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Financial Literacy and Its Determinants and Consequences: New Survey Evidence from Finland

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Introduction

- New Finnish survey data
- Big Three methodology (Lusardi & Mitchell, 2011) to measure financial litearcy
  - Interest rates, Inflation and Risk diversification
  - The questions used are slight modifications of the original Big Three questions due to us following the OECD survey format
- Relate financial litearcy to economic outcomes
  - Retirement planning
  - Over indebtedness
  - Financial fragility: Coping with an unexpected expense and income shock
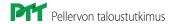
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Background

- Earlier work has found that financial literacy in Finland is relatively high
  - Kalmi & Ruuskanen (2018), Klapper & Lusardi (2020)
  - OECD (2016) adult financial literacy study Finland in second place out of 30 countries
- Finland's school system has promoted financial literacy in recent years
  - Promoting financial literacy has become more structured
  - Ministry of Justice directing strategy work, collaborating with the Bank of Finland
  - Target: Finland to be the world learder in financial literacy by 2030
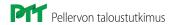
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Background

- Finland - A Nordic welfare state
  - Heavily redistributive tax system
  - Wage earners cannot relly influence their statutory occupational pension
  - Might reduce the incentives for citizens to invest in financial literacy (Jappelli, 2010)
- Consumer indebtedness in Finland has increased
  - Has lead to increases in arrears
  - In 2023, 8.5% of adults had a registered arrear
- Rising inflation in the aftermath of the pandemic, inflation in Finland was about 9% during the survey data collection

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Survey

- Data was collected in January-February 2023
- Consistent with the OECD (2022) survey
- Online survey
  - Previous Finnish financial literacy survey was conducted as face-to-face interviews
  - Thus results between these two surveys are not strictly comparable
- Sent to a panel of respondents, who receive credits from answering to surveys
  - After collecting enough credits they can be transformed into electronic gift cards

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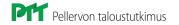oooooo

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Big Three - Interest rate

- Suppose you put 100€ in a savings account with a guaranteed interest rate of 2% per year. You do not make any further payments into this account, and you do not withdraw any money out of this account. How much money will you have in five years after the interest payment has been made? Assume that you do not have to pay taxes on capital income and that there are no other fees related to the account.

  i *Over 110€*
  ii Exactly 110€
  iii Less than 110€
  iv It is impossible to know given the information provided
  v Don't know
  vi Refused

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Big Three - Inflation

- Suppose you put 1000€ into a savings account with a guaranteed interest rate of 2% annually. The annual inflation rate is 4%, and you do not make more payments into or take out withdrawals from the account. In one year you can buy:
    - i More than today
    - ii *Less than today*
    - iii Don't know
    - iv Refused

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Big Three - Risk and Diversification

- Is the following statement true or false? 'It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares rather than investing in one share only.'
  - i *True*
  - ii False
  - iii Don't know
  - iv Refused

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Summary statistics

	Full sample (%)	Age 25-65 (%)
Cross-question consistency		
Interest and Inflation correct	39.2	42.2
All correct	36.3	39.1
None correct (All DK not included)	1.9	1.7
None correct (All DK included)	16.9	15.4
At least 1 DK	32.4	31.4
All DK	6.3	6.7
Observations	1,806	1,324

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Summary statistics

	Interest		Inflation		Risk		Overall		Self-reported Financial Knowledge
	C	DK	C	DK	C	DK	All C	DK ≥ 1	
Age									
18 -35	40.3	18.0	49.3	28.8	60.4	29.2	22.5	42.5	4.1
36 - 50	55.0	16.6	65.1	19.7	78.2	18.0	41.1	30.6	4.4
51 - 65	54.5	15.5	76.6	13.3	80.2	16.0	44.2	26.6	4.5
> 66	47.8	16.7	69.6	15.6	77.2	22.2	40.8	29.2	4.7
Sex									
Male	57.4	11.5	76.7	12.4	78.7	14.4	47.5	24.0	4.6
Female	40.9	21.8	53.0	26.7	68.5	28.6	26.3	40.7	4.2
Education									
< High school	35.4	19.3	41.2	39.5	56.9	36.4	23.6	49,2	3.8
High school grad	43.5	22.5	58.4	22.9	70.0	25.8	27.5	41.3	4.2
Some university	49.7	9.7	79.1	4.7	74.8	11.0	33.2	15.9	4.6
University graduate	58.1	13.1	77.1	10.4	82.8	13.7	47.7	21.9	4.7
Postgraduate	62.4	9.0	84.7	8.8	91.2	8.8	61.3	8.8	5.3
Employment status									
Self-employed	60.9	6.7	67.0	6.7	85.8	4.7	44.1	12.0	4.7
Not employed	44.6	21.1	57.3	24.0	68.8	22.2	28.1	37.2	4.1
Working	52.0	14.1	65.2	20.1	74.6	20.9	39.2	31.6	4.4
Retired	48.5	16.9	70.7	16.3	76.0	22.5	40.4	31.0	4.6

Note: C refers to "correct," IC to "incorrect," DK to "don't know." All figures are weighted. Self-reported financial knowledge ranges from 1 (Very bad) to 7 (Very good).

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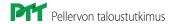oooooo

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Retirement planning

- Have you ever tried to figure out, how much you should save for retirement?
  - i *Yes*
  - ii No
  - iii Don't know
  - iv Refused

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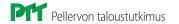ooo

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Too much debt

- I have too much debt right now
    - i I completely disagree
    - ii I somewhat disagree
    - iii Not disagree nor agree
    - iv *I somewhat agree*
    - v *I completely agree*
    - vi Don't know
    - vii Refused

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Summary statistics

	Retirement planning		Too much debt	
	Yes	No	Yes	No
Financial literacy				
Interest correct	54.3	50.3	44.0	52.9
Interest incorrect	35.5	32.4	35.3	33.0
Interest DK	10.1	17.7	20.7	14.1
Inflation correct	74.9	63.4	60.2	68.6
Inflation incorrect	16.1	16.2	17.0	15.6
Inflation DK	8.0	20.4	22.9	15.6
Risk correct	81.1	73.7	67.3	78.6
Risk incorrect	8.2	5.1	7.4	3.6
Risk DK	10.8	21.2	25.3	17.9
Total, %	19.0	81.0	31.3	68.7
Observations	273	1,074	612	1,151

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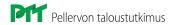ooooooooo

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Unexpected expense

- If you, personally, faced a major expense today – equivalent to your own monthly income – would you be able to pay it without borrowing the money or asking family and friends for help?
    - i I certainly would be able to pay
    - ii I probably would be able to pay
    - iii *I probably would not be able to pay*
    - iv *I certainly would not be able to pay*
    - v The question does not apply to me, I have no personal income
    - vi Don't know
    - vii Refused

Income shock

- If you lost your main source of income, how long could you continue to cover living expenses, without borrowing any money or moving into another apartment?
    - i *Less than a week*
    - ii *At least a week, but not one month*
    - iii At least one month, but not three months
    - iv At least three months, but not six months
    - v More than six months
    - vi Don't know
    - vii Refused

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Summary statistics

	Unexpected expense		Income shock	
	Not fragile	Fragile	Not fragile	Fragile
Financial literacy				
Interest correct	56.3	41.1	58.7	38.6
Interest incorrect	33.3	36.1	31.2	42.4
Interest DK	10.4	22.9	10.1	19.0
Inflation correct	71.2	56.6	73.8	54.0
Inflation incorrect	16.2	15.6	16.1	16.6
Inflation DK	13.0	27.3	10.1	29.4
Risk correct	82.6	63.1	84.5	58.0
Risk incorrect	4.5	5.0	3.7	7.8
Risk DK	12.8	31.9	11.8	34.2
Total, %	56.1	43.9	67.6	32.4
Observations	928	807	1,070	489

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Empirical approach

- Simple OLS framework
- Relating the economic outcome variables with the Big Three financial literacy measures
- Controls include
  - Age and its quadratic
  - Female dummy
  - Education level categories
  - Dummy for living with a spouse
  - Income categories
  - Employment categories
  - Number of children (0, 1, 2, 3, 4 or more)
  - Home ownership
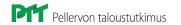 - Region (North, East, South and West Finland)

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Retirement planning

	(1) Pension planning	(2) Pension planning	(3) Pension planning
All correct	-0.042 (0.028)		
No. of correct		0.009 (0.021)	
Interest correct			-0.052* (0.029)
Inflation correct			0.020 (0.032)
Risk correct			0.018 (0.037)
Observations	1182	1185	1134
R^2	0.097	0.094	0.096

Notes: Standard errors in parentheses, * $p<0.05$, ** $p<0.01$, *** $p<0.001$. Dependent variable is a dummy indicating planning for retirement. 19% of respondents stated that they had tried to find out how much to save for their retirement. Those who did not know, were already retired, or refused to answer were coded as missing.

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Retirement planning

- Found no link between financial literacy and retirement planning
    - Retirement saving done through the state, individuals do not have much control
- Higher income and education are positively and weakly significantly related to retirement planning
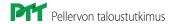- Gender is not significant unlike in Kalmi and Ruuskanen (2018)

Over indebtedness

	(1) Too much debt	(2) Too much debt	(3) Too much debt
All correct	-0.105***		
	(0.029)		
No. of correct		-0.042***	
		(0.015)	
Interest correct			-0.044
			(0.030)
Inflation correct			-0.047
			(0.037)
Risk correct			-0.061
			(0.041)
Observations	1542	1542	1484
R^2	0.129	0.127	0.127

Notes: Standard errors in parentheses, * p<0.05, ** p<0.01, *** p<0.001
Dependent variable is a dummy indicating that the respondent has too much debt. 31.3%
of respondents stated that they completely agree or somewhat agree with the statement
'I have too much debt'.

Over indebtedness

- Financial literacy found to protect from over indebtedness
- Age, higher income, and having children and living in the North of Finland have a positive and significant relation to having too much debt
- Home ownership and being self employed on the other hand were found as protective measures for having too much debt

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Unexpected expense

	(1) Unexpected Expense	(2) Unexpected Expense	(3) Unexpected Expense
All correct	-0.115***		
	(0.044)		
No. of correct		-0.066***	
		(0.021)	
Interest correct			-0.045
			(0.038)
Inflation correct			-0.037
			(0.047)
Risk correct			-0.135***
			(0.049)
Observations	1528	1528	1472
R^2	0.219	0.225	0.232

Notes: Standard errors in parentheses, * p<0.05, ** p<0.01, *** p<0.001
Dependent variable is a dummy indicating that the respondent could not pay an unexpected expense. 43.9% of respondents stated that they probably or for sure could not come up with a sum equivalent to their monthly net income to pay for an unexpected expense.

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Unexpected expense

- Financial literacy negatively and significantly related to the unexpected expense outcome variable
- Living with a spouse gives more leeway for being able to pay a sudden expense, while having children can make the budget tighter, giving a positive and significant coefficient
- Home ownership produces a negative and significant coefficient, while living in the North (relative to the South) gives a positive and significant coefficient

Income shock

	(1) Income Shock	(2) Income Shock	(3) Income Shock
All correct	-0.110*** (0.042)		
No. of correct		-0.118*** (0.032)	
Interest correct			-0.053 (0.039)
Inflation correct			-0.013 (0.051)
Risk correct			-0.214*** (0.057)
Observations	1390	1393	1343
R^2	0.159	0.176	0.190

Notes: Standard errors in parentheses, * p<0.05, ** p<0.01, *** p<0.001
Dependent variable is a dummy indicating that the respondent could cover their living expenses for less than one month if they lost their main source of income. 32.4% of respondents stated that they could cover their living expenses for less than one month without borrowing money or moving.

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Income shock

- Financial literacy can be said to protect individuals from the fragility to income shocks
- Income controls, home ownership and living in the West of Finland are negative and significant
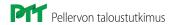- Having children positively and at some categories significantly related to the outcome variable

Conclusion

- Finnish financial literacy about average among OECD countries
  - Women have lower financial literacy than men
  - The young and the old have lower financial literacy than those in their prime working age
  - The self-employed have higher financial literacy than others
  - Financial literacy correlated with higher edcuational levels
- No statistically significant relation with financial literacy and retirement planning
- Financial literacy found to protect from adverse economic outcomes

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Thank you

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