

# Millennial Financial Literacy and Fin-tech Use

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# The growing importance of financial literacy

## Major changes that increase individuals' responsibility for their financial well-being

- Changes in the pension landscape
  - Shift from defined benefit to defined contribution plans
  - Greater responsibility for the individuals to save and invest in retirement wealth
- Rising Cost of Education
  - Young people are entering the labor force with more education but with greater student loan debt
- Changes in the labor markets
  - Workers change jobs more often
  - Skill-based wage differentials
- Changes in the financial markets
  - More opportunities to borrow & in large amounts
  - More complexity (financial products and new technology)
- Changes in financial services
  - New technologies that make financial services more efficient and available



## Section 1

# Financial Literacy and Personal Finances

## The Current Situation for Millennials

## Overview of Millennials with a focus on US

- 70 to 80 million individuals born between the late 1970s and mid-1990s
- This analysis is focused on 18 – 34 year old individuals
- Most diverse generation
  - Minorities are broadly represented (38%)
  - 11% of all Millennials have at least one immigrant parent
- Millennials are highly educated
  - 37% have at least a bachelor's degree
- Will soon make up the largest share of the labor market
  - By 2025, 3 out of 4 workers globally will be Millennials
- Financially, they have faced the Great Recession early in their lives and careers, and struggled with large increases in the cost of education.
- Cohort with the largest proportion of fintech users



## Financial literacy measure

### The Big Three

“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

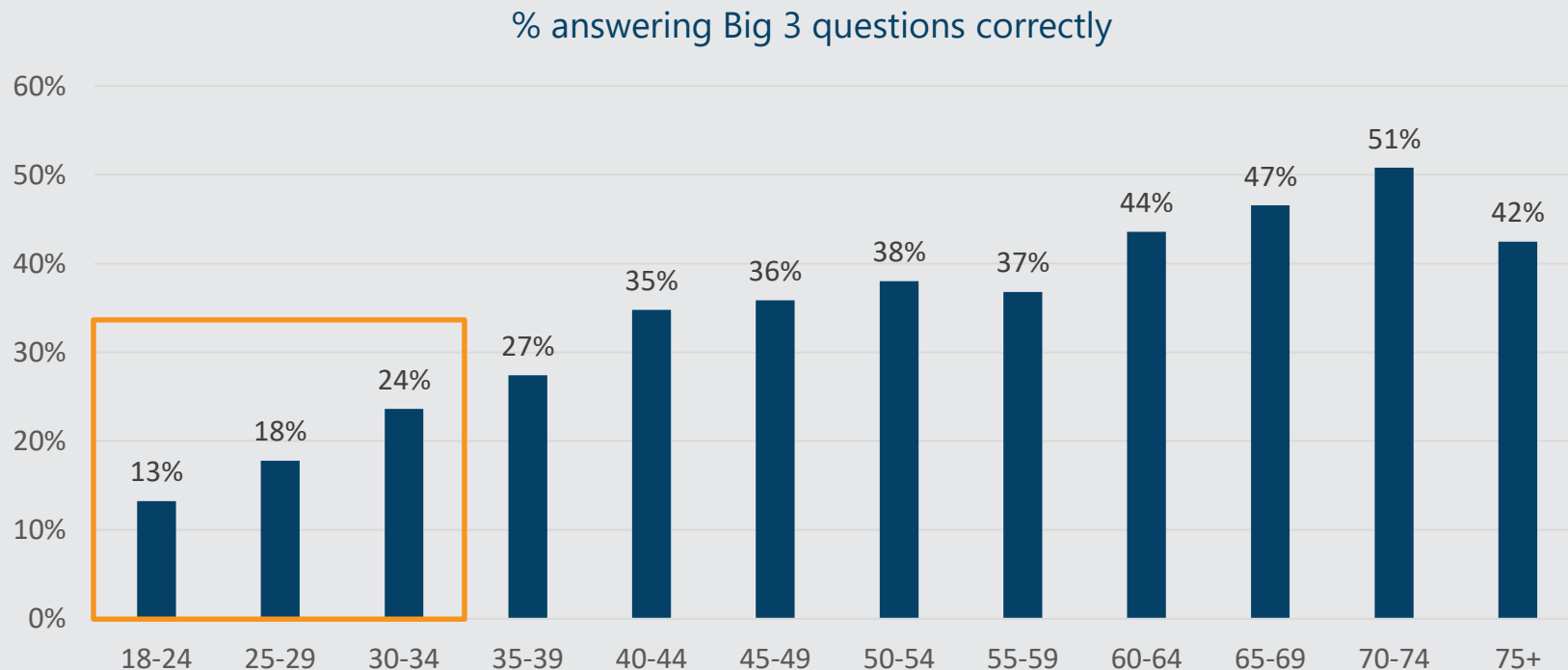
“Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, with the money in this account, would you be able to buy...”

- ☐ More than today
- ☐ Exactly the same as today
- ☒ Less than today
- ☐ Don't know
- ☐ Refuse to answer

“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

## Financial literacy across age in the US



Source: 2015 NFCS

- Financial knowledge increases very slowly with age/cohort
- Less than 1/4 know 3 basic concepts by age 34 even though most important decisions are made well before that age

## US Millennials borrowing on their assets and investments

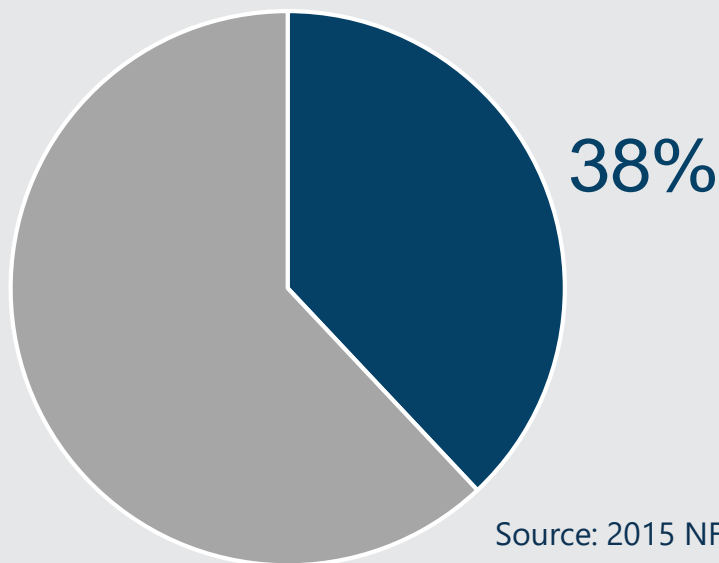
Have a checking account	86%
<i>Overdrew from their checking account</i>	<i>26%</i>
Own a home	38%
<i>Have a mortgage on their home</i>	<i>63%</i>
Have a self-directed retirement account	33%
<i>Took a loan from their retirement account (in the 12 months prior to the survey)</i>	<i>23%</i>
<i>Made a hardship withdrawal from their retirement account (in the 12 months prior to the survey)</i>	<i>20%</i>
<i>Either took a loan or made a hardship withdrawal</i>	<i>27%</i>
Have a college degree	37%
<i>Have an outstanding student loan</i>	<i>39%</i>
Have at least one credit card	70%
<i>Expensive credit card behavior (fee for late payment, over-the limit fee, fee for cash advance)</i>	<i>46%</i>

Note: Borrowing on assets and investments conditional on having the assets and investments.

Source: 2015 NFCS;  
18–34 year old

## Short-term liabilities: Use of Alternative Financial Services

Millennials show high usage of Alternative Financial Services (AFS), such as payday loans, pawnshops, auto title loans, and rent-to-own products.



Source: 2015 NFCS; 18–34 year old

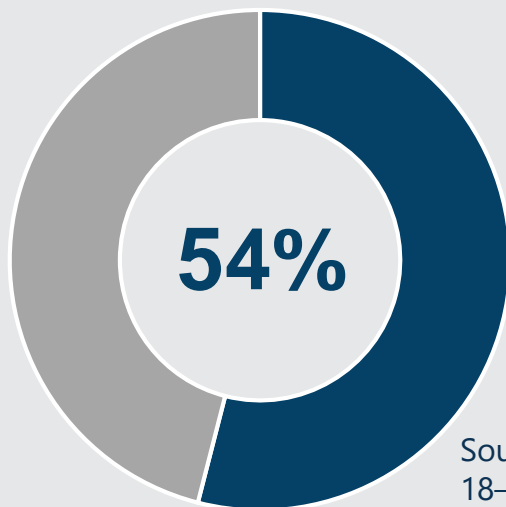
**% of Millennials who used an AFS product in  
the last five years prior to the survey**



## Concerns for student debt repayment

**45% of all Millennials have a student loan.**

Among those, more than half are concerned about repayment.



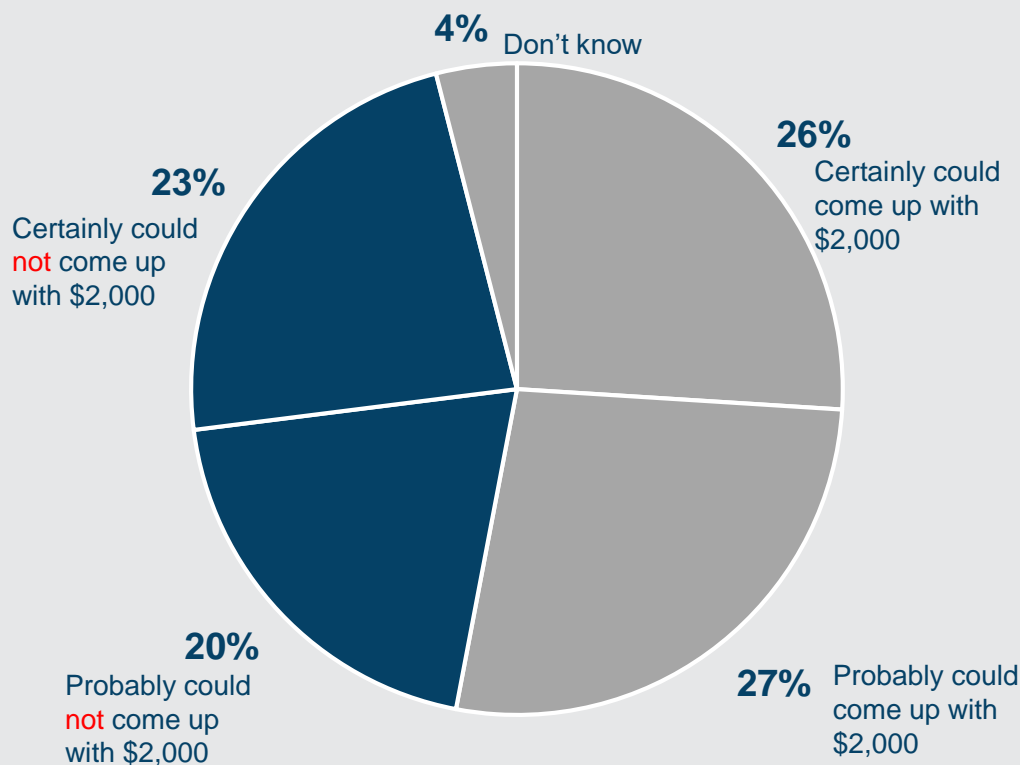
Source: 2015 NFCS;  
18–34 year old

% of Millennials with a student loan and concerned  
about repayment

## Financial fragility among Millennials

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

43% are financially fragile



Source: 2015 NFCS;  
18-34 year old

# The Newest Reports on Millennials' Financial Literacy in the Digital Age

GFLEC Insights Report

**GFLEC**  
GLOBAL FINANCIAL LITERACY  
EXCELLENCE CENTER

## Millennial Mobile Payment Users: A Look into their Personal Finances and Financial Behaviors

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Abstract:

The financial technology (fintech) sector is revolutionizing traditional financial practices, yet little information exists on users of these services. In this study, we examine untapped information from the 2015 National Financial Capability Study and the 2016 GFLEC Mobile Payment Survey to provide insights on the financial capability of American Millennials who use mobile payments. Using data from both surveys, we find striking differences in financial capability between users and non-users. Particularly, we find that users of mobile payments are more likely to overdraw their checking accounts, use credit cards expensively, borrow through alternative financial services, and withdraw from their retirement accounts. Even after we control for socio-demographic factors, results continue to show that mobile payment users are more likely to engage in behaviors that do not seem to follow good financial management practices.

## Millennial Financial Literacy and Fin-tech Use: Who Knows What in the Digital Era

### New Insights from the 2018 P-Fin Index

Paul J. Yakoboski, TIAA Institute  
Annamaria Lusardi, The George Washington University School of Business  
and Global Financial Literacy Excellence Center (GFLEC)  
Andrea Hasler, The George Washington University School of Business  
and Global Financial Literacy Excellence Center (GFLEC)



# Millennial Mobile Payment Report



### NEW INSIGHTS REPORT

#### Millennial Mobile Payment Users: A Look into their Personal Finances and Financial Behaviors



- Rapid growth and innovation in financial technology has facilitated the spread of mobile payments.
  - Consumers find mobile payment apps more flexible and easier to use than traditional payment methods.
  - Mobile payments pace up the transfer of money via various models
  - Merchants who provide the option of mobile payments often enjoy lower costs and customer data, and are able to provide improved experiences
- We aim to build a comprehensive profile of mobile payment users and understand how fintech is connected to users' financial behavior (cannot measure causality).

We use two datasets to provide insights on the financial capability of American Millennials who use mobile payments:

### **2015 National Financial Capability Study**

- Online nationally representative sample of more than 25,000 respondents
- Commissioned by FINRA Investor Education Foundation
- Offers unique information on financial literacy and capability
- Using the 3rd wave of 2015 in this study
- The sample of Millennials from the NFCS 2015 contains 7,894 observations

### **2016 GFLEC Mobile Payment Survey**

- GFLEC fielded an independent survey, including questions from the NFCS and a set of additional questions to enrich analysis
- Amazon's Mechanical Turk platform
- The sample size is 2,007 Millennials

## Users of mobile payments

How often do you use your mobile phone to pay for a product or service in person at a store, gas station, or restaurant (e.g., by waving/tapping your mobile phone over a sensor at checkout, scanning a barcode or QR code using your mobile phone, or using some other mobile app at checkout)?

- Frequently
  - Sometimes
  - Never
  - Don't know
  - Prefer not to say
- Users
- Non-users

39% of Millennials in the NFCS and 49% in the GFLEC Mobile Payment Survey reported using mobile payments

*Note:* Individuals who indicated “Don’t know” or “prefer not to say” were excluded from the analysis. Sample of 7,894 observations in the NFCS and 2,007 in the GFLEC Survey.

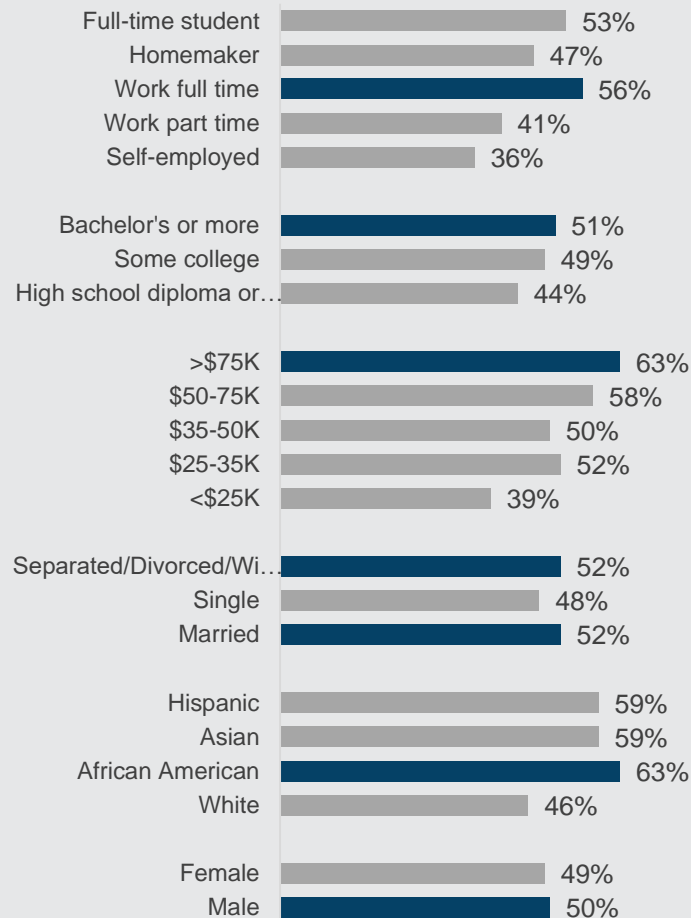
## Demographic features of mobile payment users

The average mobile payment user, according to the GFLEC Mobile Payment Survey is:

- educated (Bachelor's or more),
- male (more pronounced in NFCS),
- working full time,
- has high income,
- is more likely to be married
- and to belong to a minority ethnic group.

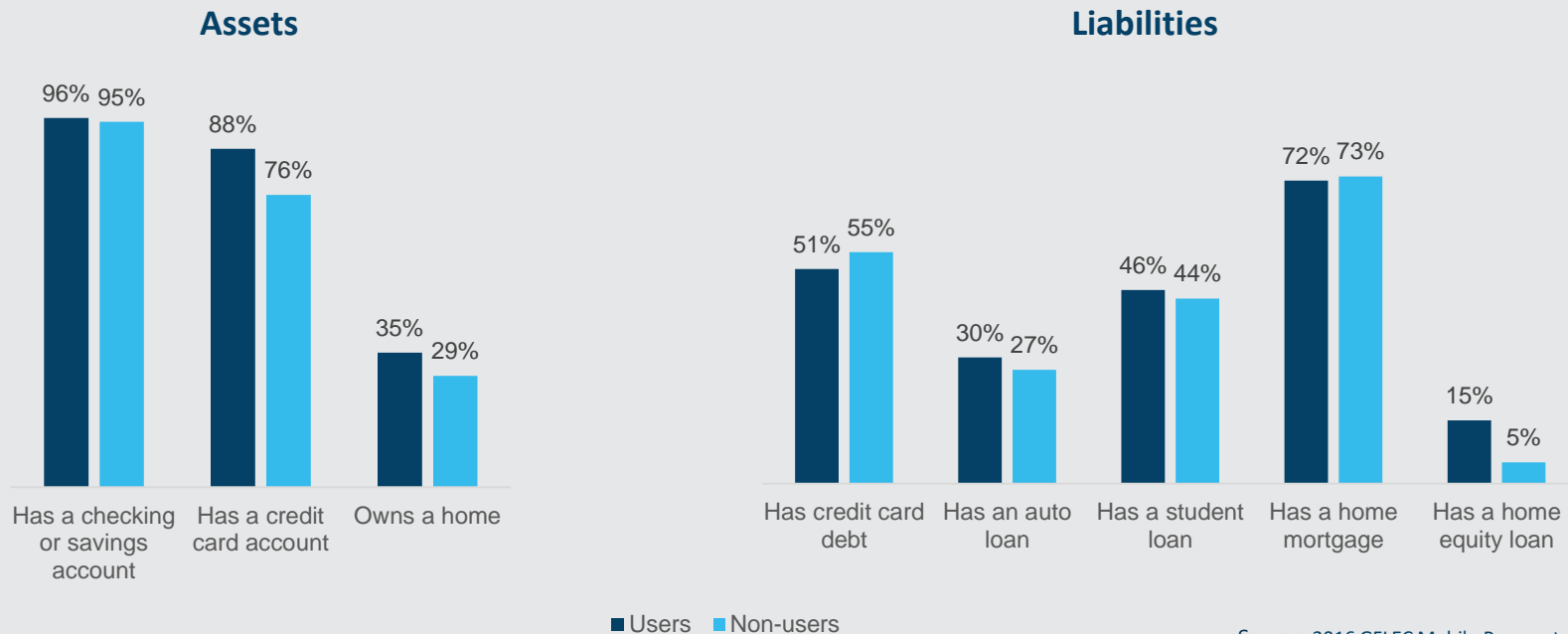
High usage among individuals with higher income and higher education might be expected as they typically are more financially active (have more incentives to use this method of payment).

Source: 2016 GFLEC Mobile Payments Survey. Statistics read as "50% of 18-34 year old males use mobile payments"





## Assets and liabilities of users compared to non-users



Source: 2016 GFLEC Mobile Payments Survey

Mobile payment users hold more assets than non-users, i.e., are more likely to

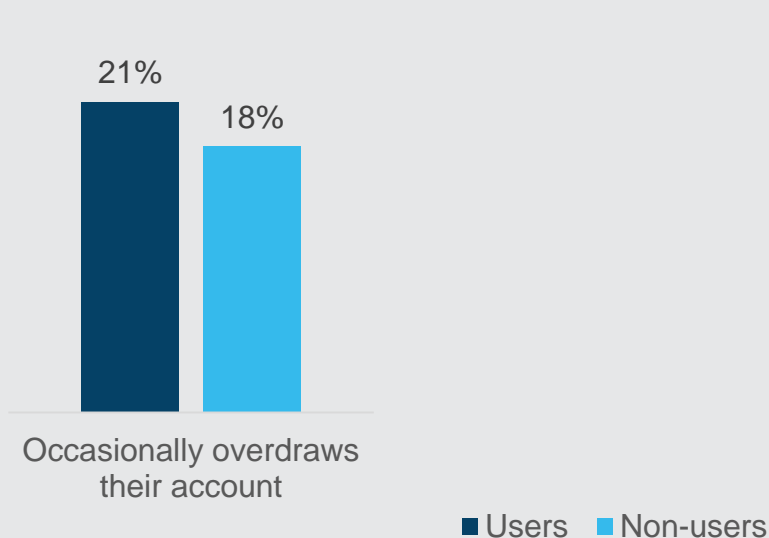
- have a checking or savings account
- have at least one credit card
- have a home
- have a retirement account

Millennial mobile payment users are more likely to hold nearly every form of debt compared to non-users. Users are more likely to have:

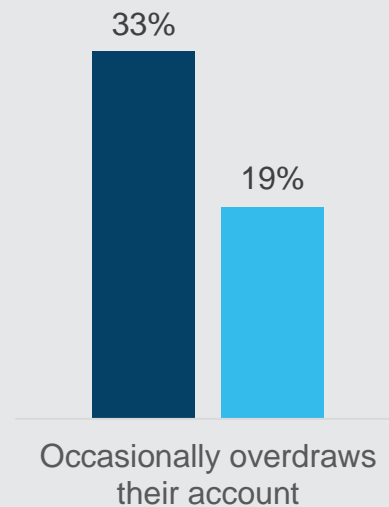
- auto loans
- student loans
- home equity loans

## Checking Account Management (in the past 12 months)

2016 GFLEC Mobile Payments Survey



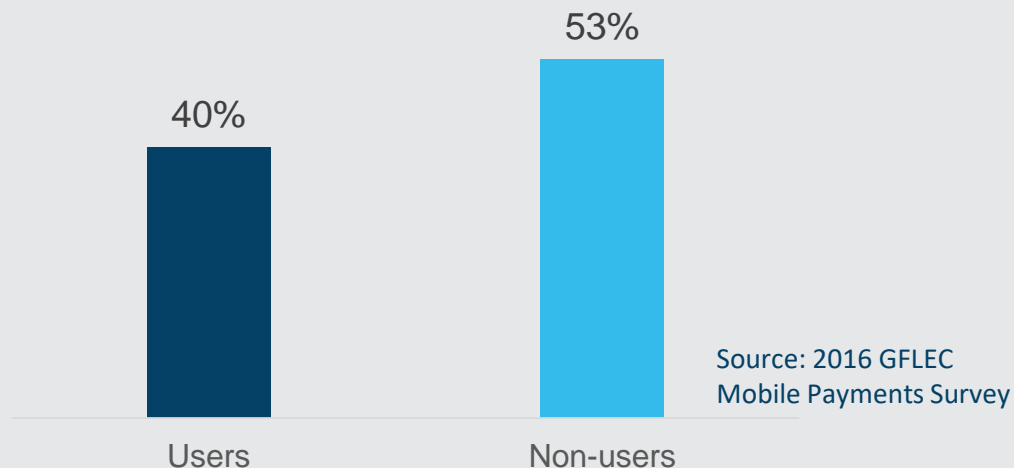
2015 NFCS



- Mobile payment users more often overdraw their checking account, according to both the GFLEC and NFCS surveys

## Financial literacy of mobile payment users

Only 40% of Millennial mobile payments users are able to answer the big three financial literacy questions correctly



<i>Uses mobile payments</i>	NFCS Survey	GFLEC Survey
Basic financial literacy	-0.155*** (0.0138)	-0.149*** (0.0235)
Controls	Yes	Yes
Observations	7,894	2,006
R <sup>2</sup>	0.073	0.077

Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

- A basic level of financial literacy is negatively associated with using mobile payments.
- Respondents with a basic level of financial literacy are around 15 percentage points less likely to use mobile payments.

## Role of financial literacy

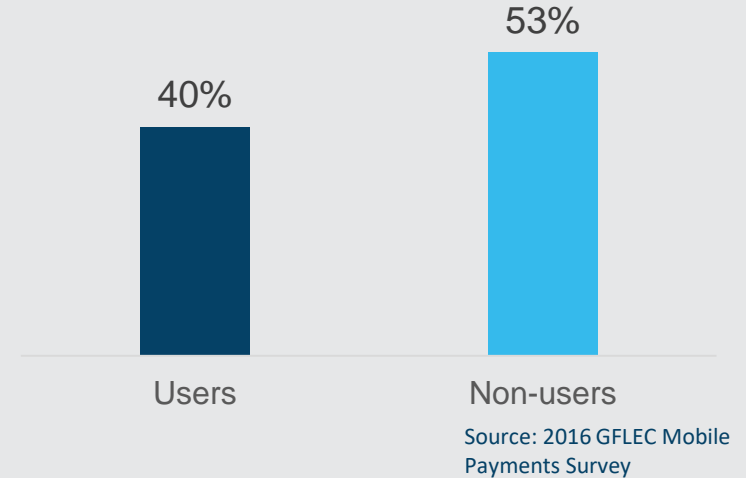
	NFCS Survey			GFLEC Survey		
	Spend more than they save	Occasionally overdraws checking account	Used at least one form of AFS	Spend more than they save	Occasionally overdraws checking account	Used at least one form of AFS
Uses m-payments	0.0747*** (0.0119)	0.173*** (0.0120)	0.251*** (0.0119)	0.0545** (0.0272)	0.0638** (0.0262)	0.220*** (0.0274)
Basic financial literacy	-0.0260* (0.0155)	-0.0658*** (0.0156)	-0.0751*** (0.0160)	-0.0672** (0.0283)	-0.0600** (0.0269)	-0.0800*** (0.0286)
Mobile payment*Basic financial literacy (Interaction)	-0.0685*** (0.0259)	-0.130*** (0.0261)	-0.166*** (0.0272)	-0.0786** (0.0393)	-0.0475 (0.0376)	-0.143*** (0.0398)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.148*** (0.0425)	0.279*** (0.0419)	0.476*** (0.0356)	0.0709 (0.147)	0.390*** (0.131)	0.475*** (0.137)
Observations	6,785	6,888	7,826	1,965	1,864	2,002
R-squared	0.025	0.061	0.125	0.053	0.055	0.134

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

- Financial literacy is negatively associated with each of the three financial behaviors.
- Interaction term is negative for all regressions and statistically significant.
  - Large magnitude: Users who are financially literate are much less likely to use AFS and to overdraw their checking account.

## Role of financial literacy

- Only 40% of Millennial mobile payments users are able to answer the Big Three financial literacy questions correctly.
- A basic level of financial literacy is negatively associated with using mobile payments. Respondents with a basic level of financial literacy are less likely to use mobile payments.



	Spend more than they save	Occasionally overdraws checking account	Used at least one form of AFS
Uses m-payments	+	+	+
Basic financial literacy	-	-	-
Financially literate mobile payment users	-	-	-

- Financial literacy is negatively associated with each of the three financial behaviors.
- Respondents who use mobile payments and are financially literate are much less likely to engage in each of these behaviors.

## Conclusion

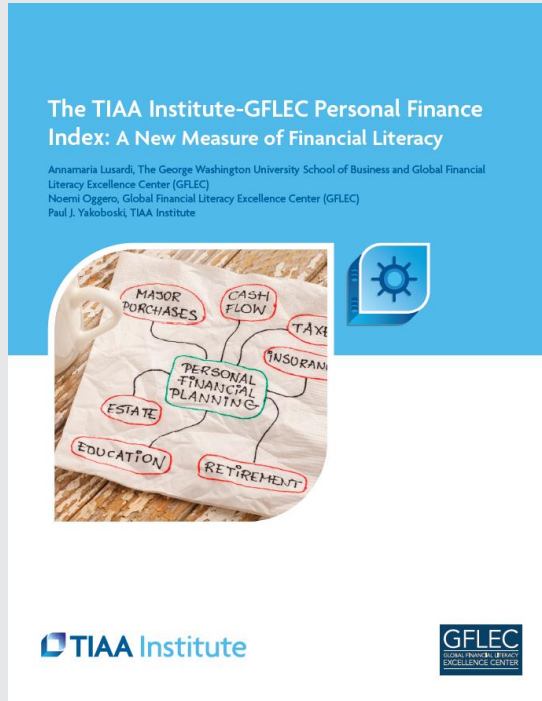
- Mobile payment services are attracting segments of customers who have a much broader range of needs than simple money transactions; providing opportunities for innovation that can be targeted by fintech developers.
- Important question: Does mobile financial technology increase the risk of financial mismanagement?
  - Study indicates that mobile payment users are at a much higher risk of poor money management compared to non-users (even after controlling for socio-demographic factors).
  - However, our data cannot be used to establish any causal link between use of mobile payment and financial outcomes.
- While mobile payment users are more likely to experience financial distress and display poor financial management, the result reverses for those who are financially literate.
- This highlights the important role of financial literacy in the expansion of the fintech industry and the fact that fintech is not a substitute for financial literacy.

# Millennial P-Fin Fintech Report

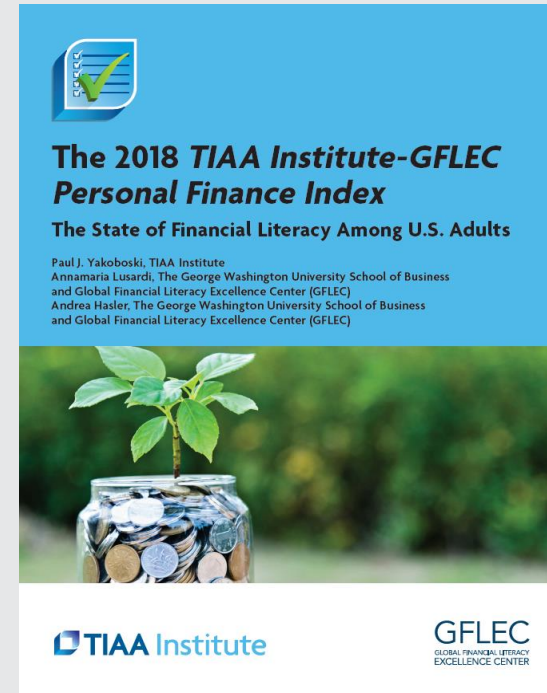
The Link between Financial Literacy and Fintech

## The TIAA Institute-GFLEC Personal Finance Index (P-Fin Index)

**Published March 2017**



**Published April 2018**

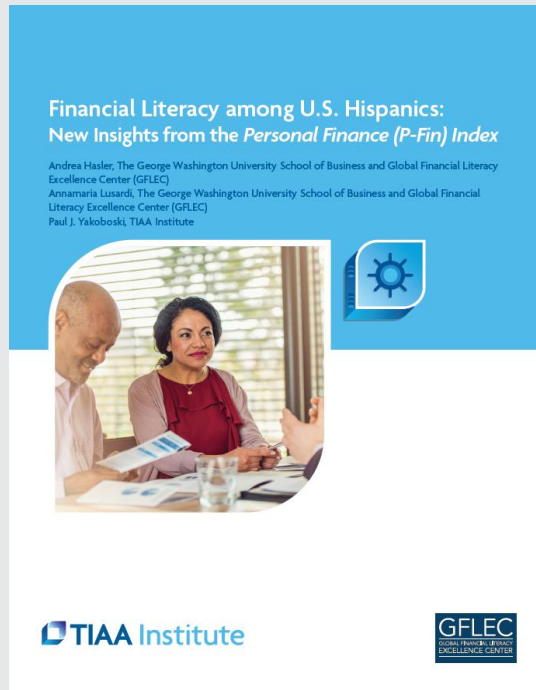


- As a joint project of the TIAA Institute and GFLEC we have designed an index of personal finance.
- The survey started in 2017 as an annual project that will result in cross-sectional trend data.



# The TIAA Institute-GFLEC Personal Finance Index (P-Fin Index) on Subgroups

**Published October 2017**



**Published October 2018**



## What makes the P-Fin Index unique?

### What is it?

The *Personal Finance Index* measures knowledge and understanding which enable sound financial decision-making and effective management of personal finances.

### What's new?

- The P-Fin Index is unique in the breath of topics covered.
- This index complements simpler measures of financial literacy.
- Examines financial literacy across eight areas in which individuals routinely function.
- 28 financial literacy questions, with 3 or 4 devoted to each functional area.

### How was it done?

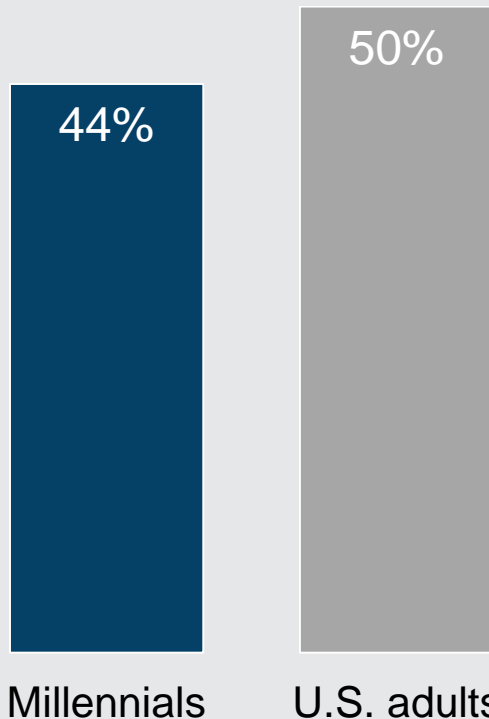
- Online survey fielded in January 2018 with a nationally representative sample of U.S. adults, ages 18 and older, and completed by 1,012 individuals.
- Annual project that will result in cross-sectional trend data.
- Each year, there is a focus on a specific sub-group (2017: Hispanics, 2018: Millennials and their use of fintech)

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

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

## P-Fin Index in 2018 (1)

*% of P-Fin questions  
answered correctly*



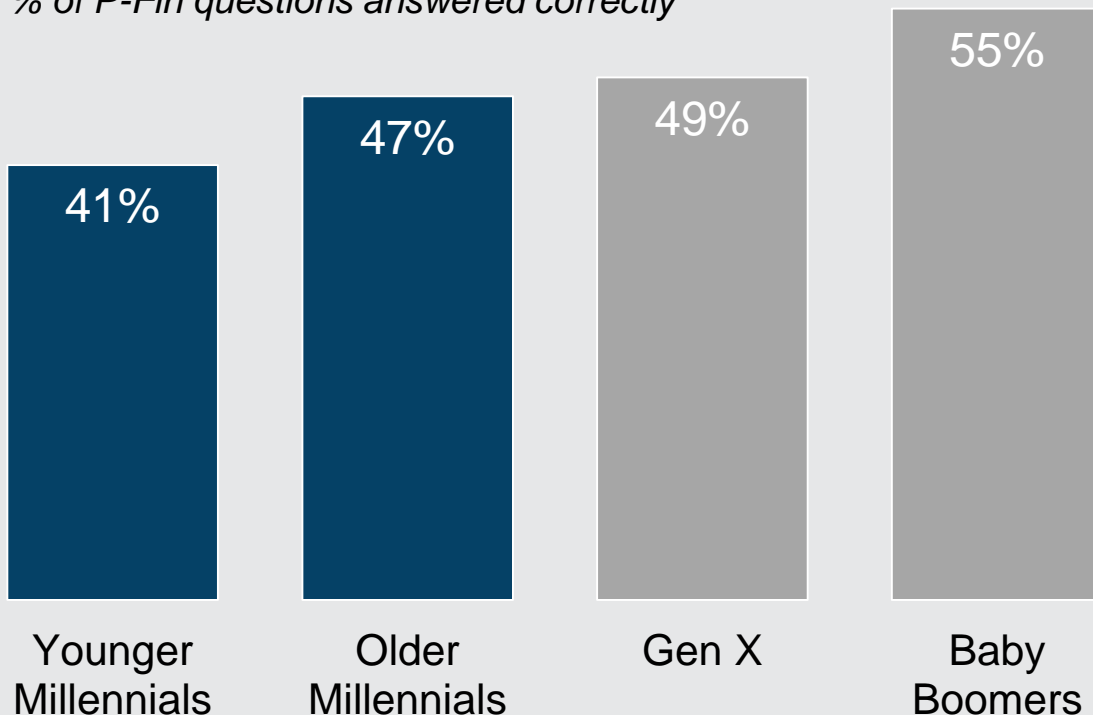
While U.S. adults answered only one-half of *P-Fin Index* questions correctly, on average, this figure is even lower among Millennials at 44%.

Age range for Millennials:  
18 – 37 year old individuals

Source: 2018 P-Fin Index,  
general population and  
Millennial oversample

## P-Fin Index in 2018 by generation

*% of P-Fin questions answered correctly*



Notable difference exists between younger and older Millennials.

Financial literacy of older Millennials mirrors that of Gen X.

Increasing financial knowledge with age is consistent with other surveys. However, the difference shows that there is large variation within Millennials.

Source: 2018 P-Fin Index, general population and Millennial oversample

(18 - 27 year olds)    (28 - 37 year olds)

## Fin-tech activities

**How often (never, sometimes, frequently) do you use your smartphone to do the following:**

Transactional activities:

- Deposit checks into a bank account
- Send or receive money from friends, family or other individuals
- Pay for a product or service in person at a store, gas station, or restaurant, i.e., making mobile payments
- Pay bills

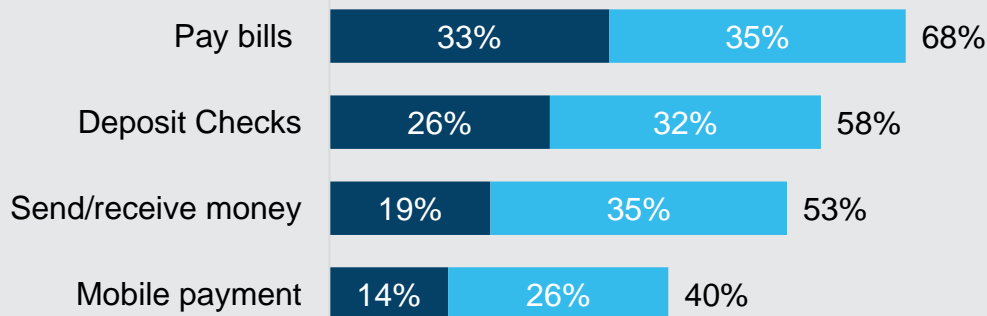
Informational activities:

- Track the amount you spend and what you spend it on
- Compare prices or product features when shopping
- Check your credit score
- Get personalized investment advice

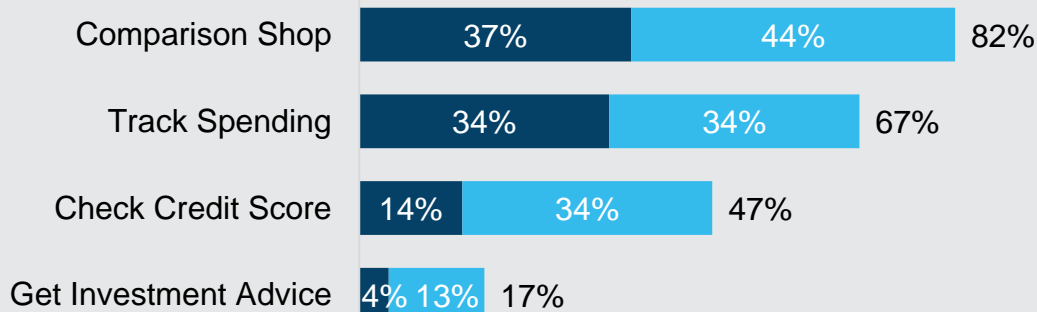
## Millennial fin-tech activities

*% of Millennials using their smartphone to...*

### Transactional



### Informational



■ Frequently ■ Sometimes

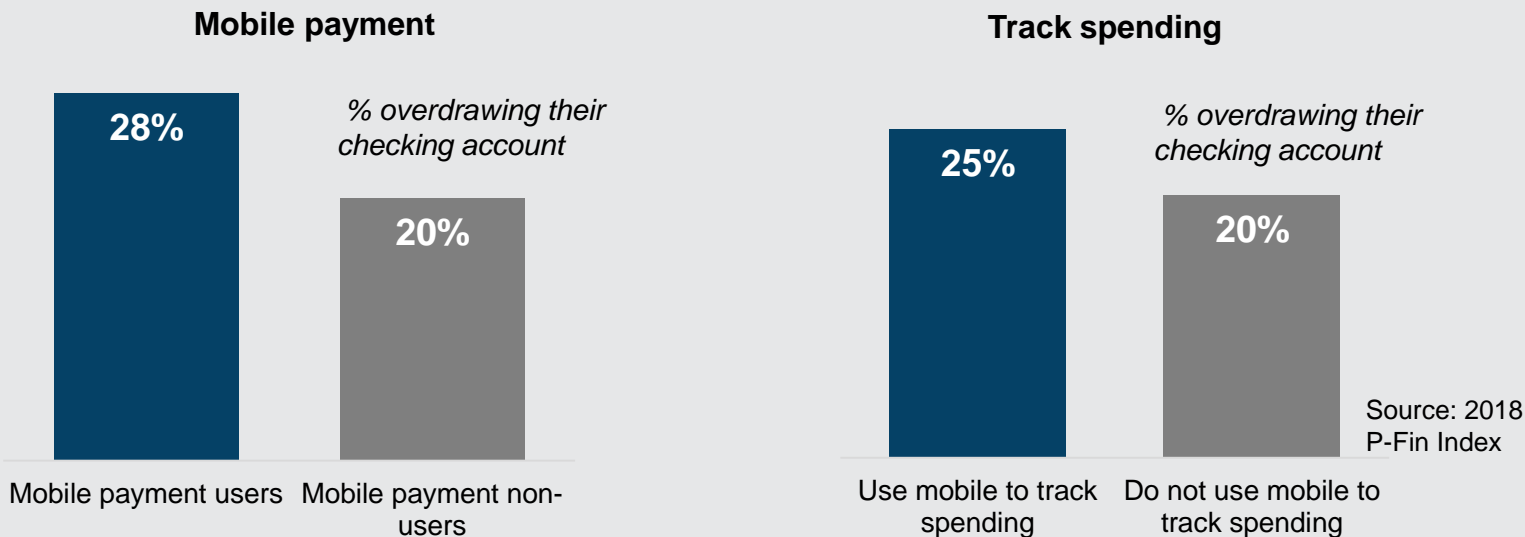
Across age: The use of fin-tech activities are more common among **older** than younger Millennials.

**Little or no consistent** variation by demographics or financial literacy in fin-tech use.

Fin-tech activities (which vary in purpose and nature) attract **different users** with different needs and economic circumstances.

Source: 2018 P-Fin Index

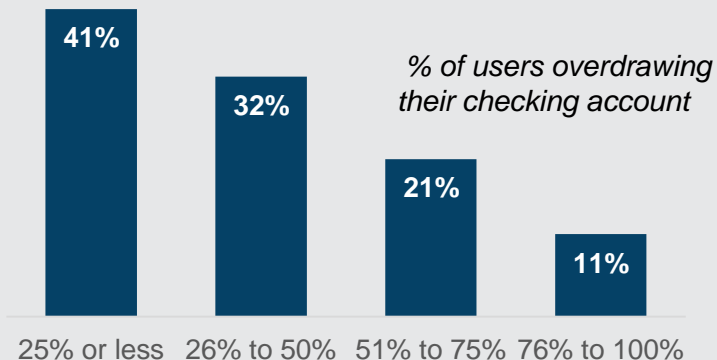
## Fin-tech and personal finance outcomes



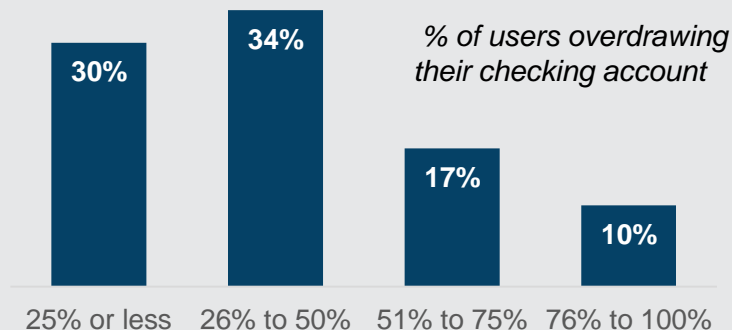
- Millennials who make mobile payments are more likely to overdraw their checking account.
- Significant difference even when controlling for demographic factors (such as gender, income, education, employment status).
- Track spending is expected to improve cash flow management, but users are not less likely to overdraw their checking account (difference is not statistically significant).
- Just correlation, but no causality measured: We cannot say whether fin-tech use increases the likelihood of poorer personal finance practices.

## Role of financial literacy

### Mobile payment



### Track spending



Occasionally overdrawing  
checking account

Uses m-payments



Financial literacy



Financially literate mobile payment  
users



- Respondents who use mobile payments and are financially literate are much less likely to overdraw their checking accounts.
- Respondents who track spending and are financially literate are also less likely to overdraw their checking accounts.



## Conclusion

- Millennials experience **low** financial literacy rates, even though they must make numerous financial decisions.
- Fin-tech activities are attracting segments of customers who have different needs and characteristics; providing **opportunities** for innovation that can be targeted by fin-tech developers.
- Important question: Does fin-tech increase the risk of financial **mismanagement**?
  - Study indicates that mobile payment users are at a much higher risk of poor money management compared to non-users (even after controlling for socio-demographic factors).
  - However, our data cannot be used to establish any causal link between use of mobile payment and financial outcomes.
- While mobile payment users are more likely to experience financial distress and display poor financial management, the result **reverses** for those who are financially literate.
- This highlights the important role of financial literacy in the expansion of the fin-tech industry

**This research will be presented at Singapore Fintech Festival**



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## Our panel at Singapore Fintech Festival



On November 13<sup>th</sup> we will be attending the 2018 Singapore Fintech Festival *Insurtech* conference to discuss:

- the importance of financial literacy
- how financial literacy deficits should be addressed by Fintech innovations to tackle to pension gap around the world.

### Opening and Moderator



**Paolo Sironi**  
*FinTech Thought  
Leader, IBM*

### Panelists



**Annamaria Lusardi**  
*Founder &  
Academic Director,  
GFLEC*



**Diana Crossan**  
*Chair of Advisory  
Board, GFLEC,  
GWU*



**Gautam Bhardwaj**  
*Director & Co-  
Founder, pinBox  
Solutions Pte Ltd*



**Harry Smorenberg**  
*Founder & CEO,  
SCC*

## Final Note

- Fintech is not a substitute for financial literacy.
- Financial education is even more important in the digital age

**Thank you!**

Questions? Contact me at **[alusardi@email.gwu.edu](mailto:alusardi@email.gwu.edu)**

# GFLEC

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