

Financial Literacy and Personal Finance An Overview

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Financial literacy is now a research field



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JEL Classification Codes Guide

The guide provides JEL Code application guidelines, keywords, and examples of items within each classification.

The "JEL" classification system originated with the Journal of Economic Literature and is a standard method of classifying scholarly literature in the field of economics. It is used in many of the AEA's published research materials.

Use the guide to gain insight on how JEL Codes are used to classify articles, dissertations, books, book reviews, and working papers. You will also find it is helpful when adding classification codes to your own work.



G53 Financial Literacy

An academic journal dedicated to financial literacy



First issue in 2023

- Publications 3 times a year
- Special issues for the first year

Why a boot camp

- Grow the next generation of researchers
- Share ideas, comments, suggestions
- We need to move the field forward
- Create a support system

Main topics I will cover in my lectures

- Measuring financial literacy
- Assessing the impact of financial literacy on behavior
- Using the data and findings to design programs and inform policy
- Implications for teaching

Motivation: Why this research topic?

Because of the changes in the economic system:

- Changes in the pension system: people are in charge of their pension

This is why Olivia Mitchell and I started working on financial literacy: people have to plan for their retirement, do they know how to do it?



Motivation: So many more reasons to work on financial literacy

Not just changes in the pension system:

- Student loans: How to finance education
- Complexity of financial instruments, including new ones (crypto assets)
- Easy access to credit, buy now pay later
- Fintech, buy with a click
- Increase in risk, including climate change



Measuring financial literacy: How it started

- How to measure financial literacy: the Big Three
 - First added in a module in the Health and Retirement Study (HRS) in 2004
- Even a small number of questions can provide insights about financial literacy
- This small number made it possible to have these questions in many national surveys around the world

The Big Three: 4 criteria used for the questions design

Simplicity

Knowledge of the building blocks fundamental to decision making in an intertemporal setting

Relevance

Questions should relate to concepts pertinent to peoples' day-to-day financial decisions over the life cycle

Brevity

The number of questions must be kept short to secure widespread adoption

Capacity to differentiate

Questions should differentiate financial knowledge to permit comparisons across people.

See Lusardi and Mitchell (JEL, 2014)

Measuring financial literacy: The ABCs of personal finance

These are the questions I designed jointly with Olivia Mitchell. One question is about inflation

The Big 3

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
 - ☐ Don't 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, with the money in this account, would you be able to buy..."
 - ☐ More than today
 - ☐ Exactly the same as today
 - ☒ Less than today
 - ☐ Don't know
 - ☐ Refuse to answer
3. "Do you think the following statement is true or false? Buying a single company stock usually provides a safer return than a stock mutual fund."
 - ☐ True
 - ☒ False
 - ☐ Don't know
 - ☐ Refuse to answer

How much do Americans know? (Lusardi and Mitchell, JPEF 2011)

Distribution of responses across the U.S. population
(2009 National Financial Capability Study)

	Responses			
	Correct	Incorrect	DK	Refuse
Interest rate	64.9%	20.5%	13.5%	1%
Inflation	64.3%	20.2%	14.2%	1.3%
Risk diversif.	51.8%	13.3%	33.7%	1.2%

NB: Only about 1/3 correctly answer all 3 questions. About 1/3 do not know about risk diversification.

Main findings

- We cannot take financial literacy for granted even in the country with the most developed financial markets
 - High proportion of incorrect and DK answers even in simple questions
- Risk diversification is what people know the least
- High proportion of “do not know” answers. What do they mean?

Added these questions to national surveys in other countries

- How do countries compare?
- Are there many similarities?
- What do people know the most and least?

We learned a lot from international comparisons

How much do Germans know? (Bucher-Koenen & Lusardi, JPEF 2011)

Distribution of responses across the German population
(2009 SAVE)

	Responses		
	<i>Correct</i>	<i>Incorrect</i>	<i>DK</i>
Interest rate	82.4%	6.7%	11%
Inflation	78.4%	4.6%	17%
Risk diversif.	61.8%	5.9%	32.3%

NB: About half (53.2%) correctly answer all 3 questions. About 1/3 do not know about risk

How much do Canadians know? (Boisclair, Lusardi and Michaud, JPEF 2017)

Distribution of responses across the Canadian population
(2012 Canadian Securities Administrators Survey)

	Responses		
	<i>Correct</i>	<i>Incorrect</i>	<i>DK</i>
Interest rate	77.9%	13.2%	8.8%
Inflation	66.2%	17.7%	16.1%
Risk diversif.	59.3%	9.4%	31.3%

NB: Less than half (42.5%) correctly answer all 3 questions. About 1/3 do not know about risk.

The world is *flat* (Financial Literacy around the World, FLat World)

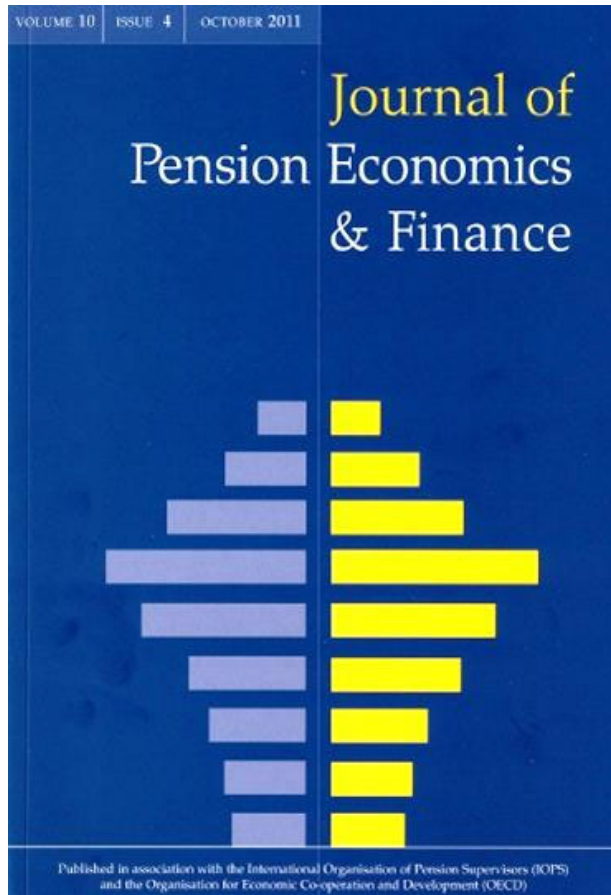
- Evidence from 15 countries:

- | | |
|-------------------|---------------|
| ❖ USA | ❖ Australia |
| ❖ Germany | ❖ France |
| ❖ The Netherlands | ❖ Switzerland |
| ❖ Italy | ❖ Romania |
| ❖ Russia | ❖ Chile |
| ❖ Sweden | ❖ Finland |
| ❖ New Zealand | ❖ Canada |
| ❖ Japan | |



Using the Big Three, we have found that financial literacy is low in both developed and developing economies

Special issue of the *Journal of Pension Economics and Finance*



We published a paper for each participating country (8 countries)

Examine the link between financial literacy and retirement planning

They are the most cited papers of *JPEF*

We had another special issue in *Numeracy* (a mathematics journal)

Financial Literacy around the World (FLat World), cont.

- Evidence from other countries and updating the evidence with a focus on inflation (special issue of the *Journal of Financial Literacy and Wellbeing*, 2023)
 - ❖ Latin America (Peru and Uruguay)
 - ❖ Eastern Europe (9 countries)
 - ❖ Singapore
 - ❖ **Finland**
 - ❖ **Italy**
 - ❖ **Japan**
 - ❖ **US**



How much do Americans know? New evidence

Distribution of responses
(2021 National Financial Capability Study)

	Responses		
	<i>Correct</i>	<i>Incorrect</i>	<i>DK</i>
Interest rate	69.4%	14.2%	15.4%
Inflation	53.1%	27.9%	23.1%
Risk diversif.	41.5%	12.5%	45.2%

NB: Less than 1/3 (28.5%) correctly answer all 3 questions. About 45% do not know about risk.

Global Finlit Survey (data collected in 2014)

We partnered with the World Bank and Gallup to measure financial literacy around the world (more than 140 countries)

We used a modified version of the Big Three to measure financial literacy

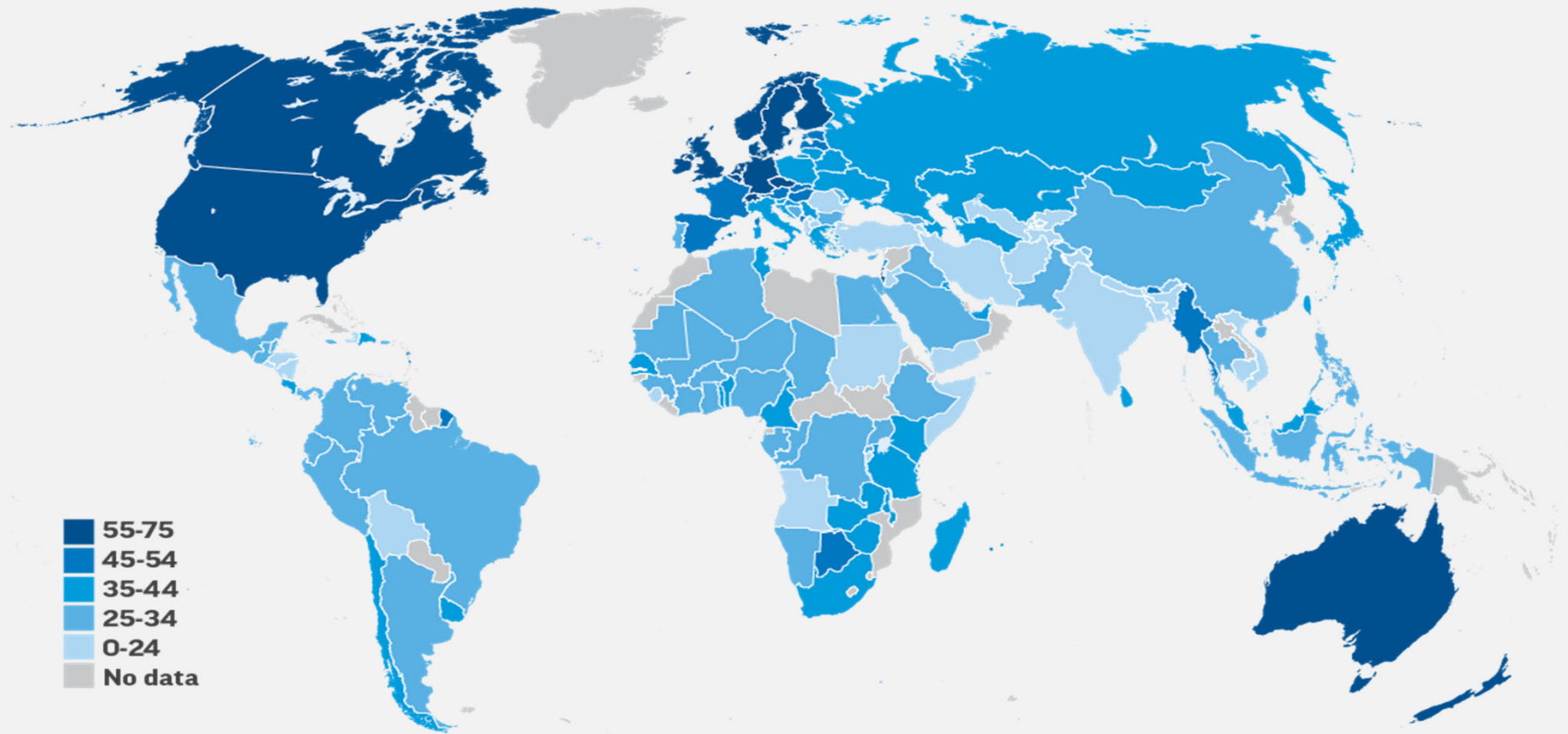
Low financial literacy is widespread.

Even in countries with well-developed financial markets and high GDP, financial literacy levels are low.

Klapper and Lusardi, *Financial Management*, 2020 .

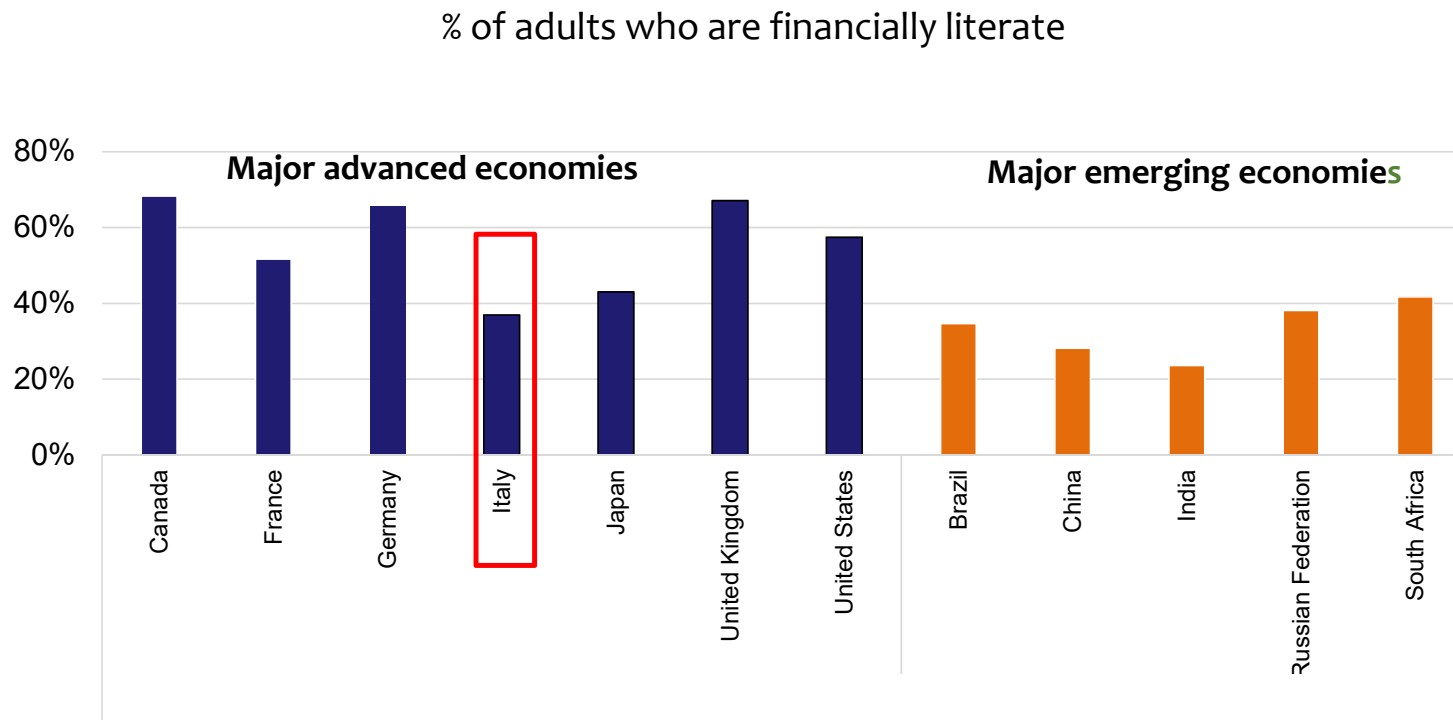


Global financial illiteracy: Only 1/3 is financially literate



Source: Global Finlit Survey, 2014

Financial literacy in the G7 and BRICS



- Financial literacy is low even in advanced countries
- Financial literacy is very low among BRICS economies

Source: Global Finlit (2014)

Global Finlit Survey (data collected in 2014)

In the appendix to our published paper, you have the aggregate statistics about each country

We have the statistics for each financial literacy questions

We have statistics across demographics: age, gender and income

BIG 5: Added two more questions

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

Do not know

Prefer not to say

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 rate

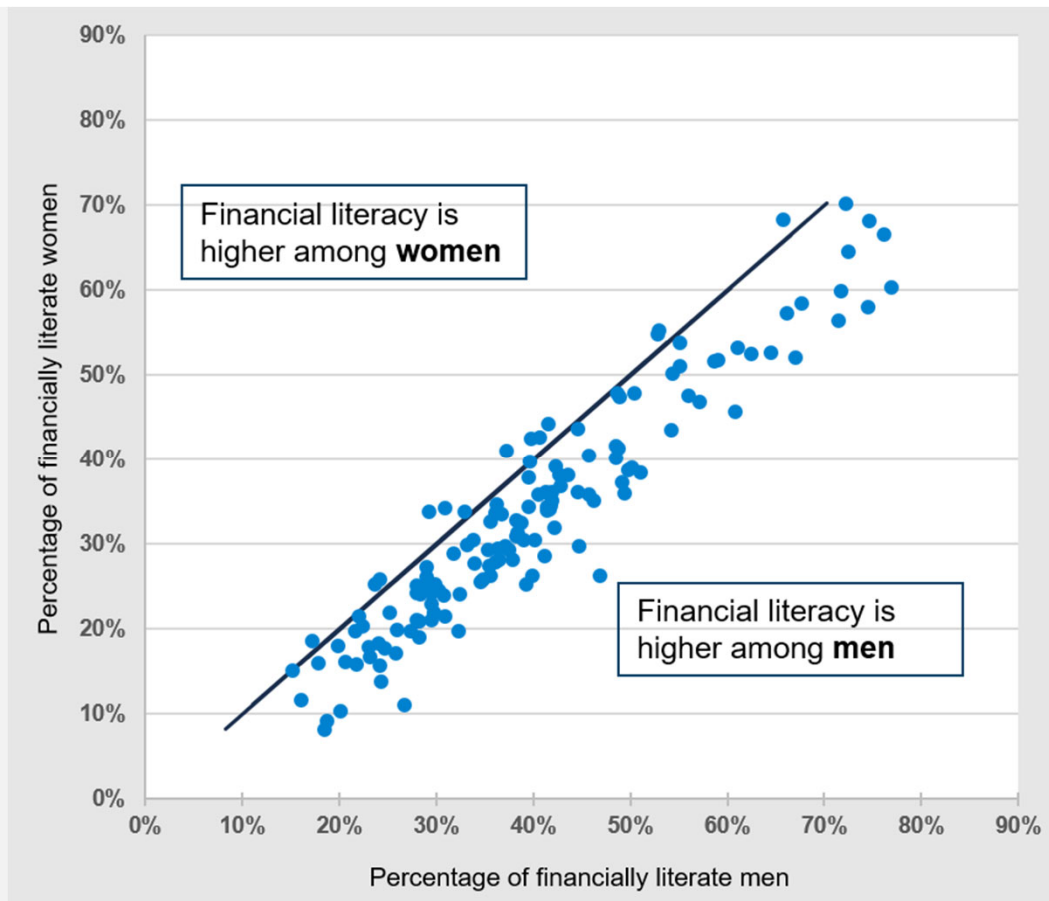
Do not know

Prefer not to say

Who knows the least?

Gender gap in financial literacy around the world

In most economies around the world, men have a better understanding of basic financial concepts than women.

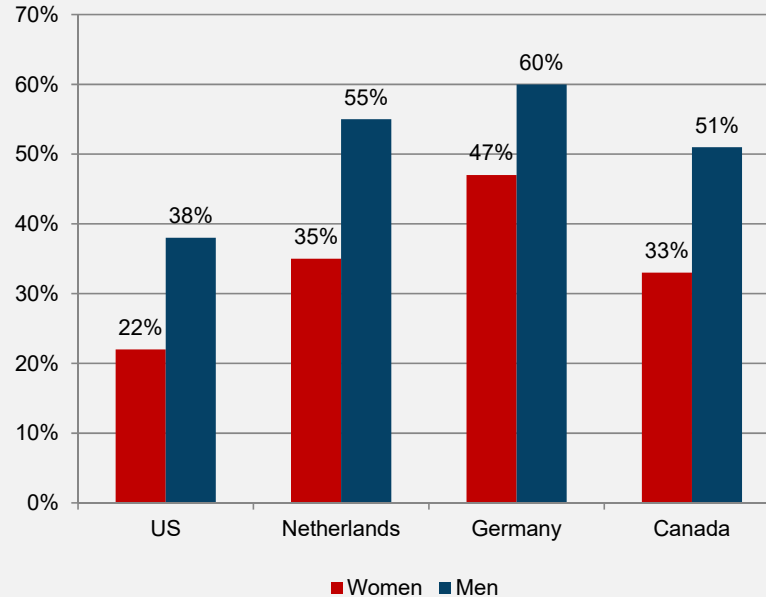


Source: Global Finlit Survey 2014

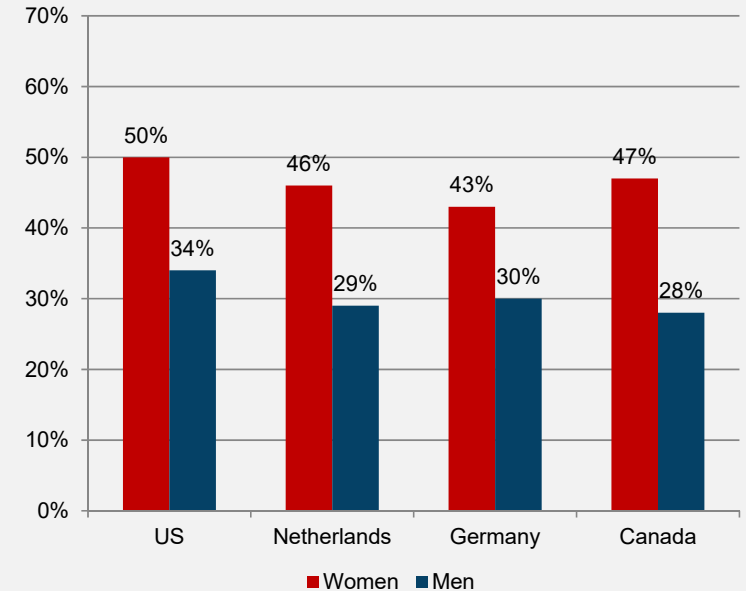
Gender gap: The importance of “do not know” in the Big Three

Women are disproportionately more likely than men to respond to a question with “do not know.”

Financial knowledge by gender
(% answering 3 Qs correctly)



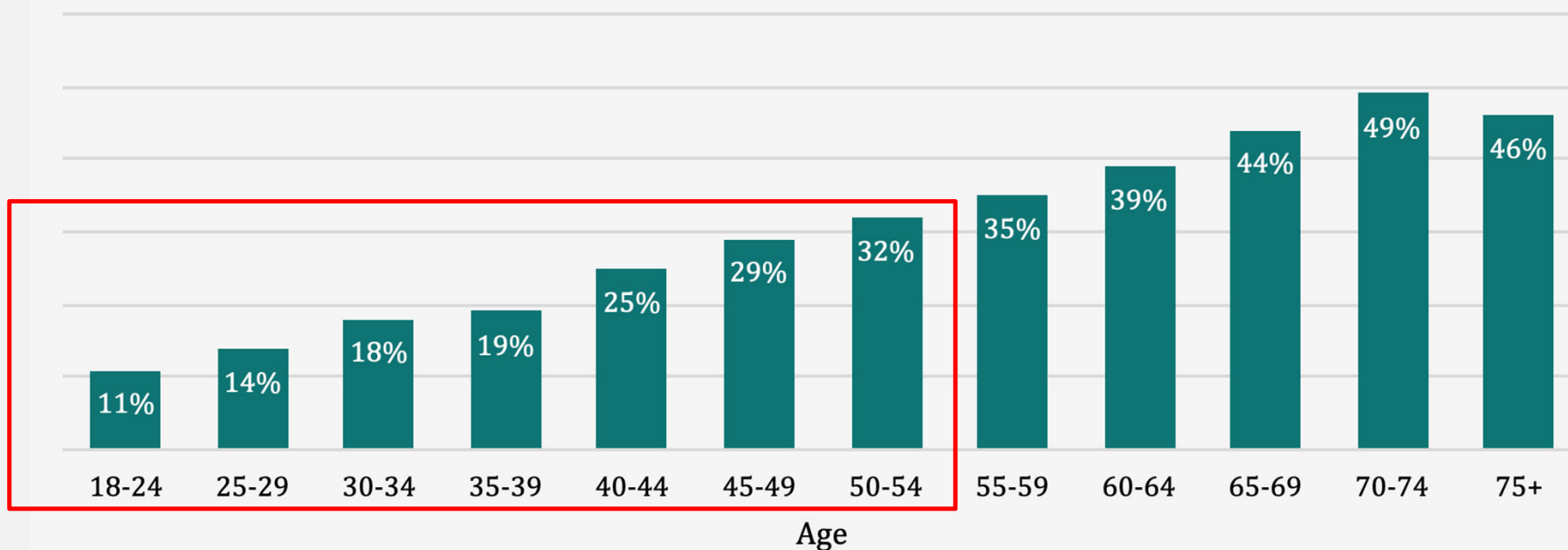
At least one "don't know" answer,
by gender



Source: Flat World

Financial literacy in America (2021 NFCS), by age

Percentage answering the Big 3 questions correctly



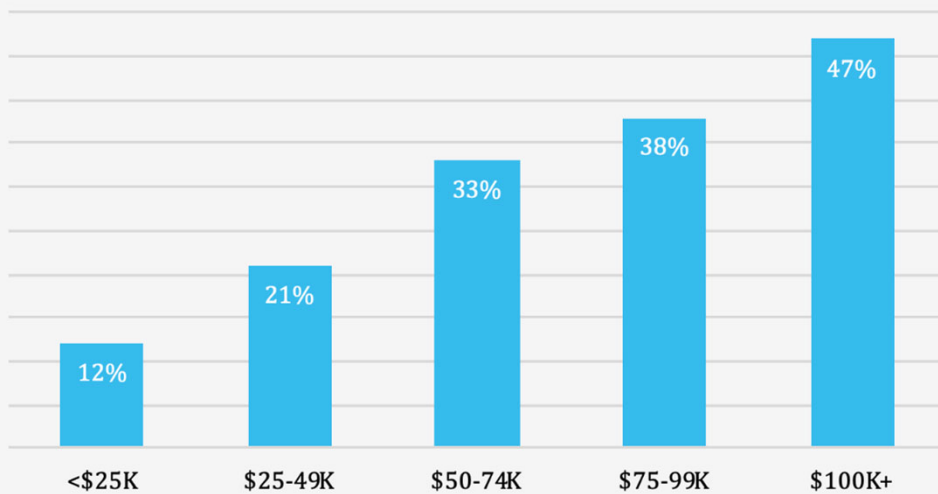
Only **1/3** of Americans know these 3 basic concepts by age 55, even though many financial decisions are made well before that age.

Source: 2021 NFCS

Financial literacy by income and education

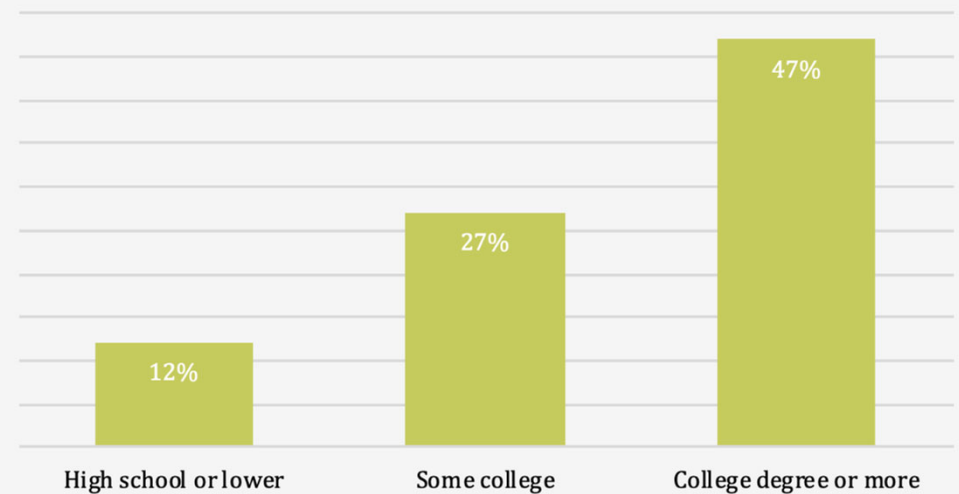
Financial literacy and
income...

Income



... and education.

Education



Source: 2021 NFCS

Explaining financial literacy (Lusardi et al., JPE 2017)



- These findings inspired Olivia Mitchell, Pierre-Carl Michaud, and I to work on a paper that was published in the JPE in 2017
- Who benefits from financial literacy? And what are the costs of acquiring financial literacy?
- Consider a life cycle model of saving with financial literacy. Financial literacy affects the return on savings. We have to spend time and effort in acquiring financial literacy
- Financial literacy is a choice variable and we can derive the “optimal” amount of knowledge.

Implications of this research



- Financial literacy is a choice variable
- To assess the impact of financial literacy on behavior, we have to take into account this potential endogeneity issue
- We will examine later how to estimate the impact of financial literacy on behavior

Started our own data collection in 2017

- Designed an index of personal finance knowledge: TIAA Institute – GFLEC Personal Finance Index (*P-Fin Index*)
- Data is collected each year (in January)
- Focus on areas of interest and needs



What is unique: 8 functional areas of personal finance

The index is based on responses to 28 questions, with three or four questions for each of the eight functional areas (from National Standards for Financial Literacy).

The P-Fin Index's 28 questions cover eight functional areas:

- | | |
|--------------|------------------------------|
| 1. Earning | 5. Borrowing |
| 2. Saving | 6. Insuring |
| 3. Consuming | 7. Comprehending risk |
| 4. Investing | 8. Go-to information sources |

An example question

Anna saves \$500 each year for 10 years and then stops saving additional money. At the same time, Charlie saves nothing for 10 years but then receives a \$5,000 gift which he decides to save. If both Anna and Charlie earn a 5% return each year, who will have more money in savings after 20 years?

- Anna
- Charlie
- Anna and Charlie will have the same amount
- Don't know
- Refuse to answer

Results:	
Correct	47%
Incorrect	28%
Don't Know	25%
No Answer	0%

Financial literacy in America: A failing grade (2023 data)

% of P-Fin Index questions answered correctly



Distribution of correct answers to P-Fin Index questions

**22-28 correct
(76%-100%)**

16%

**15-21 correct
(51%-75%)**

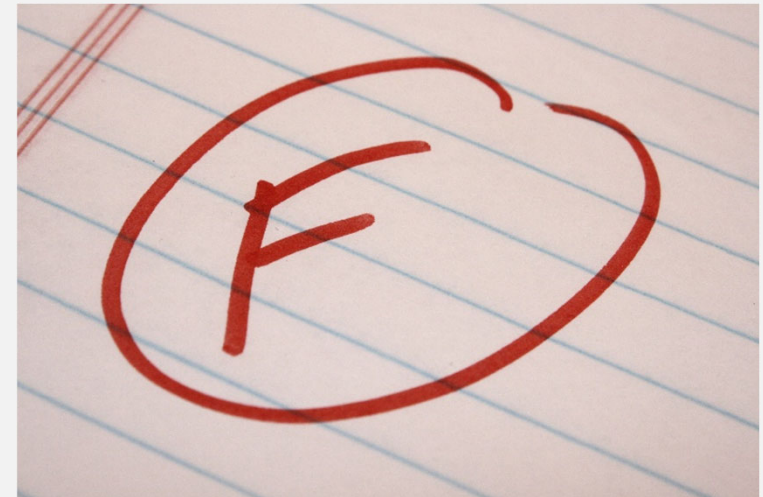
33%

**8-14 correct
(26%-50%)**

26%

**0-7 correct
(<26%)**

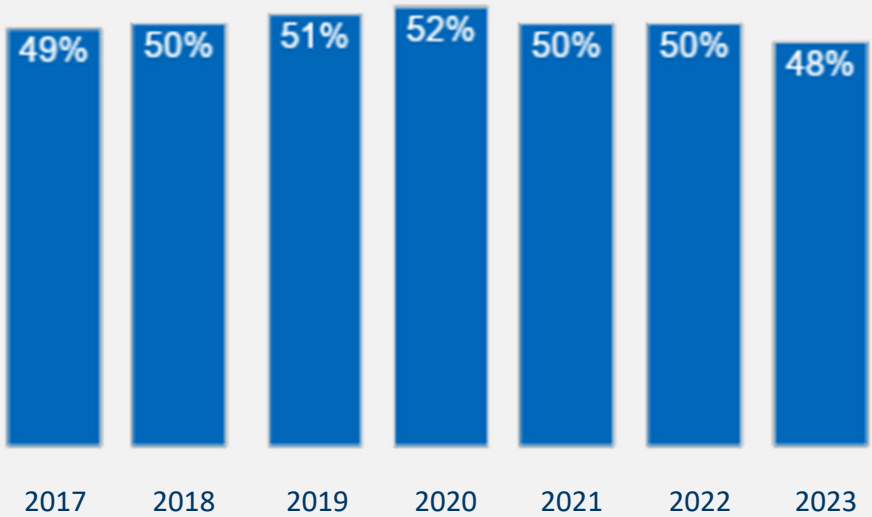
25%



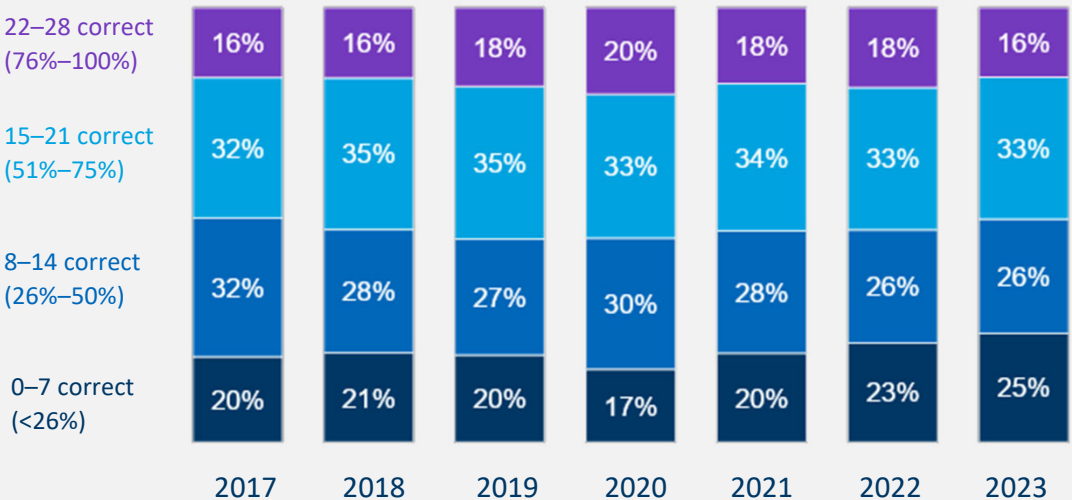
Source: TIAA Institute-GFLEC Personal Finance Index (2023).

Financial (il)literacy is holding steady: 2017-2023

% of P-Fin Index questions answered correctly



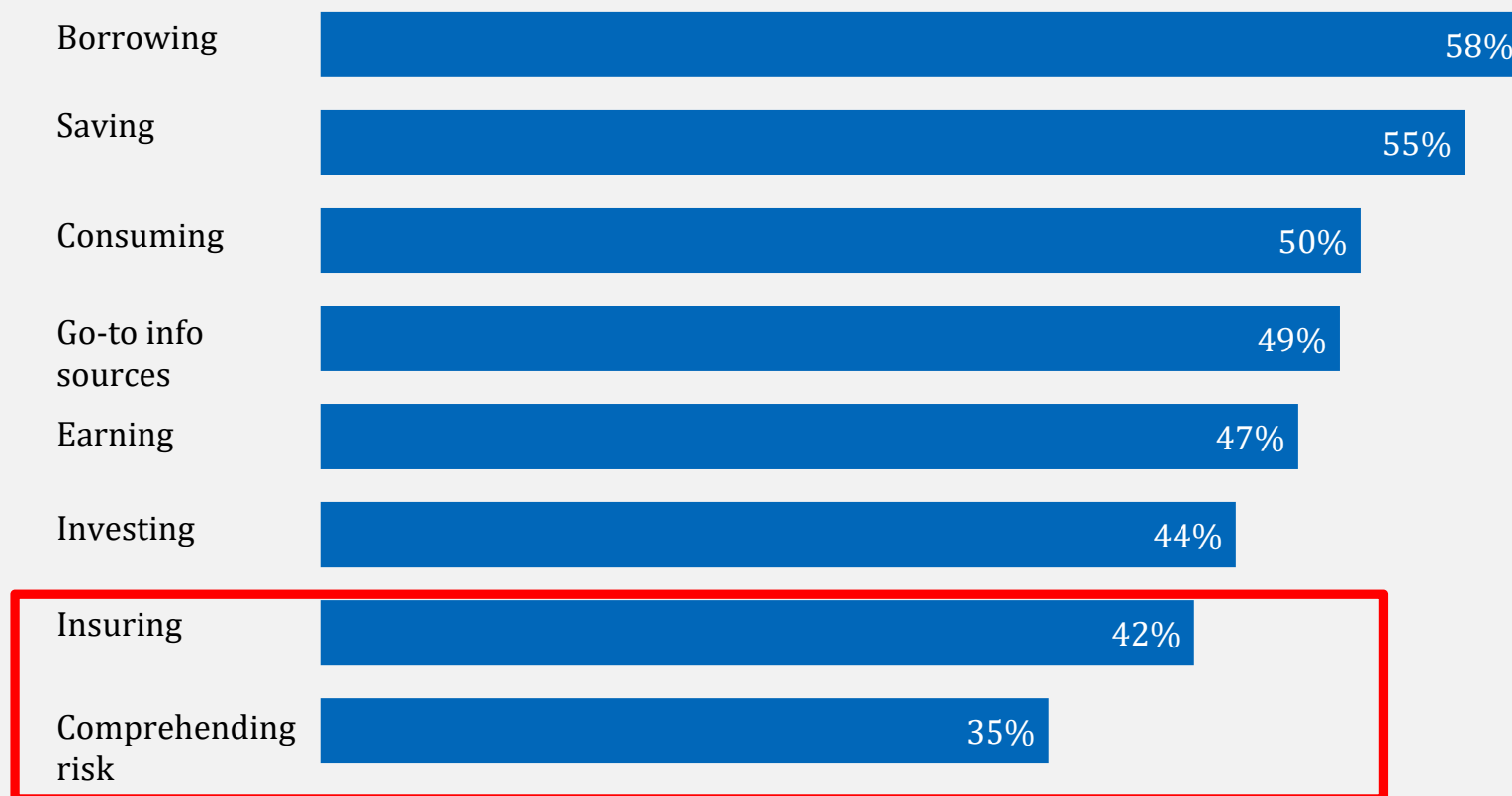
Distribution of correct answers to P-Fin questions



Source: TIAA Institute-GFLEC Personal Finance Index (2017-2023).

What do people know the most and the least

% of P-Fin questions answered correctly



Source: TIAA Institute-GFLEC Personal Finance Index (2023).

“Calculated risk”? New question in 2021

Which of the following indicates the highest probability of getting a particular disease?

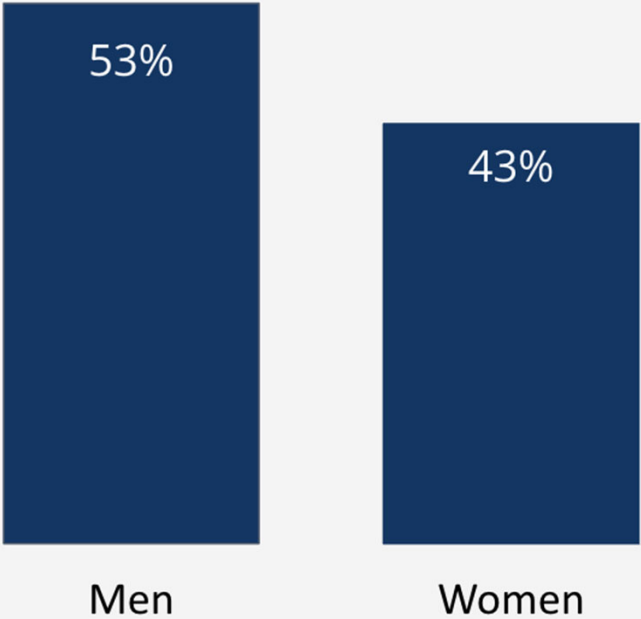
- There is a one-in-twenty chance of getting the disease
- 2% of the population will get the disease
- 25 out of every 1,000 people will get the disease
- Don't know
- Refuse to answer

Results:	
Correct	28%
Incorrect	19%
Don't Know	53%
No Answer	0%

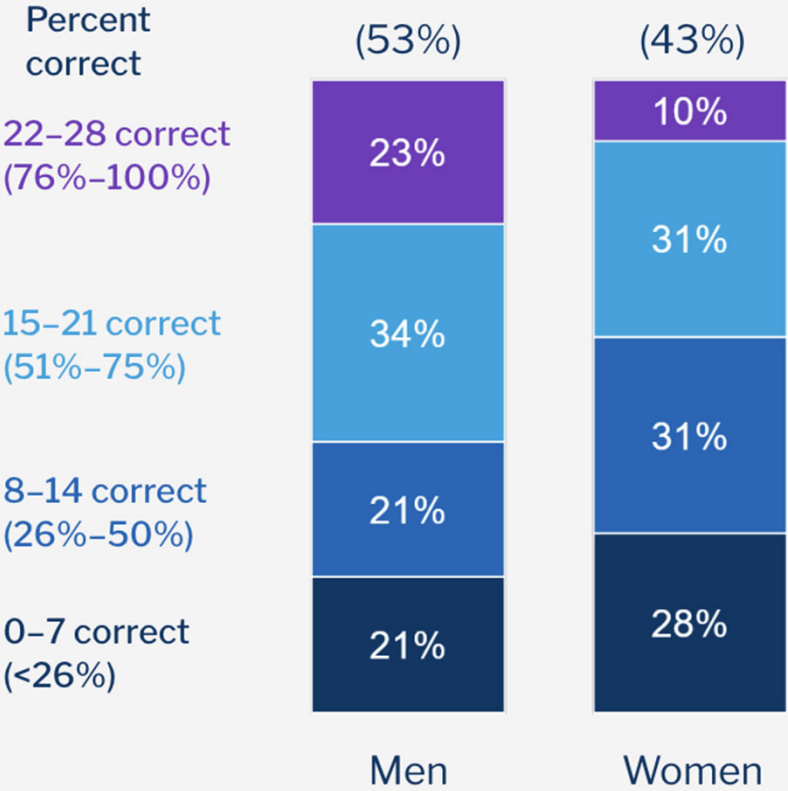
Source: TIAA Institute-GFLEC Personal Finance Index (2021).

Demographic variation: Women and knowledge

% of P-Fin Index questions answered correctly

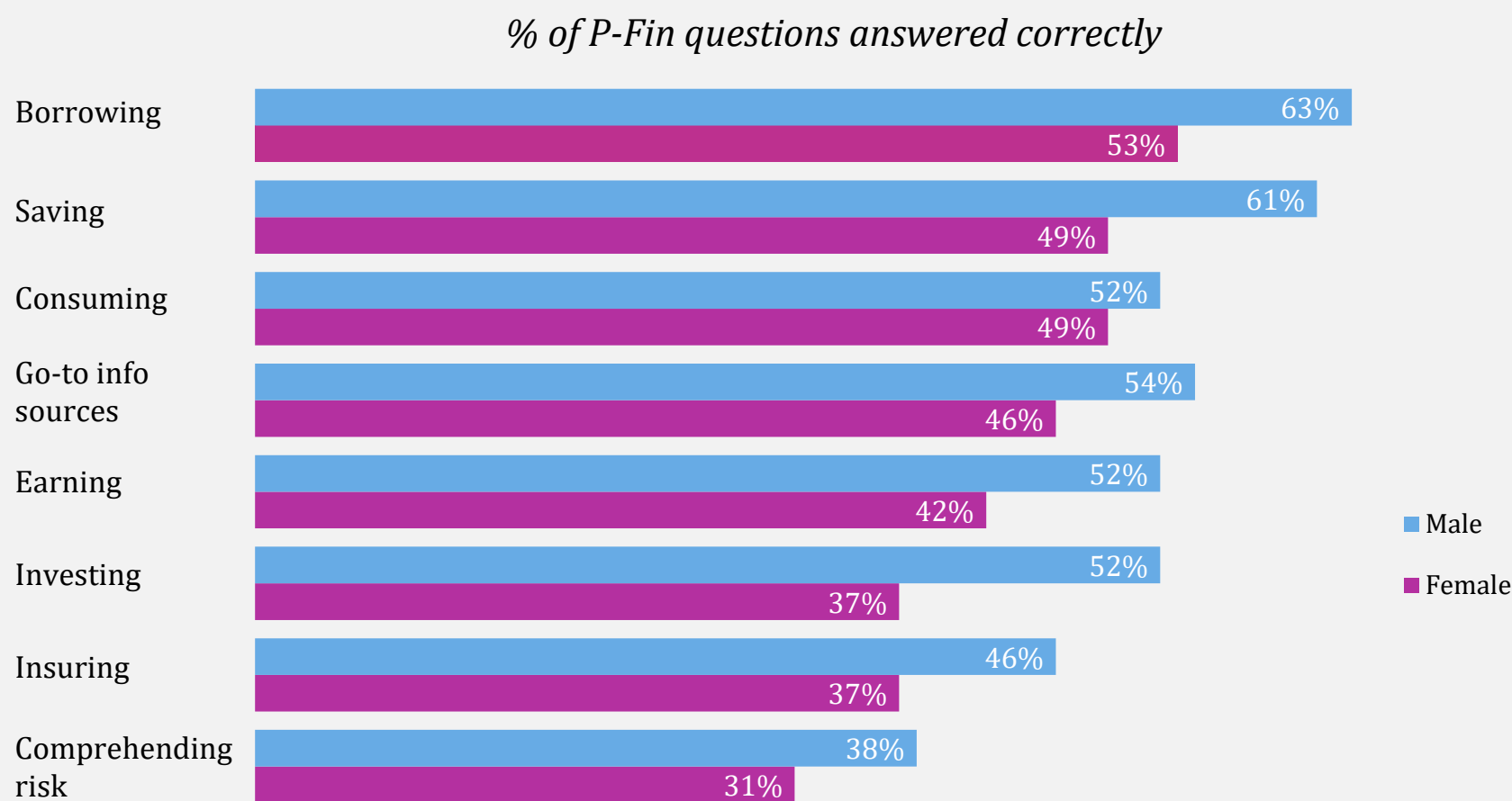


Distribution of correct answers to P-Fin questions



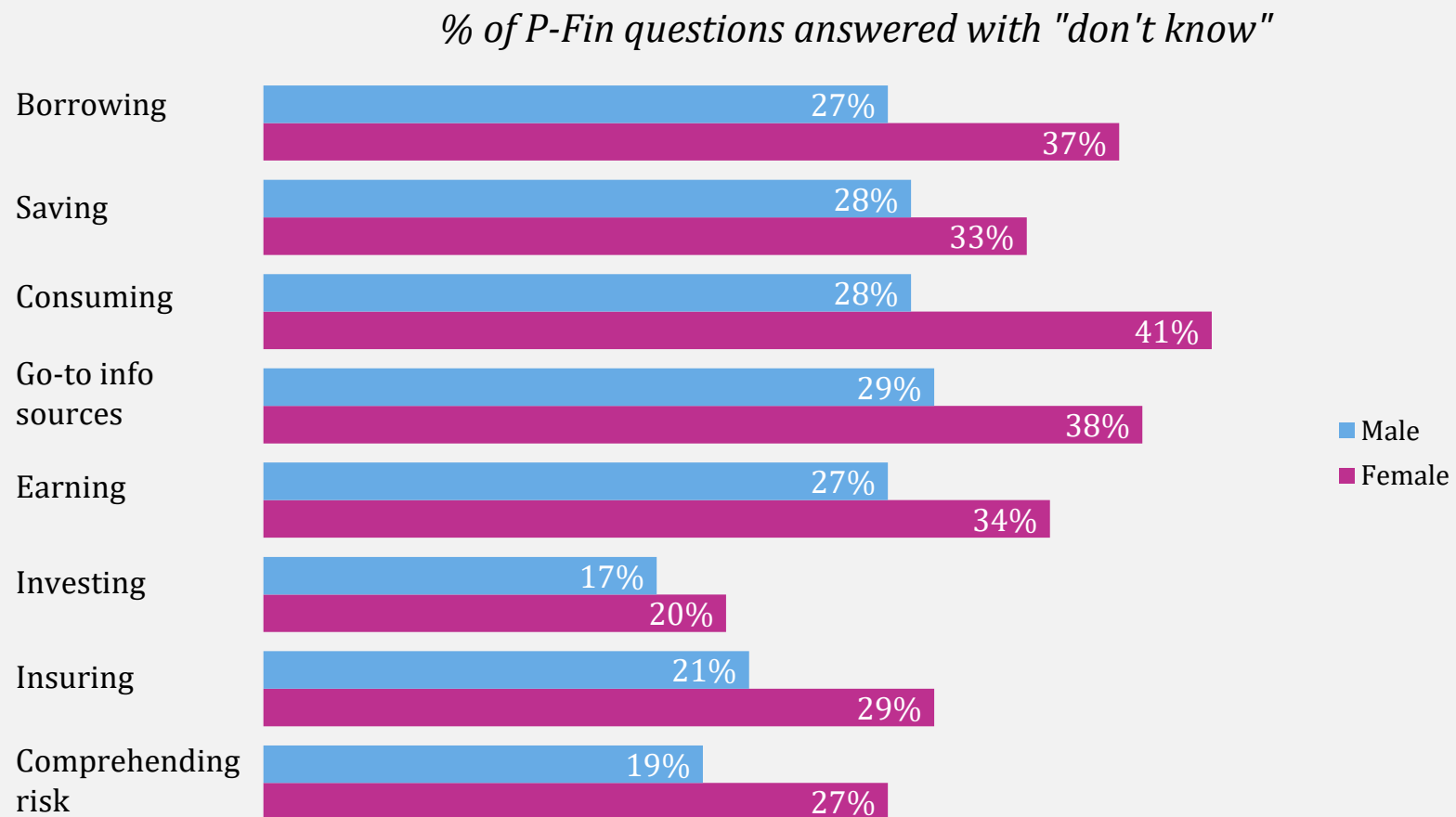
Source: TIAA Institute-GFLEC Personal Finance Index (2023).

Financial literacy gender gap in each topic...



Source: TIAA Institute-GFLEC Personal Finance Index (2023).

...and in answering “Do not know”



Source: TIAA Institute-GFLEC Personal Finance Index (2023).



Fearless Woman: Financial Literacy and Stock Market Participation

Tabea Bucher-Koenen (ZEW, U of Mannheim)

Rob Alessie (U of Groningen)

**Annamaria Lusardi (The George Washington
University and GFLEC)**

Maarten van Rooij (DNB)

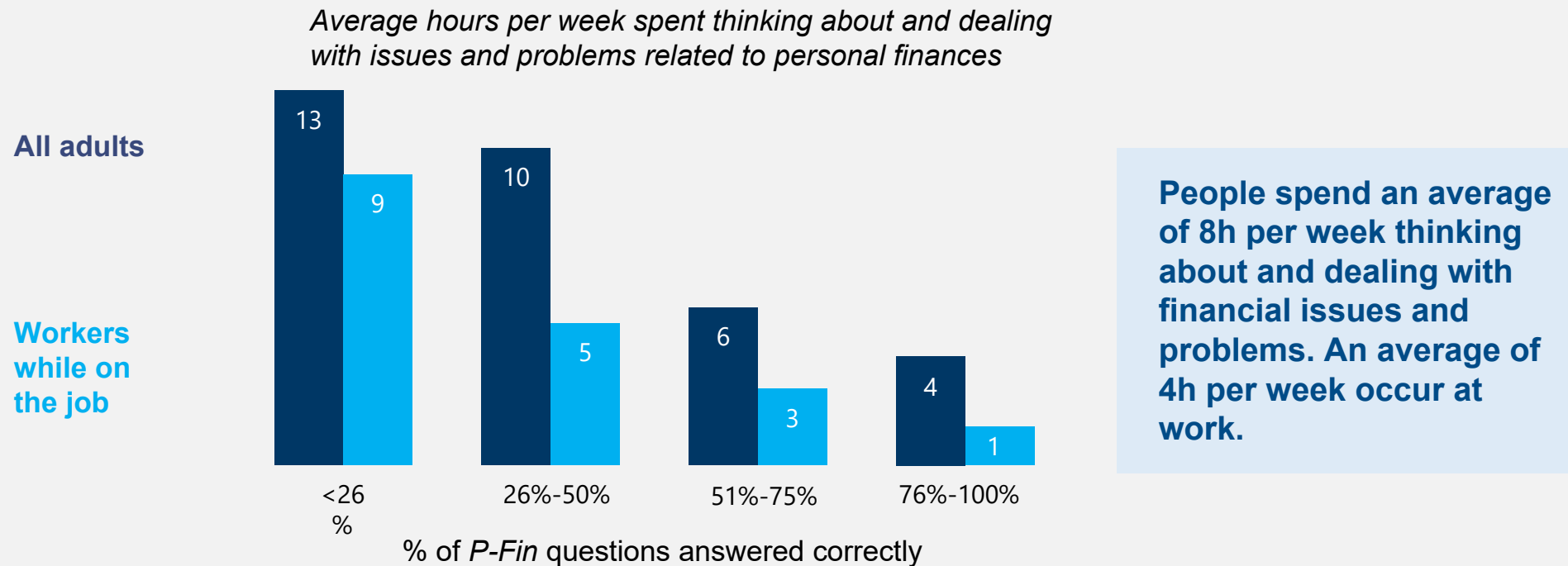
Focusing on gender differences

What happens if we take away the “do not know” option?

This is what we did in a project with data from the Dutch Central Bank .

- The gender difference shrinks but does not go away
- Women know more than they think they do, but they are not confident about their knowledge
- Both knowledge and confidence matter for financial behavior (investing in the stock market)

A simple measure of the cost of financial illiteracy (Lusardi et al., JAPP, 2023)



Source: TIAA Institute-GFLEC Personal Finance Index (2023).

Data sets to study financial literacy (and behavior)

Many data sets in the US to study financial literacy

- US National Financial Capability Study (very large data set)
- US Survey of Consumer Finances (best data set to study wealth)
- P-Fin Index (data not publicly available but you can work with us)

Global surveys

Also note that the Global Finlit Survey has aggregate data for 140 countries.

The OECD PISA data provide information on financial literacy among 15 year old students (for the participating countries)

Financial literacy and financial behavior

Does financial literacy matter?



Financial fragility in America

Long lines at the food banks at the start of the pandemic!



Measuring financial fragility (Lusardi, Schneider and Tufano, BPEA, 2011)

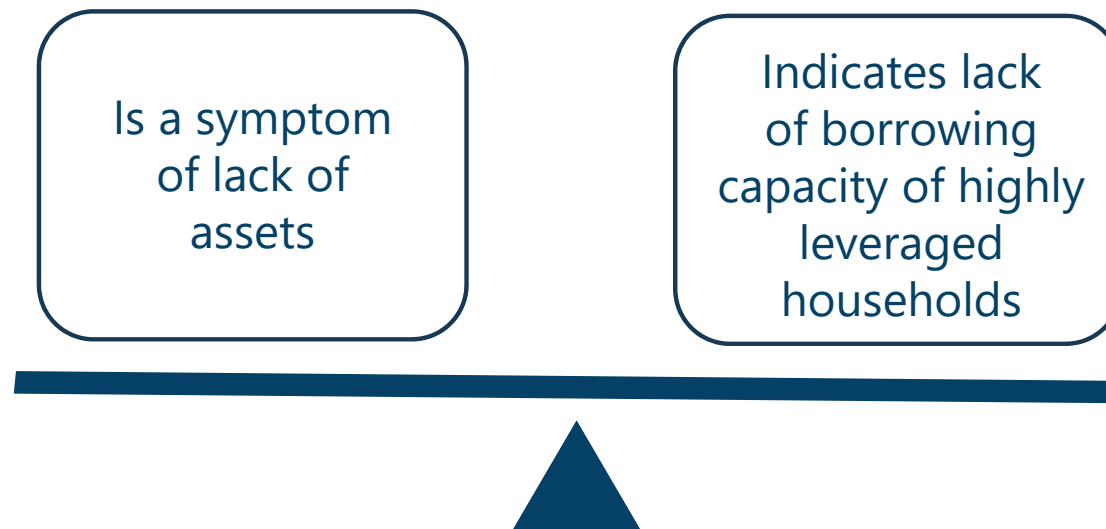
How **confident** are you that you could come up with **\$2,000** if an unexpected need arose **within the next month**?

- I am certain I could come up with the full \$2,000.
- I could probably come up with \$2,000.
- I could probably not come up with \$2,000.
- I am certain I could not come up with \$2,000.
- Don't know.
- Prefer not to say.

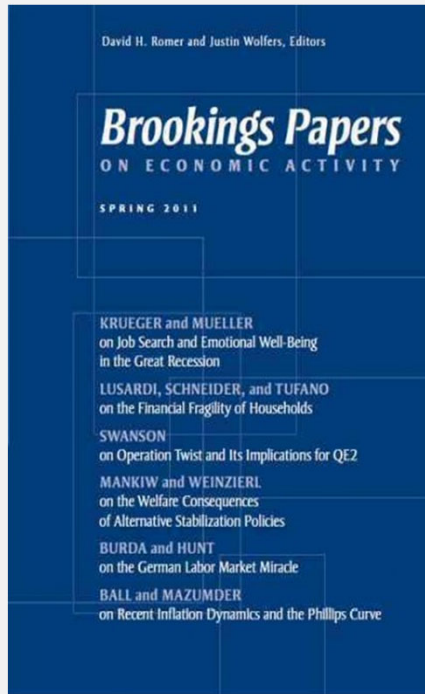


Respondents are classified as financially fragile.

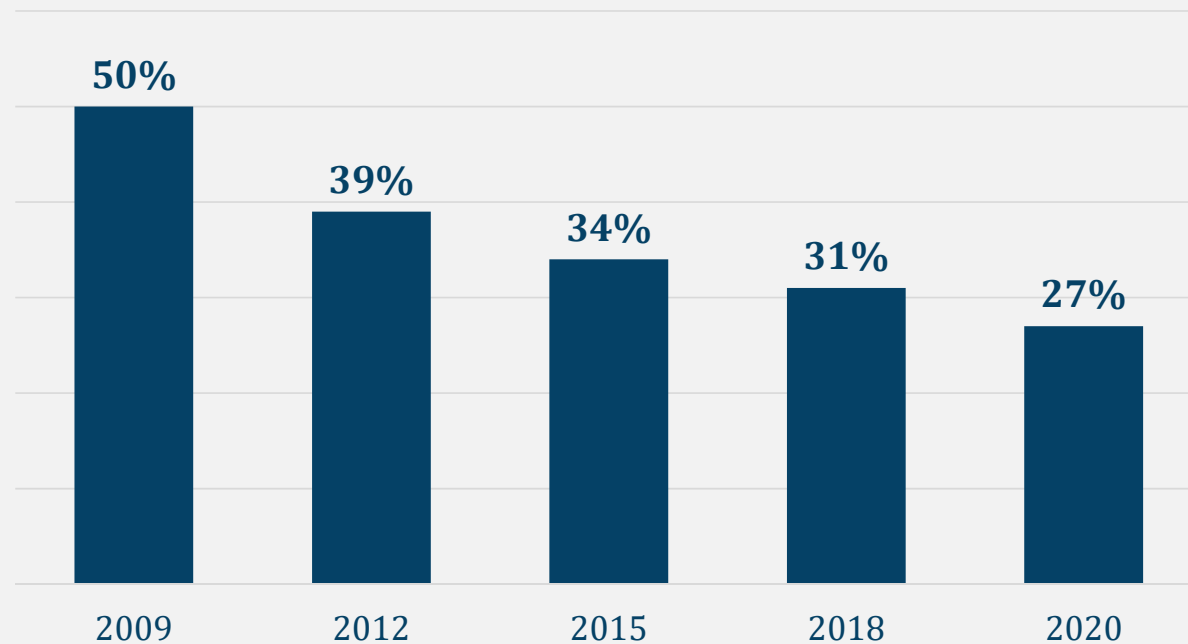
Financial fragility: What does it measure?



Financial fragility before the pandemic: **1/3** cannot face a shock



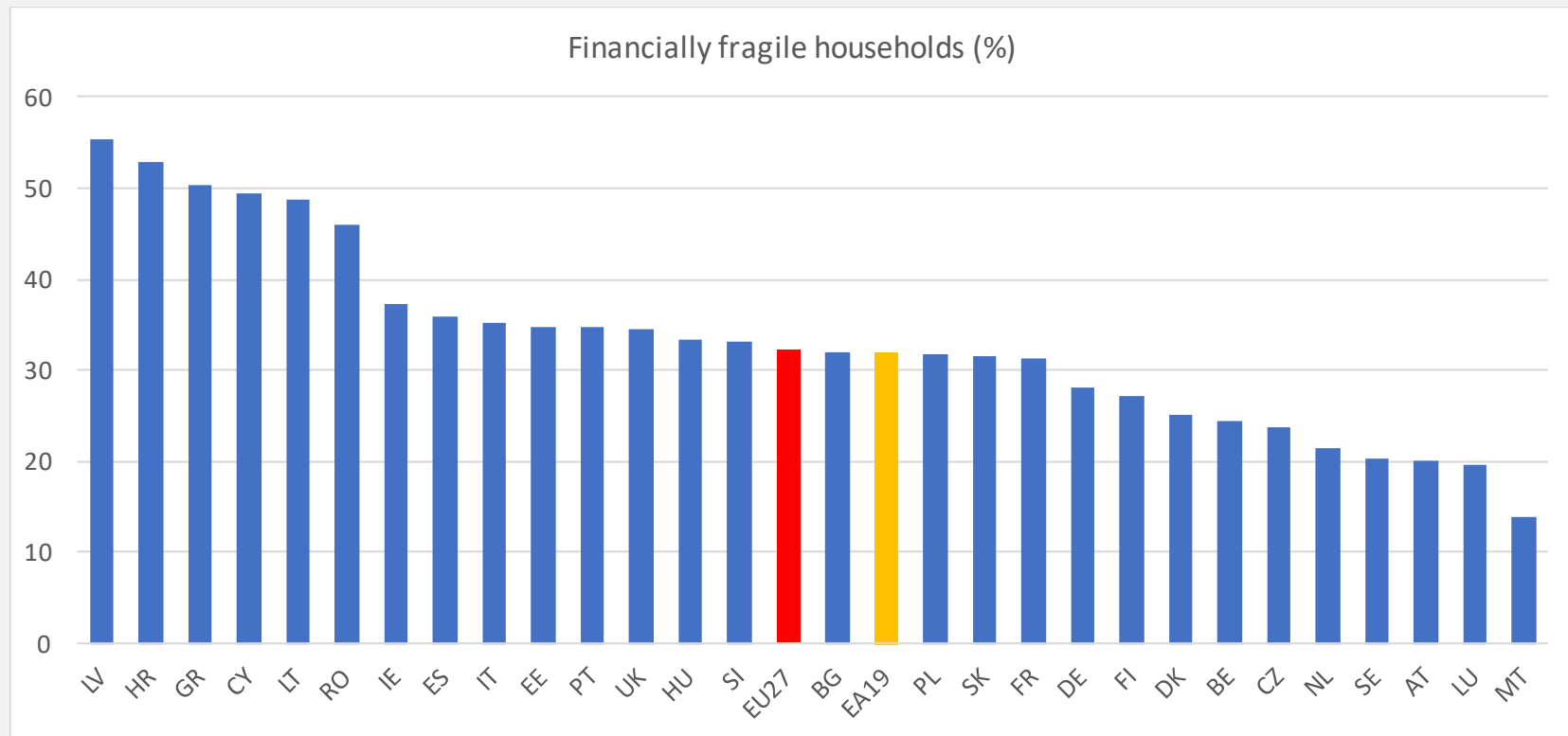
Financial fragility over time



Source: 2009 TNS data, 2012, 2015 and 2018 NFCS data, and 2020 P-Fin data

Similar findings in Europe: 1/3 cannot face a shock

(Demertzis, Domínguez-Jiménez and Lusardi, 2020)

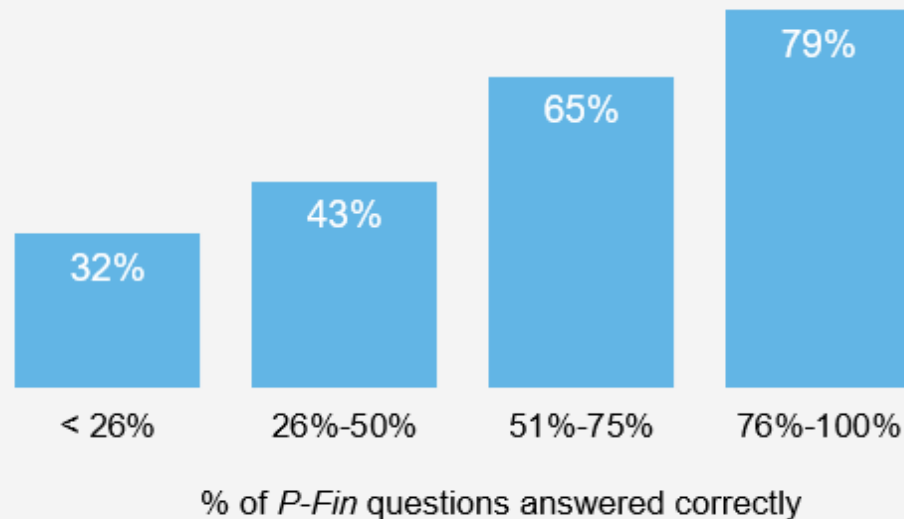


Source: EU-SILC 2018

Financial literacy and being able to cope

Those with greater financial literacy are less likely to be financially fragile.

% who could certainly come up with \$2,000 if an unexpected need arose within the next month



Source: TIAA Institute-GFLEC Personal Finance Index (2022).

The relationship between being able to cope and financial literacy (Lusardi et al., JAPP 2023)

	Model 1 <i>Financial Resilience</i>	Model 2 <i>Financial Resilience</i>	Model 3 <i>Financial Resilience</i>
> 50% of P-Fin questions correct	0.079*** (0.018)		
Total # of questions correct		0.007*** (0.001)	
Was offered financial education			0.012 (0.016)
Demographic controls	Yes	Yes	Yes
Observations	3,377	3,377	3,377
R-squared	0.187	0.190	0.181

Source: TIAA Institute-GFLEC Personal Finance Index (2022).

The relationship between retirement planning and financial literacy

	Model 1 <i>Retirement Planning</i>	Model 2 <i>Retirement Planning</i>	Model 3 <i>Retirement planning</i>
> 50% of P-Fin questions correct	0.125*** (0.023)		
Total # of questions correct		0.011*** (0.002)	
Was offered financial education			0.074*** (0.021)
Demographic controls	Yes	Yes	Yes
Observations	2,507	2,507	2,507
R-squared	0.183	0.192	0.176

Source: TIAA Institute-GFLEC Personal Finance Index (2022); non-retirees.

Estimating the effects of financial literacy

- Instrumental variables (IV) estimation
 - Hard to find good instruments
 - The IV estimates are always greater than the OLS estimates
- Example of IV estimates
 - School mandates
 - Being exposed to financial education in school or the workplace
 - Financial situation of oldest sibling
 - Parents understanding of financial matters

Experiments are the best way to assess effects of finlit/finedu

- Can address causality
 - Hard to find good instruments
- Can better control for many factors
 - Can do in labs
 - Often too much heterogeneity in the data

But tend to be expensive to do and also complex

**Use research to inform policy and
programs**

Using research to build effective programs

- The **young** are an important group and can use time in their favor
- Programs targeted to **women**
 - Vulnerable group
- Some **topics** are particularly complex
 - Risk and risk diversification
- **Personalized** programs
 - One size does not fit all



Financial education for Millennials

Program:

- Covered 5 basic concepts for financial planning
 - Targeted to young workers
 - It is a story (narrative or video)
-
- We put together a team of researchers from different fields: Economics, psychology, and linguistics
 - We evaluated its effectiveness



“Five Steps to Planning Success. Experimental Evidence from U.S. Households”, Lusardi et al., Oxford Review of Economic Policy, Vol. 30, 4, 2014, pp 697–724

Five steps to financial success: topics

The five topics

- ***Compound interest***
 - How to grow your wealth
- ***Inflation***
 - The erosion of purchasing power over time
- ***Risk diversification***
 - Do not put all your eggs in one basket
- ***Tax treatment of retirement savings vehicles***
 - Taxes advantages; 401(K) and IRAs
- ***Employer matches in defined contribution saving plans***
 - Don't leave money on the table



Evaluation

- We had control and treatment groups
- This was done on Rand America Life Panel (ALP), not a group of students
- The sample was relatively large (about 3,000 participants)
- While we were interested in the young, we do not restricted the sample to them only

Five steps to financial success: effectiveness

- After being exposed to videos, financial literacy improved among participants
- While young were targeted, the videos affected all age groups
- 25-33% of the knowledge gain is still observable after 8 months
- People learned even difficult topics, such as risk diversification

Even short interventions can affect knowledge

New project: Evaluating the effects of a low-cost online financial education program

- Teaching financial literacy (the Big Three) using stories
- Target: older population (45-75 year old)
- Use data from Understanding America Study (UAS) in 2021 and 2022
- We have used so far 2 surveys but we aim to estimate the effects of improving financial literacy in the longer term

Workplace Financial Education



Cornell Law Review

DEFINED CONTRIBUTION PLANS AND THE CHALLENGE OF FINANCIAL ILLITERACY

Jill E. Fisch,[†] Annamaria Lusardi[‡] & Andrea Hasler^{††}

Retirement investing in the United States has changed dramatically. The classic defined benefit (DB) plan has largely been replaced by the defined contribution (DC) plan. With the latter, individual employees' decisions about how much to save for retirement and how to invest those savings determine the benefits available upon retirement.

We analyze data from the 2015 National Financial Capability Study to show that people whose only exposure to investment decisions is by virtue of their participation in an employer-sponsored 401(k) plan are poorly equipped to make sound investment decisions. Specifically, they suffer from higher levels of financial illiteracy than other investors. This lack of financial literacy is critical because of both the financial consequences of poor financial decisions and a legal structure that relies on participant choice to limit the fiduciary obligations of the employer with respect to the structure and options

Defined Contribution Plans and the Challenge of Financial Illiteracy

The components of workplace financial education (1)

1) **An assessment – run a survey to learn about needs and concerns**

- Financial check-up to measure financial knowledge and capability.
- A survey provides the opportunity to segment participants into different types of financial education programs specifically targeted to their needs and levels of financial knowledge.
- It allows to track progress over time if measured on a regular basis.



The components of workplace financial education (2)

2) Address larger financial needs than retirement

- Build a financial wellness program.
- Many financial decisions are interrelated.



The components of workplace financial education (3)

3) Timing

- Make it timely
- Programs should be provided at the critical moments when financial decisions are made
- The current crisis is a “teachable moment”



The components of workplace financial education (4)

4) Evaluate to show impact and adjust to increase effectiveness

- Repeat on a regular basis
- Continually evaluate and assess impact
- Adjust program to increase effectiveness



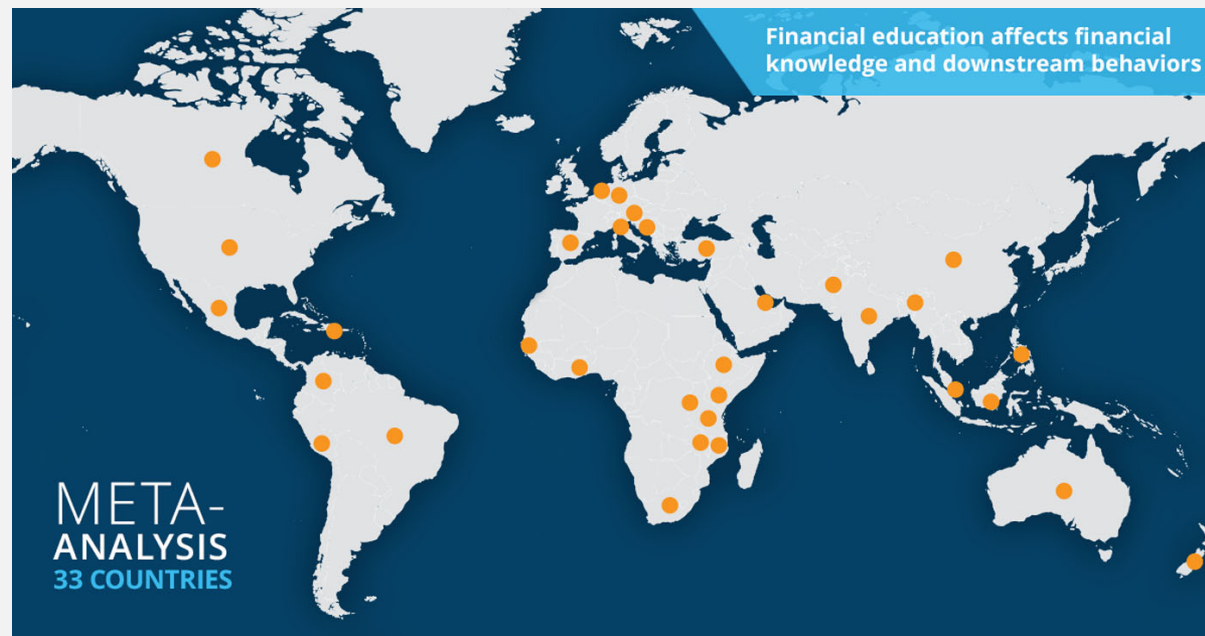
A meta-analysis of the effects of financial education



[GFLEC.org/metaanalysis](https://gflec.org/metaanalysis)

A meta-analysis of financial education, cont.

Our study includes 76 RCTs from 33 countries with over 160,000 individuals across the lifespan.



The sample include many low-income countries/target groups. The effects are measured after 30 weeks, on average, and up to more than two years.

Major findings from meta-analysis cont.

*The impact on **financial knowledge** is larger than on **financial behavior**.*

Behavior takes time to change and it may be optimal to do nothing

Among behaviors: changes are largest in behaviors relate to ***budgeting, saving and credit***.

The effects are similar across age and across countries

Policy: National strategies for financial literacy

- More than 80 countries have done or are doing a national strategy for financial literacy



A national strategy for financial literacy in Italy



I chair the Italian Committee for Financial Education in charge of designing a national strategy for financial literacy.

We did many initiatives all based on research and data. We started collecting data after the pandemic to be able to have more targeted initiatives

We provide guidelines for financial education for young and adults.

We are evaluating a national campaign.

Mandatory financial education in school



- Italy just passed a law mandating financial education in school
- Mandatory financial education in school could help alleviate inequality in financial literacy

It could also decrease the cost of investing in financial literacy.

Implications for teaching

Personal finance courses at GW

- Started a Personal Finance course at GW in 2012
- I teach both undergraduate and graduate students
- Based on data and research
- Teach risk at the end and devote many classes to it



Personal finance courses at GW, cont.

- We start each class with a statistics from the P-Fin Index
- Cover the 8 topics (and more)
- Encourage female students to participate in class



First conference on teaching personal finance at Stanford



G53 Financial literacy and personal finance network



Financial Literacy
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The G53 Network

The G53 Network comprises a diverse group of researchers from all over the world with a track record of research excellence and promoting financial literacy and personal finance.



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Our members are appointed as Research Fellows or Research Associates, depending on their seniority in the field.

Topics that require more work

- Gender differences in financial literacy
- (Cost) effectiveness of financial education in school and the workplace
- Assessing costs of financial illiteracy
- Macro implications of financial illiteracy

Topics that require more work (more)

- More “literacy” measures: sustainability, ESG, pension..
- Another global survey

Papers to read

- Lusardi and Mitchell (2023), “The importance of financial literacy: Opening a new field,” NBER working paper n. 31145, April 2023.
- Lusardi, Michaud and Mitchell (2017), Optimal financial knowledge and wealth inequality, *Journal of Political Economy*, vol 125 (2), 2017.
- Lusardi and Mitchell (2011), Financial literacy around the world: An overview,” *Journal of Pension Economics and Finance*, vol 10 (4), 2011.
- Van Rooij, Lusardi and Alessie, “Financial literacy and stock market participation,” *Journal of Financial Economics*, vol 102(2), 2011.

“Knowledge is in every country the surest basis of public happiness.”

-George Washington

