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Choices of Education and the Financial Literacy Gender Gap

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Introduction

PART 1



Overview

- The **gender gap** in Financial Literacy (FL) remains **unexplained**.
- Sociodemographic vars, Education, Numeracy or Self-confidence do **NOT** fully account for this gender gap.
- **Gender specialization** in financial decision making **doesn't** explain this gap either.

Research Problem

- What makes **women less financial literate** than men?
- Do women have **less interest** in financial matters than men?
- Do they use **different strategies** to achieve financial competence?

Hypotheses



1

Levels of FL are determined by personal characteristics

- H1a. Levels of FL are influenced by age
- H1b. Levels of FL are influenced by level of income
- H1c. Levels of FL are influenced by family situation

2

Levels of FL are shaped by formal, non-formal and informal learning processes

- H2a. Levels of FL are determined by formal education
- H2b. Levels of FL are determined by non-formal education
- H2c. Levels of FL are influenced by tasks performed in the workplace
- H2d. Levels of FL are influenced by self-directed financial learning

Hypotheses



3

There is a gender gap in terms of achieving high levels of FL

- H3a. Men show higher levels of FL
- H3b. Higher levels of FL are related to higher income regardless of gender
- H3c. Levels of FL are influenced by age regardless of gender
- H3d. Levels of FL in women are shaped by tasks performed in the workplace
- H3e. The sources used to potentially improve FL vary between the genders
- H3f. Gender differences are higher for advanced levels of FL
- H3g. Men are more willing to invest in their financial education

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Review of Related Literature

PART 2



Literature Review

- **FL** for **women** is significantly **lower** than men in several countries. The underlying mechanisms are **unclear**, despite considering individual sociodemographic differences (Fonseca et al. 2012; Bucher-Koenen et al. 2016; Driva et al. 2016; Cupák et al. 2018; Yakoboski et al. 2020)
- Numeracy (Almenberg and Dreber 2015), risk attitudes (Bonsang and Dohmen 2015; Croson and Gneezy 2009), and self-confidence (Mindra et al. 2016, 2017; Montford and Goldsmith 2016) have been considered as possible drivers of gender differences, yet these variables do not entirely account for the gender gap.
- Many studies have demonstrated that FL increases with education level (Hung et al. 2009; Bucher-Koenen et al. 2016; Preston and Wright 2019), and research on gender specialisation in financial decision making within couples has shown that relative education differences may undermine traditional gender roles when couples divide financial responsibilities (Mullen and Zissimopoulos 2010; Fonseca et al. 2012).

Our Research

Following previous studies suggesting the gender gap could be associated with how **knowledge and skills are acquired** rather than personal traits, we analyse the **gender gap in FL** by exploring a sample of undergraduates at an **online university**, in relation to their personal features, gender and the **different ways of learning finance (formal, non-formal, workplace and self-directed)**.

Our **results** reveal:

- The **more sources of learning** an individual uses, the **higher their level of FL**.
 - **Men and women deploy different ways of learning**
 - **Men** are more **willing to invest** in their **financial education**.
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Methodology

PART 3

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Data and Methodology

PHASE 1: SURVEY

- Online survey sent to all undergraduates (2019).
- N=866
- Sociodemographic variables
- Sources of FinEdu: formal, non-formal, workplace and self-directed.
- Financial Literacy Index.

Sample Distribution

Characteristic	Total	Percentage
Number of valid answers	866	
Men	375	43.4%
Women	490	56.6%
18–24 years old	60	6.9%
25–34 years old	246	28.4%
35–44 years old	282	32.65%
45–54 years old	219	25.3%
Over 54 years old	50	5.8%
Married or living as a couple	636	73.5%
With children	275	31.8%
Employed	656	75.8%
Self-employed	105	12.1%

Sources of financial skills acquisition

Source	Total	Male	Female	ANOVA (Sig)
Formal Education	25.9%	30.9%	22.0%	.003
Non-Formal Education	18.7%	23.2%	15.3%	.003
Workplace Learning	27.5%	32.5%	23.7%	.004
Newspapers	57.9%	61.9%	54.9%	.040
Books and magazines	24.4%	27.5%	22.0%	.066
TV and Radio	32.6%	33.3%	32.0%	.688
Internet	42.5%	49.9%	36.9%	.000



Average number of correct answers

Basic FL Index	4.15 (1.69)
Advanced FL Index	3.34 (1.78)
Overall FL Index	7.49 (3.05)

* Standard deviation in brackets

Characteristic	Male	Female	ANOVA (Sig)
Basic FL Index	4.71	3.72	.000
Advanced FL Index	4.03	2.81	.000
Overall FL Index	8.74	6.53	.000



Data and Methodology

PHASE 1: SURVEY

- Online survey sent to all undergraduates (2019).
- N=865
- Sociodemographic variables
- Sources of FinEdu: formal, non-formal, workplace and self-directed.
- Financial Literacy Index.

PHASE 2: MODEL

We ran several multivariate linear regression equations, considering:

- FL Index
- Gender

Results

PART 4



OLS Financial Literacy Index

	Model 1			Full model		
Coef.						
Male	0.1927	*** (0.1927)		1.3728	*** (0.1970)	
Age_25_34	0.3774	(1.4400)		0.6523	* (0.3848)	
Age_35_44	0.3947	* (1.6900)		0.9579	** (0.3977)	
Age_45_54	0.4100	*** (3.2200)		1.5010	*** (0.4228)	
Age_55_74	0.4958	** (2.1900)		1.4187	*** (0.4926)	
AnIncomeL2	0.3347	** (2.4000)		0.8428	** (0.3468)	
AnIncomeL3	0.3509	*** (5.0200)		1.6706	*** (0.3621)	
AnIncomeL4	0.3930	*** (6.1300)		2.2580	*** (0.4027)	
AnIncomeL5	0.4885	*** (7.4400)		3.3423	*** (0.4961)	
AnIncomeL6	0.5138	*** (6.8600)		3.3784	*** (0.5218)	
Children	0.2404	(0.3300)		0.0458	(0.2374)	
Couple_Married				0.0189	(0.2164)	
FormalEdu_IHVH				0.5058	** (0.2029)	
NonFormalEdu_IHVH				0.5555	*** (0.2130)	
WorkplaceLearn_IHVH				0.6009	*** (0.1954)	
LNewspaper_IHVH				0.1587	(0.2127)	
LMagBooks_IHVH				0.0375	(0.2669)	
LInternet_IHVH				0.3297	(0.2247)	
LTVRadio_IHVH				-0.1783	(0.2105)	
Observations		780			780	
R-squared		0.278			0.330	
p-Value test Age coefficients=0		0.00			0.00	
p-Value test Income coefficients=0		0.00			0.00	

Note: Robust standard errors are reported in parentheses; ***p<0.01, **p<0.05, *p<0.1.

Results

GENERAL RESEARCH FINDINGS

● PERSONAL TRAITS

- Age and Income influences the level of FL
- Family situation does not affect FL.

H1a. Levels of FL are influenced by age

H1b. Levels of FL are influenced by level of income

H1c. Levels of FL are influenced by family situation

● FINANCIAL EDUCATION SOURCES

- Formal, non-formal, and informal learning in the workplace exert a positive influence on FL.
- Only the internet had a favourable impact on increasing FL

H2a. Levels of FL are determined by formal education

H2b. Levels of FL are determined by non-formal education

H2c. Levels of FL are influenced by tasks performed in the workplace

H2d. Levels of FL are influenced by self-directed financial learning

Data and Methodology

PHASE 1: SURVEY

- Online survey sent to all undergraduates (2019).
- N=865
- Sociodemographic variables
- Sources of FinEdu: formal, non-formal, workplace and self-directed.
- Financial Literacy Index.

PHASE 2: MODEL

We ran several multivariate linear regression equations, considering:

- FL Index
- Gender

PHASE 3: GENDER DIF

We ran gender equations and applied the Oaxaca-Blinder decomposition method to explore gender differences

OLS FL by Gender

	Male			Female		
Coef.						
Age	YES			YES	**	
Income	YES	**		YES	***	
Children	0.1066		(0.3240)	-0.0664		(0.3615)
Couple_Married	0.4869		(0.3517)	-0.0784		(0.2848)
FormalEdu_IHVH	0.2133		(0.2939)	0.7460	***	(0.2775)
NonFormalEdu_IHVH	0.7978	***	(0.2951)	0.3543		(0.3129)
FinWorkingLevel_IHVH	0.4845	*	(0.2907)	0.7515	***	(0.2665)
Newspaper_IHVH	0.4374		(0.3066)	0.0401		(0.3003)
MagBooks_IHVH	0.4853		(0.3776)	-0.3516		(0.3772)
Internet_IHVH	-0.1406		(0.3027)	0.6700	**	(0.3190)
Broadcasting_IHVH	0.0235		(0.2912)	-0.2623		(0.2945)
_cons	6.0504	***	(1.0279)	3.1664	***	(0.4411)
Observations			342			438
F(18, N)			6.05			11.02
R-squared			0.231			0.272
p-Value test Age coefficients=0			0.48			0.00
p-Value test Income coefficients=0			0.00			0.00

Note: Robust standard errors are reported in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

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Results by Gender

RESEARCH FINDINGS

● PERSONAL TRAITS

- Age only important in high levels of FL for women
- Income is particularly significant for women

H3b. Higher levels of FL are related to higher income regardless of gender

H3c. Levels of FL are influenced by age regardless of gender

● FINANCIAL EDUCATION SOURCES

- Training in the workplace exerts a greater influence on FL for women
- Women and men use different learning options to improve their FL

H3d. Levels of FL in women are shaped by tasks performed in the workplace

H3e. The sources used to potentially improve FL vary between the genders

Data and Methodology

PHASE 1: SURVEY

- Online survey sent to all undergraduates (2019).
- N=865
- Sociodemographic variables
- Sources of FinEdu: formal, non-formal, workplace and self-directed.
- Financial Literacy Index.

PHASE 2: MODEL

We ran several multivariate linear regression equations, considering:

- FL Index
- Gender

PHASE 3: GENDER DIF

We applied the Oaxaca-Blinder decomposition method to explore gender differences

PHASE 4: ADVANCED FL

We analyzed gender differences in the Advanced FL using OLS and Oaxaca-Blinder Decomposition

O-B Decomposition

Basic and Adv FL

Blinder-Oaxaca decomposition

Group 1: Female = 0

Group 2: Female = 1

Number of obs = 780

Model = linear

N of obs 1 = 342

N of obs 2 = 438

BASIC FL INDEX

BasicFL_NumRight	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
overall						
group_1	4.692982	.0810251	57.92	0.000	4.534176	4.851789
group_2	3.730594	.0827004	45.11	0.000	3.568504	3.892683
difference	.9623888	.1157775	8.31	0.000	.7354691	1.189309
explained	.3240977	.0542273	5.98	0.000	.2178143	.4303812
unexplained	.6382911	.1198174	5.33	0.000	.4034533	.873129

Group 1: Female = 0

Group 2: Female = 1

Number of obs = 780

Model = linear

N of obs 1 = 342

N of obs 2 = 438

ADVANCED FL INDEX

AdvFL_NumRight	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
overall						
group_1	4.040936	.0887383	45.54	0.000	3.867012	4.214859
group_2	2.828767	.0807887	35.01	0.000	2.670424	2.98711
difference	1.212169	.1200054	10.10	0.000	.9769623	1.447375
explained	.4776509	.0712351	6.71	0.000	.3380327	.6172691
unexplained	.7345176	.1096601	6.70	0.000	.5195878	.9494474

OLS AdvFL by Gender

	Male			Female		
Coef.						
Age	YES			YES	**	
Income	YES	**		YES	***	
Children	0.0718		(0.1882)	-0.2341		(0.1985)
Couple_Married	0.1308		(0.2059)	-0.1665		(0.1635)
FormalEdu_IHVH	0.0871		(0.1687)	0.3875	**	(0.1577)
NonFormalEdu_IHVH	0.4034	**	(0.1711)	0.2291		(0.1768)
FinWorkingLevel_IHVH	0.3099	*	(0.1699)	0.4672	***	(0.1528)
Newspaper_IHVH	0.1663		(0.1790)	0.0426		(0.1680)
MagBooks_IHVH	0.5326	**	(0.2246)	-0.0448		(0.2180)
Internet_IHVH	-0.0792		(0.1834)	0.3766	**	(0.1819)
Broadcasting_IHVH	0.1124		(0.1707)	-0.2109		(0.1651)
_cons	2.4392	***	(0.4879)	1.0602	***	(0.2567)
Observations			342			438
F(18, N)			8.20			11.65
R-squared			0.279			0.293
p-Value test Age coefficients=0			0.48			0.00
p-Value test Income coefficients=0			0.00			0.00

Note: Robust standard errors are reported in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

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Results: AdvFL and Gender

RESEARCH FINDINGS

● PERSONAL TRAITS

- Age only important in high levels of FL for women
- Income is particularly significant for women

● FINANCIAL EDUCATION SOURCES

- Training in the workplace exerts a greater influence on FL for women
- Women and men use different learning options to improve their FL

H3g. Men are more willing to invest in their financial education

● FINANCIAL LITERACY

- Gender differences are higher for advanced levels of FL
- Men invest more in the acquisition of financial skills than women

H3a. Men show higher levels of FL

H3f. Gender differences are higher for adv levels of FL

Conclusion

PART 5



Main Conclusions



The **gender gap exists** between **individuals** with **similar** digital skills, education levels and gender roles.

Life and **work experiences** are critical determinants for **Advanced** FL

FL depends on **personal traits** & use of **multiple types of learning** resources. A single source is not sufficient.

Men and Women tend to use **different strategies** to achieve financial competence:

- Women: formal education and workplace learning
- Men: non-formal and self-directed learning processes -> **invest** in their financial education

Limitations of the Study

- Size of the sample may have influenced results.
- Study in a single university (*further research is needed before these results may be extrapolated to other settings and circumstances*).
- Levels of education and expectations of our sample are probably above average (*it must be taken into account when interpreting our findings*).
- Sources of financial learning (*further research is needed including other types of learning*)

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