39***	0.39***	0.39***	0.39***	0.39***	0.39***
	(33.01)	(33.19)	(33.03)	(32.98)	(32.83)	(32.94)	(33.00)
Income $<$ \$35k	-0.25***	-0.24***	-0.25***	-0.23***	-0.24***	-0.25***	-0.22***
	(-6.60)	(-6.52)	(-6.61)	(-3.34)	(-6.44)	(-6.63)	(-3.17)
Income $\geq$ \$75k	0.37***	0.37***	0.37***	0.16**	0.36***	0.37***	0.17**
	(10.37)	(10.27)	(10.34)	(2.10)	(10.08)	(10.38)	(2.25)
Age $<$ 35	0.42***	0.41***	0.42***	0.43***	0.60***	0.42***	0.57***
	(12.26)	(11.97)	(12.30)	(12.41)	(9.38)	(12.35)	(8.69)
Age $>$ 64	0.51***	0.51***	0.51***	0.52***	-0.05	0.52***	0.01
	(12.95)	(12.79)	(12.93)	(13.00)	(-0.67)	(13.01)	(0.09)
High School or Lower	0.37***	0.37***	0.37***	0.36***	0.37***	0.44***	0.39***
	(10.42)	(10.45)	(10.38)	(10.17)	(10.30)	(6.45)	(5.63)
College Graduate or Higher	0.14***	0.14***	0.14***	0.14***	0.13***	0.07	0.18**
	(4.30)	(4.09)	(4.22)	(4.16)	(3.94)	(0.99)	(2.41)
Experience Income Drop	-0.67***	-0.84***	-0.83***	-0.83***	-0.84***	-0.83***	-0.90***
	(-10.34)	(-24.70)	(-24.55)	(-24.48)	(-24.82)	(-24.50)	(-13.29)
Confidence	0.21***	0.20***	0.16***	0.21***	0.21***	0.21***	0.23***
	(19.65)	(19.25)	(9.10)	(19.68)	(19.89)	(19.67)	(12.25)
Favorable Status	0.55***	0.54***	0.55***	0.55***	0.56***	0.55***	0.55***
	(34.50)	(34.16)	(34.59)	(34.61)	(34.87)	(34.60)	(34.43)
Unfavorable Status	-0.27***	-0.14***	-0.26***	-0.26***	-0.27***	-0.27***	-0.15***
	(-30.49)	(-8.54)	(-30.19)	(-30.25)	(-30.69)	(-30.44)	(-9.04)
OK $\times$ Income Drop	-0.05***						0.02
	(-2.96)						(1.00)
OK $\times$ Unfavorable Status		-0.04***					-0.04***
		(-9.83)					(-8.06)
OK $\times$ Confidence			0.02***				-0.01
			(3.27)				(-1.48)
OK $\times$ Income $<$ \$35k				-0.01			-0.01
				(-0.53)			(-0.48)
OK $\times$ Income $\geq$ \$75k				0.06***			0.05**
				(3.15)			(2.57)
OK $\times$ Age $<$ 35					-0.07***		-0.06***
					(-3.73)		(-3.11)
OK $\times$ Age $>$ 64					0.15***		0.13***
					(7.87)		(6.72)
OK $\times$ High School or Lower						-0.03	-0.01
						(-1.32)	(-0.45)
OK $\times$ College or Higher						0.02	-0.02
						(1.00)	(-0.90)
Adj R^2	0.45	0.45	0.45	0.45	0.45	0.45	0.45
N	24,757	24,757	24,757	24,757	24,757	24,757	24,757

Table 7: Determinants of CFPB Financial Wellbeing with Interactions

This table reports the extended OLS regression results for CFPB financial wellbeing, incorporating interaction terms between objective financial knowledge and selected key variables and building on Column (8) of Table 5. All variables are defined in Table 1. The t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. For brevity, results for selected control variables are omitted.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
OK	-0.08***	-0.02	-0.48***	-0.15***	-0.12***	-0.14***	-0.36***
	(-4.24)	(-1.12)	(-9.14)	(-5.71)	(-5.72)	(-5.34)	(-5.13)
SK	0.46***	0.46***	0.46***	0.46***	0.46***	0.46***	0.46***
	(20.19)	(20.24)	(20.33)	(20.19)	(20.05)	(20.08)	(20.27)
Income < $35k	-0.79***	-0.79***	-0.80***	-0.69***	-0.78***	-0.80***	-0.75***
	(-10.92)	(-10.84)	(-11.01)	(-5.05)	(-10.78)	(-11.01)	(-5.43)
Income ≥ $75k	1.16***	1.16***	1.15***	0.56***	1.16***	1.16***	0.66***
	(17.05)	(17.04)	(16.87)	(3.84)	(16.93)	(17.02)	(4.41)
Age < 35	0.39***	0.39***	0.39***	0.41***	0.60***	0.40***	0.44***
	(5.95)	(5.81)	(5.96)	(6.14)	(4.81)	(6.07)	(3.48)
Age > 64	1.22***	1.22***	1.22***	1.23***	0.55***	1.23***	0.74***
	(16.02)	(15.95)	(15.92)	(16.08)	(3.47)	(16.11)	(4.51)
High School or Lower	0.19***	0.19***	0.18***	0.16**	0.19***	0.25*	0.13
	(2.75)	(2.78)	(2.63)	(2.35)	(2.71)	(1.90)	(0.97)
College Graduate or Higher	-0.11*	-0.12*	-0.13**	-0.13**	-0.12*	-0.52***	-0.23
	(-1.76)	(-1.87)	(-1.99)	(-2.00)	(-1.92)	(-3.61)	(-1.56)
Experience Income Drop	-1.37***	-1.74***	-1.74***	-1.73***	-1.74***	-1.73***	-1.75***
	(-10.89)	(-26.66)	(-26.66)	(-26.51)	(-26.71)	(-26.54)	(-13.26)
Confidence	0.36***	0.36***	0.15***	0.36***	0.36***	0.36***	0.23***
	(17.84)	(17.58)	(4.40)	(17.90)	(17.94)	(17.88)	(6.39)
Favorable Status	0.96***	0.95***	0.96***	0.96***	0.97***	0.96***	0.96***
	(31.31)	(31.11)	(31.41)	(31.42)	(31.54)	(31.44)	(31.31)
Unfavorable Status	-0.86***	-0.70***	-0.85***	-0.86***	-0.87***	-0.86***	-0.75***
	(-51.66)	(-22.86)	(-50.99)	(-51.24)	(-51.87)	(-51.50)	(-23.33)
OK × Income Drop	-0.12***						0.00
	(-3.39)						(0.08)
OK × Unfavorable Status		-0.05***					-0.03***
		(-6.25)					(-3.55)
OK × Confidence			0.07***				0.04***
			(7.55)				(4.22)
OK × Income < $35k				-0.05			-0.02
				(-1.33)			(-0.63)
OK × Income ≥ $75k				0.16***			0.13***
				(4.62)			(3.48)
OK × Age < 35					-0.08**		-0.02
					(-2.16)		(-0.65)
OK × Age > 64					0.17***		0.12***
					(4.74)		(3.27)
OK × High School or Lower						-0.03	0.01
						(-0.85)	(0.18)
OK × College or Higher						0.11***	0.02
						(3.07)	(0.60)
Adj R^2	0.50	0.50	0.50	0.50	0.50	0.50	0.50
N	23,683	23,683	23,683	23,683	23,683	23,683	23,683

Table 8: Financial Knowledge and Residual Financial Wellbeing

This table reports results from a two-stage regression analysis. In Stage 1 (Panel A), financial wellbeing, measured by financial satisfaction and CFPB financial wellbeing, is regressed on favorable and unfavorable financial status, family income group dummies, age group dummies, and education group dummies as follows:

$$\begin{aligned} W_i &= \alpha + \beta_1 Favorable_i + \beta_2 Unfavorable_i + \beta_3 \mathbb{I}_{\{Income_i < \$35k\}} + \beta_4 \mathbb{I}_{\{Income_i \geq \$75k\}} + \beta_5 \mathbb{I}_{\{Age_i < 35\}} \\ &+ \beta_6 \mathbb{I}_{\{Age_i > 64\}} + \beta_7 \mathbb{I}_{\{Edu_i \leq High\ School\}} + \beta_8 \mathbb{I}_{\{Edu_i \geq College\ Graduate\}} + \varepsilon_i \end{aligned}$$

The estimated first-stage residual, $\widehat{\varepsilon}_i$, is termed residual financial wellbeing and captures variation in each outcome unexplained by the included covariates. In Stage 2 (Panel B), $\widehat{\varepsilon}_i$ is regressed on subjective and objective financial knowledge:

$$\widehat{\varepsilon}_i = \alpha + \beta_1 SK_i + \beta_2 OK_i + u_i$$

t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A: Stage 1 Regressions		**Panel B: Stage 2 Regressions**	
Dependent Variable:	Satisfaction	CFPB Wellbeing	Residual Satisfaction	Residual CFPB Wellbeing
	(1)	(2)	(1)	(2)
SK			0.52***	0.70***
			(48.91)	(33.75)
OK			-0.15***	-0.08***
			(-19.57)	(-5.27)
Favorable Status	0.87***	1.44***		
	(56.12)	(49.51)		
Unfavorable Status	-0.35***	-1.01***		
	(-42.99)	(-66.45)		
Income < $35k	-0.43***	-1.12***		
	(-10.65)	(-14.74)		
Income ≥ $75k	0.52***	1.37***		
	(13.56)	(19.18)		
Age < 35	0.20***	0.08		
	(5.29)	(1.08)		
Age > 64	1.36***	2.86***		
	(35.66)	(39.92)		
High School or Lower	0.41***	0.12		
	(10.38)	(1.61)		
College Graduate or Higher	0.19***	0.09		
	(5.10)	(1.36)		
Adj R^2	0.32	0.40	0.09	0.05
N	24,757	23,683	24,757	23,683

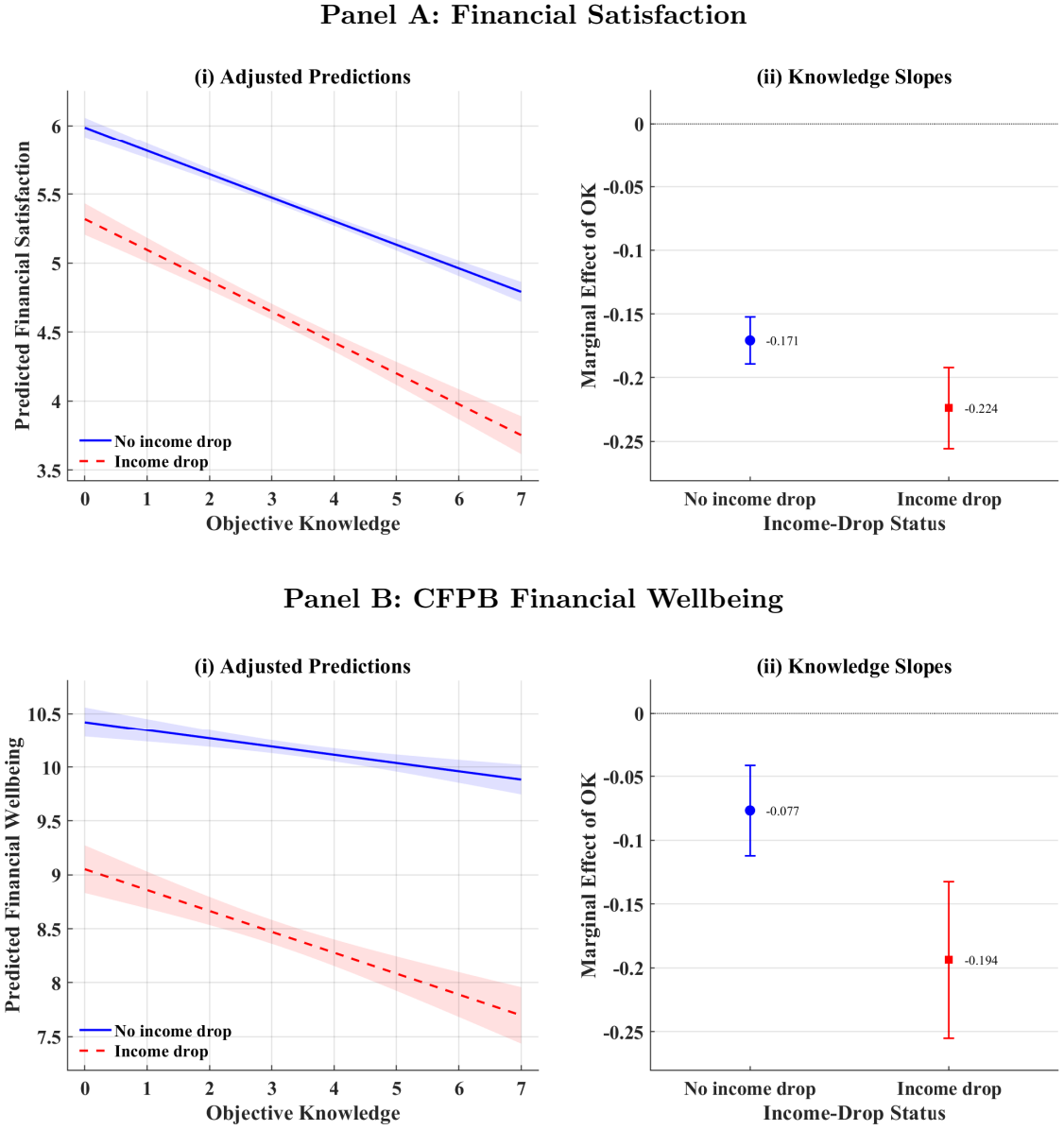


Figure 1: Income Drops, Objective Financial Knowledge, and Financial Wellbeing. The subgroups distinguish respondents who did and did not experience an income drop during the past 12 months. Panel A reports results for financial satisfaction, and Panel B reports results for CFPB financial wellbeing. Each outcome is estimated using a pooled OLS regression that includes objective financial knowledge, the subgroup indicators, interactions between objective financial knowledge and the subgroup indicators, and the remaining controls from Tables 4 and 5, Column (8). (i) of each plot presents adjusted predictions, with the remaining covariates held at their full-sample means. (ii) presents the estimated marginal effect of objective financial knowledge for each subgroup. The shaded regions in (i) are pointwise 95% confidence intervals for the adjusted mean predictions. The vertical error bars in (ii) are 95% confidence intervals for the estimated marginal effects. All confidence intervals are calculated using conventional OLS standard errors.

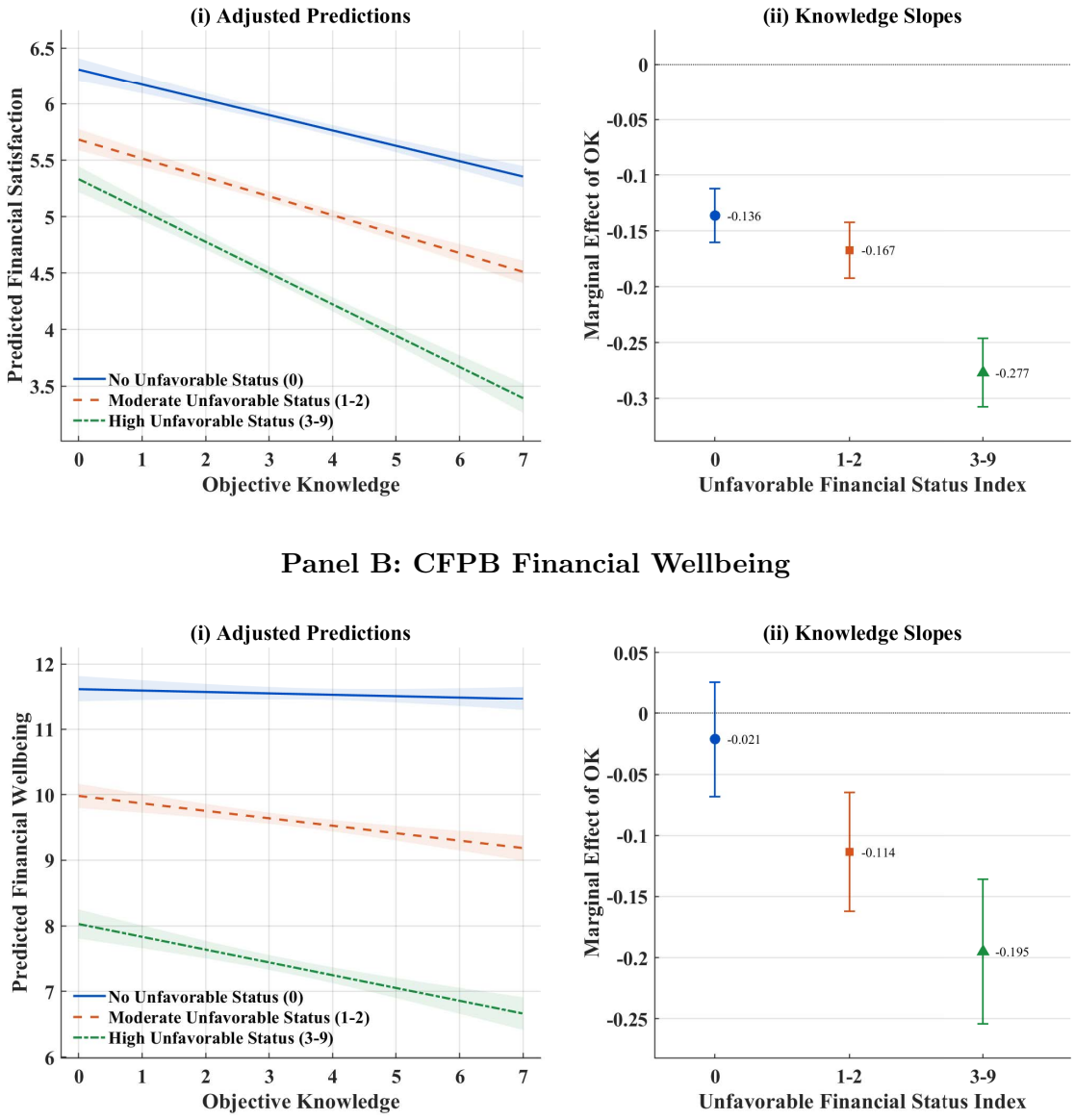


Figure 2: Unfavorable Status, Objective Financial Knowledge, and Financial Wellbeing. Respondents are classified according to their unfavorable status index: no unfavorable status (0), moderate unfavorable status (1–2), and high unfavorable status (3–9). The corresponding subgroup indicators replace the continuous unfavorable status measure in these regressions. Panel A reports results for financial satisfaction, and Panel B reports results for CFPB financial wellbeing. Each outcome is estimated using a pooled OLS regression that includes objective financial knowledge, the subgroup indicators, interactions between objective financial knowledge and the subgroup indicators, and the remaining controls from Tables 4 and 5, Column (8). (i) of each plot presents adjusted predictions, with the remaining covariates held at their full-sample means. (ii) presents the estimated marginal effect of objective financial knowledge for each subgroup. The shaded regions in (i) are pointwise 95% confidence intervals for the adjusted mean predictions. The vertical error bars in (ii) are 95% confidence intervals for the estimated marginal effects. All confidence intervals are calculated using conventional OLS standard errors.

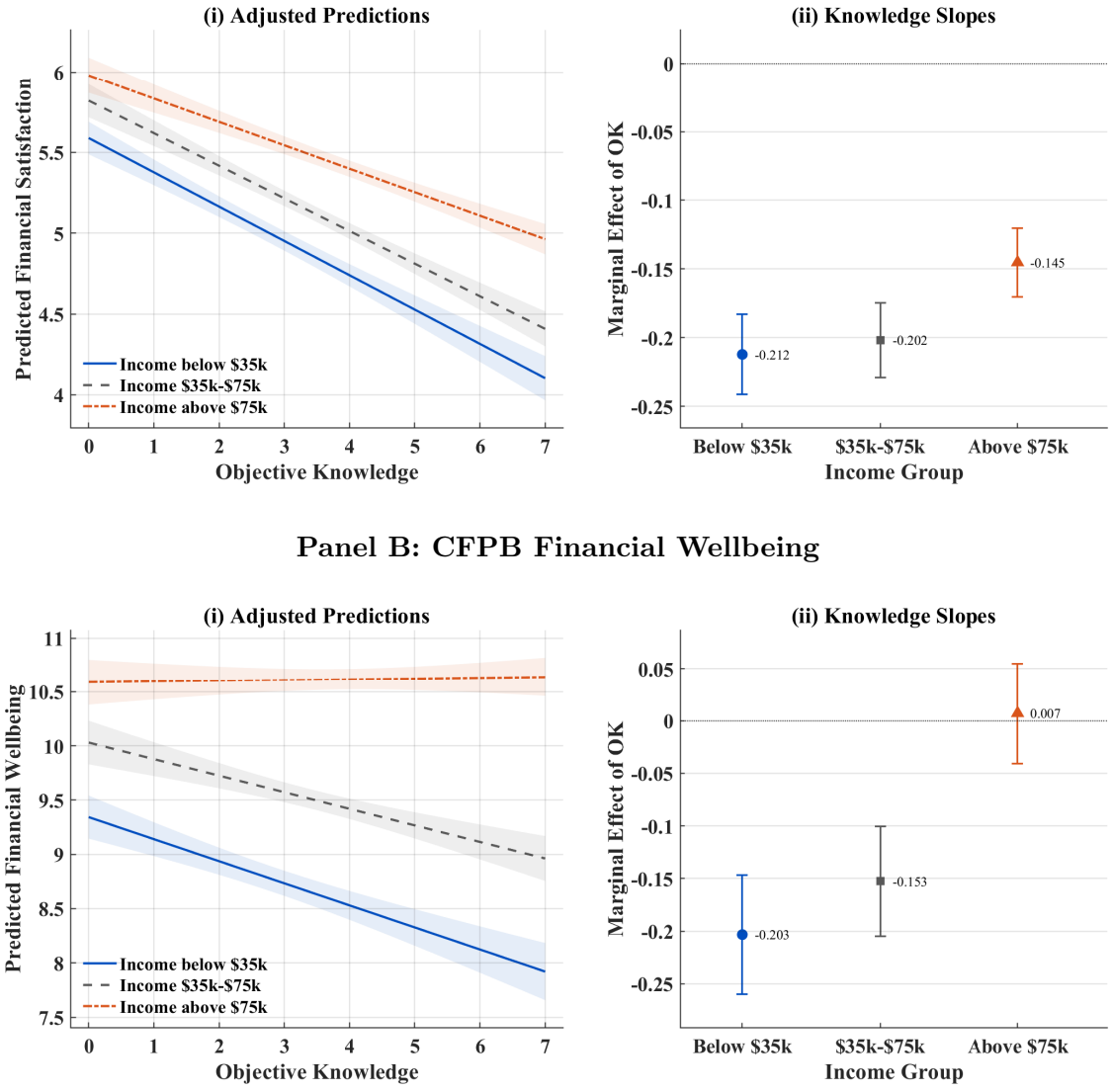


Figure 3: Income, Objective Financial Knowledge, and Financial Wellbeing. Respondents are classified into three annual household-income groups: below $35,000, $35,000–$75,000, and above $75,000. Panel A reports results for financial satisfaction, and Panel B reports results for CFPB financial wellbeing. Each outcome is estimated using a pooled OLS regression that includes objective financial knowledge, the subgroup indicators, interactions between objective financial knowledge and the subgroup indicators, and the remaining controls from Tables 4 and 5, Column (8). (i) of each plot presents adjusted predictions, with the remaining covariates held at their full-sample means. (ii) presents the estimated marginal effect of objective financial knowledge for each subgroup. The shaded regions in (i) are pointwise 95% confidence intervals for the adjusted mean predictions. The vertical error bars in (ii) are 95% confidence intervals for the estimated marginal effects. All confidence intervals are calculated using conventional OLS standard errors.

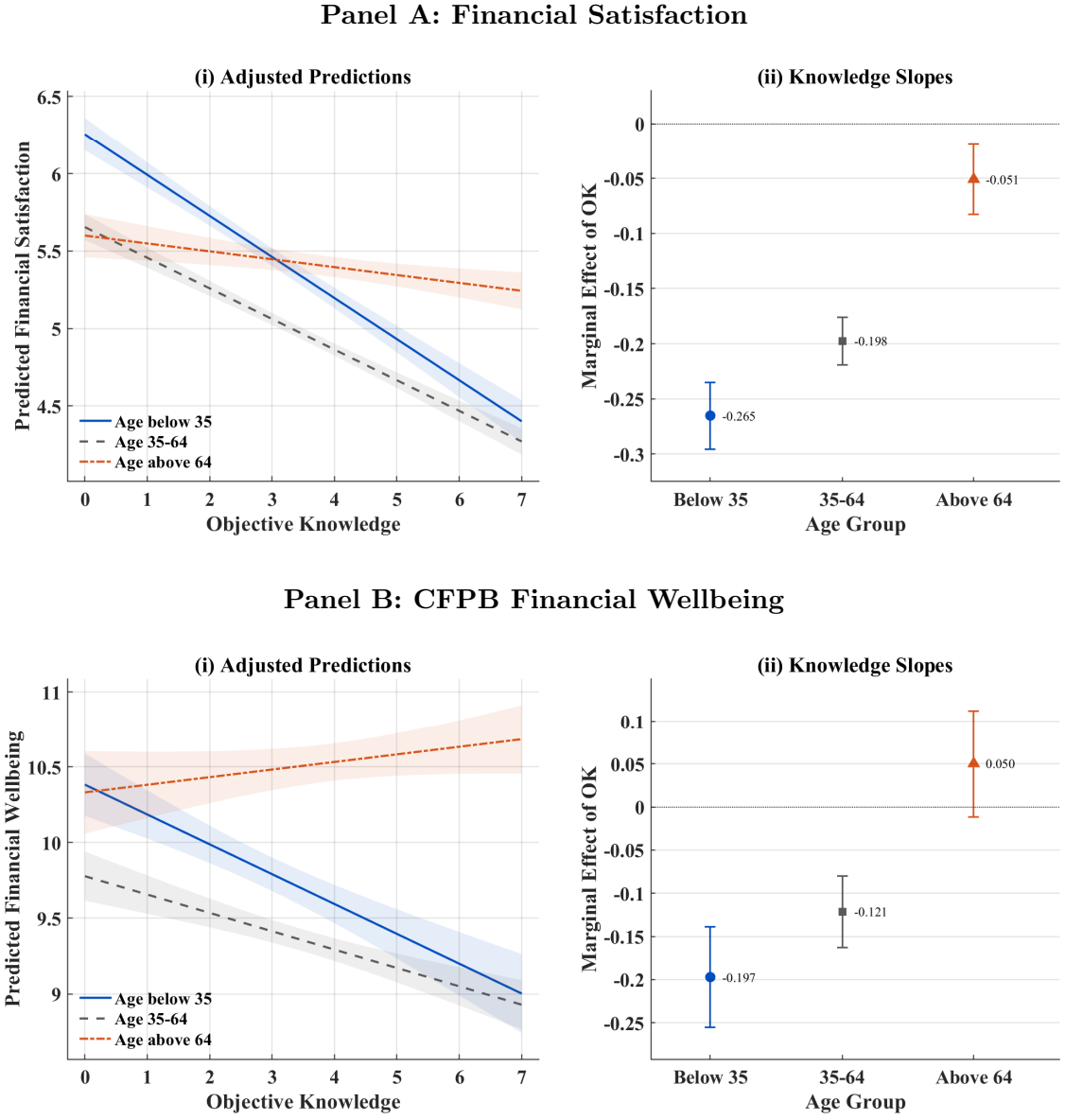


Figure 4: Age, Objective Financial Knowledge, and Financial Wellbeing. Respondents are classified into three age groups: younger than 35, 35–64, and 65 or older. Panel A reports results for financial satisfaction, and Panel B reports results for CFPB financial wellbeing. Each outcome is estimated using a pooled OLS regression that includes objective financial knowledge, the subgroup indicators, interactions between objective financial knowledge and the subgroup indicators, and the remaining controls from Tables 4 and 5, Column (8). (i) of each plot presents adjusted predictions, with the remaining covariates held at their full-sample means. (ii) presents the estimated marginal effect of objective financial knowledge for each subgroup. The shaded regions in (i) are pointwise 95% confidence intervals for the adjusted mean predictions. The vertical error bars in (ii) are 95% confidence intervals for the estimated marginal effects. All confidence intervals are calculated using conventional OLS standard errors.

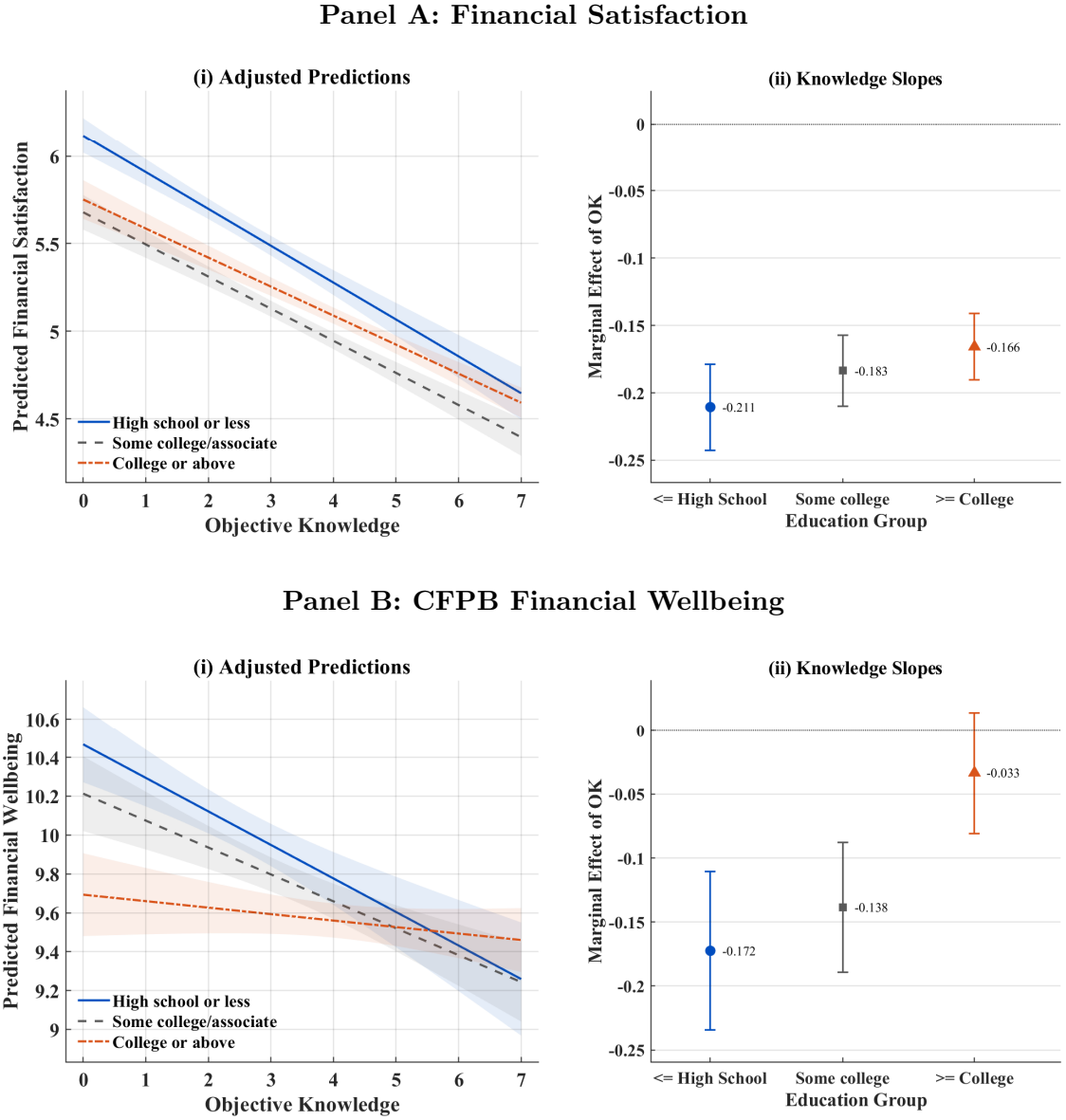


Figure 5: Education, Objective Financial Knowledge, and Financial Wellbeing. Respondents are classified into three educational-attainment groups: high school or less, some college or an associate degree, and a college degree or above. Panel A reports results for financial satisfaction, and Panel B reports results for CFPB financial wellbeing. Each outcome is estimated using a pooled OLS regression that includes objective financial knowledge, the subgroup indicators, interactions between objective financial knowledge and the subgroup indicators, and the remaining controls from Tables 4 and 5, Column (8). (i) of each plot presents adjusted predictions, with the remaining covariates held at their full-sample means. (ii) presents the estimated marginal effect of objective financial knowledge for each subgroup. The shaded regions in (i) are pointwise 95% confidence intervals for the adjusted mean predictions. The vertical error bars in (ii) are 95% confidence intervals for the estimated marginal effects. All confidence intervals are calculated using conventional OLS standard errors.

Internet Appendix

Table A1: Survey Questions for Financial Knowledge, Satisfaction, and Wellbeing

This table presents the wording of the question measuring subjective financial knowledge, the seven questions used to construct the objective financial knowledge measure, the question measuring financial satisfaction, and the five questions comprising the short form of the CFPB financial wellbeing scale.

Question ID	Details
Subjective Financial Knowledge	
M4	On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?
Objective Financial Knowledge	
M6	Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?
M7	Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?
M8	If interest rates rise, what will typically happen to bond prices?
M9	A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.
M10	Buying a single company's stock usually provides a safer return than a stock mutual fund.
M31[1]	Suppose you owe $1,000 on a loan and the interest rate you are charged is 20% per year compounded annually. If you didn't pay anything off, at this interest rate, how many years would it take for the amount you owe to double?
M50[2]	Which of the following indicates the highest probability of getting a particular disease?
Financial Satisfaction	
J1	Overall, thinking of your assets, debts and savings, how satisfied are you with your current personal financial condition?
CFPB Financial Wellbeing Short Form	
J41[3]	How well do these statements describe you or your situation?
J41_1	Because of my money situation, I feel like I will never have the things I want in life.
J41_2	I am just getting by financially.
J41_3	I am concerned that the money I have or will save won't last.

Continued on next page

[1]This question was added in 2015.
[2]This question was added in 2021.
[3]This question was added in 2018.

Continued from previous page

Question ID	Details
J42[4]	How often do these statements apply to you?
J42_1	I have money left over at the end of the month.
J42_2	My finances control my life.

[4]This question was added in 2018.

Table A2: Financial Satisfaction: Alternative Financial Status Indices

This table reports the OLS regression results for financial satisfaction in the 2024 NFCS sample using alternative definitions of the financial status indices. These alternative indices retain narrower sets of components, as described in Section 4.4. The regression specifications follow Table 4. All other variables are defined in Table 1. The t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OK	0.25***	0.10***	-0.05***	-0.07***	-0.13***	-0.14***	-0.17***	-0.17***
	(26.46)	(10.71)	(-5.50)	(-7.76)	(-14.49)	(-16.41)	(-19.31)	(-20.35)
SK		0.85***	0.72***	0.70***	0.58***	0.43***	0.48***	0.37***
		(69.76)	(60.78)	(59.55)	(51.82)	(34.70)	(43.70)	(31.24)
Income $<$ \$35k			-0.71***	-0.66***	-0.41***	-0.40***	-0.33***	-0.33***
			(-17.65)	(-15.86)	(-10.24)	(-10.17)	(-8.77)	(-8.79)
Income $\geq$ \$75k			0.97***	0.91***	0.64***	0.62***	0.46***	0.46***
			(25.23)	(23.10)	(16.95)	(16.84)	(12.58)	(12.85)
Age $<$ 35			0.22***	0.24***	0.40***	0.45***	0.41***	0.44***
			(5.66)	(6.13)	(10.97)	(12.42)	(11.77)	(12.76)
Age $>$ 64			1.13***	1.04***	0.59***	0.50***	0.63***	0.57***
			(29.01)	(23.65)	(13.98)	(12.03)	(15.71)	(14.27)
High School or Lower			0.38***	0.34***	0.36***	0.37***	0.36***	0.37***
			(9.39)	(8.34)	(9.49)	(10.01)	(9.83)	(10.19)
College Graduate or Higher			0.53***	0.54***	0.32***	0.32***	0.20***	0.20***
			(14.00)	(14.29)	(9.11)	(9.13)	(5.76)	(6.03)
Male				0.39***	0.31***	0.35***	0.32***	0.35***
				(12.23)	(10.55)	(12.14)	(11.28)	(12.41)
White				-0.21***	-0.33***	-0.33***	-0.31***	-0.31***
				(-5.87)	(-9.78)	(-9.90)	(-9.79)	(-9.78)
Married				0.36***	0.24***	0.23***	0.17***	0.17***
				(9.97)	(6.97)	(6.86)	(5.26)	(5.33)
Have Dependent Children				-0.35***	-0.15***	-0.12***	-0.06**	-0.05*
				(-10.04)	(-4.70)	(-3.65)	(-2.03)	(-1.69)
Working				-0.00	0.02	0.04	-0.20***	-0.18***
				(-0.03)	(0.69)	(1.26)	(-6.08)	(-5.46)
Experience Income Drop					-1.22***	-1.11***	-1.04***	-0.99***
					(-34.86)	(-32.02)	(-30.21)	(-28.95)
Have Investment					0.92***	0.87***	0.60***	0.59***
					(27.01)	(25.99)	(18.13)	(17.83)
Own Home					1.07***	1.00***	0.85***	0.82***
					(26.05)	(24.84)	(21.60)	(21.01)
Have Mortgage					-0.66***	-0.64***	-0.55***	-0.54***
					(-16.67)	(-16.32)	(-14.35)	(-14.38)
Have Auto Loan					-0.49***	-0.47***	-0.33***	-0.33***
					(-14.65)	(-14.08)	(-10.28)	(-10.37)
Have Credit Card					0.44***	0.39***	0.47***	0.41***
					(10.74)	(9.54)	(11.66)	(10.10)
Confidence						0.32***		0.23***
						(29.49)		(21.98)
Favorable Status							0.95***	0.89***
							(41.60)	(39.41)
Unfavorable Status							-0.31***	-0.25***
							(-18.71)	(-14.82)
Adj R^2	0.03	0.19	0.27	0.28	0.37	0.40	0.43	0.44
N	24,757	24,757	24,757	24,757	24,757	24,757	24,757	24,757

Table A3: CFPB Financial Wellbeing: Alternative Financial Status Indices

This table reports the OLS regression results for CFPB financial wellbeing using alternative definitions of the financial status indices. These alternative indices retain narrower sets of components, as described in Section 4.4. The regression specifications follow Table 5. All other variables are defined in Table 1. The t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OK	0.75***	0.49***	0.15***	0.11***	0.02	-0.01	-0.07***	-0.08***
	(39.30)	(26.44)	(7.90)	(5.98)	(1.09)	(-0.47)	(-4.02)	(-4.73)
SK		1.40***	1.09***	1.06***	0.85***	0.52***	0.63***	0.42***
		(56.41)	(45.63)	(44.88)	(37.70)	(20.99)	(28.96)	(18.01)
Income $<$ \$35k			-1.40***	-1.47***	-1.10***	-1.08***	-0.96***	-0.96***
			(-17.23)	(-17.59)	(-13.77)	(-13.78)	(-12.83)	(-12.89)
Income $\geq$ \$75k			2.20***	2.22***	1.78***	1.75***	1.36***	1.37***
			(28.72)	(28.33)	(23.76)	(23.80)	(19.34)	(19.66)
Age $<$ 35			0.09	0.07	0.37***	0.47***	0.43***	0.48***
			(1.18)	(0.92)	(5.10)	(6.47)	(6.24)	(7.08)
Age $>$ 64			2.81***	2.33***	1.50***	1.31***	1.50***	1.39***
			(36.10)	(26.42)	(17.82)	(15.88)	(19.05)	(17.70)
High School or Lower			0.25***	0.18**	0.19**	0.22***	0.19***	0.21***
			(3.00)	(2.18)	(2.50)	(2.91)	(2.71)	(2.97)
College Graduate or Higher			0.65***	0.68***	0.29***	0.28***	0.02	0.03
			(8.63)	(9.05)	(4.10)	(3.99)	(0.23)	(0.40)
Male				0.58***	0.44***	0.52***	0.46***	0.51***
				(9.19)	(7.37)	(8.90)	(8.35)	(9.33)
White				-0.62***	-0.84***	-0.83***	-0.84***	-0.84***
				(-8.69)	(-12.45)	(-12.65)	(-13.38)	(-13.41)
Married				0.53***	0.39***	0.38***	0.23***	0.24***
				(7.36)	(5.76)	(5.63)	(3.66)	(3.71)
Have Dependent Children				-1.29***	-0.86***	-0.78***	-0.55***	-0.53***
				(-18.50)	(-13.02)	(-12.15)	(-8.82)	(-8.61)
Working				-0.29***	-0.21***	-0.17**	-0.57***	-0.53***
				(-4.05)	(-3.08)	(-2.54)	(-8.81)	(-8.22)
Experience Income Drop					-2.83***	-2.59***	-2.19***	-2.10***
					(-40.38)	(-37.45)	(-32.60)	(-31.38)
Have Investment					1.54***	1.45***	0.93***	0.91***
					(22.80)	(21.79)	(14.38)	(14.14)
Own Home					1.73***	1.59***	1.26***	1.20***
					(21.16)	(19.75)	(16.35)	(15.70)
Have Mortgage					-1.31***	-1.25***	-1.00***	-0.99***
					(-16.61)	(-16.20)	(-13.43)	(-13.41)
Have Auto Loan					-1.09***	-1.04***	-0.66***	-0.66***
					(-16.36)	(-15.79)	(-10.52)	(-10.59)
Have Credit Card					0.51***	0.40***	0.89***	0.77***
					(6.13)	(4.88)	(11.07)	(9.63)
Confidence						0.66***		0.43***
						(30.95)		(20.79)
Favorable Status							1.72***	1.62***
							(38.62)	(36.49)
Unfavorable Status							-1.20***	-1.08***
							(-36.62)	(-32.74)
Adj R^2	0.06	0.17	0.28	0.30	0.39	0.41	0.46	0.47
N	23,683	23,683	23,683	23,683	23,683	23,683	23,683	23,683

Table A4: Determinants of Life Satisfaction Reported by National Financial Wellbeing Survey

This table reports the OLS regression results for life satisfaction in the 2016 National Financial Wellbeing Survey sample. The t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OK (LMscore)	0.16***	0.08***	-0.03	-0.03	-0.05*	-0.06**	-0.08***	-0.10***
	(6.72)	(3.50)	(-0.84)	(-1.30)	(-1.78)	(-2.03)	(-2.72)	(-2.91)
SK		0.35***	0.32***	0.30***	0.28***	0.09***	0.24***	0.09***
		(23.93)	(21.09)	(19.34)	(17.97)	(4.60)	(15.23)	(4.62)
Income < $40k			-0.27***	-0.20***	-0.15***	-0.16***	-0.10**	-0.12**
			(-5.71)	(-3.99)	(-3.03)	(-3.25)	(-2.06)	(-2.52)
Income ≥ $75k			0.18***	0.15***	0.10**	0.08*	0.05	0.05
			(4.14)	(3.20)	(2.28)	(1.79)	(1.14)	(1.03)
Age < 35			-0.07	0.04	0.12***	0.08*	0.10**	0.08
			(-1.48)	(0.88)	(2.61)	(1.80)	(2.20)	(1.62)
Age > 62			0.42***	0.46***	0.38***	0.40***	0.34***	0.37***
			(10.62)	(9.12)	(7.56)	(8.07)	(6.84)	(7.43)
High School or Lower			0.13***	0.09*	0.09*	0.09**	0.09*	0.09*
			(2.83)	(1.91)	(1.91)	(1.98)	(1.93)	(1.95)
College Graduate or Higher			0.03	0.01	-0.03	-0.04	-0.10**	-0.09**
			(0.58)	(0.24)	(-0.63)	(-0.96)	(-2.16)	(-2.04)
Male				-0.17***	-0.18***	-0.16***	-0.16***	-0.15***
				(-4.78)	(-4.91)	(-4.58)	(-4.57)	(-4.39)
White				-0.11***	-0.15***	-0.14***	-0.19***	-0.17***
				(-2.65)	(-3.76)	(-3.51)	(-4.87)	(-4.38)
Married				0.44***	0.38***	0.36***	0.34***	0.33***
				(10.67)	(9.07)	(8.66)	(8.10)	(8.02)
Have Dependent Children				-0.00	0.00	0.02	0.04	0.04
				(-0.08)	(0.05)	(0.53)	(0.90)	(1.12)
Working				0.08**	0.09**	0.11***	0.07	0.09**
				(1.97)	(2.09)	(2.68)	(1.59)	(2.26)
Experience Income Drop					-0.46***	-0.41***	-0.34***	-0.33***
					(-6.64)	(-6.12)	(-5.04)	(-5.00)
Have Investment					0.18***	0.11***	0.08*	0.05
					(4.20)	(2.69)	(1.78)	(1.13)
Own Home					0.18	0.14	0.04	0.05
					(0.87)	(0.71)	(0.21)	(0.24)
Have Mortgage					0.03	0.04	0.07	0.07
					(0.15)	(0.22)	(0.35)	(0.36)
Confidence						0.03***		0.03***
						(17.36)		(14.34)
Favorable Status							0.11***	0.08***
							(5.16)	(3.54)
Unfavorable Status							-0.28***	-0.21***
							(-11.87)	(-8.77)
Adj R^2	0.01	0.09	0.12	0.14	0.15	0.20	0.18	0.21
N	6,313	6,313	6,313	5,738	5,719	5,719	5,719	5,719

Table A5: Determinants of Financial Wellbeing Reported by National Financial Wellbeing Survey

This table reports the OLS regression results for financial wellbeing in the 2016 National Financial Wellbeing Survey sample. The t-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OK (LMscore)	4.20***	3.20***	1.12***	0.34	-0.08	-0.40*	-0.58***	-0.63***
	(18.33)	(14.92)	(5.34)	(1.51)	(-0.37)	(-1.90)	(-2.74)	(-2.95)
SK		4.42***	3.51***	3.52***	3.14***	0.63***	2.42***	0.64***
		(32.33)	(27.31)	(26.09)	(23.65)	(4.09)	(19.22)	(4.32)
Income < $40k			-4.58***	-4.00***	-3.26***	-3.34***	-2.44***	-2.68***
			(-11.19)	(-9.16)	(-7.62)	(-8.31)	(-6.12)	(-6.97)
Income ≥ $75k			4.49***	4.39***	3.47***	3.16***	2.56***	2.49***
			(11.96)	(11.16)	(8.98)	(8.68)	(7.13)	(7.20)
Age < 35			-0.84**	-0.77*	0.41	-0.11	0.04	-0.29
			(-2.21)	(-1.93)	(1.02)	(-0.30)	(0.12)	(-0.80)
Age > 62			8.27***	6.73***	5.51***	5.72***	4.76***	5.04***
			(24.51)	(15.57)	(12.88)	(14.22)	(12.00)	(13.19)
High School or Lower			1.61***	1.54***	1.44***	1.44***	1.38***	1.36***
			(4.20)	(3.79)	(3.67)	(3.89)	(3.76)	(3.87)
College Graduate or Higher			2.22***	2.43***	1.65***	1.47***	0.46	0.54
			(6.00)	(6.29)	(4.36)	(4.14)	(1.30)	(1.58)
Male				-0.43	-0.49	-0.29	-0.24	-0.14
				(-1.39)	(-1.61)	(-1.01)	(-0.85)	(-0.50)
White				0.31	-0.52	-0.35	-1.29***	-1.03***
				(0.88)	(-1.52)	(-1.09)	(-4.06)	(-3.37)
Married				2.54***	1.91***	1.58***	1.14***	1.04***
				(7.19)	(5.35)	(4.71)	(3.45)	(3.26)
Have Dependent Children				-2.80***	-2.58***	-2.33***	-1.93***	-1.83***
				(-7.98)	(-7.52)	(-7.23)	(-6.04)	(-5.95)
Working				-0.63*	-0.50	-0.21	-0.76**	-0.45
				(-1.72)	(-1.40)	(-0.61)	(-2.26)	(-1.37)
Experience Income Drop					-6.52***	-5.91***	-4.49***	-4.39***
					(-11.23)	(-10.83)	(-8.31)	(-8.43)
Have Investment					4.62***	3.77***	2.83***	2.49***
					(12.96)	(11.17)	(8.43)	(7.72)
Own Home					6.43***	5.97***	3.96**	4.03***
					(3.72)	(3.67)	(2.48)	(2.62)
Have Mortgage					-4.10**	-3.92**	-3.37**	-3.34**
					(-2.42)	(-2.46)	(-2.15)	(-2.21)
Confidence						0.39***		0.30***
						(27.38)		(21.35)
Favorable Status							1.77***	1.36***
							(10.32)	(8.18)
Unfavorable Status							-5.13***	-4.29***
							(-27.21)	(-23.11)
Adj R^2	0.05	0.18	0.33	0.34	0.37	0.45	0.47	0.50
N	6,339	6,339	6,339	5,757	5,738	5,738	5,738	5,738