A Proposal for a New Financial Literacy Questionnaire

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Abstract

Our purpose is to validate a new questionnaire to measure financial literacy. We test our 18-item questionnaire using a sample of 269 respondents. Data come from an Internet survey in Italy from January to March 2019. Following the definition provided by Organizations of Economics Developments (OECD), we analyze three dimensions of financial literacy: knowledge, skills, and attitude. Regarding skills and attitude, we introduce a new set of items, whereas, for knowledge, we use items proposed by National Financial Capability Studies (NFCS) (2009). We conduct exploratory factor analysis, confirmatory factor analysis and structural equations models to verify the validity, reliability and applicability of the questionnaire. Our results show that the data fit reasonably well, thus proving the reliability and validity of the questionnaire to measure financial literacy.

Keywords: financial literacy, financial skills, financial attitude, exploratory and confirmatory factor analysis, structural equations models

JEL Codes: D12, D14, D18, D63.

1. Introduction

People make many decisions in their daily lives, some of which concern economic and/or financial aspects. Researchers have shown that several people do not take the right financial decisions, putting their well-being at risk. (Lusardi & Mitchel, 2011a; Klapper, Lusardi & Van Oudheusden, 2015). According to Bernanke (2010), "Helping people better understand how to borrow and save wisely and how to build personal wealth is one of the best things we can do to improve the well-being of families and communities." Previous studies on financial literacy develop strategies and techniques to measure financial literacy levels. Several scholars propose different methods to measure it (Hung, Parker & Yoong, 2009), but none of them is completely acknowledged as the best one, thus stressing the need for further research on this issue (Marcolin & Abraham, 2006). For many years, financial knowledge has been considered a synonym of financial literacy (Bucher-Koenen, Lusardi, Alessie & Van Rooij, 2017; Hilgert, Hogarth & Beverly, 2003; Lusardi & Mitchell, 2011b). However, some scholars disagree, highlighting how knowledge is not sufficient for identifying financial literacy (Kimiyaghalam & Safari, 2015). The efforts made by scholars, together with the initiatives of public and private authorities to increase financial knowledge, had positive effects, but they are not sufficient (Lusardi & Mitchell, 2011c). Knowledge, which for many years has been considered the most reliable variable to measure financial literacy, is certainly the starting point for identifying the problem. However, it is not sufficient for understanding economic agents' poor financial choices (Allgood & Walstad, 2013; Demirguc-Kunt & Klapper, 2012). For these reasons, researchers have studied the phenomenon of financial literacy by testing the variables that influence the choices and decision-making mechanisms of economic agents (see Table 1).

Table 1. Financial literacy explanatory variables

Age	Worthington, 2006; Agarwal, Driscoll, Gabaix & Laibson, 2009; Beckmann 2013; Bucher-Koenen & Lusardi, 2011; Lusardi & Mitchell, 2011[b]; Gamble, Boyle, Yu & Bennett, 2014
Education	Lusardi & Mitchell, 2011[a]; Christelis, Jappelli & Padula, 2010; Lusardi 2012
Income and Professional status	Johnson & Sherraden, 2007; Monticone, 2010, Atkinson & Messey, 2012; Lusardi & Tufano 2015
Gender	Chen & Volpe, 1998:2002; Eckel & Grossman, 2008; Murphy, 2005; Goldsmith & Goldsmith, 2006; Lusardi & Mitchell, 2007[a], 2007[b]; Hung, Parker & Yoong, 2009; Mottola, 2013; Agnew & Harrison, 2015; Bucher-Koenen, Lusardi, Alessie & Van Rooij, 2017
Civil Status	Dew, 2008; Calamato, 2010; Brown & Graf, 2013

Source. Authors' elaboration.

The development of such measurement techniques occurred simultaneously with the identification of these variables. As a result, we also identified other variables that play a key role in financial literacy.

The value adds importance to this approach in the literature on the financial literacy field, as the financial skills and financial attitude matured by people are determinant and significant to predict their financial literacy level.

In particular, adding variables, such as skills and attitudes to predict financial literacy can reduce the impact provided by omitted variable bias (Bucher-Koenen & Lusardi, 2011) and more in general, endogeneity problems (Stolper & Walter, 2017). To achieve this goal, authors developed a set of items that assess the financial skills and financial attitude, following the guidelines provided by OECD (2016) as well as analyzed the impact of other variables such as age, gender, and marital status used in the financial literacy field.

Our purpose is to verify the validity, reliability and applicability of the questionnaire. To pursue this goal, we conducted an exploratory factorial analysis and confirmatory factor analysis on 269 observations. The paper is organized as follows: in section 1, we present the literature review, in section 2, we outline the research hypothesis, in section 3, we present the methodology, in section 4, we present the results, and in section 5, we outline our conclusions.

2. Literature Review

2.1 Review on Financial Literacy Definitions

Financial knowledge is a fundamental variable for measuring financial literacy. Lusardi and Mitchell (2011b) designed three questions, known as the "Big Three", to assess financial knowledge based on the concepts of compound interest rates, real return rates (and the effect of inflation), and risk diversification. These questions have been used all over the world and are accepted by many scholars. However, others (e.g., Hastings, Madrian & Skimmyhorn 2013) criticize them, claiming that they are incapable of measuring people true financial knowledge. Indeed, both Lusardi and Mitchell (2011a) and van Rooij (2011) pointed out how financial knowledge questions suffer of sensitivity to framing related to the translation of questions on financial knowledge, in order to make comparisons between different countries. Furthermore, one of the most problematic aspects in measuring financial literacy is the contrast between the most cited definitions of financial literacy and the variables used in the literature to measure it (Fernandes, Lynch & Netemeyer, 2014). In Table 2, we summarize how researchers often only use financial knowledge as a key variable to measure financial literacy despite of term *financial skills* is mentioned several times in the definitions.

Table 2. Main financial literacy definitions

Authors	Definition	Year
Jump$tart Coalition for Personal Financial Literacy	"*The ability to use knowledge and skills to manage one's financial resources effectively for lifetime financial security*"	1997
Financial Industry Regulatory Authority (FINRA)	"*The understanding ordinary investors have of market principles, instruments, organizations and regulations*"	2003
Mandell	"*The ability to evaluate the new and complex financial instruments and make informed judgments in both choice of instruments and extent of use that would be in their own best long-run interests*"	2008
Hung, Parker & Yoong	"*Knowledge of basic economic and financial concepts, as well as the ability to use that knowledge and other financial skills to manage financial resources effectively for a lifetime of financial well-being*"	2009
Huston	"*...understanding (personal finance knowledge) and use (personal finance application)*"	2010
Atkinson & Messy	"*amalgam of mindfulness, attitude, behaviors and knowledge and skills essential for making the right financial decisions which eventually lead to the attainment of financial wellbeing*"	2012
Organization for Economic Co-operation and Development (OECD)	"*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*"	2014

Source. Authors' Elaboration.

However, analyzing the above-mentioned definitions, it is possible to highlight how not only financial knowledge, but also financial skills and financial attitude are fundamental in trying to measure financial literacy. To pursue this goal, we propose a new questionnaire to measure financial literacy that considers financial knowledge, financial skills and financial attitude.

1.2 Self-Report vs Performance Test

Previous studies in the literature use both performance test and self-report methods to measure financial literacy. See Table 3.

Table 3. Financial literacy assessment technique

Authors	Year	Performance Test	Self-assessed
Volpe, Chen, & Pavlicko	1996	x	
Chen & Volpe	1998	x	
Volpe, Kotel, & Chen	2002	x	
Hilgert, Hogarth, & Beverley	2003	x	
FINRA	2003	x	x
Moore	2003	x	x
Agnew & Szykman	2005	x	x
Markow & Bagnaschi	2005	x	
Mandell	2006	x	
Lusardi & Mitchell[b]	2007	x	
Lusardi & Mitchell[a]	2007	x	x
Mandell	2008	x	
Lusardi & Mitchell[b]	2011	x	
Fornero & Monticone	2011	x	x
van Rooij, Lusardi & Alessie	2011	x	x
Collins	2012	x	x
Mottola	2013	x	x
Fernandes, Lynch & Netemeyer	2014	x	x
Gamble, Boyle, Yu & Bennet	2014	x	x
Gaudecker	2015	x	x
Lusardi &Tufano	2015	x	x
Klapper, Lusardi & Oudheusden	2016	x	
Allgood & Walstad	2016	x	x
Bannier & Neubert	2016	x	x
Kramer	2016	x	x
Bucher-Koenen, Lusardi, Alessie & Van Rooij	2017	x	x

Source. Authors' elaboration based on Hung, Parker & Yoong (2009).

Self-report methods tend to return results influenced by overconfidence (OECD, 2005), i.e., respondents tend to overestimate their level of financial literacy. Therefore, performance tests are able to measure knowledge or skills precisely, because for each question exists only one correct option. However, Agnew and Szykman (2005) found a significant correlation between actual and perceived financial knowledge. Indeed, a robust methodology capable of measuring financial literacy should include variables based on both approaches.

3. Research Hypotheses

We propose a new questionnaire to measure financial literacy. Given the links between financial skills, financial knowledge, and financial attitude, to determine financial literacy, we propose the following hypotheses:

H_0: There is no correlation between financial skills, attitude and financial knowledge

H_{01}: The correlation between financial skills and financial knowledge is positive and significant;

H_{02}: The correlation between financial knowledge and financial attitude is positive;

H_{03}: Respondents who have a prudent financial attitude has a greater probability to record high financial literacy levels;

H_{04}: Respondents who have recorded good financial knowledge have a greater probability to record high financial literacy levels;

H_{05}: The correlation between financial skills and financial attitude is positive;

H_{06}: Respondents who have recorded good financial skills have a greater probability to record high financial literacy levels.

4. Methods

4.1 Measures of Financial Knowledge Skills and Attitude and Measures of Subjective Financial Satisfaction and Knowledge

4.1.1 Measures of Financial Knowledge

We use the questions provided by the report "Financial Capability in the United States" conducted by NFCS in 2009 (Note 1). Those questions include the followings (Table 4).

Table 4. Financial Knowledge questions

Financial literacy	Question	Answers
	1) 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?	1. *More than $102* 2. Exactly $102 3. Less than $102 98. Do not know 99. Refuse to answer
	2) Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?	1. More than today 2. Exactly the same 3. *Less than today* 98 Do not know 99 Refuse to answer
	3) Please tell me whether this statement is true or false. "Buying a single company's stock usually provides a safer return than a stock mutual fund".	1. True *2. False* 98 Do not know 99 Refuse to answer
Financial knowledge	4) Please tell me whether this statement is true or false. "A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest over the life of the loan will be less".	1. *True* 2. False 98 Do not know 99 Refuse to answer
	5) If interest rates rise, what typically happens to bond prices?	1. *They fall* 2. They rise 3. They stay the same 4. There is no relationship between bond prices and interest rates 98 Do not know 99 Refuse to answer

Note. Italics indicate the correct answer.

4.1.2 Measures of Financial Skills

Financial skill questions should focus on everyday financial situations. Tezel (2015) defines financial skills as "the capability to use relevant knowledge and understanding to manage an expected or an unpredictable situation in order to solve a financial problem and convert it to a benefit and opportunity to one's advantage". Following the guidelines given by Lusardi and Mitchell (2011b), Lusardi (2015), and OECD (2016), we propose the following questions (Note 2) (Table 5).

Table 5. Financial skills questions

	You moved to a city where the cost of living is one-third higher than where you used to live. For the same salary, how will you be able to keep your savings ratio constant?	1. Increasing purchases by 1/3 *2. Decreasing purchases by 1/3* 3. Decreasing purchases by 2/3 98. Do not know, 99. Refuse to answer
	2 You have recently become a parent. You would like to find a solution that would allow your family to have more economic peace of mind in case something happens to you; what do you do?	1. Buy a house by taking out a mortgage 2. Buy shares in a company *3. Subscribe an insurance policy* 98. Do not know 99. Refuse to answer
	3 You have decided to invest 10,000€ in financial assets. You are offered three different funds; which fund would you choose? [Level 1 indicate low risk, level 5 medium risk and level 9 high risk]	1. Asset A: 2% return, risk level 3 *2. Asset B: 4% return, risk level 3* 3. Asset C: 5% return, risk level 9 98. Do not know 99. Refuse to answer
Financial skills	4) You have the opportunity to invest 20,000€. You are a risk-averse person and have a long-term investment horizon. Which investment do you think is the closest to your needs?	1. Investment in Bitcoin *2. Investment in government bonds* 3. Investment in derivatives 98. Do not know 99. Refuse to answer
	5) You have just turned 42, and your company is in a bad economic condition. Fortunately, you won a lottery prize of 200,000€. How will you use this figure?	1. Using 90% of the amount to fulfill my long-desired wishes and save the remaining 10%, *2. Using 30% for my wishes, Using 40% for a supplementary pension plan and 30% for savings* 3. Using 70% of the amount for my wishes, and Using 30% for savings 98. Do not know 99. Refuse to answer

Note. Italics indicate the correct answer.

4.1.3 Measures of Financial Attitude

According to Pankow (2012) financial attitude is "state of mind, opinion, and judgment of a person about finances".

We propose eight questions regarding respondents' attitudes toward everyday financial issue, following the indications provided by OECD (2016). Answers range on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Those questions include the following (Table 6).

Table 6. Financial attitude questions

	Before buying something, I ask myself if I have paid my necessary expenses.	Range 1-7
	Before buying something, I compare prices.	Range 1-7
	Before signing a financial contract, I carefully read its contents.	Range 1-7
Financial Attitude	I am careful to distinguish between necessary and unnecessary expenses.	Range 1-7
	Before making a major purchase, I make sure that my savings are sufficient to cover any sudden expense.	Range 1-7
	The first thought I have when I borrow money is that I want to return the money on time.	Range 1-7
	If I know the costs I will have to incur tomorrow, I'll think about it today.	Range 1-7
	Before making online payments, I concern about the security of my data.	Range 1-7

Note. The number 1 stands for "completely disagree" and 7 stands for "completely agree".

4.1.4 Measures of Subjective Financial Satisfaction and Knowledge

Two self-reported questions are used to assess participants' financial satisfaction and knowledge. Those items are provided by NFCS (2016). Concerning financial satisfaction, participants answered on a 7-point Likert scale ranging from 1 (*not at all satisfied*) to 7 (*extremely satisfied*). Regarding financial knowledge, respondents rated on a 7-point Likert scale ranging from 1 (*very low*) and 7 (*very high*). Those questions include the following (Table 7):

Table 7. Financial attitude questions

Subjective Financial satisfaction	Overall, thinking of your assets, debts, and savings, how satisfied are you with your current personal financial condition?	Range 1-7
Subjective Financial knowledge	How would you use your overall financial knowledge?	Range 1-7

4.2 Econometric Procedure

In order to test questionnaire validity, we run both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

Furthermore, we propose a Structural Equation Model (SEM) for the purpose of verifying how the proposed model is able to combine financial literacy – interpreted as combination between knowledge, skills and attitude – with the exploratory variables mentioned before (see Table 1).

4.3 Sample Description

Data were gathered in Italy from January to March 2019 using the Computer Assisted Web Interview (CAWI) survey methodology. According to Midler (2013), this method is based on the realizing of a research questionnaire disclosed on the website and all questions are have been previously predefined following the guidelines provided by Fowler and Mangione (1990).

The questionnaire was promoted via social platforms such as Facebook and Twitter as they are massively used by our target. We collected 500 questionnaires and after cleaning (missing values etc) the final sample contained 296 respondents. Those participants completed the questionnaire, which included financial knowledge and skills questions and self-report measures of financial attitude, knowledge and satisfaction. Participants also completed a brief demographics questionnaire in which they were asked to indicate their gender, age, marital status, education level, work status and income (Table 8).

Table 8. Variable descriptions

Variable	Description
Subjective financial satisfaction	Overall score on self-financial satisfaction question; range 1-7
Subjective financial knowledge	Overall score on self-financial knowledge question; range 1-7
Financial skills	Overall score on financial skills questions; range 1-5
Financial knowledge	Overall score on financial knowledge questions; range 1-5
Financial attitude	Overall score on financial attitude questions; range 1-7
Gender	1 = male, 0 = female
Age	Age in March 2019
Marital status	1 = married, 2 = divorced, 3 = widowed, 99 = refuse to answer
Education	1 = primary school certificate, 2 = secondary school certificate, 3 = high school diploma, 4 = bachelor's degree, 5 = master's degree, 6 = specialization course/PhD, 7 = I have not completed high school education, 98 = other, 99 = refuse to answer
Work status	1 = full-time work (> 35 hours/week), 2 = part-time work (< 35 hours/week), 3 = stay at home, 4 = student, 5 = retired, 6 = disabled or unable to work, 7 = unemployed, 98 = other, 99 = refuse to answer
Income	1= less than $10,000, 2 = between $10,000 and $20,000, 3 = between $20,000 and $40,000, 4 = between $40,000 and $80,000, 5 = more than $80,000, 99 = refuse to answer

In Table 9, we present the descriptive analysis (Note 3) of the socio demographic variables.

The sample is composed by 161 females and 135 males; age mean is 27.91 (*SD* = 10.61 years; range of 18–68).

With regard to education, 5.7% (*N* = 17) achieved a middle school diploma, 52.4% completed high school (*N* = 155), 27.7% completed a bachelor's degree (*N* = 82), and 14.1% achieved a master's degree (*N* = 42).

Concerning income, 25% (*N* =74) preferred not to say, 15.2% (*N* = 45) claimed fewer than 10,000€, 25.7% (*N* = 76) claimed to have between 10,000€ and 20,000€, 24% (*N* = 71) reported between 20,000€ and 40,000€, 8.1% (*N* = 24) claimed between 40,000€ and 80,000€, and 2% (*N* = 6) reported more than 80,000€.

With regard to working status, 25% (*N* = 74) work full-time, 11.8 (*N* = 35) part-time, 44.6% (*N* = 132) were students, 4.7% (*N* = 14) stay at home, 13.5% (*N* = 40) retired, and 0.3% (*N* = 1) unemployed.

Regarding Marital status, 14.2% (*N* = 42) were married, 82.4% (*N* = 244) single, 0.7% (*N* =2) divorced, 0.7% (*N* = 2) widows, and 2% (*N* = 6) preferred not to say.

Table 9. Descriptive results (*N=296*)

Variable	Mean	*SD*	Min	Max
Age	27..91	10.61	18	68
Marital status	1.88	6.217	1	99
Education	4.339	8.430	1	99
Work status	1.45	1.589	1	99
Income	3.722	34.591	1	99

5. Results

5.1 Exploratory Factor Analysis

We conduct an exploratory factor analysis using SPSS 25 software.

The Kaiser-Meyer-Olkin statistic, ranging from 0 to 1, indicates the degree of each variable in a set that is predicted without error by the other variables.

According to Hair (2011), it is possible to accept a value of 0.5 or more. Bartlett's test of sphericity measures the

presence of correlations among variables, providing the statistical probability that the correlation matrix has significant correlations between at least some of the variables.

The Kaiser-Meyer-Olkin index is equal to .855, whereas the Bartlett test is significant (p = .000). These results reject the null hypothesis that the matrix of correlations between variables is an identity matrix.

We run a principal component analysis, as well as three components with an eigenvalue of over 1.00, explaining 54.91% of the total variance and showing a great internal consistency.

To measure the reliability of the items, Cronbach's internal coherence index (Cronbach, 1955) was calculated, in its variant of KR-20 (Kuder-Richardson formula 20) specific for dichotomous variables, indicates the intensity of the correlation between the questions that make up a same scale, and to be considered sufficient it should be greater than 0.60.

All components present good Cronbach Alpha value (.856 for financial knowledge, .820 for financial skills and .755 for financial attitude). See Table 10.

Table 10. Component loadings for the items of the financial literacy questionnaire

Component	Item	1	2	3
Financial Attitude	4	0.811		
	5	0.798		
	2	0.779		
	7	0.751		
	3	0.694		
	6	0.684		
	8	0.583		
	1	0.566		
Financial Skills	5		0.865	
	2		0.852	
	1		0.839	
	4		0.674	
	3		0.575	
Financial Knowledge	2			0.78
	5			0.72
	3			0.714
	1			0.649
	4			0.609
A		.856	.820	.755
M		5.93	12.351	37.221
SD		1.81	8.770	20.142

5.2 Confirmatory Factor Analysis

We conducted confirmatory factor analysis (CFA) using STATA 14 software. CFA results indicate that the measurement model fits well with the data. In particular, both comparative fit index (CFI) and Tucker Lewis index (TLI) are higher than 0.9 (*CFI* = 0.92; *TLI* = 0.917) suggesting a good data fit (Bentler, 1990). The chi-square was significant (χ^2 [132] = 266.565, p <.001), and the root mean square error approximation was equal to .059, suggesting a good model fit. See Figure 1.
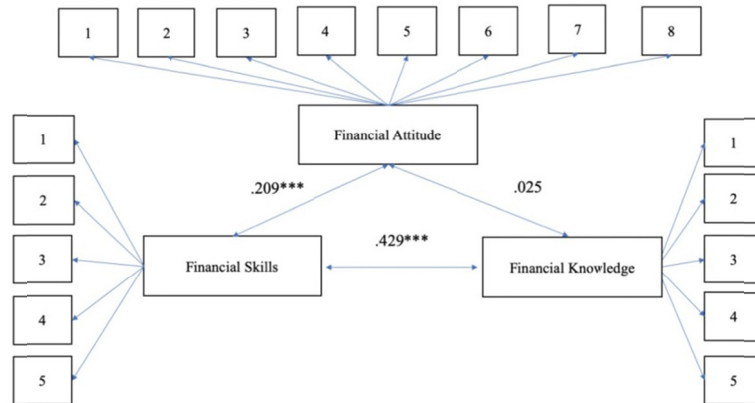
Figure 1. Path diagram

Note. *** Correlations are significant at 1%.

Furthermore, correlations results demonstrate the validity about hypothesis one (H1) and hypothesis five (H5), but not for the hypothesis two (H2). See Table 11.

Table 11. Means, standard deviations and correlations

	Construct	M	SD	1	2	3
1	Financial Attitude	6.02	.98			
2	Financial Skills	2.80	1.27	.209***		
3	Financial Knowledge	2.27	1.47	.025	.429***	

Note. *** Correlations are significant at 10% (*), 5% (**) and 1% (***).

5.3 Structural Model and Hypotheses Tests

Structural equation modeling tests the hypothesis regarding observed variables, financial knowledge, skills and attitude among financial literacy considered the latent variable of this model. Furthermore, we have added to the model socio-demographic variables, mentioned before and self-reported item on financial knowledge.

The hypotheses of this research have been tested following the econometrics guidelines provided Greenspoon & Saklofske (1998). In particular, the fit indices for the structural model indicate plausibly good model fit (χ^2 [347] = 643.988, p <.001, RMSEA=.054, CFI=.90, TLI= .90). Results confirm our sixth hypothesis (H6): a positive influence of financial skills on financial literacy (H6: Standardized Path Coefficient [SPC] = .646; p<.000). However, financial attitude does not influence financial literacy (H3: [SPC] = -.030; p>.05). In this research, as like as in broadly part of literature, financial knowledge has a positive and significant influence on financial literacy, confirming hypothesis 4 (H4: [SPC]=.672; p<.000). As regards other variables, subjective financial knowledge and satisfaction have positive and significant impact on financial literacy ([SPC] = .510: .260; p<.000). Furthermore, income and civil status have positive and significant influence on financial literacy ([SPC] = .500: .273; p<.000), gender has recorded a negative and significant value ([SPC] = -.113; p <.01), work status has positive and significant value ([SPC] = .212: p<.05), age reported negative and significant value ([SPC] = .15; p<.05) while education was not significant ([SPC] = .036; p>.005). The results provided by this study confirms the importance of financial knowledge as a key variable to measure levels of financial literacy as demonstrated by Lusardi & Mitchell (2011) and highlights how financial skills and attitudes are relevant to detect in more detail the phenomenon of financial literacy as suggested by OECD (2005;2016) (Figure 2)
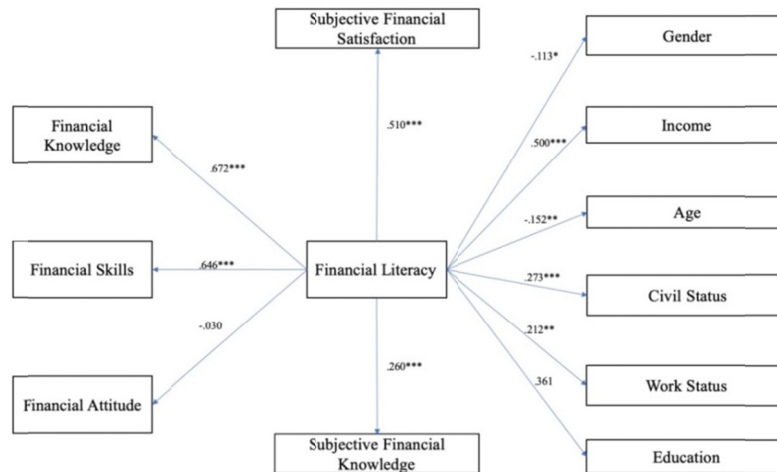
Figure 2. Financial literacy structural equations model

Note. Asterisks indicate the significance of the coefficients at 10% (*), 5% (**) and 1% (***).

6. Conclusion

We propose and validate a new questionnaire of financial literacy. Results provided by exploratory and confirmatory factor analysis confirm both reliability and robustness of the model.

Financial Knowledge is positive related with financial skills showing how increasing knowledge increases financial skills. However, this result does not hold for all respondents, indicating that possessing financial knowledge is not always a prerequisite for good financial skills, and therefore highlighting how skills and knowledge are different variables to analyze financial literacy.

Regarding financial attitude, results confirm significant and positive relation with financial skills, but not with financial knowledge. This evidence could be attributed to exogenous factors, like financial experiences or psychological traits, not analyzed in the proposed model. However, items based on Objective Financial Knowledge and Satisfaction are important to predict more precisely financial literacy level. These results confirm evidences provided by Agnew and Szykman (2005) for Objective Financial Knowledge and Xiao and Porto (2017) for Objective Financial Satisfaction.

Structural equations model shows that socio-demographic variables – except for education – are statistically significant with the model, in line with previous researches underlining the links between financial literacy and socio-demographic variables. Furthermore, subjective financial knowledge and satisfaction have shown positive correlations with financial literacy measured through financial skills, financial knowledge and financial attitude.

Finally, the structure of the new questionnaire seems to be able to investigate financial literacy. Linking financial skills and attitude to financial knowledge allows to have a wider framework on financial literacy levels recorded by people.

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Notes

Note 1. United States National Financial Capability Study (2009): http://www.finrafoundation.org/programs/p123306

Note 2. In particular, the financial skills and knowledge correct option is scored as one, and the wrong option is scored as zero. Each item has one correct and two/three wrong options. Asterisks indicate correct answers. Following the methodology provided by OECD, the response "do not know" and "refuse to answer" are considered wrong.

Note 3. Regarding the variables on education and income levels, options "other", "do not know" and "refuse to answer", coded respectively as 98 and 99, were omitted from the descriptive analysis to avoid abnormal fluctuations in the values of the average and, consequently, of the standard deviation.