

The Importance of Financial Literacy: Opening a New Field

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Abstract

We undertake an assessment of our two decades of research on financial literacy, building on our empirical research and theoretical work casting financial knowledge as a form of investment in human capital. We also draw on recent data to determine who is the most – and least – financially savvy in the United States, and we highlight the similarity of our results in other countries. A number of convincing studies is now available, from which we draw conclusions about the effects and consequences of financial illiteracy, and what can be done to fill these gaps. We conclude by offering our thoughts on implications for teaching, financial literacy programs, and future research.

Keywords: Financial education, inflation, wealth inequality, saving, debt, stock market participation.

JEL Codes: G53, D14, D91

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I. Introduction

Consumers are increasingly having to make complex financial decisions with the advent of disruptive financial products including online investment applications, novel ways to make payments (“buy now, pay later”) and borrow money, student loans along with new, although highly risky, instruments such as crypto assets. As well, the shift from defined benefit to defined contribution retirement plans implies that ordinary people must now shoulder the burden of saving, investing, and drawing down their own retirement assets, usually without the benefit of employers directing these decisions. As a consequence, it has become increasingly important for consumers seeking to make sensible financial decisions in their everyday lives to acquire and implement *financial literacy*, by which we mean the knowledge of and ability to use fundamental financial concepts in their economic decision making. As we show below, the fact that so many people lack such knowledge not only makes their economic lives difficult, but it also contributes to wealth inequality in the economy at large.

In the early 2000’s, we designed and fielded a survey in the United States to help us evaluate peoples’ financial literacy and understand its impact on financial decisions. These questions have now gained popularity around the world. In what follows, we illustrate what we have learned about financial literacy in the United States and elsewhere, as well as how this knowledge varies across demographic groups. Most importantly, our theoretical and empirical work permits us to measure the impact of financial literacy on some very important economic outcomes, including financial wellbeing and wealth inequality. Recent economic crises due to the subprime mortgage debacle, the COVID-19 pandemic, and most recently, the rise of inflation, further illuminate the importance of financial literacy to individuals and society at large. This is why financial literacy has become its own field of study and many countries have mandated financial literacy in school, beginning

with elementary education. It is now also taught at the high school and college levels. The next step is to add this measure to national statistics measures of country performance. We conclude our discussion with thoughts on how economists can implement what we have learned in research, teaching and policy.

II. What We Have Learned about Financial Literacy

Our early work on financial literacy was prompted by concerns about inadequate saving, financial vulnerability, and retirement insecurity. At that time, there were no nationally representative datasets indicating what people knew (or did not know) about the fundamentals of economics and finance. For this reason, in 2004, we created and fielded an experimental module on financial literacy for the Health and Retirement Study (HRS). This effort produced what is now known as the “Big Three,” a short set of questions that over the years has proven to be an extremely good measure of peoples’ understanding of basic financial concepts (Lusardi and Mitchell 2008; 2011a, b, c). Four principles informed the design of these questions: simplicity, relevance, brevity, and capacity to differentiate. Specifically, our questions measured knowledge of the key building blocks for financial decision making in an intertemporal setting (simplicity). We also required that the questions relate to concepts pertinent to peoples’ day-to-day financial decisions over the life cycle (relevance) and captured general rather than context-specific ideas. Finally, the list of questions had to be few in number, so as to secure widespread adoption (brevity) and to differentiate across peoples in terms of their financial knowledge (capacity to differentiate).

In practice, the fact that we were limited to only a handful of questions in the HRS module proved to be a blessing in disguise, since numerous other surveys have now also added the Big Three questions due to their usefulness and the short time commitment they require. In fact, our

questions are now included in many US surveys including the National Longitudinal Survey of Youth (NLSY), the Rand American Life Panel (ALP), the Understanding America Study (UAS), the National Financial Capability Study (NFCS), and the Survey of Consumer Finances (SCF), just to mention some of the most prominent ones. The Big Three have also been included in over 40 surveys fielded in Europe, Latin America, and Asia (see Lusardi and Mitchell 2011c and 2014 for a review of the findings in other countries). This has enabled us to develop international comparisons of financial literacy, and financial literacy questions akin to ours were also included in the S&P Global Financial Literacy Survey covering more than 140 countries (Klapper and Lusardi 2020).¹ Additionally, in our recent work, we have designed additional measures of financial literacy for more sophisticated respondents (a measure that has become known as the “Big Five” and other measures as well), and we continue to find these offer immense insights (Lusardi and Mitchell 2017; Clark et al. 2017). Good measurement is critically important to understand a topic and identify potential problems, so this is why we have focused much attention to careful measurement of financial literacy.

Below we report the wording of our Big Three questions. As is evident, these are simple questions, yet they test for basic and fundamental knowledge at the basis of most economic decisions. In addition, answering these questions does not require difficult calculations, as we do not test for knowledge of mathematics but rather for an understanding of how interest rates and inflation work. The questions also test knowledge of the language of finance, since, for example, we do not explain what interest rates, inflation, or a stock mutual fund are. Furthermore, making the questions multiple choice and giving respondents the option to say ‘do not know’ or refusing to answer avoids forcing them to pick an answer at random. These last two choices also offer

¹ These questions were designed by Leora Klapper and Annamaria Lusardi in collaboration with Gallup.

insights that go beyond correct versus incorrect responses, and help us evaluate when respondents are unsure of their knowledge, as we explain in more detail below. Moreover, another advantage of testing people’s knowledge of basic financial concepts is that, if people are unfamiliar with these, they are much less likely to know about more complex concepts such as the relationship between risk and return, the term structure of interest rates, and how interest compounds over long periods.

The “Big Three” 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

Source: Lusardi and Mitchell (2011a). Note: Correct answers are indicated with two asterisks.

This parsimonious set of questions offers rich information about peoples’ financial literacy. To illustrate some findings, we next provide evidence from the 2019 Survey of Consumer Finances, the most recent data available from one of the best surveys on wealth (Bhutta et al. 2020). As we have reported in many of our previous studies, financial literacy is strikingly low in the United States (Table 1). For instance, while 81% of Americans understand simple interest rates, about three-quarters get the inflation question correct, and only 61% of the population knows that a single stock is riskier than a stock mutual fund. But only 43% of the respondents are able to

answer all of the questions correctly. Thus, knowledge of basic financial concepts cannot be taken for granted, even in a country with well-developed financial markets and where the transition to defined contribution pensions has been underway for decades. As noted above, knowledge is particularly low about risk diversification, an important and fundamental concept but where the percentage not just of incorrect answers but also of “do not know” answers is strikingly high.

Table 1 here

While this is a simple, but effective indicator, as we show below, we have also developed more complex measures of financial literacy, such as the Personal Finance Index (or P-Fin Index) that include as many as 28 questions (Yakoboski et al. 2022).² This more complex measure of financial literacy confirms the findings using the Big Three; specifically, that low financial literacy characterizes the population, and that risk/risk management is what people know the least.³

Another finding we emphasize in our work is that financial illiteracy is not only widespread in the general population, but it also differs markedly across demographic groups, potentially contributing to other types of economic inequality. For instance, Figure 1A reports financial literacy levels for women and men, where we see a sizeable gender gap for each of the financial literacy questions separately, as well as for the overall Big Three score. Women are 8 percentage points (pp) less likely to respond to the interest rate question correctly, 10 pp less likely to know about inflation, and 17 pp less likely to be knowledgeable about risk diversification than men. Overall, only 29% of women answer all three questions correctly, versus 48% of men. This gender difference is remarkably stable across topics (Yabokoski et al. 2022). It is also strikingly stable across the 140 countries examined by Klapper and Lusardi (2020), a finding that speaks to the

² This survey started in 2016 and is done yearly. It covers a representative sample of the US population and one or more subgroups is normally oversampled to provide additional information.

³ The P-Fin Index considers eight topics, and comprehending risk is once again where people score the lowest; there is also a high proportion of ‘do not know’ answers.

importance of doing more research on this topic. We also see in Figure 1B that women are much more likely than men to respond that they do not know/refuse to answer at least one financial literacy question,⁴ especially the one about risk diversification, the most difficult of the three. Such gender differences are likely to be the result of lack of self-confidence, in addition to lack of knowledge (Bucher-Koenen et al. 2021).

Figure 1 here

It is also important to examine financial literacy patterns by age. As we see in Figure 2A, the young display very low financial literacy, with only one-third being able to answer all three questions correctly. This is quite troublesome, as many are making important financial decisions about student loans, contributing to a pension, managing credit card debt, buying their first home, and raising a family, all highly consequential financial decisions. Another lesson from Figure 2A is that financial literacy is not high even among older respondents, though most of them have presumably already made many financial decisions over their lifetimes. The hump-shaped literacy pattern peaks with only about half answering all questions correctly, in the 50-59 age bin. Thereafter, the percentage getting all three answers correct falls for people in older generations,⁵ again a concern since many have a limited grasp of basic finance concepts despite needing to manage their money in retirement. In view of the recent rapid price level increase, Figure 2B highlights what we have learned about people's knowledge of inflation. Once again, the young fare poorly. This is, to some extent, not surprising, as they are unlikely to have experienced high inflation rates until now. Nevertheless, it bodes ill given the financial decisions that the young must make, along with their older peers, in view of markedly higher inflation than in the past.

Figure 2 here

⁴ The percentage of those who refuse to answer is normally very small.

⁵ Since this is cross sectional data, we cannot distinguish between age and cohort effects.

There are also sharp differences by educational levels. While 85% of those with college degrees or more earned a perfect score on the Big Three, only 18% of the High School dropouts attained this level (Figure 3A). Differences are smaller for the inflation question (Figure 3B), 85% versus 54%, yet the least educated still display little financial knowledge. Figure 3C illustrates that, even within the college plus group, however, more than one third of respondents (35%) did not earn a perfect score on the Big Three. In other words, education alone is insufficient to instill financial literacy in consumers. Indeed, as we note below, acquisition of financial knowhow requires additional investment above and beyond a general education.

Figure 3 here

A final set of tabulations from the SCF describes the sharp differences in financial literacy observed by race and ethnicity. Figure 4A indicates that half of Whites could correctly answer all three questions, versus only 26% of Blacks and 22% of Hispanics. This result underscores the particularly low level of basic financial knowledge among Hispanics and African Americans, which may help account for the persistence of inequality along financial dimensions such as wealth. We focus on correct answers to the inflation question in Figure 4B, a topic that affects everyone, and again, we see that Blacks and Hispanics are particularly disadvantaged regarding this knowledge useful for day-to-day financial management, relative to Whites.

Figure 4 here

These findings are relatively similar across developed nations, providing a robust set of evidence regarding the degrees of difficulty in answering these questions and the quality of the measurement as well (Lusardi and Mitchell 2011b, 2014). A major finding from other studies, shown in Figure 5, is that the level of financial literacy is low even in countries in the G7 bloc (for example, Italy or Japan), as well as those with a strong education system (such as Finland or

Sweden). Our project on ‘Financial Literacy around the World’ (FLAT World) showed that the world is *flat* indeed in terms of financial literacy, based on our international comparisons of knowledge of fundamental concepts across countries (Lusardi and Mitchell 2011c). In developing countries, financial literacy tends to decline rather than increase with age (Klapper and Lusardi 2020). This suggests that younger cohorts may be acquiring financial literacy over time, compared to their older counterparts whose knowledge was low or had depreciated over time. Nevertheless, the young in emerging economies are still relatively poorly informed when compared to young people in developed economies.

Figure 5 here

The P-Fin Index provides two additional insights about financial literacy over time (Yakoboski et al. 2022). First, there is little evidence that financial literacy has changed over the past six years (2017-2022). Second, there has been an increase in financial literacy inequality: that is, the demographic groups who are more financially literate in 2022 were also the most financially literate in 2017 (for example, men and the better-educated). The somewhat good news is that there was also an improvement in financial literacy scores among the young, possibly due to more US states having mandated financial education in school (Urban et al. 2015).

In sum, this evidence points to the key role of financial literacy as a type of human capital that people can acquire differentially over time and over the life cycle. In the next section, we investigate the impact of financial literacy on economic decision making.

III. How Financial Literacy Shapes Economic Decision Making

Financial literacy can be linked to important financial outcomes. Our early work using HRS data found that financial literacy is a strong predictor of retirement planning and wealth (Lusardi

and Mitchell 2007, 2011a). We have replicated this finding in many other US datasets, as well as in several other countries (e.g., Behrman et al. 2012; Hasting and Mitchell 2020; Lusardi and Mitchell 2014). Management of personal finances has also become more critical over time, not only because of changes in pensions but also because of macroeconomic shocks. The Global Financial Crisis of 2008-9 sharpened interest in financial literacy, since rising debt costs and peoples' lack of financial cushions were seen to affect the economy at large, not just individuals. In the wake of the pandemic and its consequent economic dislocations, it has become even clearer that people must hold precautionary savings and manage money properly in order to protect their financial wellbeing (Demertzis et al. 2020; Clark et al. 2021).

Our research has also shown that financial literacy produces better investment outcomes. For example, the more financially literate are more likely to invest in the stock market, and to earn higher (risk-adjusted) returns on their investments (van Rooij et al. 2011; Clark et al. 2017). Stock market participation can be a conduit to higher wealth and, potentially, to greater wealth inequality, as we discuss below. Yet another way wealth can be shaped by financial literacy is via the liability side of the balance sheet. We have found that debt has risen across generations in the United States, and that people are increasingly carrying debt well into retirement (Lusardi and Mitchell 2017). Importantly, the more financially literate are better able to manage this debt (Mitchell and Lusardi 2020; Lusardi et al. 2020). In view of the widespread extent of student debt in the US, the need for financial literacy is growing even more important over time.

In Table 2, we report results from a median regression of three wealth measures as well as the wealth/income ratio, indicating the changes in outcome associated with a given change in the financial literacy score. Additional model controls, indicated in Table 2, include age, gender, education, marital status, employment status, race, and income. Our goal is descriptive, to show

that financial literacy is, in fact, linked to wealth above and beyond, for example, the effect of education, and that education is insufficient to account for the effect of financial knowledge on the accumulation of wealth. Panel A indicates that one more correct answer is associated with 13% higher median net wealth, 25% higher financial wealth, and 7% more nonfinancial wealth. Moreover, the wealth/income ratio rises by 15% at the median, holding all other factors constant. If a respondent were to answer all of the Big Three correctly, this is associated with 45% more net wealth, 82% more financial wealth, and 16% more non-financial wealth, at the median. The 37% higher wealth to income ratio also underscores the powerful positive association with financial literacy.

Table 2 here

The finding that financial literacy is associated with peoples' savings (we are agnostic about the causal link, for now) has led us to develop a theoretical model to examine the impact of financial literacy on wealth and wealth inequality. In particular, our life cycle model embeds several types of uncertainty regarding labor income, out-of pocket medical expenses, and asset returns, as well as borrowing constraints and other features of the economy to make the model as realistic as possible (Lusardi et al. 2017). Of central interest is the role of financial literacy, where we posited that becoming financially knowledgeable requires people to expend time and money. In turn, this investment permits them to reap the benefits of having access to a better technology for their saving. Moreover, as with all human capital, depreciation is a factor, so consumers must decide whether to keep investing in financial literacy or to let knowledge decline with time. In this setup, financial literacy becomes an endogenous decision variable, so that people choose their financial knowledge optimally by comparing the costs and benefits of doing so.

Our theoretical framework is useful for several reasons. First, it rationalizes some of the financial literacy facts reported above. For example, financial literacy is predicted to be low among the young, but it should rise with age as people start investing in financial literacy. At some point, it can be optimal to let knowledge depreciate, generating the observed hump-shaped pattern.⁶ Second, our model also predicts that financial literacy will be higher for the better-educated, as this group is more likely to need to save for retirement, compared to the lower-paid who receive relatively higher Social Security replacement rates. This may also explain observed differences in financial literacy by race and ethnicity. Third, the inclusion of financial literacy in this economic model makes it clear that people can be perfectly rational and yet not be particularly financially sophisticated. Indeed, our model predicts the optimal amount of financial knowledge in which different groups will invest, providing a useful extension of traditional intertemporal saving models. This extension is also likely to make the models more realistic. Fourth, our model makes it clear that understanding the causal impact of financial literacy on wealth must take into account the fact that financial literacy is an endogenous variable. While the results in Table 2 were reported for descriptive reasons, different estimation strategies are required in order to assess the impact of financial literacy on wealth, as we have done in previous work summarized in Lusardi and Mitchell (2014)

To this end, we can use our theoretical model to assess the impact of financial literacy, not just on wealth, but also on wealth inequality. We find that financial literacy is indeed not a side-show; instead, in the US, we find that 30-40% of wealth inequality near retirement can be accounted for by financial literacy (Lusardi et al. 2017). Accordingly, we conclude that financial literacy matters, and it matters a great deal.

⁶ In addition, of course, people may also elect to delegate money management decisions to financial advisers in lieu of devoting their own time and effort to acquiring the knowledge (Kim et al. 2021).

Adding financial literacy into an intertemporal model of saving is one important way to measure its impact. Another way is to seek sources of exogenous variation in empirical studies of access or opportunities to become financially literate. This includes, for example, the establishment of new universities or mandating financial education in school or the workplace. Of course, empirical evaluations are best when they result from the gold standard of rigorous evaluation, namely randomized control trials (RCTs), as this can avoid, for example, more able people self-selecting into the programs of interest.

Our recent meta-analysis of financial education programs (Kaiser et al. 2022) concentrated only on such RCTs, so as to provide evidence of the most rigorous program evaluations available. Some 76 financial education programs in 33 countries across six continents were considered, and the results were resoundingly positive. The key findings are as follows: First, we confirmed that financial education positively affects both financial knowledge and behavior. Second, the impact is three to five time larger than found by older studies (Fernandez et al. 2014), mainly due to the inclusion of many more recent papers in the more recent review. These papers could, for example, benefit from the research on financial literacy to design better programs. Indeed, research on financial literacy has grown exponentially over time, as seen in Figure 6, which also speaks to the importance of this topic Third and very importantly, using the scale by Kraft (2020), we showed that financial education programs are cost-effective and the effects are similar to other education programs, such as those related to health, energy, or the environment.

Figure 6 here

We have also created our own financial education programs, designed with the knowledge and expertise accumulated over many years of research. Our findings again point in the same direction. For example, when exposed to financial education on basic financial topics of central

interest here, including the Big Three, we detect an increase in knowledge that persists some time beyond the intervention (Heinberg et al. 2014). Nevertheless, more research is needed to increase the effectiveness of the programs, at low cost, and to reinforce such knowledge at key points over the life cycle (Lusardi et al. 2020).

IV. Discussion

A. Implications for Teaching

As financial literacy is clearly now an important skill that people need to have, Personal Finance courses have begun to be offered in colleges and universities, particularly in the United States. Early work pointed to the importance of having financial education in high school (Bernheim et al. 2001). We have started offering such courses at our own universities in 2013, motivated and guided by our research findings. While business schools regularly teach corporate finance courses to aspiring Chief Financial Officers (CFOs), households must also be exposed to rigorous preparation to manage their money, save and invest properly, and decumulate their assets in retirement; in other words, they must become the CFOs of their own finances. In fact, financial experts used to manage pension wealth on behalf of firms' employees, but with DC plans, individuals must now make those decisions themselves.

Some governments have also implemented financial literacy training in high schools, which is a promising step forward to help the young acquire basic financial skills (widen the access and reduce the cost), and also to help them avoid getting into financial trouble early in life (Urban et al. 2015; Barua et al. 2017). Not surprisingly, financial education is most effective when there is a rigorous curriculum, a specific course devoted to personal finance (rather than embedding these concepts into other classes) and trained teachers (Tennyson and Nguyen 2005). Yet it is also

critical to reinforce this training periodically, to offset the effect of human capital depreciation (Lusardi et al. 2020).

Our research offers useful insights about what such courses should teach. For example, the Big Three and the P-FinIndex tell us that most people do not grasp key fundamental financial concepts, particularly financial risk and risk management. We cover these topics extensively and rigorously in our courses, building first on simpler concepts. Moreover, people must make many consequential decisions that require them to know about specific financial instruments and contracts, such as student loans, mortgages, credit cards, investments, and annuities. Consumers must also be aware of their rights and obligations in the financial marketplace. Moreover, planning for the future often requires complex calculations. Our research shows that much can be done to help people make savvier financial decisions. Several years ago, the Council for Economic Education (CEE 2013) established National Standards for Financial Literacy, detailing what should be covered in Personal Finance courses in school. We extended those standards, borrowing from both the theory and the evidence on financial literacy, to design our own Personal Finance courses.⁷ Together with other academics teaching this topic to a very wide group of students, we also organized the first academic conference for the economics profession dedicated to the teaching of Personal Finance.⁸ Importantly, our meta-analysis of financial education programs also found that financial education had substantial positive impacts on financial knowledge in both developing and in developed countries. Thus, courses can now be found everywhere; the financial literacy world is indeed flat.

B. Implications for programs

⁷ Our course syllabi are available upon request.

⁸ We thank John Shoven and Michael Boskin for jumpstarting this initiative and hosting the conference at Stanford University: <https://personalfinanceteaching.org/>.

Our research also has several implications for financial education programs. First, given low levels of financial literacy globally, it is important to step up the effort to improve financial knowledge across the population. To do so, many initiatives at national levels have been launched, and more than 80 countries have set up national committees entrusted with the design and implementation of national strategies for financial literacy (OECD/INFE 2017). One of us chairs the Financial Education Committee charged with improving financial literacy in Italy. Moreover, influential policymakers and central bankers, including former Fed Chairman, Ben Bernanke, have also spoken to the critical importance of financial literacy. Additionally, the European Commission (2020) has recently acknowledged the importance of financial literacy as a key step for a capital markets union.

Programs seeking to achieve results on a national scale will need to promote financial education across a wide swath of the population, in particular in schools. Indeed, the Programme for International Student Assessment (PISA) since 2012 has added financial literacy to the set of topics that 15-year old students need to know to be able to participate in modern society and be successful in the labor market. More recently, as eloquently noted by the Secretary General of the United Nation, financial skills can usefully be included in the toolkit that all young people require to overcome the challenges of today's world and make good decisions for their future.⁹

Since acquiring financial knowledge is a lifelong process, financial education can also be provided after people leave high school, and one approach finding increasing favor is via the workplace.¹⁰ Analysis of the P-Fin Index shows that Americans spend an average of seven hours

⁹ The United Nations Secretary-General stated at the conclusion of the 2022 Transforming Education Summit: “Learning to do calls for a focus on a whole new set of skills, including digital literacy, financial skills, and emerging technical and STEM skills. Transformed education systems should develop flexible career management skills, and promote innovation, creativity, and entrepreneurship.” <https://www.un.org/en/transforming-education-summit/sg-vision-statement>

¹⁰ See the earlier research by Bernheim (1998) and Bernheim and Garrett (2003) and the summary and discussion by Clark (2023) on the importance of workplace financial education.

a week dealing with their personal finance issues, and three of these hours occur during worktime. Moreover, the least financially literate are four times more likely to spend 10+ hours per week thinking about and dealing with issues and problems related to personal finances (Yabokoski et al. 2022). Given that the costs of financial education programs need not be high, employers may find it beneficial to provide financial education for their employees. Moreover, as there are large differences in financial knowledge across demographic groups, as noted above, one size will not necessarily fit all. For this reason, providing tailored programs will better address the needs of specific groups. For example, some of the observed gender differences in financial literacy may be due not only to knowledge, but also to self-confidence. Programs targeting women could therefore try to promote both.

There can also be negative externalities arising from poor financial literacy. For example, consumers who fail to understand risk and risk management may underinsure (Brown et al. 2017, 2021; Gottlieb and Mitchell 2020). We have also learned that many families lacked buffer savings to hedge even small shocks, much less economic recessions and the pandemic shock (Demertzis et al. 2020; Hurwitz et al. 2021). In volatile economic times, if people do not understand inflation, interest compounding or risk, they may not set aside enough for precautionary savings and retirement. To avoid having to ask taxpayers to support such families, it could be less costly to try to prevent these behaviors.

Finally, since financial literacy has such important implications for wealth and wealth inequality, investing in financial literacy may help reduce gaps that arise because of unequal access to financial education. In other words, financial literacy has an impact not only at the individual level but at the aggregate level as well.

C. Implications for future research

After 20 years of research on this topic, financial literacy has now become an official field of study in the economics profession, with its own JEL code (G53). Indeed, with around 55.1 million cites in Google,¹¹ the importance of the topic should not be underestimated. We also recently launched a new academic journal, the *Journal of Financial Literacy and Wellbeing*, to add to the wealth of knowledge in this exciting arena. Nevertheless, much research remains to be done, partly because many programs are being implemented around the world with the objective of improving knowledge and fostering more savvy financial behavior. And because we have learned so much in the past two decades about financial literacy, many programs have moved beyond very short interventions, such as a single retirement seminar or sending employees to a benefits fair, to more robust programs. An invaluable next step is to do more to understand both the short-term and long-term costs and benefits of such treatments, if possible in a RCT context. Without this, it will be challenging to pinpoint what works best, for whom, and at what points in the life cycle.

We must also consider that it may not always be optimal to change behavior, as our theoretical model indicated (Lusardi et al. 2017, 2020). In fact, sometimes the best response may be to do nothing, particular if people are unlikely to use the knowledge in a timely way, or if they lack access to the kinds of financial products that would enhance their saving and risk management. In any event, our understanding of what works has benefitted from the development of theory as well as empirical evidence on financial literacy and the effects of financial education. The Big Three have provided a good stepping stone to show that the levels of financial literacy are low and that work is needed to improve this state of affairs.

¹¹ This refers to search results for the term “financial literacy” in Google Chrome (4/12/2023).

V. Conclusions

We have shown that financial literacy is a form of human capital, and as such, must be incorporated into economic models to help us better understand the many determinants of financial decision making over the life cycle. While others have sought to find new ways to help people save for retirement, budget, invest for the long term, and so on, our work implies that isolated initiatives (such as nudges and reminders) alone will not solve peoples' larger inability to make good decisions about the broad range of financial choices they face. Moreover, those seeking to understand wealth inequality would do well to take proper account of the reasons for and consequences of poor levels of financial literacy. We should emphasize that we do not propose that consumers behave irrationally or make systematic mistakes. Instead, we confirm that economic models can and should be amended to incorporate the fact that people often lack the necessary knowledge to participate in financial markets and use financial instruments properly. As a result, robust interventions are needed to address the persistently low and widespread lack of financial literacy. Indeed, the topic is ripe to be integrated into syllabi, textbooks, and microeconomics as well as macroeconomics courses at both the undergraduate and graduate levels. Moreover, teaching personal finance in both school and college is an ideal way to make financial education more widely accessible. Analysts and educators should also undertake serious and thorough evaluations of what works best, and how financial education programs can be made as cost effective as possible. Finally, as there are clearly constraints on the potential generosity of welfare and other government programs, we propose that financial literacy be explicitly included as a macroeconomic indicator in the national statistics, to judge a nation's current and future wellbeing. Finland recently launched its national strategy for financial literacy pledging to become

the nation with the highest level of financial literacy by 2030 (Raijas 2021). As our research shows, promoting financial literacy is a way to insure people live more financially secure lives.

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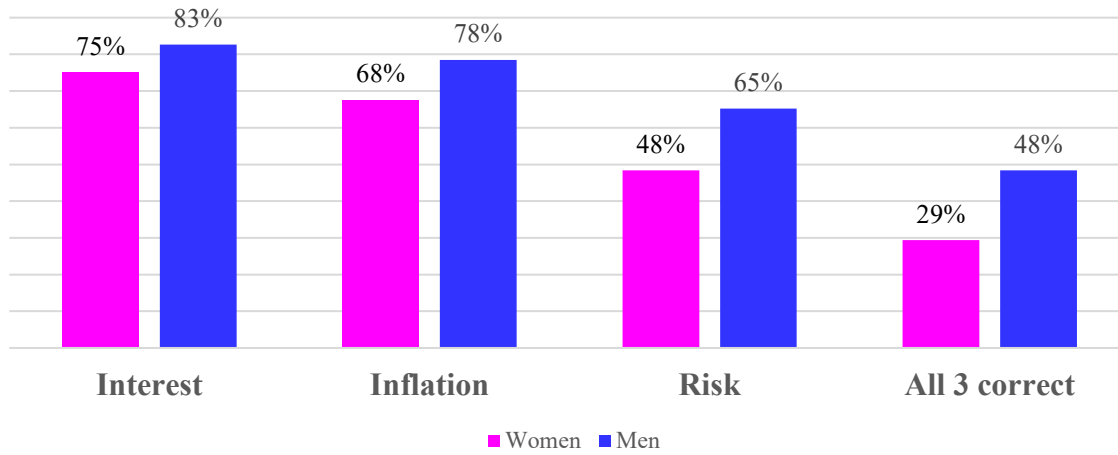
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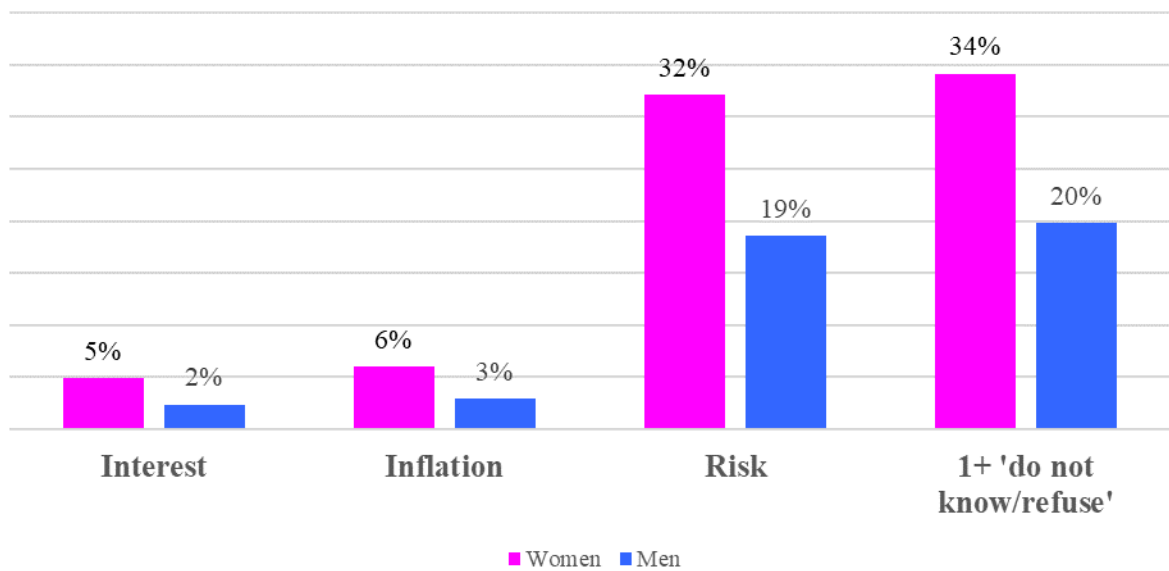
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Figure 1. Financial Literacy Differences by Sex

A. Percent of respondents answering all Big Three questions correctly, by sex



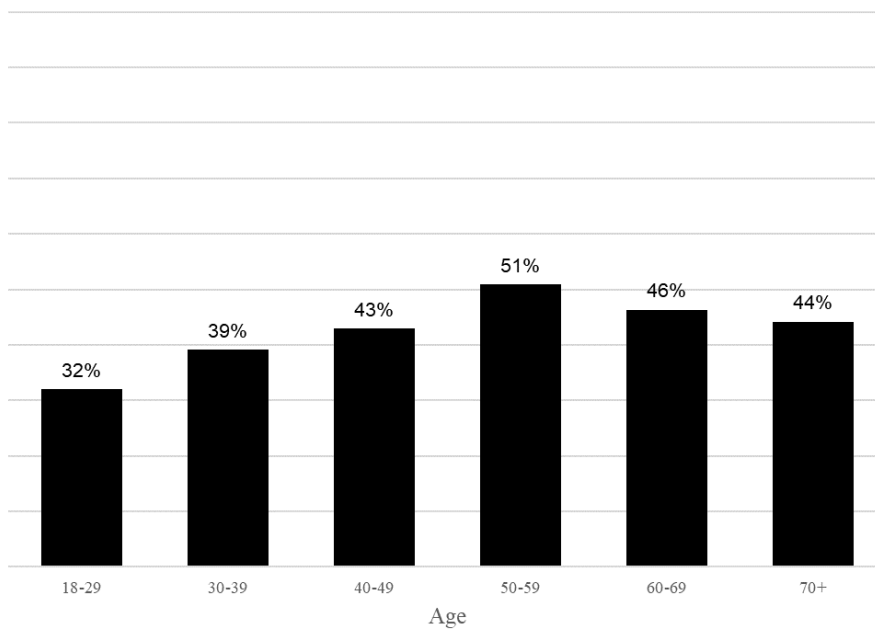
B. Percent of respondents answering all Big Three questions with 'Do not know/Refuse,' by sex



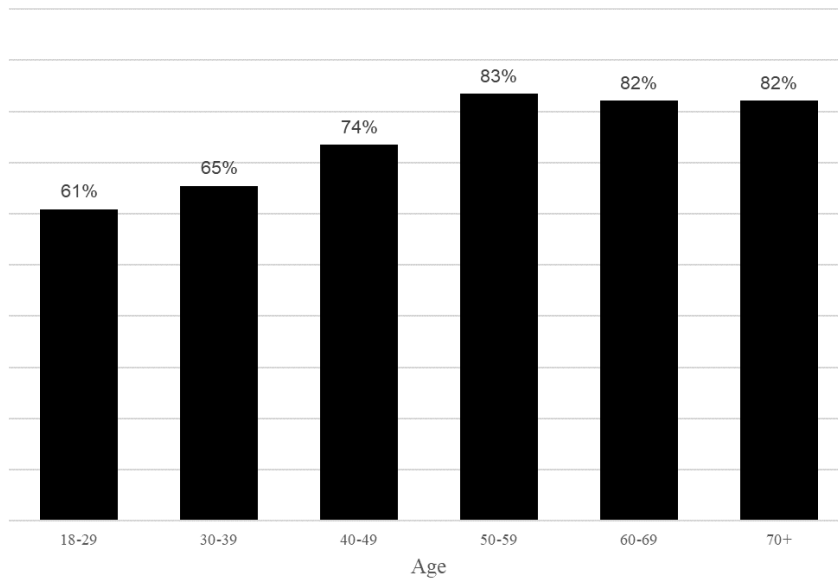
Source: Authors' tabulations, 2019 Survey of Consumer Finance. All data weighted.

Figure 2. Financial Literacy Differences by Age

A. Percent of respondents answering all Big Three questions correctly, by age



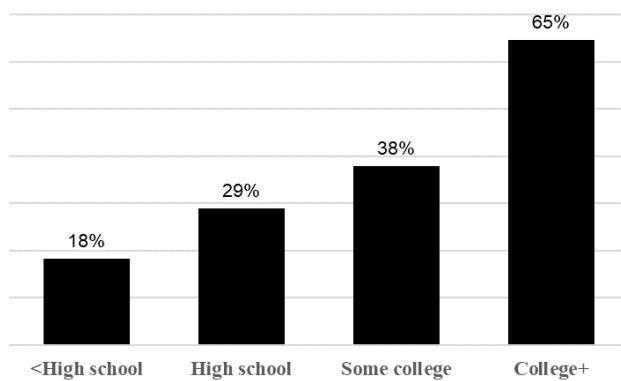
B. Percent of respondents answering the inflation question correctly, by age



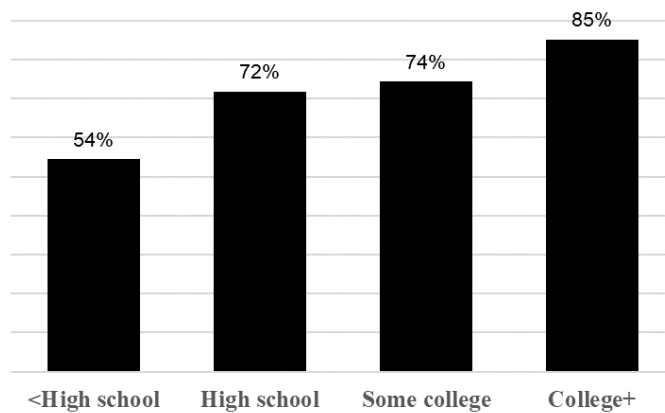
Source: Authors' tabulations, 2019 Survey of Consumer Finance. All data weighted.

Figure 3. Financial Literacy Differences by Education

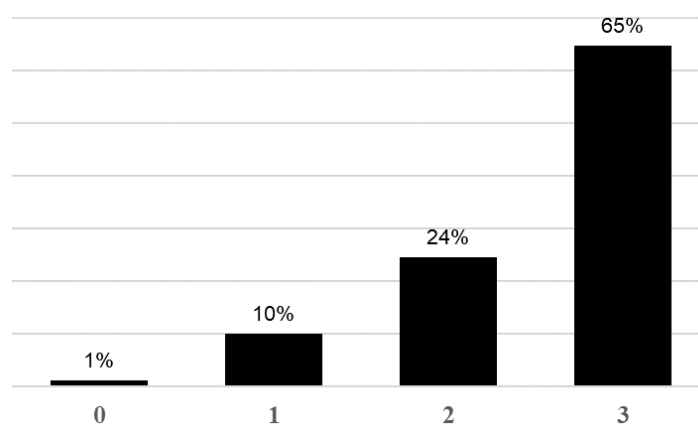
A. Percent of respondents answering all Big Three questions correctly, by education



B. Percent of respondents answering the inflation question correctly, by education



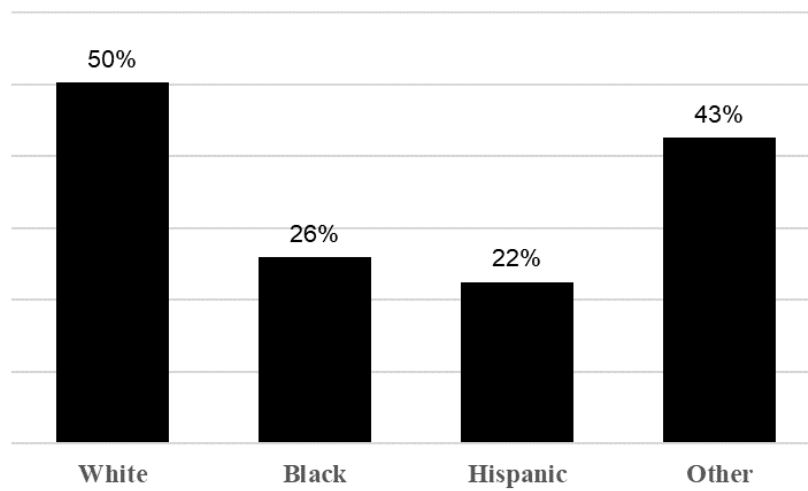
C. Distribution of number of correct answers to Big Three questions, college+ only



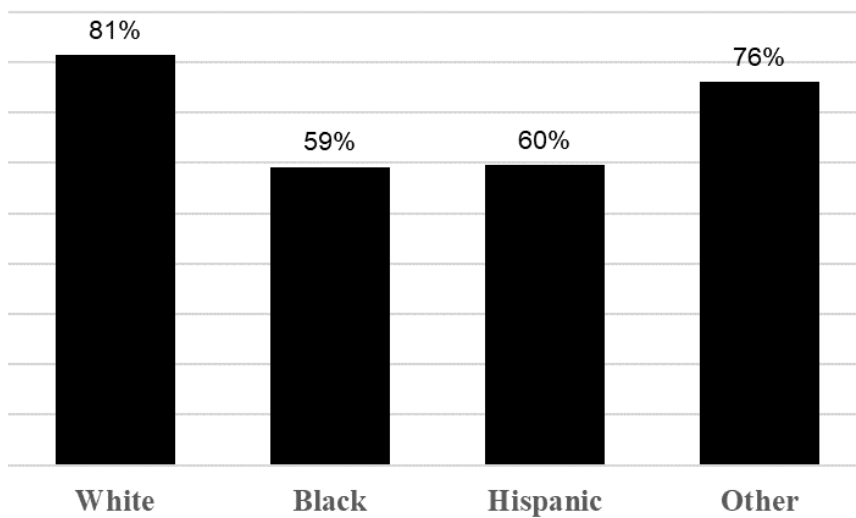
Source: Authors' tabulations, 2019 Survey of Consumer Finance. All data weighted.

Figure 4. Financial Literacy Differences by Race/Ethnicity

A. Percent of respondents answering all Big Three questions correctly, by race/ethnicity

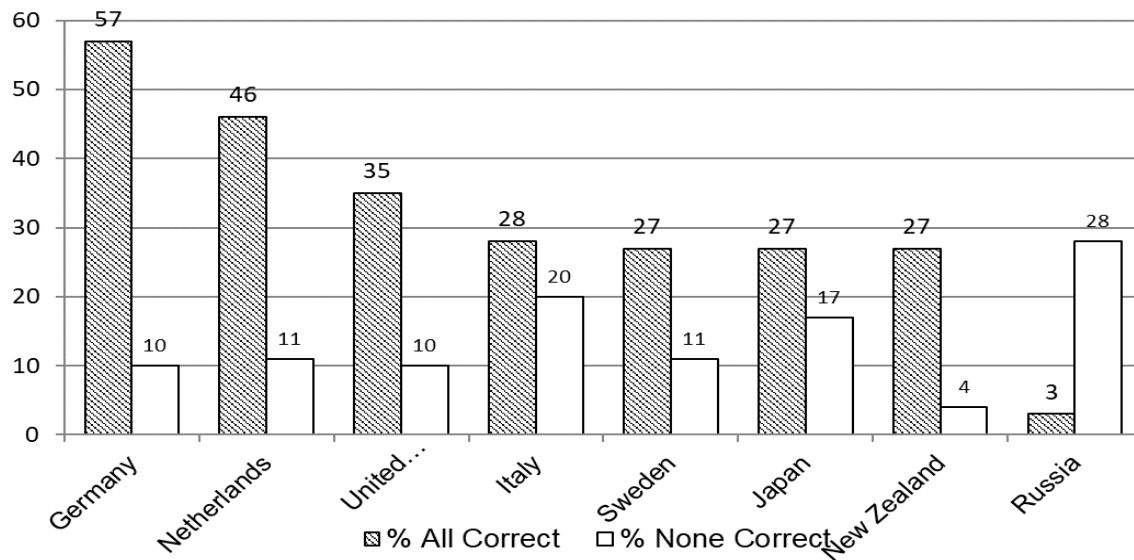


B. Percent of respondents answering the inflation question correctly, by race/ethnicity



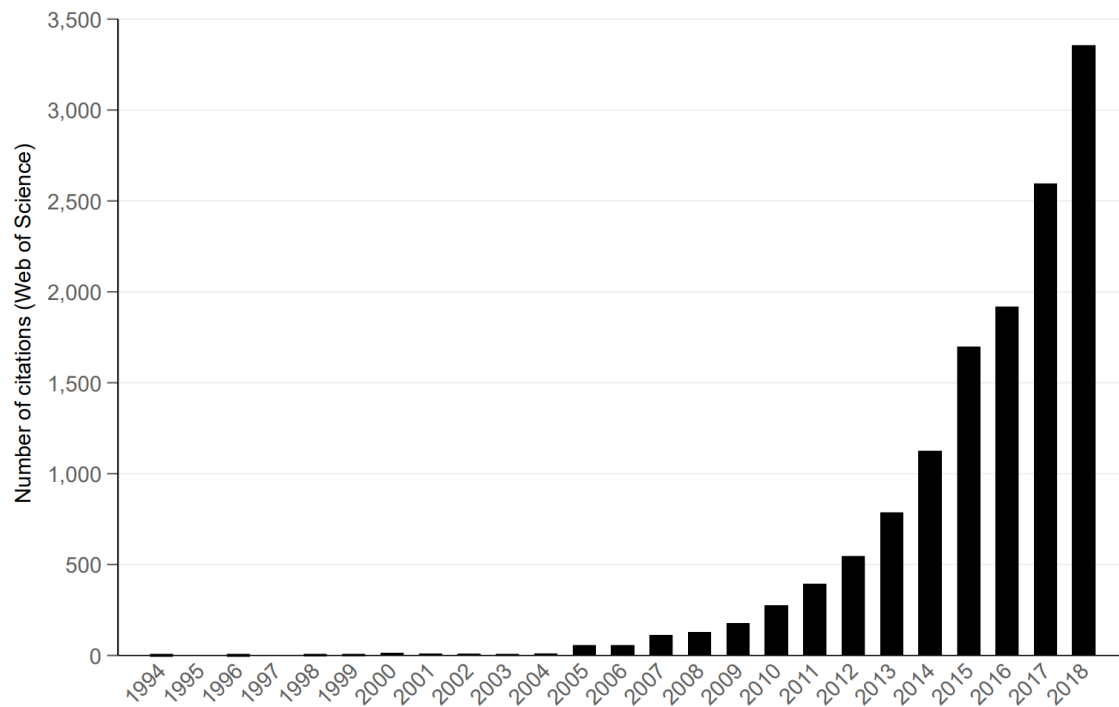
Source: Authors' tabulations, 2019 Survey of Consumer Finance. All data weighted.

Figure 5. Financial Literacy Around the World



Source: Lusardi and Mitchell (2011c).

Figure 5. Citations in the SSCI to the Term “Financial Literacy” Per Year



Source: Kaiser et al. (2022).

Table 1. Financial Literacy in the US Population

	<i>Correct</i>	<i>Incorrect</i>	<i>DK/RF</i>
Interest	80.6%	16.4%	3.0%
Inflation	75.5%	20.7%	3.8%
Risk	60.7%	17.1%	22.2%
All BIG3 correct	43.3%		

Source: Authors' tabulations, 2019 Survey of Consumer Finance. All data weighted.

Table 2. Estimated Changes in Wealth and Wealth/Income for Specific Changes in Financial Literacy Scores

	Net Wealth	Financial Wealth	Non-Financial Wealth	Wealth/Income Ratio
<i>A. Change in Wealth Per Unit Change in FinLit Score</i>				
Change in wealth	\$16,100	\$5,900	\$12,100	0.305
% change versus median	13%	24%	7%	15%
<i>B. Change in Wealth if All Big Three Correct</i>				
Change in wealth	\$54,600	\$20,600	\$25,600	0.725
Percent of change to median	45%	82%	16%	37%

Note: Besides the financial literacy variable, all columns control for age, female, Black, Hispanic, other race, education, marital status, number of children, employment status, and income. Source: Authors' tabulations, 2019 Survey of Consumer Finance. Wealth measures are winsorized at the top and bottom 1%, as is the income/wealth ratio. The wealth/income ratio uses net wealth in the numerator. All data weighted.

Appendix: Descriptive Statistics for the 2019 SCF data used in Tables 1 and 2

Variable	Mean	Std.Err.
Total net worth (2019\$)	731,989	13,057
Total assets (2019\$)	837,955	13,606
Total financial assets (2019\$)	353,499	9,759
Total nonfinancial assets (2019\$)	480,671	10,154
Income (2019\$)	105,329	1,606
FinLit index	2.17	0.011
All BIG3 correct	0.43	0.006
Age	51.73	0.037
Female	0.27	0.005
Male (Ref)	0.73	0.005
White (Ref)	0.65	0.006
Black/African American	0.14	0.006
Hispanic	0.10	0.004
Race, other	0.11	0.004
<High school	0.11	0.005
High school	0.24	0.005
Some college	0.28	0.005
College+ (Ref)	0.36	0.006
Married	0.56	0.006
Divorced/Separated	0.17	0.004
Widowed	0.08	0.003
Never married (Ref)	0.19	0.004
#Kids	0.72	0.012
Working (Ref)	0.58	0.005
Self-employed	0.11	0.003
Retired/Disabled	0.27	0.003
Not working	0.04	0.002

Source: Authors' tabulations, 2019 Survey of Consumer Finance. All data weighted.