

We don't need no financial education?

Does the faculty of study influence students' financial literacy? Evidence from French students

Guillaume Thevenet, LaRGE, University of Strasbourg

Andis Hamelin, LaRGE, University of Strasbourg

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I. Introduction

1. Motivations

- Financial literacy: understanding how compound interests work, how inflation works and what are risk and risk diversification (Lusardi and Mitchell, 2008)
- Financial literacy helps people to undertake more performant financial decisions (Aubert et al., 2018; Bucher-Koenen and Lusardi, 2011; Van Rooij et al., 2012, 2011)
- Financial literacy is associated with higher financial inclusion (Grohmann et al., 2018) and higher financial well-being (Lee et al., 2019)

1. Introduction

2. Targeting fragile populations

- Financial literacy levels remain alarming, with specifically fragile populations (OECD, 2020)
- Gender gap: women display lower levels of financial literacy (Fonseca et al., 2012; Lusardi and Mitchell, 2011, 2008).
- Income gap: High-income households have high levels of financial literacy (Atkinson and Messy, 2012), contrary to low-income households (Hastings et al., 2013)
- Age gap: older (Lusardi and Mitchell, 2011) and younger (Lusardi and Mitchell, 2010) parts of the population display lower level of financial literacy
- The age gap is of particularly interest for researchers, with a great focus on the youth and students (Goyal and Kumar, 2021)

1. Introduction

3. Financial literacy is useful for students

- Financial literacy has for students the same benefits as found in the general population: increased financial inclusion (Xiao and O'Neill, 2016), financial well-being (Fan and Chatterjee, 2019), and reduced financial fragility (Norvilitis et al., 2006; Xiao et al., 2011)
- Increasing interest in the literature in investigating the determinants of students' financial literacy (Goyal and Kumar, 2021)

I. Introduction

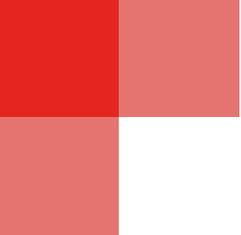
4. Determinants of students' financial literacy

- Socio-demographic determinants: gender (Chen and Volpe, 1998, 2002), age (Brau et al., 2019), parental background (Brau et al., 2019)
- Educational and “experience” determinants: work experience during College (Chen and Volpe, 1998) or before (Brau et al., 2019), educational level (from *freshman* to *senior*) has a positive effect on financial literacy (Sarigül, 2014)
- Type of education: business major vs other students: business students perform well (Chen and Volpe, 2002; Beal and Delprachita, 2003, Sarigül, 2014)
- **What are the effects of the different faculties on students' financial literacy?**

I. Introduction

5. Hypotheses

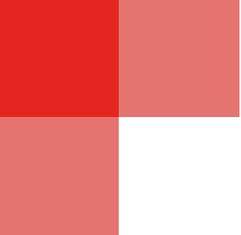
- Financial literacy involves core competences such as numeracy and risk conceptualisation (Lusardi and Mitchell, 2014)
- Numeracy varies across faculties (Jonas, 2018)
- If the core competences of financial vary across faculty, shouldn't we observe variations of financial literacy across faculties?
- Subjective financial literacy (Allgood and Walstad, 2016) and overconfidence in financial literacy (Chu et al., 2017) are intertwined with objective financial literacy. Has the faculty of study a broader effect?



I. Introduction

6. Contributions

- The traditional “business students vs the others” perspective needs an update: we breakdown the investigations to a more fine-grained level
- We adopt a broader perspective: we investigate the effects of the faculty of study on financial literacy with a comprehensive definition of financial literacy



II. Method

1. Sample

- We surveyed the 58,000 students from the University of Strasbourg
- Survey dates: from the 21st of October 2021 to the 1st of December 2021
- 11,227 answers to the survey and a final sample of 7,121 observations

II. Method

2. Main variables

- Objective financial literacy: 1 question for each dimension: compound interests, inflation, and risk diversification (Lusardi and Mitchell, 2008). Used separately as dummies or added in a score ranging from 0 to 3
- Subjective financial literacy: 1 question, using a 7-point Likert scale (Allgood and Walstad, 2016)
- Faculty of study: 7 dummies for the 35 official components of the University of Strasbourg

Table 1: Mean scores of financial literacies across faculties

Standard deviations in parentheses

	N=	Mean of <i>Objective FL</i>	Mean of <i>Subjective FL</i>	Mean of <i>FL Interest</i>	Mean of <i>FL Inflation</i>	Mean of <i>FL Risk</i>
Faculty:						
<i>Social Sciences</i>	2,042	2.1396 (0.9000)	3.1611 (1.3738)	0.8418 (0.3650)	0.6690 (0.4707)	0.6288 (0.4832)
<i>Economics and Business</i>	779	2.4814 (0.7490)	3.8601 (1.3336)	0.8973 (0.3038)	0.7997 (0.4004)	0.7843 (0.4115)
<i>Natural Sciences</i>	571	2.2102 (0.8216)	2.8932 (1.3301)	0.9089 (0.2880)	0.7180 (0.4503)	0.5832 (0.4935)
<i>Formal Sciences</i>	746	2.2466 (0.7042)	3.1676 (1.3689)	0.8660 (0.3409)	0.7252 (0.4467)	0.6555 (0.4755)
<i>Humanities</i>	1,575	1.8387 (0.9901)	2.7530 (1.3604)	0.7486 (0.4340)	0.5663 (0.4957)	0.5238 (0.4996)
<i>Life Sciences</i>	1,344	2.1429 (0.8861)	2.6362 (1.3180)	0.8444 (0.3625)	0.6577 (0.4746)	0.6406 (0.4800)
<i>Other Faculties</i>	64	1.9219 (0.9479)	2.7500 (1.3214)	0.8594 (0.3504)	0.5781 (0.4978)	0.4844 (0.5037)
<i>Selective Faculty:</i>						
Yes	1,319	2.3268 (0.8022)	3.2570 (1.4211)	0.9060 (0.2920)	0.7544 (0.4306)	0.6664 (0.4717)
No	5,802	2.0803 (0.9271)	2.9707 (1.3881)	0.8199 (0.3843)	0.6477 (0.4777)	0.6127 (0.4872)
Whole sample	7,121	2.1260 (0.9103)	3.0237 (1.3986)	0.8358 (0.3704)	0.6675 (0.4712)	0.6227 (0.4848)

Table 2: ANOVA for Objective and Subjective financial literacies

*** p<0.01, ** p<0.05, * p<0.1

	Dependent variable: <i>Objective FL</i>				Dependent variable: <i>Subjective FL</i>			
	DF	Partial MS	F Stat.		DF	Partial MS	F Stat.	
Model	73	7.4325	9.78	***	73	24.9432	14.52	***
<i>Faculty</i>	6	26.5565	34.93	***	6	126.9943	73.92	***
<i>Gender</i>	2	94.3531	124.11	***	2	151.8135	88.37	***
<i>Age</i>	44	0.8108	1.07		44	3.7608	2.19	***
<i>Nationality</i>	2	0.0643	0.08		2	103.6146	60.31	***
<i>Current Degree</i>	5	4.8695	6.41	***	5	9.6101	5.59	***
<i>Parent 1 Degree</i>	6	2.5354	3.33	***	6	2.0493	1.19	
<i>Parent 2 Degree</i>	6	1.5442	2.03	*	6	3.7306	2.17	**
<i>Already Paid Work</i>	1	0.0022	0.00		1	24.3734	14.19	***
<i>Already Internship</i>	1	1.3498	1.78		1	12.3274	7.18	***
Residual	7,047	0.7602			7,047	1.7179		
Total	7,120	0.8287			7,120	1.9560		
N=7,121					N=7,121			
Root MSE= 0.8719					Root MSE= 1.3107			
R ² = 0.0920					R ² = 0.1307			
Adjusted R ² = 0.0826					Adjusted R ² = 0.1217			

Table 3: Effects of the faculty of study on students' financial literacy

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

The reference group is Social Sciences

VARIABLES	(1) <i>FL Interest</i> (logit)	(2) <i>FL Inflation</i> (logit)	(3) <i>FL Risk</i> (logit)	(4) <i>Subjective FL</i> (ologit)
Independent variables				
<i>Economics and Business</i>	0.5220 *** (0.1365)	0.6238 *** (0.1034)	0.6844 *** (0.1031)	0.7370 *** (0.0757)
<i>Natural Sciences</i>	0.4941 *** (0.1631)	0.0338 (0.1085)	-0.3740 *** (0.1004)	-0.5529 *** (0.0856)
<i>Formal Sciences</i>	0.2214 * (0.1308)	0.1382 (0.1007)	-0.1056 (0.0953)	-0.2417 *** (0.0801)
<i>Humanities</i>	-0.3873 *** (0.0883)	-0.3993 *** (0.0727)	-0.4373 *** (0.0711)	-0.6317 *** (0.0618)
<i>Life Sciences</i>	0.0262 (0.1004)	-0.0623 (0.0773)	0.0353 (0.0755)	-0.7127 *** (0.0648)
<i>Other Faculties</i>	0.2852 (0.3715)	-0.3374 (0.2635)	-0.5759 (0.2582)	-0.5456 ** (0.2272)

Table 4: Definition of groups of confidence

Group	Definition	Confidence
Objective Low/Subjective Low	Objective FL <3 and Subjective FL ≤3	<i>Well-Calibrated</i>
Objective Low/Subjective High	Objective FL <3 and Subjective FL >3	<i>Overconfident</i>
Objective High/Subjective Low	Objective FL =3 and Subjective FL ≤3	<i>Underconfident</i>
Objective High/Subjective High	Objective FL =3 and Subjective FL >3	<i>Well-Calibrated</i>

The definition of groups is the one used by Allgood and Walstad (2016)

Table 5: Multinomial logit for students' confidence in financial literacy

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

The reference group is Social Sciences

VARIABLES	(1) <i>Overconfident vs Well-Calibrated</i>		(2) <i>Underconfident vs Well-Calibrated</i>	
Independent variables				
<i>Economics and Business</i>	-0.0404 (0.1112)		0.0005 (0.1079)	
<i>Natural Sciences</i>	-0.5292 (0.1472)	***	0.1139 (0.1152)	
<i>Formal Sciences</i>	-0.2558 (0.1225)	**	0.0786 (0.1101)	
<i>Humanities</i>	-0.3450 (0.0937)	***	-0.0724 (0.0879)	
<i>Life Sciences</i>	-0.5026 (0.1067)	***	0.3109 (0.0855)	***
<i>Other Faculties</i>	-0.3052 (0.3647)		0.1699 (0.3065)	

V. Conclusion

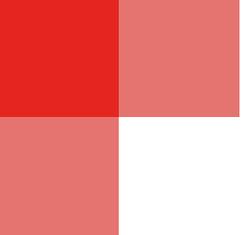
1. Overview of the results

- The faculty of study explains variations in both objective and subjective financial literacies of students. This is consistent with existing pieces of literature (Sarigül, 2014). The faculty of study is the second largest factor influencing variations in financial literacies
- Depending on faculties, the effect differs: Economics and Business students are more likely to be performant in objective financial literacy, while Humanities student are more likely to underperform
- Economics and Business students and Social Sciences students are more likely to have a high subjective financial literacy, contrary to all other students
- Economic and Business and Social Sciences students are more likely to be overconfident in their financial literacy, contrary to Life Sciences students

V. Conclusion

2. Implications

- There is an interest in breaking down faculties of study, when working on students' financial literacy
- The relative importance of faculty of study
- Objective financial literacy, subjective financial literacy and overconfidence in financial literacy have a common determinant
- Empirical contribution: we use a large sample (7,121 observations), representative of a large French University
- Practical implication: financial literacy programs need to focus specific groups of students. Yet they remain general



Thank you for your attention



Robustness checks

- Some studies (Furrebøe et al., 2023; Klapper et al., 2013) use a score of financial literacy and not questions separately
- Klapper and Léger-Jarniou (2006) highlight that “Grandes Ecoles” students have socio-demographic characteristics that should be taken into account. They represent 18,52% of the sample we use
- We use a score of financial literacy, *Objective FL*, and we include a dummy *Selective faculty* in the regressions

Table 6: Effects of the faculty of study on students' financial literacy

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

The reference group is Social Sciences

	(1)		(2)		(3)	
VARIABLES	<i>Objective FL (ologit)</i>		<i>Objective FL (ologit)</i>		<i>Subjective FL (ologit)</i>	
Independent variable						
<i>Economics and Business</i>	0.7258 (0.0844)	***	0.6894 (0.0869)	***	0.7298 (0.0781)	***
<i>Natural Sciences</i>	-0.1168 (0.0902)		-0.1387 (0.0911)		-0.5571 (0.0864)	***
<i>Formal Sciences</i>	0.0541 (0.0843)		0.0775 (0.0854)		-0.2370 (0.0811)	***
<i>Humanities</i>	-0.5212 (0.0643)	***	-0.4960 (0.0659)	***	-0.6267 (0.0633)	***
<i>Life Sciences</i>	-0.0088 (0.0671)		0.0068 (0.0677)		-0.7094 (0.0654)	***
<i>Other Faculties</i>	-0.3371 (0.2342)		-0.3110 (0.2347)		-0.5402 (0.2276)	**
Additional control						
<i>Selective faculty</i>			0.1178 (0,0678)	*	0,0239 (0,0636)	

Table 1: Definition of variables

Variables	Measure	Use in the model	Type of variable	Source
<i>Objective FL</i>	Added scores for the Big T hree questions (<i>FL Interest</i> for interest rate, <i>FL Inflation</i> for inflation rate, and <i>FL Risk</i> for financial risk)	Dependent variable	Categorical	Lusardi and Mitchell (2014), adapted in French by Arrondel (2017)
<i>Subjective FL</i>	Self-assessment on a 7-point Likert's scale	Dependent variable	Categorical	Allgood and Walstad (2016)
<i>Faculty</i>	Dummy for each Faculty: Social Sciences Economics and Business Natural Sciences Formal Sciences Humanities Life Sciences Other faculties	Independent variable	Dummies	Sarigül (2014), adapted to the French academic system
<i>Gender</i>	=0 if Male =1 if Female =2 if Other	Control variable	Categorical	Chen and Volpe (2002)
<i>Nationality</i>	=1 if French =2 if Other European nationalities =3 if Outside EU nationalities	Control variable	Categorical	Lusardi and Mitchell (2011)
<i>Age</i>	2021 - Year of birth	Control variable	Continuous	Lusardi and Mitchell (2008)
<i>Current Degree</i>	=1 if First-year Bachelor =2 if Second-year Bachelor =3 if Third (last) year Bachelor =4 if First-year Master =5 if Second (last) year Master =6 if Ph.D.	Control variable	Categorical	Chen and Volpe (1998)
<i>Parent 1 and Parent 2 degrees</i>	=1 if Less than Baccalaureate =2 if Baccalaureate or equivalent =3 if Technical degree =4 if Bachelor degree or equivalent =5 if First-year master or equivalent =6 if Second-year master or equivalent =7 if Ph.D. or equivalent	Control variable	Categorical	Brau et al. (2019)
<i>Already Paid Work</i>	=0 if the student never had a paid job =1 if the student already had a paid job	Control variable	Dummy	Brau et al. (2019)
<i>Already Internship</i>	=0 if the student never did an internship =1 if the student already did an internship	Control variable	Dummy	Brau et al. (2019)

Table 3: Effects of the faculty of study on students' financial literacy

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; the reference group is Social Sciences

	(1)		(2)		(3)		(4)	
VARIABLES	<i>FL Interest (logit)</i>		<i>FL Inflation (logit)</i>		<i>FL Risk (logit)</i>		<i>Subjective FL (ologit)</i>	
Independent variables								
<i>Economics and Business</i>	0.5220	***	0.6238	***	0.6844	***	0.7370	***
	(0.1365)		(0.1034)		(0.1031)		(0.0757)	
<i>Natural Sciences</i>	0.4941	***	0.0338		-0.3740	***	-0.5529	***
	(0.1631)		(0.1085)		(0.1004)		(0.0856)	
<i>Formal Sciences</i>	0.2214	*	0.1382		-0.1056		-0.2417	***
	(0.1308)		(0.1007)		(0.0953)		(0.0801)	
<i>Humanities</i>	-0.3873	***	-0.3993	***	-0.4373	***	-0.6317	***
	(0.0883)		(0.0727)		(0.0711)		(0.0618)	
<i>Life Sciences</i>	0.0262		-0.0623		0.0353		-0.7127	***
	(0.1004)		(0.0773)		(0.0755)		(0.0648)	
<i>Other Faculties</i>	0.2852		-0.3374		-0.5759	**	-0.5456	**
	(0.3715)		(0.2635)		(0.2582)		(0.2272)	
Controls								
<i>Already Paid Work</i>	-0.0221		-0.0263		-0.0025		0.1690	***
	(0.0699)		(0.0548)		(0.0530)		(0.0448)	
<i>Already Internship</i>	0.1550	*	-0.0421		0.0842		0.1254	**
	(0.0814)		(0.0636)		(0.0615)		(0.0524)	
<i>Gender</i>	Yes		Yes		Yes		Yes	
<i>Age</i>	Yes		Yes		Yes		Yes	
<i>Nationality</i>	Yes		Yes		Yes		Yes	
<i>Current Degree</i>	Yes		Yes		Yes		Yes	
<i>Parent 1 Degree</i>	Yes		Yes		Yes		Yes	
<i>Parent 2 Degree</i>	Yes		Yes		Yes		Yes	
<i>Constant</i>	1.0221	***	0.3167	*	1.0821	***		
	(0.2455)		(0.1901)		(0.1784)			
Observations	7,121		7,121		7,121		7,121	
Pseudo R ²	0.0644		0.0446		0.0339		0.0374	
LR Chi ²	409.23	***	403.5600	***	320.16	***	905.20	***
Log likelihood	-2974.9664		-4326.9006		-4559.3237		-11648.256	

Table 5: Multinomial logit for students' confidence in financial literacy

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; the reference group is Social Sciences

VARIABLES	(1) <i>Overconfident vs Well-Calibrated</i>		(2) <i>Underconfident vs Well-Calibrated</i>	
Independent variables				
<i>Economics and Business</i>	-0.0404 (0.1112)		0.0005 (0.1079)	
<i>Natural Sciences</i>	-0.5292 (0.1472)	***	0.1139 (0.1152)	
<i>Formal Sciences</i>	-0.2558 (0.1225)	**	0.0786 (0.1101)	
<i>Humanities</i>	-0.3450 (0.0937)	***	-0.0724 (0.0879)	
<i>Life Sciences</i>	-0.5026 (0.1067)	***	0.3109 (0.0855)	***
<i>Other Faculties</i>	-0.3052 (0.3647)		0.1699 (0.3065)	
Controls				
<i>Already Paid Work</i>	0.2076 (0.0695)	***	-0.0641 (0.0619)	
<i>Already Internship</i>	0.0494 (0.1300)		0.0211 (0.0719)	
<i>Gender</i>	Yes		Yes	
<i>Age</i>	Yes		Yes	
<i>Nationality</i>	Yes		Yes	
<i>Current Degree</i>	Yes		Yes	
<i>Parent 1 Degree</i>	Yes		Yes	
<i>Parent 2 Degree</i>	Yes		Yes	
<i>Constant</i>	-1.0408 (0.2207)	***	-0.7008 (0.2324)	***
Observations	7,121			
Pseudo R ²	0.0224			
LR Chi ²	303.52	***		
Log likelihood	-6619.0899			

Table 6: Effects of the faculty of study on students' financial literacy

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; the reference group is Social Sciences

VARIABLES	(1)		(2)		(3)	
	<i>Objective FL (ologit)</i>		<i>Objective FL (ologit)</i>		<i>Subjective FL (ologit)</i>	
Independent variables						
<i>Economics and Business</i>	0.7258 (0.0844)	***	0.6894 (0.0869)	***	0.7298 (0.0781)	***
<i>Natural Sciences</i>	-0.1168 (0.0902)		-0.1387 (0.0911)		-0.5571 (0.0864)	***
<i>Formal Sciences</i>	0.0541 (0.0843)		0.0775 (0.0854)		-0.2370 (0.0811)	***
<i>Humanities</i>	-0.5212 (0.0643)	***	-0.4960 (0.0659)	***	-0.6267 (0.0633)	***
<i>Life Sciences</i>	-0.0088 (0.0671)		0.0068 (0.0677)		-0.7094 (0.0654)	***
<i>Other Faculties</i>	-0.3371 (0.2342)		-0.3110 (0.2347)		-0.5402 (0.2276)	**
Controls						
<i>Already Paid Work</i>	-0.0252 (0.0473)		-0.0183 (0.0474)		0.1704 (0.0450)	***
<i>Already Internship</i>	0.0732 (0.0546)		0.0726 (0.0546)		0.1255 (0.0524)	**
<i>Selective Faculty</i>			0.1178 (0.0678)	*	0.0239 (0.0636)	
<i>Gender</i>			Yes		Yes	
<i>Age</i>			Yes		Yes	
<i>Nationality</i>			Yes		Yes	
<i>Current Degree</i>			Yes		Yes	
<i>Parent 1 Degree</i>			Yes		Yes	
<i>Parent 2 Degree</i>			Yes		Yes	
Observations	7,121		7,121		7,121	
Pseudo R ²	0.0378		0.0380		0.0374	
LR Chi ²	649.60	***	652.63	***	905.34	***
Log likelihood	-8269.7509		-8268.2349		-11648.185	

Table 7: Bonferroni group comparison: Objective FL by Faculty

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

Bonferroni Comparison: <i>Objective FL</i> by Faculty													
	<i>Social Sciences</i>		<i>Economics and Business</i>		<i>Natural Sciences</i>		<i>Formal Sciences</i>		<i>Humanities</i>		<i>Life Sciences</i>		<i>Other Faculties</i>
<i>Social Sciences</i>	-												
<i>Economics and Business</i>	0.6894 (0.0869)	***	-										
<i>Natural Sciences</i>	-0.1387 (0.0911)		-0.8282 (0.1086)	***	-								
<i>Formal Sciences</i>	0.0775 (0.0854)		-0.6119 (0.1088)	***	0.2162 (0.1103)		-						
<i>Humanities</i>	-0.4960 (0.0659)	***	-1.1855 (0.0954)	***	-0.3573 (0.0983)	***	-0.5735 (0.0867)	***	-				
<i>Life Sciences</i>	0.0068 (0.0677)		-0.6827 (0.0957)	***	0.1455 (0.0970)		-0.0707 (0.0888)		0.5028 (0.0714)	***	-		
<i>Other Faculties</i>	-0.3110 (0.2347)		-1.0004 (0.2451)	***	-0.1723 (0.2454)		-0.3885 (0.2411)		0.1850 (0.2348)		-0.3178 (0.2357)		-

Table 8: Bonferroni group comparison: Subjective FL by Faculty

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

Bonferroni Comparison: <i>Subjective FL</i> by Faculty													
	<i>Social Sciences</i>		<i>Economics and Business</i>		<i>Natural Sciences</i>		<i>Formal Sciences</i>		<i>Humanities</i>		<i>Life Sciences</i>		<i>Other Faculties</i>
<i>Social Sciences</i>	-												
<i>Economics and Business</i>	0.7298 (0.0781)	***	-										
<i>Natural Sciences</i>	-0.5571 (0.0864)	***	-1.2869 (0.0997)	***	-								
<i>Formal Sciences</i>	-0.2370 (0.0811)	*	-0.9668 (0.0999)	***	0.3201 (0.1041)	**	-						
<i>Humanities</i>	-0.6266 (0.0633)	***	-1.3564 (0.0873)	***	-0.0695 (0.0931)		-0.3896 (0.0827)	***	-				
<i>Life Sciences</i>	-0.7094 (0.0654)	***	-1.4392 (0.0883)	***	-0.1523 (0.0920)		-0.4725 (0.0850)	***	-0.0828 (0.0687)		-		
<i>Other Faculties</i>	-0.5402 (0.2276)		-1.2700 (0.2359)	***	-0.0169 (0.2371)		-0.3032 (0.2336)		0.0864 (0.2279)		0.1692 (0.2284)		-