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Financial Literacy, Retirement Planning, and Investment Behavior -
A comparative Study for Austria and Switzerland

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Structure of the presentation

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2. Overview of the literature
3. Goals and new aspects of our study
4. Methodology and sample
5. Data
6. Main results
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    - The impact of financial literacy on pension planning
    - The impact of financial literacy on investment behavior
7. Conclusions

1. Introduction

Relevance of Financial Literacy

Increasing complexity and number of financial products	Everyday decisions increasingly require financial knowledge	Demographic change	Changes of the pension systems

Weak stock market affinity

Ineffective saving- and pension planning behavior

Insufficient pension payments

(Private) insolvencies

No real estate investments

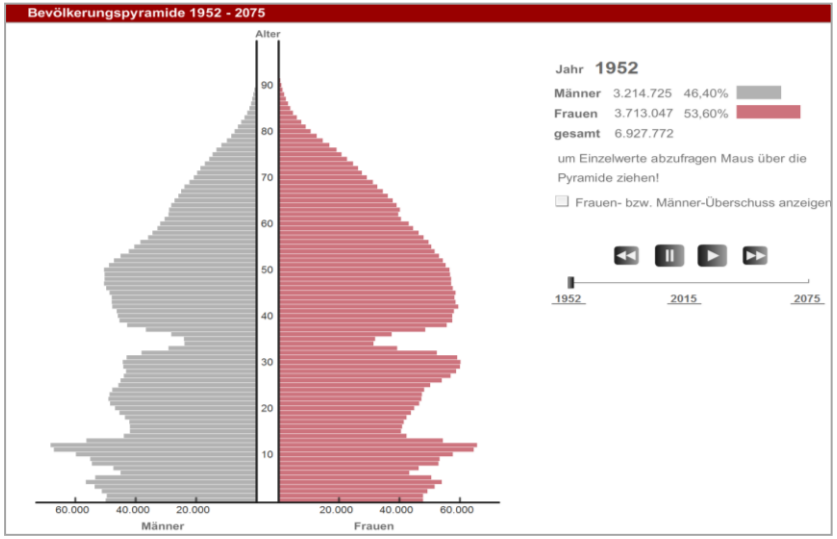
Insufficient wealth accumulation

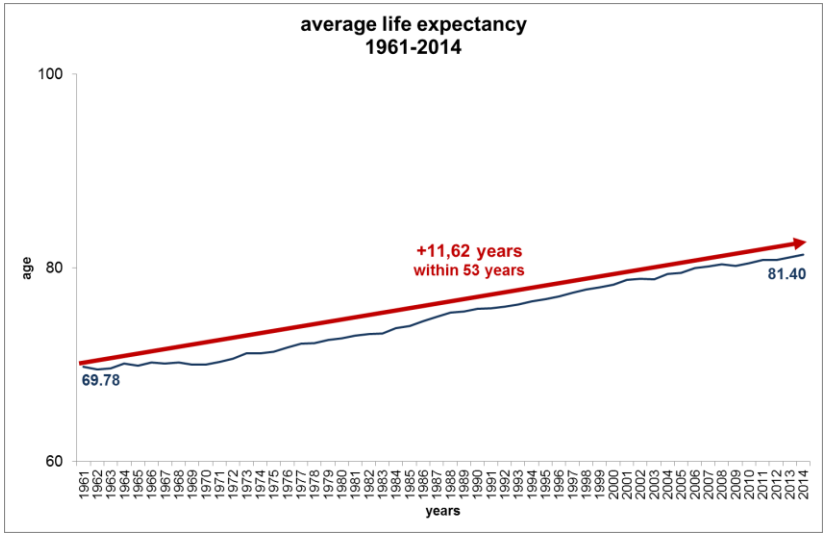
Fewer company foundations

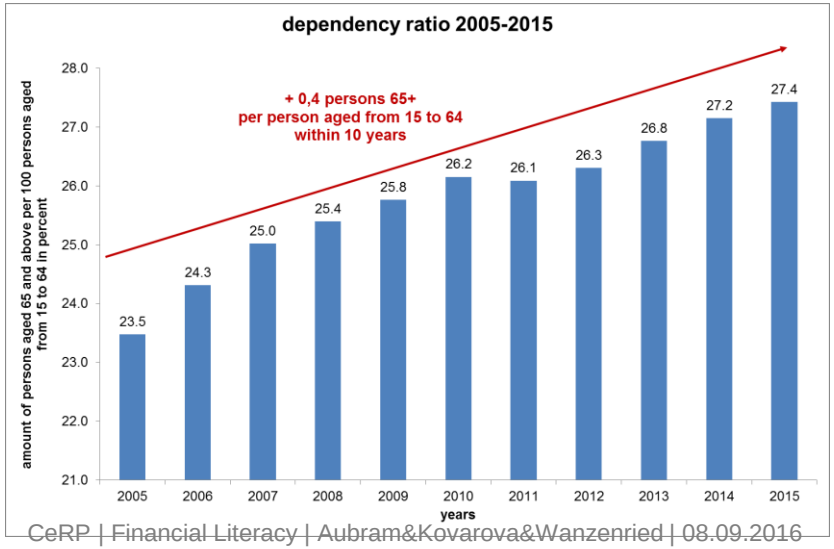
„Financial literacy is the knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts to improve the financial well-being of individuals and society, and to enable participation in economic life.“ (OECD, 2013, S. 33)

1. Introduction

Demographic developments in Austria



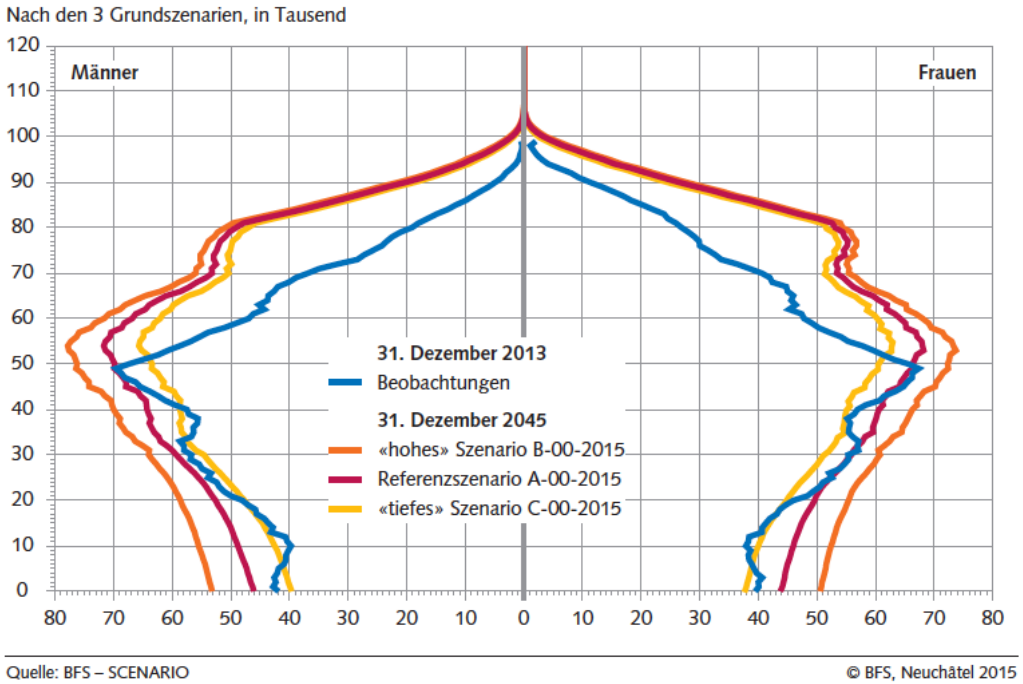




- The Austrian population is getting older
- The old-age-dependency ratio (=nb. of persons aged 65+ relative to 100 persons aged btw 15-64) is increasingly at the disadvantage of the working population
- The pension system moves more and more from the public to the private sector

1. Introduction

Demographic developments in Switzerland



- Over the next 30 years: The age pyramid is changing from a pine to a pear to a plumb and finally to a mushroom.
- Development of the old-age-dependency ratio: similar developments like in Austria
  - dependency ratio is supposed to increase from 28.4 in 2013 to 48.1 in 2045

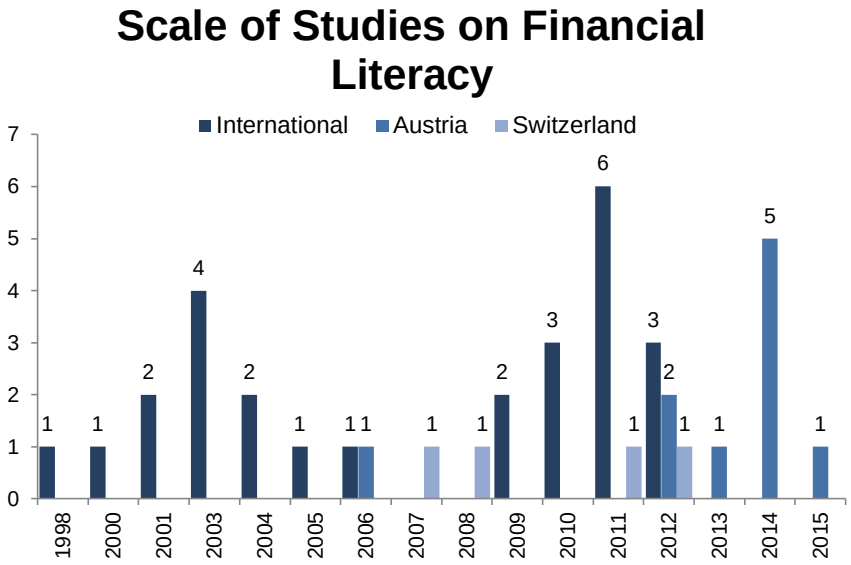
- The state pension and the occupational pension will in many cases not be sufficient anymore to cover the living expenses in old age.
  ➡ one needs personal savings in order to live well

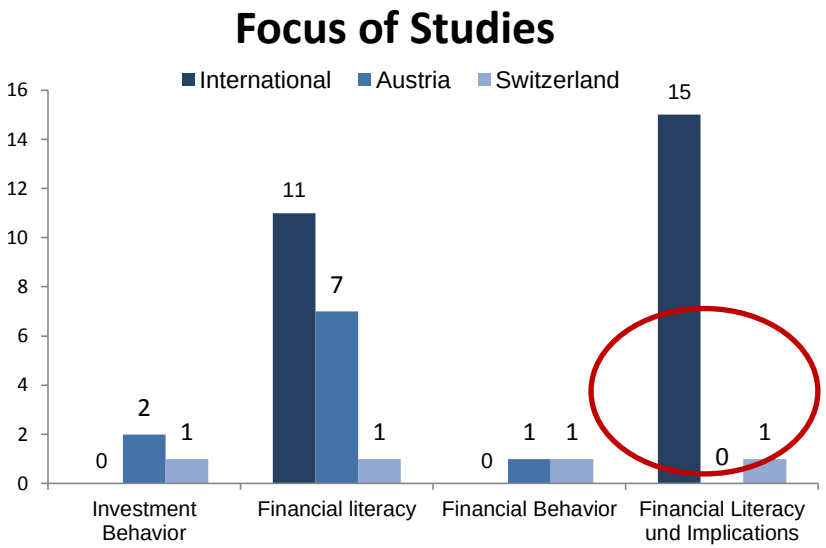
2. Overview of the literature

Selection of studies

Year	Authors	Titel
2015	Klapper, Lusardi & Oudheusden	Financial Literacy around the world, (S&P's Survey)
2014	Silgoner & Weber	Das Finanzwissen der österreichischen Haushalte (ÖNB)
2012	Bright & Keller	International Survey on Financial Competence
2012	Messy & Atkinson	Measuring Financial Literacy (OECD Working Paper)
2012	Brown & Graf	Financial literacy, household investment and household debt: Evidence from Switzerland (SIBF Working Paper)
2011	van Rooij, Lusardi & Alessie	Financial Literacy and Stock Market Participation (JFE)
2011	Lusardi & Mitchell	Financial Literacy Around the world: An Overview (NBER WP)
2011	van Rooij, Lusardi & Alessie	Financial Literacy, Retirement Planning, and Household Wealth (EJ)
2008	Stäheli, Zobl & Hobein	Financial Literacy in der Schweiz - Erhebung über den Stand des Finanzwissens (ZHAW WP)
2005	Lusardi & Mitchell	Financial Literacy and Planning: Implications for Retirement Wellbeing (Michigan Retirment Research Center Research WP)

2. Overview of the literature





- Financial crises as trigger to study financial literacy
- In Austria and Switzerland: The topic of financial literacy is „under-researched“
- More research is needed especially with respect to the implications of financial (il)literacy

3. Goals and new aspects of our study

Goals

Comparative study on financial literacy for Austria and Switzerland under consideration of the following aspects:

- To provide a status quo of financial literacy (basic and advanced) in Austria and Switzerland
- To investigate the determinants of financial literacy
- To study the implications of financial literacy for the investment behavior
- To study the implications of financial literacy for the pension planning behavior
- To identify differences between Austria and Switzerland

3. Goals and new aspects of our study

Research questions

- RQ1: Which **relevance has financial literacy** gained as a research and public discourse topic in Austria and Switzerland in the international comparison?
  - RQ 1.a: To what extent has been financial literacy in Austria and in Switzerland investigated until 2016?
  - RQ 1.b: What focus has been set in the research studies conducted on financial literacy in Austria and Switzerland until 2016?
- RQ2: To what extend does the **self-assessed financial knowledge** differ from the **factual financial knowledge** among the working population in Austria and Switzerland? Which socio-demographic and socio-economic factors seem to influence the self-assessed and factual financial literacy?
- RQ3: What is the impact of financial literacy on **the investment behavior** and **pension planning** among the working population in Austria and Switzerland, and to what extent does the relationship between financial literacy on the one hand and investment behavior and pension planning on the other hand **differ between Austria and Switzerland?**

3. Goals and new aspects of our study

New aspects

- **Recent** empirical evidence on financial literacy in Austria and Switzerland **comparable** to international studies (e.g. van Rooij, Lusardi & Alessie, 2011)
- First study that **compares two** similar but with respect to certain aspects still different **systems** in terms of financial literacy and its determinants
- First study that investigates **implications of financial literacy on pension planning and investment behavior** in Austria and Switzerland and the differences between the two countries

4. Methodology and sample

Applied methods

- Analysis of the literature
- Online survey
- Descriptive statistics
- Regression analyses: bi- and multinomial logit estimations

Structure of the questionnaire

1. Financial Literacy: Self-evaluation- and factual FL (basic und advanced)
2. Investment behavior and motivation: Intent and reality
3. Pension planning behavior
4. Information sources for financial information
5. Sociodemographic information (age, education, work status, industry, income strategy, risk behavior)

4. Methodology and sample

Bi- and multinomial logit models:

Model specification 1: To explain self-assessed and factual financial literacy

$$Pr(y_i^*) = \alpha_0 + \alpha_1 sex_i + \alpha_2 age_i + \alpha_3 risk\ aversion_i + \alpha_4 education_i + \alpha_5 workforce_i + \alpha_6 employment_i + \alpha_7 workforce\ in\ financial\ services_i + \alpha_8 income_i + \varepsilon_i$$

Dependent variables:

- Self-assessed financial literacy: 3 aspects of FL and index of self-assessed FL
- Factual financial literacy index (based on basic and advanced FL questions)

Model specification 2: To explain pension planning and investment behavior

$$Pr(y_i^*) = \alpha_0 + \alpha_1 financial\ literacy_i + \alpha_2 sex_i + \alpha_3 age_i + \alpha_4 risk\ aversion_i + \alpha_5 education_i + \alpha_6 workforce_i + \alpha_7 employment_i + \alpha_8 work\ in\ financial\ services_i + \alpha_9 income_i + \varepsilon_i$$

Dependent variables:

- Pension planning behavior
- Investment behavior (of 5 different investment types)

4. Methodology and sample

Estimation method

- Bi- and multinomial logit models estimated with OLS (GLS as robustness test)
- Robust standard errors to correct for heteroscedasticity
- Separate estimations for Austria and Switzerland (pooled estimations with country dummies as robustness test)

Sample

- Online survey during the time period from Feb. 9th to March 20th 2016
- Random sampling, i.e. distribution over social media
- Overall 449 observations: 341 for Austria, 108 for Switzerland (separate consideration of the two subsamples)

➡ non-representative sample

5. Data

How to measure financial literacy: Dependent variables
(following, e.g. Lusardi & Mitchell (2009, 2011) and van Rooij et al. (2011, 2012))

Variable name	Variable description
Self-assessed financial knowledge	Self-assessed knowledge about financial products and investment possibilities, (min = 1, max = 4)
Self-assessed ability to use financial knowledge for investments	Self-assessed ability to use own financial knowledge to invest money, (min = 1, max = 4)
Self-assessed ability to handle money and a budget	Self-assessed ability to handle money and to plan a household budget, (min = 1, max = 4)
Index of self-assessed financial literacy	Sum of answers from the three self-assessment questions with respect to financial literacy (min = 3, max = 12)
Index of real financial literacy	Sum of correct answers from the basic and advanced financial literacy questions (min = 0, max = 16)

5. Data

Basic financial literacy: % of correct, incorrect and „do not know“ answers

	Numeracy	Interest compounding	Inflation	Time value of money	Money illusion
			Austria (n = 341)		
Correct	83.60	71.30	88.00	60.40	76.50
Incorrect	15.50	25.80	4.10	31.30	21.70
Do not know	0.90	2.90	7.90	8.20	1.80
			Switzerland (n = 108)		
Correct	97.20***	78.70	93.50	69.40	85.20
Incorrect	2.80	19.40	2.80	24.10	14.80
Do not know	0.00	1.90	3.70	6.50	0.00
			All (n = 449)		
Correct	86.98	73.00	89.30	62.60	78.60
Incorrect	12.50	24.30	3.80	29.60	20.00
Do not know	0.70	2.70	6.90	7.80	1.30

This table reports the spread of correct, incorrect, and do not know answers on five questions regarding the basic financial literacy in Austria and Switzerland. The topics asked in the basic session were (1) numeracy, (2) interest compounding, (3) inflation, (4) time value of money and (5) money illusion (see Appendix A). Differences between Austria and Switzerland in those two population based on Chi2-Test for homogeneity significant from zero are marked with *** at the 0.01 level, ** at the 0.05 level, and * at the 0.10 level, respectively, in the line for Switzerland.

5. Data

Advanced financial literacy: % of correct, incorrect and „do not know“ answers

	Correct	Incorrect	Do not know	Correct	Incorrect	Do not know	Correct	Incorrect	Do not know
	Austria (n = 341)			Switzerland (n = 108)			All (n = 449)		
Which statement describes the main function of the stock market?	89.10	8.20	2.60	96.30**	3.70	0.00	90.90	7.10	2.00
What happens if somebody buys the stock of a firm in the stock market?	91.20	6.70	2.10	95.40	4.60	0.00	92.20	6.20	1.60
What happens if somebody buys a bond of a firm?	75.70	11.70	12.60	93.50***	2.80	3.70	80.00	9.50	10.50
Which statement about mutual funds is correct?	72.70	7.00	20.30	87.00***	2.80	10.2	76.20	6.00	17.80
Considering a long time period (e.g. 10 or 20 years), which asset normally gives the highest return: savings accounts, bonds or stocks?	51.30	29.60	19.10	75.00***	16.70	8.30	57.00	26.50	16.50
When an investor spreads his money among different assets, does the risk of losing money: increase, decrease or stay the same?	86.20	8.20	5.60	94.40**	2.80	2.80	88.20	6.90	4.90
If you buy a 10-year bond, it means you cannot sell it after five years without incurring a major penalty. True or False?	49.00	24.60	26.40	69.40***	16.70	13.90	53.90	22.70	23.40
Stocks are normally riskier than bonds. True or False?	76.20	9.70	14.1	89.80***	4.60	5.60	79.50	8.50	12.00
Buying a company stock usually provides a safer return than a stock mutual fund. True or False?	73.60	5.00	21.4	87.00***	5.60	7.40	76.80	5.20	18.00
If the interest rate falls, what should happen to bond prices: rise, fall or stay the same?	29.90	36.70	33.40	23.10	59.30	17.60	28.30	42.10	29.60
An investment with a higher probability of a higher return is usually also riskier. True or False?	84.80	7.30	7.90	95.40***	1.90	2.80	87.30	6.00	6.70

This table reports the spread of correct, incorrect and do not know answers on 11 questions regarding the advanced financial literacy in Austria and Switzerland. Differences between Austria and Switzerland in those two population based on Chi2-Test for homogeneity significant from zero are marked with *** at the 0.01 level, ** at the 0.05 level, and * at the 0.10 level, respectively, in the column for Switzerland.

5. Data

How to measure pension planning and investment behavior: Dependent variables

Variable name	Variable description
Pension planning indicator	Degree to which respondent has thought about pension planning (min = 1 max = 4)
Dummy: Invested in stocks	1 if respondent invested in stock, 0 else
Dummy: Invested in bonds	1 if respondent invested in bonds, 0 else
Dummy: Invested in real estate	1 if respondent invested in real estate, 0 else
Dummy: Invested in gold	1 if respondent invested in gold, 0 else
Dummy: Invested in savings account	1 if respondent invested in savings account, 0 else

5. Data

Independent variables:

Variable name	Variable description
Dummy: Female	Dummy: 1 if respondent is female, 0 else
Age	Age in years
Dummy: Risk taker	1 if respondent considers himself as risk taker, 0 else
Dummy: University education	1 if respondent has a university degree, 0 else
Dummy: In workforce	1 if respondent is in workforce, 0 else
Dummy: Self-employed	1 if respondent is self-employed, 0 else
Dummy: Financial services industries	1 if respondent is working in the financial services industries, 0 else
Dummy: Income≤3000	1 if respondent's net income is up to 3000 per month, 0 else
Dummy: 3000<Income≤6000	1 if respondent's net income is between 3000 and 6000per month, 0 else
Dummy: 6000<Income ≤9000	1 if respondent's net income is between 6000 and 9000 per month, 0 else
Dummy: Income>9000	1 if respondent's net income is higher than 9000 per month, 0 else
Dummy: Income missing	1 if respondent's net income is missing, 0 else

5. Data

Descriptive statistics of dependent variables:

Variable name	Austria (n = 341)		Switzerland (n = 108)		All (n = 449)	
	Mean	Std.Dev	Mean	Std.Dev	Mean	Std.Dev
Self-assessed financial knowledge	2.25	0.89	2.71***	0.91	2.36	0.92
Self-assessed ability to use financial knowledge for investments	2.19	0.85	2.48***	0.89	2.26	0.87
Self-assessed ability to handle money and a budget	3.32	0.68	3.46***	0.63	3.35	0.67
Index of self-assessed financial literacy	7.76	1.92	8.65***	1.94	7.98	1.96
Index of real financial literacy	11.60	3.12	13.55***	2.66	12.08	3.12
Indicator of pension planning	2.69	0.97	3.09***	0.85	2.79	0.96
Dummy: Invested in stocks	0.48	0,50	0.78***	0.42	0.55	0.50
Dummy: Invested in bonds	0.24	0.43	0.30**	0.46	0.25	0.43
Dummy: Invested in real estate	0.32	0.47	0.43***	0.50	0.35	0.48
Dummy: Invested in gold	0.30	0.46	0.23***	0.42	0.29	0.45
Dummy: Invested in savings account	0.91	0.29	0.94**	0.23	0.92	0.28

➡ Austria and Switzerland differ from each other with respect to financial literacy, investment behavior and pension planning behavior

5. Data

Descriptive statistics of independent variables:

Variable name	Austria (n = 341)		Switzerland (n = 108)		All (n = 449)	
	Mean	Std.Dev	Mean	Std.Dev	Mean	Std.Dev
Dummy: female	0.55	0.50	0.42	0.50	0.52	0.50
Age	35.39	12.65	39.78***	12.03	36.45	12.63
Age squared	1,418.80	989.83	1,753.49**	961.51	1,499.31	992.45
Dummy: Risk taker	0.20	0.40	0.32***	0.47	0.23	0.42
Dummy: University education	0.53	0.50	0.76***	0.43	0.58	0.49
Dummy: In workforce	0.79	0.41	0.88**	0.33	0.81	0.39
Dummy: Self-employed	0.09	0.29	0.11	0.32	0.10	0.30
Dummy: Financial services industries	0.09	0.29	0.24***	0.43	0.13	0.33
Dummy: Income≤3000	0.79	0.41	0.18	0.38	0.64	0.48
Dummy: 3000<Income≤6000	0.10	0.30	0.19***	0.40	0.12	0.33
Dummy: 6000<Income ≤9000	0.01	0.08	0.20***	0.41	0.05	0.23
Dummy: Income>9000	0.01	0.11	0.32***	0.47	0.09	0.28
Dummy: Income missing	0.09	0.29	0.10**	0.30	0.09	0.29

➡ Austria and Switzerland differ from each other with respect to the explanatory variables as well.

6. Results

Model I: Determinants of self-assessed and factual financial literacy:

Table 13: Ordered logit results of self-assessed and factual financial literacy

	Austria					Switzerland				
Dependent variable: Financial literacy	**Self-assessed financial literacy**				**Factual FL**	**Self-assessed financial literacy**				**Factual FL**
	Financial knowledge	Ability to use fin. knowledge for invest.	Ability to handle money and a budget	Index of self-assessed FL	Index of factual FL	Financial knowledge	Ability to use fin. Knowledge for invest.	Ability to handle money and a budget	Index of self-assessed FL	Index of factual FL
Dummy: Female	-1.291***	-1.084***	-0.022	-1.031***	-1.176***	-1.103**	-1.417***	-0.512	-1.269**	-1.593***
	(0.225)	(0.234)	(0.228)	(0.211)	(0.217)	(0.508)	(0.540)	(0.475)	(0.523)	(0.519)
Age	0.065	0.088	0.176**	0.111	0.092	0.239**	0.107	0.085	0.176*	0.172
	(0.062)	(0.072)	(0.077)	(0.071)	(0.080)	(0.122)	(0.131)	(0.132)	(0.101)	(0.145)
Age squared	-0.001	-0.001	-0.002**	-0.001	-0.001	-0.003**	-0.001	-0.001	-0.002*	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
Dummy: Risk taker	0.715**	0.528*	-0.169	0.522	0.182	0.618	0.292	0.928*	0.519	-0.062
	(0.305)	(0.306)	(0.290)	(0.339)	(0.266)	(0.516)	(0.456)	(0.550)	(0.453)	(0.485)
Dummy: University education	0.470**	0.115	0.665***	0.459**	1.093***	1.779***	1.063**	-0.523	1.084**	1.635***
	(0.223)	(0.237)	(0.241)	(0.220)	(0.214)	(0.581)	(0.494)	(0.639)	(0.494)	(0.513)
Dummy: In workforce	-0.621*	-0.470	-0.987***	-0.779**	-0.456	-1.635***	-0.953*	-0.376	-1.214**	-0.815
	(0.366)	(0.345)	(0.316)	(0.332)	(0.310)	(0.587)	(0.544)	(0.846)	(0.612)	(0.729)
Dummy: Self-employed	0.292	0.545*	0.425	0.461*	0.687**	0.528	1.676**	0.140	0.913	0.550
	(0.301)	(0.312)	(0.386)	(0.260)	(0.349)	(0.695)	(0.665)	(0.960)	(0.594)	(0.606)
Dummy: Work in fin. services	3.112***	2.456***	0.579	2.552***	2.144***	2.615***	1.982***	0.434	2.155***	1.326***
	(0.504)	(0.445)	(0.385)	(0.430)	(0.371)	(0.547)	(0.515)	(0.506)	(0.533)	(0.486)
Dummy: 3000<Income≤6000	0.652*	0.638*	0.423	0.793**	0.709*	0.617	0.336	0.220	0.510	-0.472
	(0.390)	(0.360)	(0.408)	(0.359)	(0.363)	(0.649)	(0.727)	(0.787)	(0.664)	(0.791)
Dummy: 6000<Income≤9000	3.854***	2.566***	-0.005	2.744***	3.221***	-0.349	0.435	0.795	0.309	0.403
	(0.872)	(0.440)	(1.248)	(0.692)	(0.641)	(0.689)	(0.825)	(0.764)	(0.691)	(0.711)
Dummy: Income>9000	-0.226	-0.402	-1.015	-0.593	-0.519	0.427	1.018	0.398	0.690	0.396
	(0.616)	(0.465)	(0.688)	(0.561)	(0.536)	(0.754)	(0.922)	(0.935)	(0.805)	(0.855)
Dummy: Income missing	0.551*	0.989***	0.303	0.778***	-0.012	-1.042	-0.701	0.235	-0.705	-0.918
	(0.300)	(0.329)	(0.390)	(0.287)	(0.327)	(0.918)	(0.888)	(1.076)	(0.956)	(0.761)
Number of observations	341	341	341	341	341	108	108	108	108	108

This table reports results from ordered logit regressions of the effects of person-specific characteristics on financial literacy indicators. For the notation of the variables see Table 3. Robust standard errors in brackets. Coefficients that are significantly different from zero at the 1%, 5%, and 10% level are marked with ***, **, and * respectively.

6. Results

Determinants of self-assessed and factual financial literacy

Financial literacy=
f(gender, age, risk aversion, education, labor market status, work in fin.services, income category)

Main results:

- Women tend to have a lower FL, and this holds for self-assessed as well as factual FL
- A higher education (i.e. a university degree) leads to a higher level of FL
- Self-employed tend to have a higher level of FL, at least for certain aspects of FL
- Persons who are active in the labor market tend to have a lower level of self-assessed FL
- Persons working in the financial services industries have a higher level of FL

Main differences between Austria and Switzerland:

- Self-assessed FL increases with age only in Switzerland
- Some dimensions of self-assessed FL increase with the risk aversion in Austria only
- Income seems to matter for FL in Austria only, where persons with a middle to higher income level seem to have a higher level of FL

6. Results

The impact of financial literacy on pension planning

Table 14: Ordered logit results of pension planning

Dependent variable: Pension planning	Austria				Switzerland			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Index of self-assessed FL	0.161**	0.345***			0.404***	0.363**		
	(0.069)	(0.122)			(0.142)	(0.180)		
Dummy female x Index of s.a. FL		-0.307**				0.087		
		(0.146)				(0.239)		
Index of factual FL			0.072**	0.099			0.296***	0.282
			(0.033)	(0.064)			(0.092)	(0.175)
Dummy female x Index of factual FL				-0.040				0.020
				(0.073)				(0.186)
Dummy: female	0.214	2.635**	0.170	0.647	0.182	-0.549	0.362	0.093
	(0.238)	(1.204)	(0.231)	(0.910)	(0.483)	(2.090)	(0.532)	(2.548)
Age	0.207***	0.192***	0.209***	0.209***	0.227*	0.217*	0.231**	0.227**
	(0.078)	(0.072)	(0.077)	(0.076)	(0.120)	(0.124)	(0.106)	(0.110)
Age squared	-0.002*	-0.002*	-0.002*	-0.002*	-0.002	-0.002	-0.002	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dummy: Risk taker	0.901***	0.786***	0.962***	0.943***	0.159	0.156	0.442	0.447
	(0.258)	(0.266)	(0.250)	(0.258)	(0.469)	(0.466)	(0.488)	(0.499)
Dummy: University education	-0.671***	-0.665***	-0.714***	-0.722***	-1.219*	-1.207*	-1.556**	-1.544**
	(0.234)	(0.230)	(0.241)	(0.240)	(0.678)	(0.690)	(0.712)	(0.738)
Dummy: In workforce	0.916***	0.889***	0.880***	0.861***	-0.381	-0.352	-0.474	-0.467
	(0.318)	(0.314)	(0.323)	(0.328)	(0.670)	(0.676)	(0.649)	(0.645)
Dummy: Self-employed	-0.244	-0.214	-0.236	-0.236	-0.086	-0.117	0.181	0.172
	(0.376)	(0.380)	(0.387)	(0.390)	(0.801)	(0.801)	(0.812)	(0.821)
Dummy: Work in fin. services	-0.353	-0.430	-0.198	-0.217	-0.846	-0.828	-0.620	-0.621
	(0.367)	(0.370)	(0.366)	(0.366)	(0.571)	(0.571)	(0.519)	(0.520)
Dummy: 3000<Income≤6000	0.312	0.227	0.301	0.295	0.676	0.715	1.128	1.137
	(0.419)	(0.430)	(0.413)	(0.412)	(0.764)	(0.786)	(0.753)	(0.774)
Dummy: 6000<Income≤9000	15.003***	14.895***	14.151***	15.381***	0.666	0.627	0.510	0.507
	(0.774)	(0.823)	(0.767)	(0.769)	(0.798)	(0.828)	(0.749)	(0.758)
Dummy: Income>9000	0.742	0.727	0.679	0.655	1.395	1.391	1.531*	1.543*
	(0.981)	(0.928)	(0.991)	(0.981)	(0.849)	(0.860)	(0.811)	(0.801)
Dummy: Income missing	0.596*	0.542	0.684*	0.691*	1.510*	1.553*	1.557*	1.568*
	(0.342)	(0.340)	(0.354)	(0.354)	(0.907)	(0.933)	(0.834)	(0.832)
Observations	341	341	341	341	108	108	108	108

This table reports results from ordered logit regressions of the effects of person-specific characteristics on pension planning. For the notation of the variables see Table 3. Robust standard errors in brackets. Coefficients that are significantly different from zero at the 1%, 5%, and 10% level are marked with ***, **, and * respectively.

6. Results

The impact of financial literacy on pension planning

Pension planning=
f(**financial literacy**, gender, gender x financial literacy, age, risk aversion, education, labor market status,
work in fin.services, income category,)

Main results:

- The higher the FL, the more intensive is the pension planning behavior.
- Self-assessed FL has stronger impact on the pension planning behavior than the factual FL.
- The older the person, the more intensive is the pension planning behavior, at least until reaching the retirment age.
- Persons with an university degree seem to care less about the pension planning

Main differences between Austria and Switzerland:

- Effect of FL on pension planning behavior is stronger in Switzerland than in Austria
- The income matters in Austria only, where persons with middle and higher incomes seem to plan more for their pension.
- Gender differences exist in Austria only: Men with a higher self-assessed FL take more care of their pension planning, while women with a higher self-assessed FL are less concerned about pension planning.

6. Results

The impact of financial literacy on investment behavior:

Table 15: Ordered logit results of investment behavior for Austria

Dependent variable:	Self-assessed financial literacy					Factual financial literacy				
Investment behavior	Invested in stocks	Invested in bonds	Invested in real estate	Invested in gold	Invested in savings account	Invested in stocks	Invested in bonds	Invested in real estate	Invested in gold	Invested in savings account
Index of self-assessed FL	0.292***	0.381***	0.0118	0.140*	0.0359					
	(0.0844)	(0.0937)	(0.0754)	(0.0788)	(0.134)					
Index of factual FL						0.282***	0.232***	-0.0006	0.052	0.019
						(0.0588)	(0.0562)	(0.047)	(0.049)	(0.077)
Dummy: female	-0.806***	0.342	0.203	0.405	0.307	-0.670**	0.307	0.190	0.359	0.305
	(0.280)	(0.310)	(0.280)	(0.274)	(0.441)	(0.289)	(0.311)	(0.281)	(0.285)	(0.466)
Age	0.329***	0.178**	0.191**	-0.0152	-0.0914	0.357***	0.208**	0.193**	-0.004	-0.088
	(0.0823)	(0.088)	(0.083)	(0.074)	(0.113)	(0.089)	(0.091)	(0.083)	(0.075)	(0.112)
Age squared	-0.004***	-0.00182*	-0.002**	0.0003	0.000771	-0.004***	-0.002**	-0.002**	0.0002	0.0007
	(0.001)	(0.0011)	(0.001)	(0.0009)	(0.0014)	(0.0011)	(0.00110)	(0.001)	(0.001)	(0.0014)
Dummy: Risk taker	0.429	0.465	0.607*	0.109	-1.046**	0.579	0.656**	0.612*	0.176	-1.034**
	(0.348)	(0.340)	(0.318)	(0.323)	(0.431)	(0.379)	(0.329)	(0.318)	(0.315)	(0.435)
Dummy: Univ. education	0.227	-0.116	0.0972	-0.75***	0.289	-0.0620	-0.324	0.103	-0.769***	0.276
	(0.290)	(0.316)	(0.264)	(0.273)	(0.426)	(0.308)	(0.324)	(0.269)	(0.268)	(0.448)
Dummy: In workforce	-0.0220	-0.570	-0.00522	0.0327	0.857	-0.137	-0.773*	-0.0150	-0.0367	0.835
	(0.433)	(0.427)	(0.415)	(0.373)	(0.538)	(0.430)	(0.449)	(0.413)	(0.379)	(0.535)
Dummy: Self-employed	-0.375	-0.196	0.121	0.456	-1.396**	-0.487	-0.281	0.127	0.477	-1.400***
	(0.468)	(0.480)	(0.438)	(0.432)	(0.543)	(0.520)	(0.501)	(0.443)	(0.433)	(0.540)
Dummy: Work in fin. services	0.599	0.196	0.348	1.118**	0.980	0.557	0.477	0.376	1.292***	1.009
	(0.474)	(0.480)	(0.431)	(0.441)	(0.914)	(0.484)	(0.436)	(0.411)	(0.431)	(0.852)
Dummy: 3000<Income≤6000	0.875*	0.814*	1.287***	1.159***	1.545	0.661	0.771*	1.294***	1.173***	1.563
	(0.497)	(0.445)	(0.418)	(0.413)	(1.053)	(0.544)	(0.424)	(0.421)	(0.410)	(1.083)
Dummy: 6000<Income≤9000	-		-		-	-		-		-
Dummy: Income>9000	0.333	2.369**	0.707	-0.308	-1.799	0.240	2.206*	0.700	-0.362	-1.813
	(0.980)	(1.165)	(1.137)	(0.920)	(1.519)	(0.941)	(1.171)	(1.131)	(0.908)	(1.526)
Dummy: Income missing	0.871**	0.240	0.585	0.478	-0.865*	1.087**	0.492	0.593	0.555	-0.842
	(0.418)	(0.467)	(0.407)	(0.432)	(0.520)	(0.444)	(0.479)	(0.404)	(0.438)	(0.524)
Index of self-assessed FL		0.373		1.226			0.550		1.387	
		(1.621)		(1.426)			(1.415)		(1.364)	
Observations	339	341	339	341	339	339	341	339	341	339

This table reports results from ordered logit regressions of the effects of person-specific characteristics on investment behavior for Switzerland. For the notation of the variables see Table 3. Robust standard errors in parentheses. Coefficients that are significantly different from zero at the 1%, 5%, and 10% level are marked with ***, **, and * respectively.

6. Results

The impact of financial literacy on investment behavior

Effective investment behavior $\{\boldsymbol{stocks, bonds, real\ estate, gold, savings\ accounts}\}$ = *f*(**financial literacy,** gender, age, risk aversion, education, labor market status, work in fin.services, income category)

Main results:

- Persons with a higher level of FL are more likely to buy stocks and bonds

Main differences between Austria and Switzerland:

- Women in Austria are less likely to buy stocks; women in Switzerland tend to leave their savings on the savings account.
- In Austria, older people buy more stocks, bonds and real estate.
- Risk loving persons in Austria rather invest in real estate; the same group in Switzerland rather invests in gold. In both countries they leave less money on savings accounts.
- In Austria, the income category 3‘000-6‘000 Euro tends to be invested in stocks, bonds, real estate and gold, while the same income category in Switzerland rather leaves the money on the savings account.

7. Conclusions

- Our study: New and potentially interesting findings! Also, we can learn from the comparative study between Austria and Switzerland, even though we are not (yet) able to explain all the differences.
- Our results have clear limitations (sample selection, underlying complexity not reflected in model, applied methods, etc.).
- Research on financial literacy has still a lot of potential, especially also when considering countries like Austria and Switzerland.

  ➡ Work in progress: – Financial literacy and information behavior
  – Financial literacy in the curricula of schools
- The research findings should be considered by politics: Financial literacy is a key determinant of welfare on the individual as well as the social level and should be promoted by the state.
- Besides the state (e.g. via the schooling system), the financial services industries have a responsibility and a clear interest in a higher level of FL.

7. Conclusions

Some policy recommendations for the different stakeholders:

To the address of the state:

- The personal pension planning increases with FL, and therefore, the state has an interest to increase the FL level of the population.
- Education: FL should be integrated in the school curricula as early as possible, in the best case already at the kindergarten level

To the address of the financial services industries:

- FL has a positive impact on the capital market participation, and therefore, a higher level of FL is also in the interest of the financial services providers.
- The different groups (age, education level, gender, etc.) have to be targeted in specific ways, with the choice of the best suited media, content, communication strategy, etc.

To the address of the public:

- At (almost) every age an investment in increasing one‘s FL is worth, given its direct impact on individual welfare.

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15th International Pragmatics Conference

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Panel: Financial literacy – a key to the real world

Organized by: ***Marlies Whitehouse, Monika Kovarova-Simecek, Gabrielle Wanzenried***

Panel:
Financial literacy – a key to the real world

The panel focuses on the key role of financial literacy in society and discusses research in which the various genres of finance (e.g., pension fund information, financial analysts' recommendations, corporate announcements, bank statements, insurance letters, tax forms, financial advisors' papers) are examined with inter- and transdisciplinary approaches that reconstruct, scrutinize, or aim at improving the communication between financial experts and society-at-large (Whitehouse & Perrin, 2015).

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