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Understanding Financial Literacy in Immigrants and Non-English Speakers in the United States

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Author Biography

Jack Andreuccetti is a dedicated student with a strong passion for economics and social impact. Jack is actively involved in research on financial literacy, particularly focusing on the barriers faced by immigrants in the United States. In addition to research, Jack writes about financial education topics on his blog (financialliteracy.blog) where he shares insights and practical advice.

Jack is also an accomplished scholar and athlete. He is a National Merit Semifinalist, an AP Scholar with Distinction, and a recipient of the CollegeBoard's National Hispanic Recognition Award for outstanding academic achievement. Jack is committed to community service, tutoring English and volunteering at Nourish New Jersey. Jack also founded a financial literacy course, where he partners with local community groups to offer the class to native Spanish speakers. Outside of academics, Jack is a competitive soccer player and enjoys spending time with his family.

Abstract

The financial landscape is becoming increasingly complex, with the rise of diverse financial products, technologies, and new investment options, making financial knowledge more crucial than ever. However, immigrants and non-English speakers in the United States face significant obstacles in acquiring the financial literacy essential to their economic security. This paper examines the relationship between financial knowledge, immigration, time spent living in the U.S., and English language proficiency. Drawing on data from two national data sets, the research reveals that non-native English speakers demonstrate lower financial literacy in the United States, proportionate to their English proficiency. New immigrants also exhibit poor financial sophistication, which improves the longer they reside in the U.S. While financial education courses positively affect financial literacy, their impact varies across demographic groups. This paper concludes by underscoring the critical need for financial literacy initiatives tailored to immigrants and non-English speakers, to increase familiarity and remove barriers to the U.S. financial system. Expanding access to financial education and banking services is essential for integrating these populations, ultimately enhancing their economic security.

Keywords: financial literacy, immigrants, non-English speakers, financial capabilities, U.S. financial system, English proficiency, financial education, economic security, financial inclusion

Introduction

Finances are becoming increasingly complex due to the growth of financial products, fintech innovations, and new investment options like digital currencies, making financial knowledge more important than ever. As a result, financial literacy, the skills and knowledge needed to make informed money-related decisions, has gained prominence in economic research. Despite this increase in its importance, financial literacy remains low in the United States and throughout the world (Lusardi and Mitchell, 2014). Research has shown that this is especially true for ethnic/racial minorities and immigrants (Lusardi and Tufano, 2015), with these groups being disadvantaged compared to the white majority and native-born.

While many authors have considered ethnicity/race and separately the impact of financial education on literacy, there has been little research done on how proficiency in the native language or time in the country since immigration impacts financial knowledge, or how that plays into the benefits from financial education. This paper aims to explore whether there is a connection between native language proficiency or time spent in the country and financial knowledge. In order to do this, the analysis will focus on several key areas: financial literacy levels among different racial and ethnic groups in the United States, including immigrants, the relationship between financial sophistication and English proficiency, and the effects of financial education.

The analysis finds that non-native English speakers are less likely to be financially sophisticated in the United States, in proportion to how well they speak English. Similarly, the time an immigrant has spent in the country is positively correlated with financial sophistication, ownership of a bank account or home, and participation in the stock market.

This paper begins with a literature review on financial literacy and education. This is followed by a description of the data sources, the NFCS and SIPP, and an outline of the methodology for examining financial literacy across different demographic groups. Next, findings are presented on how financial literacy correlates with English proficiency, immigration status, and financial education. We conclude with policy recommendations to improve financial education for immigrants and non-English speakers.

Literature Review

This section explores the existing body of research on financial literacy, with an emphasis on the impact of economic education, demographic disparities, the behavioral implications of financial knowledge, and the effectiveness of financial literacy interventions.

Economic Education and Financial Literacy

Earlier studies establish a significant positive correlation between economic education and financial literacy. This strong positive correlation largely stems from the fact that economic education enables individuals to understand and navigate the world of finances, resulting in better financial decisions and outcomes. An example of this is the research conducted by Lusardi and Mitchel (2014), whose work displays how individuals who experienced formal economic education had higher levels of financial literacy, and thus were more likely to engage in conscientious actions that improved their long-term financial well-being. These included participation in stock markets, cautious borrowing, and saving.

Prior research performed by Mandell (2008) establishes the importance of early financial education. His findings highlight how students who took high school courses on personal finances or management of

money tended to score significantly higher when their proficiency in financial literacy was assessed. Thus, these results implicate that early education is crucial in improving the financial literacy competence among the general population. However, other studies have found that the impact of financial education programs fluctuates depending on several variables. Research by Cole, Paulson, and Shastry (2016) found that albeit financial education is generally effective, factors such as quality of instruction, ethnicity, and the socioeconomic background of students influence the success of such education. In addition, an ongoing debate exists regarding the efficacy of financial education initiatives. The pessimistic position of Willis (2011) on this subject stems from her research, which explains how numerous financial programs fail to make a lasting improvement in financial literacy. She argues that a fault exists between education and situations or applications in the real world. Furthermore, a "forgetting curve" may limit the benefits of financial education courses, as individuals lose previously gained financial knowledge as more time passes without reiteration (Fernandes, Lynch, & Netemeyer, 2014). Thus, these evaluations suggest more research should be done on the relationship between financial education and the actual application of economic principles.

Financial Literacy Across Demographics

Past studies on financial literacy consistently reveal large disparities between demographic groups. This research establishes how race, ethnicity, gender, income, and age all play an immense role in assessing one's financial literacy. Such research also establishes that the disparities exist for a number of reasons, including broader systematic inequalities, family structure, and societal norms, as well as unequal access to opportunities such as education.

The relationship between gender and financial literacy levels contains one of the most distinct and significant findings in the literature. There exists a large gender gap in financial literacy, with women having lower levels of financial literacy, on average, than men. This phenomenon exists across numerous studies and situations. An example is the work of Bucher-Koenen et al. (2017), which attributes this imbalance to differences in socialization, risk management, and the gendered division of work in households. Women are, on average, less involved in household financial decisions, hence having lower understandings of financial literacy. This gendered difference in financial knowledge also has implications for women's financial security in the long run, as they are more likely to have financial hardships due to lower lifetime earnings and longer life expectancies. Lusardi and Mitchell (2011) discovered similar occurrences, but also found that women are aware of their shortfalls in regards to financial literacy, whereas men are less conscientious of their own levels of financial knowledge. In other words, while women are on average less financially literate, they are generally more aware of their position in this regard.

There also exist significant racial and ethnic disparities in financial literacy. Lusardi and Tufano (2015) noticed that Black and Hispanic individuals are much more likely to display low levels of financial literacy. They suggest this racial imbalance stems from these groups being more likely to use high-cost borrowing methods and being less likely to own savings or retirement accounts. Ultimately, the roots of these disparities are varied, including historical discrimination and inequalities in access to education (FINRA, 2022). Additionally, Lusardi et al. (2023) found that those who identified as Black and Hispanic were much more financially vulnerable than other ethnicities such as White and Asian. The researchers attested the imbalances to a higher likelihood of

single parenthood, increased debt, and poor money management practices, as well as income shocks and a lack of savings and wealth. Moreover, the combination of race and gender disparities creates compounded disadvantages for Black and Hispanic women, who Clark et al. (2021) found face higher levels of economic insecurity and are less likely to have access to resources that aid their financial literacy.

The effect of these disparities goes beyond the scope of individual finances and extends to broader financial inequality. The lower levels of financial literacy among previously discussed demographic groups contribute to widening the wealth gap, since individuals in these marginalized groups have proven less likely to perform wealth-building activities such as investing in financial markets or real estate. Furthermore, financial illiteracy worsens the effects of economic shocks, like losing a job or experiencing a medical emergency. This occurs because individuals with low financial literacy are less likely to have savings or funds specifically for emergencies (Lusardi, Schneider, & Tufano, 2011). Thus, these findings accentuate the importance of financial literacy in broader efforts to reduce financial inequality.

Impact of Financial Literacy on Financial Behavior

Literature and prior studies done on the subject show that financial literacy plays a critical role in determining financial behavior, as those with greater financial literacy have a higher likelihood of engaging in beneficial economic activities. Research done by Lusardi and Mitchell (2011) exhibits the strong relationship between financial literacy and retirement planning. These authors found that answering one additional financial question correctly was associated with a 3-4 percentage point higher chance of planning for retirement. Also, individuals with higher financial literacy are much more likely to calculate their retirement needs and use retirement savings plans, such as a 401(k). Planning for retirement is key to accumulating wealth – individuals who have a retirement plan accumulate significantly more wealth than those who do not. The correlation between low financial literacy and lack of retirement planning poses a concerning issue, as future financial security is becoming increasingly dependent on decisions made by individuals and less on pensions.

Furthermore, The National Financial Capability Study (2022) supports the link between financial literacy and positive financial behavior. In the study, individuals who expressed higher levels of financial literacy were found more likely to pay their credit card balances in full each month, avoid late fees, and have better credit scores. The above practices lead to less financial stress and greater stability. However, some research suggests that, despite its necessity, financial literacy is not sufficient to guarantee positive financial habits. Psychological biases, such as overconfidence or recency bias, can also lead individuals to make poor financial choices, regardless of their financial literacy (Kahneman & Tversky, 1979). Additionally, outside factors, such as economic conditions or societal standards, affect financial decisions irrespective of measures of financial literacy (Thaler & Sunstein, 2008). Hence, these findings suggest efforts to improve financial literacy should be bolstered by an environment that limits cognitive biases and promotes positive financial decisions.

Financial Literacy Interventions

Researchers are unclear on the benefits of financial education programs, since studies have produced mixed results. While some approaches led to positive results, others had quite limited effects, causing uncertainty about the best form of financial education.

Lusardi et al. (2020) claim the efficacy of financial literacy education depends on factors including content, delivery method, and timing. More specifically, their research found that education fit to the specific needs and situations of individuals tended to be more effective than universal programs. Brown et al. (2016) provide an example of the influence of specialized financial education. Programs that focused on practical skills, such as budgeting and saving, and that delivered these concepts through interactive methods, were more likely to cause positive behavioral changes. In addition, timing of educational efforts matters, as initiatives that occurred during the transition to adulthood or before major financial decisions, had a significantly larger influence than those delivered at other times. Furthermore, the results of Corsini and Giannelli (2021) displayed a strong connection between specific financial education and a significant increase in financial literacy.

On the other hand, Fernandes, Lynch, and Netemeyer (2014) found the average effect size of educational efforts was small in their analysis of financial literacy programs. This result suggests many programs have a limited impact on financial behavior and decisions. The researchers claim financial education requires other forms of support to be most effective. The other forms of support suggested include behavioral nudges, access to financial products, and regulations to protect individuals. The Consumer Financial Protection Bureau (CFPB) backs this view, emphasizing the importance of combining financial literacy programs with greater efforts of financial inclusion and consumer protection.

While many studies have examined the link between ethnicity or race and financial literacy, as well as the effects of financial education on financial knowledge, there is limited research on how English language proficiency or the duration of time since immigration affects financial literacy. Furthermore, the impact of these factors on the effectiveness of financial education has received little attention. This paper aims to explore these topics in depth.

Data

This paper utilizes two primary data sources to explore the financial knowledge of diverse populations in the United States: (1) the 2021 National Financial Capability Study (“NFCS”) administered by the Financial Industry Regulatory Authority, and (2) the 2022 Survey of Income and Program Participation (“SIPP”), from the United States Census Bureau.

National Financial Capability Study (NFCS)

The NFCS is a large-scale national survey designed to gather extensive information on financial literacy and related demographic data across the United States. The survey has 27,118 unique participants and includes questions specifically targeting respondents’ experiences with financial education courses, their financial behaviors, and their financial literacy. Financial literacy is tested by a set of seven multiple-choice questions. This survey also asks the self-perceived financial knowledge of respondents, which can be compared against their actual results from the financial literacy test. The NFCS is one of the few surveys that have data for finance-specific education and tests for financial literacy. This, coupled with robust demographics, make it an ideal data set to explore the topics addressed in this paper.

The NCFS aimed to create a set of questions that could reliably measure a person’s financial literacy by testing their ability to apply basic financial concepts to real-life situations. See Appendix 1 for the seven specific financial literacy test questions asked, which includes the “Big

Three" questions that were developed to assess financial literacy (Lusardi and Mitchell 2008). They are the first three questions in Appendix 1 and were constructed to evaluate:

Numeracy: The ability to perform a simple calculation on interest compounding;

Understanding of Inflation: The ability to understand inflation in a direct financial decision;

Understanding of Risk Diversification: Knowledge of risk diversification, in this case in relation to individual stocks and mutual funds.

The remaining questions were derived to cover the topics of interest rates, mortgage payment amortization, and bond prices. All questions were intended to be simple, avoiding complex calculations, and formatted as multiple-choice options to make it easier for the survey respondents. Respondents were also given the option to select "Do not know", "Refuse to answer", or "Prefer not to say" to try and eliminate inaccuracies in the results from guessing. Before being included in the survey, the NCFS questions were crafted to ensure they accurately measured the financial literacy topics outlined above. This involved pilot testing with diverse demographic groups to ensure the questions were understandable and could effectively differentiate between varying levels of financial literacy.

Survey of Income and Program Participation (SIPP)

The 2022 SIPP is a comprehensive survey conducted by the U.S. Census Bureau, which collected detailed data on income sources, program participation, and labor force activities among 41,070 individuals and their corresponding households across the United States. This survey captures a broad spectrum of financial information, including employment, income, and wealth; and includes unique language and immigration status data such as English language proficiency, language spoken at home, and the amount of time living in the United States. From a financial perspective, the data does not directly capture financial literacy, but instead has detailed data on types of financial products owned across a comprehensive set of potential product types. The survey is backward looking to the previous calendar year; data collected in 2022 reflect experiences from 2021, etc. To ensure its validity, the survey undergoes pretesting, subject matter expert reviews, and post-collection data consistency checks.

Methodology

This section outlines the empirical strategy, data sources, and financial literacy indicators used across two separate national data sets.

Empirical strategy

To analyze differences in financial literacy across proficiency in the English language, immigration status, time in the U.S., and whether a financial education course has previously been taken.

To research these variables, three financial literacy measures and six proxy indicators were analyzed across the two data sets, using multivariate regression analyses – both ordinary least squares (OLS) and Probit (binary). In the models a financial literacy score (Y_i) of individual i is related to a set of controls, where X_k is a vector of k demographic variables including the respondent's race/ethnicity, gender, age, education, and household or personal income. For the NCFS data, additional variables of a financial education course and the number of financial education course locations are included. The SIPP data has immigration status, and time living in the United States, and proficiency speaking

English as supplemental variables. The additional variables are represented as X_z, a vector of z variables below.

$$Y_i = \beta_0 + \beta_k X_k + \beta_z X_z + \varepsilon$$

The NFCS dataset contains three variables that we use to evaluate different measures of financial literacy. The first variable is the result of a financial literacy test given to each participant as part of the survey. The second is a self-assessment asking the participant to rate their own financial knowledge, while the third asks if a financial literacy course was ever taken. A fourth proxy variable is created that measures financial product ownership as an alternative to the other three financial literacy variables.

From the SIPP data set this paper creates four different proxy variables to assess financial sophistication, a construct that measures various tiers of financial product ownership as a substitute for a direct financial literacy variable.

Measures of Financial Literacy

A Total Financial Literacy score was created from the answers to the financial literacy questions described above and found in Appendix 1. The respondent's score was the sum of each correctly answered question out of the seven total questions, with the Total Financial Literacy variable having a maximum possible score of seven and a minimum of zero.

Additionally, this paper explores respondents' view of their own financial knowledge, as self-assessed in the survey. The survey asked how the respondent would assess their overall financial knowledge, on a scale from one to seven: one meaning very low and seven meaning very high. See Appendix 2 for the definition of each NFCS variable used in the analysis.

Measures of Financial Sophistication, a proxy for Financial Literacy

Unlike the NCFS survey, the SIPP data did not have a direct financial knowledge test, so proxy variables were created to estimate financial literacy.

The SIPP Total Financial Sophistication variable was constructed as the sum of financial and investment products that each respondent owned. To create the variable, participants were given a single point for ownership of a financial and investment product in each of ten separate categories. The points were then summed to create a variable that ranged from zero to ten, with zero being no ownership of any financial or investment products, and ten being ownership of at least one product in each of the ten separate categories. The ten categories are: 1) Annuities; 2) Bank Accounts; 3) Bonds and Fixed Income; 4) Educational Savings Accounts; 5) General Partnerships, Limited Partnerships, and Investments in Businesses; 6) Life Insurance; 7) Other Investments – art, collectibles, etc.; 8) Real Estate, including ownership of a primary home; 9) Retirement Accounts; and 10) Stocks and Equity. For example, if the respondents owned a checking account and also their primary home, they would get a point each for the Bank Accounts and Real Estate categories, giving them a Total Financial Sophistication score of two.

In addition to the total score, four tiers of financial sophistication were created as subsets of SIPP Total Financial Sophistication, to segment participants into groups. This was to help determine if there were characteristics unique to each grouping. The Tiers are:

Tier 1 – Any respondent who had a Bank Account product;

Tier 2 – Respondents with a Bank Account and also owned Real Estate;

Tier 3 – A Bank Account, Real Estate, and investments in Stocks, Bonds or other Fixed Income;

Tier 4 – The respondents with the above and additional ownership of other financial product or investments in any other category.

The concern with this approach, as an indirect proxy for financial knowledge, is that the ownership of financial and investment products may be more correlated to wealth than financial sophistication. To address this, the SIPP Total Financial Sophistication is compared to a similar variable constructed using the NCFS data in Section V. While not decisive, the comparison does support the approach of financial product ownership as a proxy for financial literacy.

See Appendix 3 for the definition of each SIPP variable used in the analysis. Note the income variable is for each participant's household and is a self-reported annual number. So, each member of the household, regardless of age and employment status, should have the same annual household income number. Furthermore, data from respondents of all ages was used. A secondary analysis looking solely at those of working age, just high school age, or just retirees, etc. could be considered.

Analysis of Empirical Findings

The primary aim of the analysis is to explore the determinants of financial literacy, especially as it relates to race/ethnicity, immigration, time in the United States, and proficiency in the English language.

Multivariate Regression Results – SIPP Data

Total Financial Sophistication Score

Table 1 provides multivariate regression results of the factors shaping Total Financial Sophistication, the proxy for financial literacy. These results indicate that proficiency in speaking English is positively correlated with financial sophistication, as does being born in the United States. For immigrants, there is a clear trend of improved financial sophistication the longer an immigrant has been in the United States, with the shortest time periods having the most negative correlation coefficients. As time in the country increases to over 20 years, the coefficient becomes negligible and is not statistically significant. A possible hypothesis is that a newcomer's unfamiliarity with the U.S. financial system creates a barrier to financial system access. After 20 years, immigrants may reach a level of familiarity with the system that looks like financial knowledge comparable to that of native-born individuals. Similarly, it's easy to see English as an obstacle to the financial system that improves with competence in the language. Nevertheless, the results show that English proficiency and the length of time immigrants have spent in the country have a positive relationship with financial literacy.

Table 1 – Determinants of Financial Sophistication (SIPP Data)

	Total	Tier 1	Tier 2	Tier 3	Tier 4
	OLS	Probit (binary)	Probit (binary)	Probit (binary)	Probit (binary)
Gender	0.126 ***	0.033 *	0.042 ***	0.157 ***	0.112 ***
	(0.011)	(0.018)	(0.014)	(0.015)	(0.016)
Age	0.013 ***	0.018 ***	0.017 ***	0.017 ***	0.012 ***
	(3.23E-4)	(4.76E-4)	(4.60E-4)	(4.84E-4)	(4.49E-4)
Income	1.58E-06 ***	-2.51E-08	1.44E-06 ***	1.50E-06 ***	1.31E-06 ***
	(1.11E-7)	(8.49E-8)	(1.97E-7)	(1.84E-7)	(1.41E-7)
Education	0.344 ***	0.466 ***	0.294 ***	0.396 ***	0.346 ***
	(0.003)	(0.006)	(0.004)	(0.006)	(0.006)
White	0.237 ***	0.122 **	0.198 ***	0.275 ***	0.306 ***
	(0.028)	(0.048)	(0.043)	(0.049)	(0.055)
Black	-0.043	-0.241 ***	-0.330 ***	-0.210 ***	0.026
	(0.031)	(0.053)	(0.048)	(0.054)	(0.060)
Hispanic	-0.045	-0.063	0.032	0.010	0.023
	(0.029)	(0.050)	(0.046)	(0.053)	(0.060)
Asian	0.215 ***	0.001	0.179 ***	0.208 ***	0.209 ***
	(0.036)	(0.061)	(0.052)	(0.059)	(0.065)
BorninUS	0.185 ***	0.070	0.135 ***	0.162 ***	0.228 ***
	(0.032)	(0.048)	(0.039)	(0.044)	(0.047)
WellSpeakEnglish	0.078 ***	0.001	0.016	0.084 ***	0.122 ***
	(0.009)	(0.015)	(0.013)	(0.017)	(0.019)
TimeinUSA_5	-0.251 ***	-0.332 ***	-0.613 ***	-0.757 ***	-0.573 ***
	(0.049)	(0.083)	(0.082)	(0.112)	(0.128)
TimeinUSA_5_10	-0.115 **	0.079	-0.319 ***	-0.351 ***	-0.250 ***
	(0.048)	(0.079)	(0.067)	(0.079)	(0.087)
TimeinUSA_10_20	-0.099 **	0.152 **	-0.085	-0.133 **	0.009
	(0.043)	(0.070)	(0.056)	(0.065)	(0.070)
TimeinUSA_20	0.019	0.218 ***	0.095 **	0.038	0.047
	(0.037)	(0.059)	(0.046)	(0.052)	(0.057)
Constant	-1.372 ***	-3.036 ***	-2.617 ***	-4.805 ***	-9.788
	(0.196)	(0.353)	(0.371)	(0.650)	(18.494)
R^2 *[N = 41,070]*	0.483	0.486	0.284	0.306	0.239

*Note: Robust standard errors in parenthesis; *** p<0.01; ** p<0.05; *p<0.1. Other controls include region of residence.*

Tier 1 - Financial Sophistication - Any respondent who had a Banking product

Tier 2 - Financial Sophistication - Respondents with a Banking product and also owned Real Estate

Tier 3 - Financial Sophistication - A Banking product, Real Estate, and investments in Stocks, Bonds or other Fixed Income

Tier 4 - The respondents with the above and additional ownership of other financial product or investments in any other another category

Financial Sophistication Tiers

Table 1 also shows results for the Financial Sophistication Tiers 1-4. For Tier 1 (ownership of a bank checking or savings product), many fewer factors are significant when determining who has a bank account. The only significant factors are age, gender, education, time in the United States, and being either Black or White. It is reasonable that income no longer plays an important role when deciding to own a bank account, as the utility of an account does not change much with wealth. However, being in the United States for less than five years is an important factor that makes bank account ownership less probable. Investigating the challenges immigrants face with U.S. banking products could facilitate quicker integration into the financial system. This warrants further analysis, as access to a bank account serves as the gateway to the U.S. financial system, and an increase in bank accounts among new immigrants could positively impact their financial well-being.

More surprisingly, speaking English well and being born in the United States are no longer significant for ownership of a bank account. Additionally, identifying as White is positively correlated and Black is negatively linked to owning bank accounts, which is consistent with previous research (Lusardi et al, 2023). Age remains an important factor, but this might only be relevant for pre-adult ages (0-18 years old) where bank account ownership is uncommon.

Tier 2 adds ownership of real estate, such as a primary residence, and Tier 3 layers on further ownership of stock or fixed income investments. These tiers, as well as the most advanced Tier 4, have similar characteristics to the overall Total Financial Sophistication score, with the notable exception of Tiers 2 and 3 Financial Sophistication having a negative relationship to participants who identify as Black.

For Financial Sophistication, an Ordinary Least Squares model (OLS) was used, while for the Financial Sophistication Tiers 1-4 probit binary models were used. All estimations use robust standard errors.

Multivariate Regression Results – NCFS Data

Table 2 provides multivariate regression results of the factors shaping the four dependent variables: Total Financial Literacy, Financial Knowledge Self-Assessment, Participation in a Financial Education Class, and a Financial Sophistication score constructed from the NCFS data.

Table 2 – Determinants of Financial Literacy, Financial Knowledge Self-Assessment, and Financial Sophistication (NCFS Data)

	Total Financial Literacy	Financial Knowledge Self Assessement	Taken a FinEd Class	Financial Sophistication (NCFS)
	OLS	OLS	Probit (binary)	OLS
Gender	0.687 ***	0.299 ***	0.154 ***	0.125 ***
	(0.020)	(0.018)	(0.018)	(0.011)
Age	0.239 ***	0.115 ***	-0.068 ***	0.136 ***
	(0.006)	(0.005)	(0.006)	(0.003)
Income	0.145 ***	0.133 ***	0.031 ***	0.242 ***
	(0.005)	(0.005)	(0.005)	(0.003)
Education	0.232 ***	0.083 ***	0.103 ***	0.105 ***
	(0.007)	(0.006)	(0.006)	(0.004)
White	0.223 ***	-0.006	-0.003	0.096 ***
	(0.046)	(0.043)	(0.040)	(0.027)
Black	-0.462 ***	0.070	0.158 ***	-0.071 **
	(0.052)	(0.050)	(0.045)	(0.031)
Hispanic	-0.116 ***	-0.090 **	0.006	-0.059 **
	(0.045)	(0.041)	(0.039)	(0.026)
Asian	0.358 ***	-0.194 ***	-0.148 ***	0.058 *
	(0.062)	(0.053)	(0.053)	(0.035)
Taken a Financial Ed	0.407 ***	0.214 ***	N/A	0.010
	(0.049)	(0.038)		(0.028)
How many Fin Educa	0.014	0.204 ***	N/A	0.105 ***
	(0.027)	(0.019)		(0.015)
Constant	0.238 ***	3.316 ***	-1.240 ***	0.263 ***
	(0.056)	(0.054)	(0.051)	(0.033)
R^2 [N = 27,118]	0.265	0.139	0.028	0.408

Note: Robust standard errors in parenthesis; *** p<0.01; ** p<0.05; *p<0.1. Other controls include region of residence.

Predictably, having taken a financial education course in the past is positively correlated to the Total Financial Literacy score, however, the number of places a participant has received financial education (high school, college, employer, or the military) is not. Taking any financial education class is highly correlated to the number of places a respondent received financial education, and either variable can be interchangeable in the models. Still, it is surprising that having taken financial education in more places does not confer additional financial literacy. This may be the result of the type of questions being asked; one would suspect that the frequency, intensity, and level of financial education achieved will start to matter for survey questions that are more difficult. As mentioned in Section III, the NCFS survey was designed to only include straightforward questions that do not require considerable calculation. Note, however, that an increase in financial course locations does positively influence Self-Assessment scores as well as Financial Sophistication, adding further credence to the theory that more financial education is useful but only basic financial education is sufficient for the NCFS financial literacy test questions. Finally, it is important to emphasize how few individuals have participated in financial education classes. In the NCFS survey, only 21% of respondents reported having taken any form of financial education course. This number is roughly the same for Whites, Hispanics, and Asians, but increases to 25% for Blacks.

When looking at the Total Financial Literacy score, race/ethnicity follow patterns shown in previous literature, including Whites and Asians positive correlations, while Hispanic and Blacks have negative correlations to financial literacy. Yet these patterns break down when looking at the participant's self-assessment of financial knowledge, which is either not statistically significant or, in the case of Asians, is negatively correlated, the opposite of actual financial literacy test results. Self-assessment of personal abilities has historically been unreliable, and cultural factors may influence how individuals evaluate their financial skills compared to their peers. Nonetheless, there is a well-documented tendency to overestimate one's actual abilities in survey responses (Kahneman and Tversky, 1979). Consequently, the findings from the Financial Knowledge Self-Assessment model are of limited interest.

One last finding worth noting is that Black respondents were more likely to report having taken a financial education course, while Asian respondents were less

likely. Although not shown in Table 2, a similar pattern was observed in the number of locations where financial education was received, with Black respondents showing a positive relationship and Asian respondents a negative correlation.

Validation of the SIPP Financial Sophistication construct, as a proxy for financial literacy

Finally, to verify the robustness of the SIPP Financial Sophistication variable as a proxy for financial literacy, a comparable variable labeled "financial sophistication" was constructed using data from the NCFS survey. The NCFS survey was far less detailed than the SIPP survey regarding financial and investment product ownership, featuring only four questions on product ownership compared to the 50+ detailed questions in the SIPP survey. A summary of the differences:

- **SIPP Financial Sophistication variable:** Derived from 10 product categories that consolidated 51 in-depth survey questions, encompassing all specialized financial and investment products, along with details on how they are owned;

- **NCFS Financial Sophistication variable:** Only four survey questions on financial and investment products: home, stocks, banking, and retirement account ownership.

As a result, the NCFS variable exhibits a narrower range of differentiation, with scores ranging from zero to four, compared to zero to ten for the SIPP variable. Despite the limited scope and depth of the NCFS financial product questions, a regression model utilizing the NCFS Financial Sophistication variable could still validate the financial sophistication concept as a strong proxy for financial literacy if:

- The NCFS Financial Sophistication regression model exhibits characteristics that closely resemble those of the regression model for NCFS Total Financial Literacy test scores;

- The determinants of the NCFS Financial Sophistication model are also similar to those of the SIPP Financial Sophistication model, which uses a different dataset but comparable factors (such as gender, age, income, education, race/ethnicity, etc.).

Indeed, a model of NCFS Financial Sophistication has the same statistically significant determinants as the NCFS Financial Literacy model (see Table 2). Likewise, the determinants for the NCFS Financial Sophistication model share similar attributes with those of the SIPP Financial Sophistication model. Although not conclusive, these findings support the validity of SIPP Total Financial Sophistication as a proxy for financial literacy.

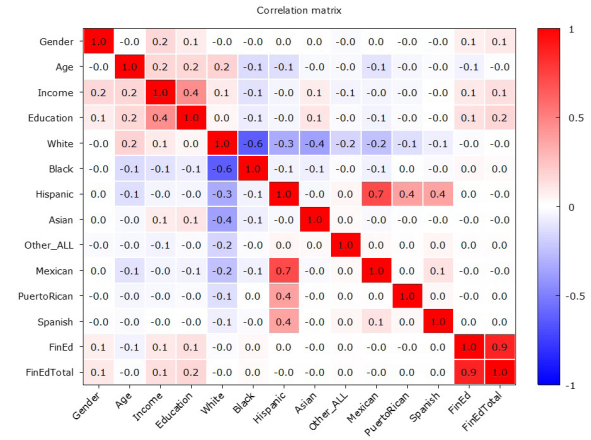
For the Total Financial Literacy, Financial Knowledge Self-Assessment, and Financial Sophistication (constructed from NCFS) models, Ordinary Least Squares was used. For the Financial Education Class variable, a probit binary model was used. All estimations use robust standard errors.

Correlation Matrices

Table 3 presents a correlation matrix for variables using the NCFS data. Notably, there is a strong correlation (86%) between taking any financial education course and the variable that sums financial course locations (up to four: high school, college, employer, and/or the military). As a result, these two variables are nearly interchangeable in the models, and either remains statistically significant in all models when the other is excluded.

Table 3 – NCFS Correlation Matrix

	Gender	Age	Income	Education	White	Black	Hispanic	Asian	Other	Mexico	Puerto Rico	Spain	# of Financial Education	Education Locations
Gender	1.000	-0.009	0.156	0.079	-0.006	-0.005	0.003	0.002	-0.027	0.004	-0.005	-0.011	0.0709	0.0893
Age		1.000	0.164	0.159	0.179	-0.145	-0.133	-0.036	-0.037	-0.113	-0.045	-0.022	-0.0548	-0.0147
Income			1.000	0.445	0.085	-0.116	-0.047	0.077	-0.052	-0.046	-0.034	-0.006	0.0912	0.128
Education				1.000	0.039	-0.078	-0.043	0.109	-0.022	-0.054	-0.024	-0.007	0.1257	0.1643
White					1.000	-0.633	-0.331	-0.372	-0.170	-0.247	-0.130	-0.069	-0.0197	-0.008
Black						1.000	-0.054	-0.070	-0.018	-0.057	0.006	-0.023	0.0331	0.0232
Hispanic							1.000	-0.035	0.042	0.707	0.372	0.366	0.0028	-0.0062
Asian								1.000	0.032	-0.029	-0.010	-0.003	-0.0055	-0.0082
Other									1.000	0.033	0.016	0.044	0.011	0.0128
Mexico										1.000	0.010	0.112	-0.0019	-0.0109
Puerto Rico											1.000	0.033	-0.0025	0.002
Spain												1.000	0.0093	0.0074
Financial Education													1	0.8616
# of Fin Ed Locations														1

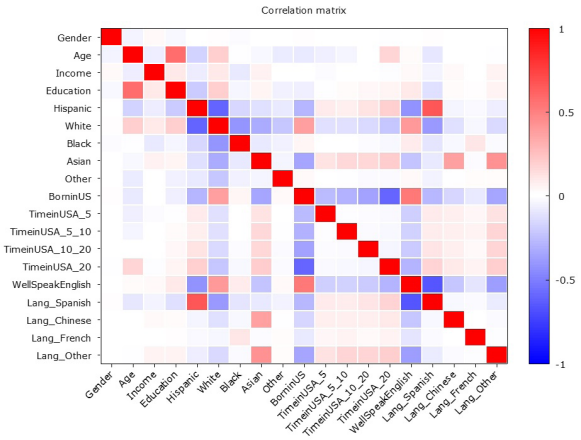


Correlation Coefficients, using the observations 1 – 27118. Two-tailed critical values for n = 27118: 5% 0.0119, 1% 0.0156

Table 4 shows a correlation matrix for variables using the SIPP data. As expected, being White and being born in the United States are both highly correlated with speaking English proficiently.

Table 4 – SIPP Correlation Matrix

	Gender	Age	Income	Education	White	Black	Hispanic	Asian	Other	Mexico	Puerto Rico	Spain	# of Financial Education	Education Locations
Gender	1.000	-0.009	0.156	0.079	-0.006	-0.005	0.003	0.002	-0.027	0.004	-0.005	-0.011	0.0709	0.0893
Age		1.000	0.164	0.159	0.179	-0.145	-0.133	-0.036	-0.037	-0.113	-0.045	-0.022	-0.0548	-0.0147
Income			1.000	0.445	0.085	-0.116	-0.047	0.077	-0.052	-0.046	-0.034	-0.006	0.0912	0.128
Education				1.000	0.039	-0.078	-0.043	0.109	-0.022	-0.054	-0.024	-0.007	0.1257	0.1643
White					1.000	-0.633	-0.331	-0.372	-0.170	-0.247	-0.130	-0.069	-0.0197	-0.008
Black						1.000	-0.054	-0.070	-0.018	-0.057	0.006	-0.023	0.0331	0.0232
Hispanic							1.000	-0.035	0.042	0.707	0.372	0.366	0.0028	-0.0062
Asian								1.000	0.032	-0.029	-0.010	-0.003	-0.0055	-0.0082
Other									1.000	0.033	0.016	0.044	0.011	0.0126
Mexico										1.000	0.010	0.112	-0.0019	-0.0109
Puerto Rico											1.000	0.033	-0.0025	0.002
Spain												1.000	0.0093	0.0074
Financial Education													1	0.8616
# of Fin Ed Locations														1



Correlation Coefficients, using the observations 1 – 41070. Two-tailed critical values for n = 41070: 5% 0.0097, 1% 0.0127

The analysis in this section reveals that proficiency in English and being born in the United States are positively correlated with financial sophistication. For immigrants, financial knowledge improves the longer they have lived in the U.S., becoming comparable to that of native-born individuals after around 20 years. Income is not a significant factor in bank account ownership, though newly arrived immigrants (less than five years) are less much likely to own an account. As expected, financial education has a strong influence on financial literacy.

Conclusion

The results clearly indicate that English-speaking ability and time spent in the United States are positively associated with financial literacy, a relationship that, while intuitive, has not been widely explored in previous research. This finding suggests several potential policy implications, including the importance of simultaneously improving English proficiency and financial literacy for maximum impact. A program designed to address both areas concurrently should be developed and its outcomes carefully evaluated.

Moreover, examining the barriers or unfamiliarity immigrants face with U.S. banking products could help speed up their integration into the financial system. In addition to low Total Financial Sophistication scores, immigrants who have been in the country for less than five years were also less likely to own a bank account. This issue merits further study, as bank accounts are a critical entry point into the U.S. financial system and expanding access for new immigrants could positively impact their overall financial well-being. Potential policy initiatives could include simplifying access to banking products for new immigrants, supported by subsidies to encourage bank account ownership and offset any additional credit risk for banks. These special gateway accounts could be incorporated into new arrival materials for immigrants, possibly as auto-enroll or opt-out programs.

Lastly, it is important to highlight how few individuals have participated in a financial education class. Only 21% of respondents in the NCFS survey reported taking any type of financial education course. Achieving universal financial education remains a significant challenge, with financial literacy particularly low among new immigrants and non-English speakers. However, even small changes in the language and timeliness in which financial education is delivered could have a meaningful impact on financial security for all United States residents.

Appendix 1 – NCFS Financial Literacy Questions

Table 1 – NCFS Financial Literacy Questions

1) 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?
- More than $102**
- Exactly $102
- Less than $102
- Do not know
- Refuse to answer

2) 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?
- More than today
- Exactly the same
- Less than today**
- Do not know
- Refuse to answer

3) Please tell me whether this statement is true or false. "Buying a single company's stock usually provides a safer return than a stock mutual fund."
- True
- False**
- Do not know
- Refuse to answer

4) If interest rates rise, what will typically happen to bond prices?
- They will rise
- They will fall**
- They will stay the same
- There is no relationship between bond prices and the interest
- Don't know
- Prefer not to say

5) 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?
- Less than 2 years
- At least 2 years but less than 5 years**
- At least 5 years but less than 10 years
- At least 10 years
- Don't know
- Prefer not to say

6) Which of the following indicates the highest probability of getting a particular disease?
- There is a one-in-twenty chance of getting the disease**
- 2% of the population will get the disease
- 25 out of every 1,000 people will get the disease
- Don't know
- Prefer not to say

7) 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.
- True**
- False
- Don't know
- Prefer not to say

Source: 2021 NCFS Data File Information

Appendix 2 – NCFS Variable Definitions

Category	Variable	N	Mean	STDEV	Min	Max
Gender	1 = Male	12,465				
	0 = Female	14,653				
Geographic Region	Northeast	4,511				
	Midwest	6,004				
	South	8,535				
	West	8,068				
Age	Years old, in buckets below	27,118				
	1 = 18-24 years old	3,009				
	2 = 25-34	4,696				
	3 = 35-44	4,564				
	4 = 45-54	4,617				
	5 = 55-64	4,731				
	6 = 65+ years old	5,501				
Income	Personal Annual Income	27,118				
	Less than $15,000	3,327				
	At least $15,000 but less than $25,000	2,942				
	At least $25,000 but less than $35,000	2,918				
	At least $35,000 but less than $50,000	3,847				
	At least $50,000 but less than $75,000	5,007				
	At least $75,000 but less than $100,000	3,570				
	At least $100,000 but less than $150,000	3,470				
	At least $150,000 but less than $200,000	1,212				
	At least $200,000 but less than $300,000	560				
	$300,000 or more	265				
Education		27,118	4.4	1.7	1	7
	Did not complete high school	737				
	High school graduate – regular high school diploma	4,825				
	High school graduate – GED or alternative credential	1,897				
	Some college, no degree	7,065				
	Associate's degree	2,943				
	Bachelor's degree	6,682				
	Post graduate degree	2,969				
Ethnicity/Race	White	21,303				
	Black	2,978				
	Hispanic	2,274				
	Asian	1,327				
	Native Hawaiian or other Pacific Islander	178				
	AmericanIndian or Alaska Native	582				
	Other	203				
Hispanic Country of Origin	Mexican	1,187				
	Puerto Rican	339				
	Spanish	328				
Self Assessment of Financial Knowledge		27,118	4.9	1.5	0	7
Financial Knowledge Test		27,118	3.3	1.9	0	7

Note: Total Sample size of 27,118 survey participants
Source: 2021 National Financial Capability Study (NFCS), Financial Industry Regulatory Authority (FINRA)

Appendix 3 – SIPP Variable Definitions

Category	Variable	N	Mean	STDEV	Min	Max
Gender	1 = Male	19,905				
	0 = Female	21,165				
Geographic Region	Northeast	5,917				
	Midwest	7,457				
	South	15,651				
	West	12,015				
Age	Age	41,070	44.0	24.1	1	89
Income	Household Annual Income	41,070	$120,632	$158,925	$(272,124)	$6,374,838
Education	Education	41,070	4.1	2.2	0	7
	1 Did not finish Primary	384				
	2 Primary (finished)	494				
	3 Middle (finished)	4,128				
	4 High School (finished)	9,343				
	5 Some College	8,801				
	6 Undergraduate College (finished)	6,916				
	7 Post-Graduate (finished)	4,514				
	0 N/A (did not respond)	6,490				
Ethnicity/Race	Hispanic	7,808				
	White	25,212				
	Black alone	4,123				
	American Indian or Alaska Native alone (AIAN)	229				
	Asian alone	2,665				
	Native Hawaiian or Other Pacific Islander alone (HP)	139				
	White-Black	210				
	White-AIAN	263				
	White-Asian	240				
	Black-AIAN	35				
	Other 2 or more races	146				
Born in US		34,507				
US Citizen		38,846				
How long lived in the USA?		4,957				
	< 5 years	564				
	5- 10 years	721				
	10- 20 years	1,014				
	20+ years	2,658				
How well does ... speak English?		41,070	4.7	0.7	1	5
	1 = Not at all	378				
	2. Not well	847				
	3. Well	1,172				
	4 = Very well	4,646				
	5 = Native English or N/A	34,027				
What language does ... speak at home?		7,043				
	Spanish	4,240				
	Chinese	423				
	French	152				
	Other	2,228				
Financial Sophistication Score		41,070	1.8	1.5	0	10
	Bank Account	29,669				
	Owned Real Estate + Bank Account	20,883				
	Securities + the above	13,892				
	The above + any other financial product	9,216				

Note: Total Sample size of 40,070 survey participants
Source: 2022 Survey of Income and Program Participation (SIPP), US Census Bureau

Appendix 4 – SIPP Variables – Statistical Summary

		Average	StdDev	N	Financial Sophistication Score (%) 0	1	2	3	4	5-10
Full Sample		1.8	1.5	41,070	23.4	24.2	20.0	18.4	8.9	5.2
Age										
1-13	*	0.1	0.3	5,610	88.4	11.6	0.0	0.0	0.0	0.0
14-17	*	0.4	0.7	2,004	70.9	22.0	5.7	1.3	0.0	0.0
18-24	*	1.2	0.9	3,338	22.7	48.2	20.9	6.4	1.6	0.2
25-34	*	1.9	1.3	4,775	12.2	31.3	23.8	21.4	8.8	2.5
35-44	*	2.3	1.4	4,860	10.5	24.3	22.1	23.0	13.4	6.6
45-54	^	2.4	1.5	4,570	9.5	23.1	21.0	24.9	12.6	8.9
55-64	^^	2.4	1.5	5,525	7.3	21.8	23.8	26.6	12.2	8.4
65+	``	2.4	1.4	10,388	5.1	22.3	27.9	24.7	12.3	7.8
Gender										
Male	*	1.9	1.6	19,905	24.3	22.7	19.3	18.1	9.7	5.9
Female	*	1.8	1.5	21,165	22.5	25.6	20.6	18.6	8.2	4.5
Education										
Did not finish High School	*	1.0	0.8	5,006	34.8	41.2	17.6	5.5	0.7	0.0
High School (finished)	*	1.8	1.2	9,343	13.1	34.5	26.6	18.3	5.6	1.9
Some College	*	2.2	1.3	8,801	6.6	27.6	28.1	24.4	9.3	4.0
Undergraduate (finished)	*	2.8	1.4	6,916	3.4	15.8	22.4	28.9	18.1	11.4
Post-Graduate (finished)	*	3.2	1.4	4,514	1.8	8.6	18.0	31.5	22.7	17.5
N/A (did not respond)	*	0.1	0.3	6,490	88.3	11.7	0.0	0.0	0.0	0.0
Income										
<$25k	*	1.1	1.1	5,750	31.983	38.139	20.07	6.4696	2.4	0.9
$25-49k	*	1.5	1.3	6,961	26.131	29.637	22.827	15.199	4.6114	1.6
$50-100k	*	1.8	1.4	11,457	23.488	22.563	22.013	20.992	7.6984	3.2
$100-249k	*	2.1	1.6	13,092	20.249	18.637	18.278	22.877	12.794	7.2
$250-499k	*	2.6	1.8	2,811	16.044	17.04	14.621	19.957	16.293	16.0
>=$500k	*	2.8	2.0	999	14.615	19.219	12.713	16.016	17.618	19.8
Race/Ethnicity										
White, non-Hispanic	*	2.1	1.5	25,212	16.6	21.2	21.3	22.1	11.7	7.0
Black, non-Hispanic	*	1.5	1.3	4,123	31.4	23.2	21.6	17.5	4.4	1.9
Hispanic	*	1.1	1.2	7,808	40.3	32.2	15.0	8.7	2.7	1.2
Asian, non-Hispanic	*	1.9	1.5	2,665	19.7	28.6	20.8	15.7	9.4	5.9
All other races	*	1.3	1.3	1,262	35.5	28.9	16.4	12.0	5.2	1.9
Country of Birth										
Born in the USA	*	1.9	1.5	34,507	24.2	22.0	19.9	19.2	9.2	5.5
Not Born in the USA	*	1.7	1.4	6,563	18.9	36.0	20.2	14.1	7.1	3.7
Years in the USA (immigrants only)										
< 5 years	*	1.0	1.1	564	43.4	33.5	11.5	7.6	3.4	0.5
5- 10 years	*	1.4	1.3	721	24.7	39.8	15.8	11.0	6.0	2.8
10- 20 years	*	1.6	1.3	1,014	19.0	40.1	18.3	12.3	7.6	2.6
20+ years	*	1.9	1.4	2,658	12.5	36.7	21.7	16.5	7.8	4.8
How well does ... speak English?										
1. Not at all	*	0.7	0.7	378	42.1	43.9	11.9	2.1	0.0	0.0
2. Not well	*	1.0	1.0	847	32.6	44.7	16.1	4.5	1.4	0.7
3. Well	*	1.4	1.3	1,172	27.2	36.0	18.6	12.1	4.1	2.0
4. Very well	*	1.5	1.4	4,646	30.6	28.6	18.1	13.1	6.3	3.3
5. Native English or N/A	*	1.9	1.5	34,027	21.8	22.5	20.4	19.9	9.7	5.7
Language spoken at home										
Spanish	*	1.1	1.1	4,240	38.4	34.0	16.0	7.8	2.5	1.2
Chinese	+	2.0	1.5	423	16.5	30.0	19.6	15.8	12.1	5.9
French	+	1.7	1.4	152	21.7	29.6	19.1	21.1	5.3	3.3
Other	++	1.8	1.5	2,228	19.9	30.6	20.0	16.5	8.4	4.6

* Indicates statistical significance from all other sub-populations in the grouping, using T-Statistic test, p < 0.05

+ Indicates statistical significance from all other sub-populations in the grouping, but not Other, using T-Statistic test, p < 0.05

++ Indicates statistical significance from Spanish, but not French or Chinese, using T-Statistic test, p < 0.05

^ Indicates statistical significance from all other sub-populations in the grouping, but not 55-64, using T-Statistic test, p < 0.05

^^ Indicates statistical significance from all other sub-populations in the grouping, but not 45-54 and 65+, using T-Statistic test, p < 0.05

^^ Indicates statistical significance from all other sub-populations in the grouping, but not 55-64, using T-Statistic test, p < 0.05

Appendix 5 – NCFS Variables Statistical Summary

		Average	StdDev	N	Financial Literacy Test Score (%) 0	1	2	3	4	5	6	7
Full Sample		3.3	1.9	27,118	8.1	11.5	15.1	18.2	17.2	14.8	10.5	4.6
Age												
18-24 years old	*	2.4	1.8	3,009	15.6	19.3	20.5	17.7	12.9	8.0	5.1	0.9
25-34	*	2.8	1.8	4,696	10.9	15.7	19.0	19.8	14.7	11.2	6.7	2.0
35-44	*	3.1	1.8	4,564	8.9	13.3	18.7	19.3	15.4	12.9	8.8	2.8
45-54	*	3.5	1.9	4,617	7.3	10.1	13.9	18.3	19.0	15.5	10.9	5.0
55-64	*	3.8	1.9	4,731	5.7	7.9	11.9	17.9	19.5	17.4	13.0	6.8
65+ years old	*	4.1	1.8	5,501	3.9	6.3	9.6	16.1	19.8	20.5	15.5	8.3
Gender												
Male	*	3.8	1.9	12,465	6.0	8.6	11.9	15.9	17.1	17.8	15.2	7.5
Female	*	2.9	1.8	14,653	10.0	13.9	17.8	20.1	17.3	12.3	6.4	2.2
Education												
Did not complete high school	*	1.8	1.6	737	26.2	22.1	19.7	17.4	8.8	4.1	1.6	0.1
High school graduate (regular)	++	2.5	1.7	4,825	14.4	17.6	19.2	20.1	15.1	9.1	3.6	0.9
High school graduate (GED)	++	2.4	1.7	1,897	14.9	17.3	21.0	20.7	13.3	8.9	3.0	0.9
Some college, no degree	*	3.2	1.8	7,065	6.9	11.7	17.0	20.2	18.6	14.1	8.6	2.8
Associate's degree	*	3.4	1.8	2,943	6.9	9.8	13.9	19.2	21.1	15.3	10.5	3.3
Bachelor's degree	*	4.1	1.9	6,682	3.7	6.9	10.9	15.9	17.8	19.5	16.6	8.6
Post graduate degree	*	4.3	1.9	2,999	3.2	6.3	9.6	12.7	16.8	21.3	19.1	11.0
Income												
<$15k	*	2.3	1.7	3,327	18.1	20.3	19.5	18.5	12.4	7.0	3.5	0.8
$15-24k	*	2.6	1.7	2,942	13.9	15.7	20.3	19.6	16.0	8.9	4.4	1.1
$25-34k	*	2.9	1.7	2,918	10.0	14.7	18.5	21.3	17.2	11.0	5.4	1.9
$35-49k	*	3.2	1.8	3,847	6.8	12.2	16.6	20.6	18.8	14.0	7.6	3.3
$50-74k	*	3.6	1.8	5,007	5.7	9.3	13.3	18.3	19.3	18.0	11.9	4.2
$75-99k	*	3.8	1.9	3,570	4.9	7.8	12.8	16.4	18.5	19.0	14.6	6.0
$100-149k	*	4.1	1.9	3,470	3.8	6.6	10.2	15.4	17.9	19.9	17.3	8.9
$150-199k	*	4.4	1.8	1,212	2.1	4.8	10.7	14.5	16.6	20.4	18.4	12.5
>=$200k	*	4.6	1.9	825	2.9	5.3	7.4	12.4	13.6	18.5	23.9	16.0
Race/Ethnicity												
White	*	3.5	1.9	21,303	7.0	10.3	14.2	18.2	17.8	15.9	11.5	5.1
Black	*	2.4	1.7	2,978	14.6	19.0	21.4	18.7	13.5	8.5	3.2	1.0
Hispanic	*	2.9	1.8	2,274	11.2	13.6	18.1	20.7	16.8	10.8	6.3	2.4
Asian	*	3.8	2.1	1,327	7.7	9.0	11.4	14.5	15.1	17.3	15.4	9.6
Other	*	3.0	1.9	921	10.5	15.1	15.1	18.0	18.5	11.2	8.7	2.9
Country of Origin - Hispanic												
Mexico	^	2.8	1.8	1,187	11.4	15.3	18.7	20.0	15.8	10.4	6.2	2.3
Puerto Rico	^	2.6	1.8	339	14.2	15.0	19.5	18.9	16.2	9.4	5.6	1.2
Spain	^	3.2	1.8	328	7.0	11.9	18.6	21.3	16.5	13.4	8.2	3.0
Financial Education												
Taken a FinEd class anywhere	*	3.8	1.9	5,765	4.3	8.7	13.3	16.5	17.3	17.9	14.8	7.1
Not taken a FinEd class	*	3.2	1.9	21,353	9.2	12.2	15.6	18.6	17.2	14.0	9.3	4.0
Financial Education - how many places have you taken a class? (HS, college, employer, military)												
0	*	3.2	1.9	21,587	9.2	12.3	15.6	18.6	17.1	13.9	9.2	4.0
1	*	3.7	1.9	2,902	4.9	9.5	13.8	17.6	17.7	16.6	14.2	5.6
2	^^	4.1	1.8	1,819	2.8	7.1	11.9	15.2	18.2	20.2	15.9	8.7
3	*	4.2	1.8	709	2.3	6.8	10.9	14.8	15.9	20.5	18.1	10.9
4	^^	3.8	1.8	101	2.0	7.9	19.8	18.8	11.9	19.8	13.9	5.9
Financial Education - where was the class taken?												
High School	#	3.8	1.8	3,345	4.3	8.5	13.8	18.1	17.4	18.4	13.5	6.0
College	##	4.2	1.8	3,183	2.8	6.8	11.1	14.8	17.6	19.4	17.8	9.7
Employer	#	4.1	1.9	2,120	2.7	7.5	12.7	14.8	16.8	19.3	16.9	9.2
Military	##	3.8	1.9	423	2.6	11.1	15.4	15.6	14.9	21.0	13.0	6.4

* Indicates statistical significance from all other sub-populations in the grouping, using T-Statistic test, p < 0.05

++ Indicates statistical significance from all other sub-populations in the grouping, but not High School Regular vs. GED, using T-Statistic test, p < 0.05

^ Spain is statistical significant from Mexico and Puerto Rico, but Mexican and Puerto Rico are not from each other, using T-Statistic test, p < 0.05

^^ Indicates statistical significance from all other sub-populations in the grouping, but not 2 vs. 4 classes, using T-Statistic test, p < 0.05

# Indicates statistical significance from all other sub-populations in the grouping, but not High School and Military, using T-Statistic test, p < 0.05

Indicates statistical significance from all other sub-populations in the grouping, but not College and Employer, using T-Statistic test, p < 0.05

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