POLITECNICO DI TORINO

Department of Management and Production Engineering

Master's Degree in Engineering and Management

Master's Degree Thesis

Analysis of Financial Education Initiatives in Italy: A Critical Perspective in Light of Behavioral Theories

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Summary

Abstract

This thesis analyzes the role of financial education in Italy, focusing mainly on the existing literature, on behavioral biases, on financial education initiatives aimed at mitigating them and on the success of the latter. The research begins by explaining the role played by financial education illustrating the advantages but above all highlighting the disadvantages of not being financially educated. Subsequently, it continues with a review of existing studies on financial literacy in Italy highlighting the main gaps existing with other nations. In parallel, the main behavioral biases such as overconfidence, framing bias and loss aversion that damage individuals' financial decisions are explored. Through the analysis of case studies of educational initiatives promoted by public and private bodies in Italy, the thesis evaluates the effectiveness of these interventions in improving financial awareness and reducing the incidence of behavioral biases. The results show that, although there are positive signs in terms of increased financial knowledge and competence, significant challenges remain to bridge this gap and bring Italy closer to the average of the most developed countries in Europe. The thesis concludes with suggestions to improve financial education initiatives in Italy and highlighting that with greater collaboration between the various private and national actors involved, more accessible strategies could be implemented for all segments of the population, also bridging the geographical gap.

Financial Education

Introduction to Financial Education

According to the Organization for Economic Cooperation and Development (OECD) definition: "Financial Literacy is 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." The OECD is an international organization of economic studies that includes 38 member countries that have in common a market economy. It was born on December 14, 1960, in Paris to replace the Organization for European Economic Co-operation (OECE) and includes many European states and others outside of Europe such as Australia, the United States, Canada and Japan. The organization plays mainly a consultative assembly role that allows an opportunity to compare political experiences, for the resolution of common problems, the identification of commercial practices and the coordination of local and international policies of member countries.

Returning instead to the concept of financial education and the definition provided, it is very important to underline how this concept has become fundamental in the modern economy. In a world where markets are becoming increasingly complex, there is a growing individual responsibility in the management of one's finances, in fact it's possible to summarize the concept of financial education as the ability to know how to manage one's assets with awareness. To be able to do this, one needs to master certain economic concepts, including:

- basic knowledge of financial products on the market (derivatives, ETFs, cryptocurrencies, stocks, bonds, equity funds)
- concept of inflation and its link with central bank rates
- knowledge of the risk-return ratio
- awareness of one's rights and responsibilities in the financial field
- ability to use the concepts studied to make correct investment choices.

Over the years, this has been a topic on which academic literature has placed a strong interest and has also highlighted that a good level of financial education can positively influence the economic situation of individuals but at the same time of families.

Financial markets have existed since ancient times, changing a lot over the years to become more complex. With the passage of time, individuals have found themselves shouldering greater financial responsibilities, navigating complex market dynamics, and making crucial financial decisions.

Just think about how the situation in recent years has led to a very unstable global economic and financial situation. The advent of the Covid-19 pandemic and a very complex geopolitical situation have brought significant changes within financial markets. One of the main drivers of these changes within financial markets, as well as the costs of everyday products, are interest rates. During the pandemic period and shortly thereafter, interest rates were lowered to allow for economic recovery. It is important to remember that during this period, the market situation was terrible. Following the pandemic, in recent years, interest rates have been raised, creating the phenomenon of inflation, which is the generalized increase in the prices of goods and services. In such complex times, it becomes clear how important financial education is to understand the dynamics and, at the same time, have a solid background to avoid being overwhelmed by these major changes. Instead, one can take advantage of them with targeted and appropriate investments and financial choices.

This need is particularly pronounced in Italy, where the level of financial literacy remains notably low. Considering this, the importance of addressing financial education becomes even more clear. In the next chapters, we will delve into an examination of pertinent studies conducted within Italy, seeking to understand the current landscape of financial literacy initiatives. Also, we will compare financial literature in Italy with other countries to find areas for improvement and best practices.

Why Financial Education is so important?

Retirement planning

One of the benefits of a proper financial education is the ability to adequately plan for retirement with appropriate savings choices. In their 2006 research, Lusardi and Mitchell analyzed data from the 2004 Health and Retirement Study (HRS). As shown in Figure 1 from their paper, good financial knowledge is crucial for retirement planning. In fact, correctly answering the question on compound interest, a reliable indicator of an individual's financial literacy, was associated with an increase in the likelihood of being a retirement planner, with this relationship being statistically significant at the 1% level.

	Probability of Being a Retirement Planner		
	1	**2**	**3**
Correct Percentage Calculation	-.016	-.012	-.034
	(.061)	(.062)	(.060)
Correct Lottery Division	.059*	.034	.001
	(.030)	(.031)	(.032)
Correct Compound Interest	.153***	.149***	.114***
	(.035)	(.035)	(.039)
Correct Political Literacy	.104***	.084**	.016
	(.032)	(.040)	(.042)
DK Percentage Calculation		.021	.054
		(.068)	(.067)
DK Lottery Division		-.154***	-.141***
		(.050)	(.051)
DK Compound Interest		-.114	-.073
		(.080)	(.081)
DK Political Literacy		-.019	-.016
		(.053)	(.054)
Demographic controls	No	No	Yes
Pseudo R^2	.031	.038	.074

Note: This table reports Probit estimates of the effects of literacy on planning; marginal effects reported. Analysis sample consists of HRS Early Baby Boomers who responded to financial literacy questions. Additional controls include age, education, race, sex, marital status, retirement status, number of children, and a dummy variable for those not asked the question about interest compounding. DK indicates respondent said he could not answer. Observations weighted using HRS household weights. * Significant at 10%; ** significant at 5%; *** significant at 1%. Adapted from Lusardi and Mitchell (2006b).

Figure 1. Empirical Effects of Financial Literacy on Retirement Planning. [1]

[1] Source: Lusardi, A., & Mitchell, O. S. (2007). *Financial literacy and retirement preparedness: Evidence and implications for financial education.*

Participation in the financial markets

Another benefit of financial education is certainly greater participation in financial markets, as highlighted by Geng Li in his publication "Information Sharing and Stock Market Participation: Evidence from Extended Families". This study was based on a logistic regression analysis, controlling for various economic and demographic characteristics. The results show that a better level of education, and therefore financial education, is associated with greater participation in investments. In Figure 2, it can be seen that the regression coefficients of the parameters related to the level of education of an individual are significant concerning market participation. It should be noted that the regression coefficient quantifies the relationship between an independent variable (in this case, the level of education) and a dependent variable (in this case, entry into the equity markets) in a regression model, indicating how much the dependent variable varies for each unit of variation in the independent variable.

	5-year interval			2-year interval		
Variable	Coefficient (1)	Std. error (2)	Odds ratio (3)	Coefficient (4)	Std. error (5)	Odds ratio (6)
$entry^{i,\,p}$	0.275**	(0.124)	[1.317]	0.325**	(0.179)	[1.384]
$entry^{i,\,c}$	0.302**	(0.145)	[1.353]	−0.009	(0.207)	[0.992]
$entry^{i,\,s}$	0.066	(0.096)	[1.069]	−0.064	(0.158)	[0.938]
age	−0.030**	(0.014)	[0.971]	−0.009	(0.015)	[0.991]
$age^2/100$	0.036***	(0.014)	[1.037]	0.022*	(0.014)	[1.022]
highschool	0.360***	(0.092)	[1.438]	0.366**	(0.118)	[1.443]
somecollege	0.793***	(0.089)	[2.209]	0.720***	(0.119)	[2.055]
college	1.246***	(0.096)	[3.477]	0.964***	(0.124)	[2.621]
married	0.005	(0.071)	[1.005]	0.024	(0.092)	[1.024]
white	1.070***	(0.072)	[2.916]	0.886***	(0.089)	[2.426]
quartile1	0.032	(0.136)	[1.033]	−0.408	(0.174)	[0.665]
quartile2	0.419**	(0.129)	[1.521]	0.200**	(0.154)	[1.221]
quartile3	0.811***	(0.127)	[2.249]	0.513***	(0.152)	[1.670]
quartile4	1.308***	(0.132)	[3.700]	0.919***	(0.156)	[2.507]
wave1994	−0.509***	(0.074)	[0.601]			
wave1999	−0.624***	(0.071)	[0.536]			
wave2001				0.143*	(0.075)	[1.153]
Memo	$N = 11{,}892$	Pseudo $R^2 = 0.133$		$N = 9{,}999$	Pseudo $R^2 = 0.083$	

*, **, *** indicate the coefficient estimated is statistically significant at 90%, 95% and 99%, respectively.

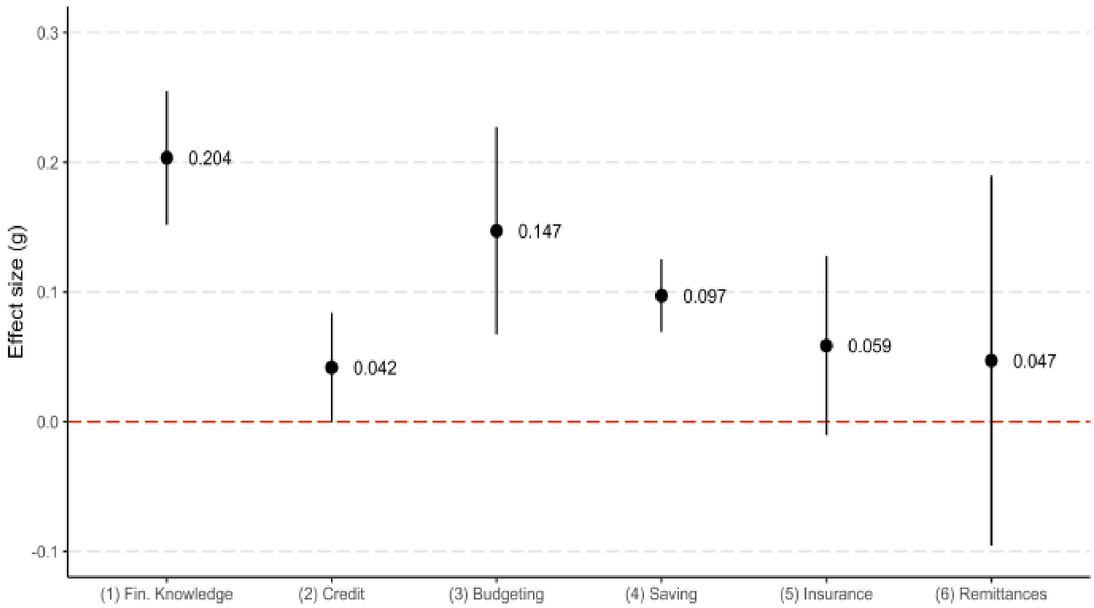
Figure 2. Logistic regression: Equity market entries. [2]

Saving and investment behavior

The ability to save is another area where financial education has a strong impact. This can be seen from the studies by Kaiser, T., Lusardi, A., Menkhoff, L., & Urban, C. (2020) entitled "Financial Education Affects Financial Knowledge and Downstream Behaviors". Figure 3 highlights the effect of financial education on different variables: financial knowledge, credit,

[2] Source: Li, G. (2009). *Information sharing and stock market participation: Evidence from extended families.* Federal Reserve Board.

budgeting, remittances, and the one of interest to us, saving. Effects are expressed in units of standard deviation (Hedges' g), this provides a standardized measure of the effect that financial education has on these variables. On the y-axis, we measure the impact while on the x-axis we find the variables mentioned above. The effect that financial education has on saving choices is positive in fact all the points are concentrated above the zero line. All these experiments were done with a confidence level of 95%.



Notes: Results from robust variance estimation in meta-regression with dependent effect size estimates (RVE) (Hedges et al. 2010). The number of observations for the financial knowledge sample (1) is 215 effect size estimates within 50 studies. The number of observations for the credit behavior sample (2) is 115 within 22 studies. The number of effect size estimates for the budgeting behavior sample (3) is 55 within 23 studies. The number of observations in the saving behavior (4) sample is 253 effect size estimates within 54 studies. The number of observations in the insurance behavior sample (5) is 18 effect sizes within six studies. The number of observations on remittance behavior (6) is 17 effect size estimates reported within six studies. Dots show the point estimate, and the solid lines indicate the 95% confidence interval.

Figure 3. Financial education treatment effects by outcome domain. [3]

[3] Source: Kaiser, T., Lusardi, A., Menkhoff, L., & Urban, C. (2020). *Financial education affects financial knowledge and downstream behaviors.* National Bureau of Economic Research.

Benefit of Financial Education

Reduction of financial traps

Of course, a solid financial education can help avoid financial scams and prevent mistakes such as excessive indebtedness. Particularly useful in this regard are the studies by Oren Bar-Gill, which analyse subprime mortgages. The scholar highlighted that subprime mortgage contracts were characterized by a complex structure and a deferral of costs, with low initial payments followed by increasing instalments and penalties for prepayment. These characteristics made it difficult for borrowers to evaluate the total cost of the mortgage, favouring distorted competition and contributing to the increase in default rates and foreclosures. All this confirms that better financial education, perhaps accompanied by greater contract transparency, would certainly have helped avoid situations of heavy family indebtedness.

Improvement of economic well-being

Financial education not only improves financial skills but also has a direct impact on individuals' well-being. As highlighted in "Insights from the Standard & Poor's Ratings Services Global Financial Literacy Survey" by Klapper, Lusardi, and Van Oudheusden, financial literacy is crucial both for understanding complex financial products and for comprehending and managing pensions. This study also emphasizes that those who are more financially educated tend to make more investments and utilize a greater variety of financial products. Obviously, the ability to participate in the markets provides individuals with advantageous investment opportunities for managing their wealth.

Preparing for financial emergencies

Dealing with financial emergencies today, considering all the economic crises of recent years is something that everyone must know how to implement. Earlier studies reviewed of Lusardi and Mitchell 2006 showed that high financial literacy increased the chance of an individual of having savings. This is very significant, especially in unstable economic situations such as today, where these savings enable individuals to cope with unexpected events like an increase in interest rates or the rise of inflation and at the same time save themselves from personal financial crises.

Costs of Financial Illiteracy

Debt and misuse of credit

Without financial education or with insufficient information, poor decisions can be taken and unnecessary debts contracted. Ausubel (1991) reports in his study "The Failure of Competition in the Credit Card Market" about the lack of competition in credit card market. This lack of competition also affects consumers, who are generally less well-informed and so do not raise the standard of their financial education. The result is a wrong understanding of how to use credit and as a consequence collection of debts with high interest rates, which leads people into an incurable economic condition.

Lack of participation in financial markets

As we saw in Geng Li's research, lack of financial education is indeed a barrier to entry into the world of finance. In addition, this can be a trouble since people are losing the chance to invest in possibly monetarily beneficial opportunities. A third key observation found in these studies was the relationship between sharing financial information within a family and market participation. The family size is another potential determinant of the educational expenditure; that being said, obviously greater communication on this issue in the family would need to imply higher investments if only members are financially literate and conscious enough to do it. Therefore, it becomes very important to have a good level of financial education.

Lacking retirement strategy

The lack of financial education has major risks such as the inability to plan effectively for retirement. The 2006 research by Lusardi and Mitchell, which is cited numerous times herein, proves the connection between an individual’s financial knowledge level and his retirement readiness. If an individual is not able to plan ahead for his or her retirement, this could become a major problem. The main consequences could be over-reliance on social welfare programs, having to take on a large amount of debt, or difficulty paying medical expenses. All these possibilities certainly lead to a lower standard of living.

Unveiling the State of Financial Literacy in Italy: Insights and Analysis

Financial literacy levels of Italian Students over PISA Assessments (2012-2021)

With the evolution of the world and so also of the financial system, financial literacy has become an important life skill that must be known by all the people to have a better idea of what to do with money and investments. The Programme for International Student Assessment (PISA) conducted by the OECD provides a worldwide assessment of financial literacy among 15-year-old students. In this chapter, the progress of financial literacy among Italian students since 2012 will be analyzed and its eventual reduction or increase will be addressed.

PISA 2012: Initial Findings

The 2012 PISA financial literacy assessment in fact marked the first time Italy had undertaken the measurement of a representative sample of students' financial knowledge and skills on an international basis. It was a 60-min PDF printed test that included both multiple-choice and constructed-response questions. In addition, students conducted one-hour tests in mathematics and reading literacy called student achievement assessments (SAAs) as well as questionnaires collecting information on their personal background, home, school experience, study attitudes and exposure to cash. School principals also completed questionnaires about school policies and the learning environment, including financial education at their schools.

This leaves Italian students in 16^{th} – 17^{th} place among the 18 countries assessed, some way behind the OECD average of approximately 34 points.

Mean performance in financial literacy	Mean score	Range of ranks
Shanghai-China	603	1 - 1
Flemish Community (Belgium)	541	2 - 2
Estonia	529	3 - 4
Australia	526	3 - 5
New Zealand	520	4 - 6
Czech Republic	513	5 - 7
Poland	510	6 - 7
Latvia	501	8 - 9
United States	492	8 - 12
Russian Federation	486	9 - 14
France	486	9 - 14
Slovenia	485	9 - 14
Spain	484	10 - 15
Croatia	480	11 - 16
Israel	476	11 - 17
Slovak Republic	470	15 - 17
Italy	466	16 - 17
Colombia	379	18 - 18
OECD average-13	**500**	

Partner countries and economies are marked in blue.

Figure 4. Mean performance in financial literacy. [4]

An important number, the 21.7% of Italian students fell short of the baseline level, which is above the OECD average (15.3%). In addition, only 2.1% were a top performer in Italy compared to the OECD average at 9.7%. More detailed information for each level could be seen in the chart below.

[4] Source: OECD. (2014). *Results from PISA 2012 – Country Note: Italy.* OECD Publishing.

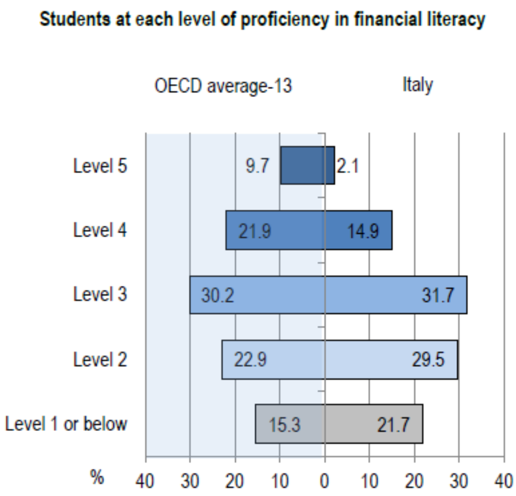


Figure 5. Students at each level of proficiency in financial literacy. [5]

In Italy, the link between socio-economic status and financial literacy performance was less pronounced than the OECD average suggesting fairer learning opportunities. But the inequities were significantly between regions, for example, students from Friuli Venezia Giulia and Veneto test scores at least 86 points higher than their peers in Calabria (more than one proficiency level). Italian students were also far less likely to have had access to financial products and services, with only 44% having a bank account or prepaid debit card against the OECD average of 54%, the students who hold with a bank account scored 10 points higher than students who did not.

There were gender differences, with boys achieving slightly better scores than girls. It is also important to note that there were differences between immigrant and non-immigrant students, with the latter scoring 33 points higher. Interestingly, the results show a certain positive relationship between financial literacy and performance in mathematics and reading, but, on the other hand Italian students had underachieved for their general overperformance in this respect. In fact, it was expected that the performance in financial literacy would be higher, given the results of the mathematics and reading tests.

[5] Source: OECD. (2014). *Results from PISA 2012 – Country Note: Italy.* OECD Publishing.

Performance in financial literacy by subgroup	Mean score/score dif.
Boys	470
Girls	462
Difference (Boys - Girls)	**8**
Non-immigrant students	474
Immigrant students	441
Difference (non-imm. - imm.)	**33**
Strength of the relationship between socio-economic status and performance	Performance variation accounted for by socio-economic status (%)
Financial literacy	7.5
Mathematics	7.9
Difference (FL - M)	-0.4

Statistically significant differences are marked in bold.

Figure 6. Performance in financial literacy by subgroup. [6]

The Italian government responded to these findings by implementing a voluntary financial education program for primary and secondary schools. Launched initially with approximately 630 students in 2008-2009, the program was later expanded to more than 23,000 students in 2011-2012.

PISA 2015: Advancements and Dilemmas

The 2015 PISA assessment introduced a computer-based test format to better reflect advances in digital learning and testing. Italian students improved by only a marginal amount, even though they still scored lower than the OECD average. The mean score of Italy was 483, while the OECD average was 489, which ranked Italy between 7th and 9th among the 15 participating countries and economies. The good news is that fewer Italians were below the basic proficiency level, roughly 20% of students. The portion of top performers reached 6.5%, but they were still below the OECD average which was 11.8%.

[6] Source: OECD. (2014). *Results from PISA 2012 – Country Note: Italy.* OECD Publishing.

Mean performance in financial literacy				
	Mean score	Range of ranks	Percentage of students	
			Below Level 2	Level 5
OECD avg-10	**489**		**22.3**	**11.8**
B-S-J-G (China)	566	1 - 1	9.4	33.4
Belgium (Flemish)	541	2 - 3	12.0	24.0
Canadian provinces	533	2 - 3	12.7	21.8
Russia	512	4 - 5	10.9	10.5
Netherlands	509	4 - 6	19.2	17.5
Australia	504	5 - 6	19.7	15.4
United States	487	7 - 9	21.6	10.2
Poland	485	7 - 9	20.1	8.0
Italy	483	7 - 9	19.8	6.5
Spain	469	10 - 10	24.7	5.6
Lithuania	449	11 - 12	31.5	3.7
Slovak Republic	445	11 - 12	34.7	6.3
Chile	432	13 - 13	38.1	3.1
Peru	403	14 - 14	48.2	1.2
Brazil	393	15 - 15	53.3	2.6

Figure 7. Mean performance in financial literacy. [7]

In Italy, only 5% of the variation in performance is associated with socio-economic status; the link is weaker compared to other OECD countries. Financial literacy scores for students with a bank account also were significantly higher than those without, by 23 points. The study shows financial experience is an important driver of being financially literate. Unluckily, one of the problems of Italy is that only 35% of the students hold a bank account.

[7] Source: OECD. (2017). *Results from PISA 2015 – Country Note: Italy.* OECD Publishing.

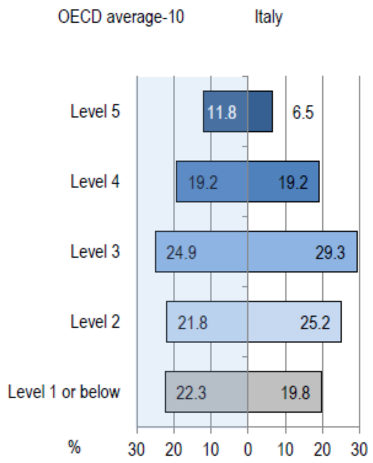


Figure 8. Students at each level of proficiency in financial literacy. [8]

Nonetheless, financial literacy remained less related to mathematics and reading performance in Italy than on average across the OECD countries, which implies that Italian students were relatively poor at using their academic skills to solve problems presented within a financial context. There was a continued gender gap, with boys increasingly outperforming girls, and there were more boys than girls among the top performers. Only one in ten respondents were in the bottom-performing group of students, and advantaged students scored more than 60 points higher than disadvantaged students. Another similar trend compared to 2012 was observed among students with a foreign background, who again scored lower than students without such background, this time the gap was of 18 points.

An important section was dedicated to students with financial experience. This section highlighted that students who hold a bank account score better than those without. The same result was observed for students with a prepaid debit card. In Italy, the percentage of students with a bank account was 35,3%, while the percentage of students with a prepaid debit card or a bank account was 56,6% and these two numbers were below the OECD average (below is reported the table with all the complete data for each country). This

[8] Source: OECD. (2017). *Results from PISA 2015 – Country Note: Italy.* OECD Publishing.

shows the importance for Italy of exposing young people to financial matters because this is one of the main drivers regarding the financial education.

	Mean	Percentage of students holding a bank account %	Percentage of students holding a bank account and/or a prepaid debit card %	Difference in financial literacy performance between students who hold a bank account and students who do not, after accounting for socio-economic status Score dif.
OECD average	489	56,4	60,2	23
Netherlands	509	95,0	95,5	72
Australia	504	79,0	80,7	26
Canadian provinces	533	77,6	79,7	31
Belgium (Flemish)	541	74,7	75,4	24
United States	487	52,8	56,1	22
Spain	469	52,4	54,2	28
B-S-J-G (China)	566	46,1	47,9	4
Slovak Republic	445	42,3	44,8	-14
Lithuania	449	39,0	39,1	-4
Italy	483	35,3	56,6	23
Russia	512	28,1	46,6	-5
Poland	485	27,8	29,6	2
Chile	432	27,2	29,7	12
Peru	403	n	n	n
Brazil	393	n	n	n

Table 1. Countries and economies are ranked in descending order of the percentage of students holding a bank account. [9]

It also helped that the central bank and Ministry of Education had initiated some effective programs, even before financial education was included in the national curriculum. The 2015 evaluation highlighted the need to address high-needs students, socio-economic disparities and equity issues between boys and girls; expand learning opportunities, incorporate

[9] OECD. (2017). *PISA 2015 results (Volume IV): Students' financial literacy.* OECD Publishing.

parental involvement in education programme (where appropriate) create secure environments for extracurricular activities, as well as monitor financial-literacy programs.

Follow-up: PISA 2018

Italian students continued to improve their financial literacy performance respect to 2012, as shown by the most recent PISA assessment in 2018. However, the average score increased to 476 points, but they still scored below the OECD average that was 505 points. The number of students that didn't reach the level of proficiency is 21% and is always above the OECD average, that was 15%.
The number of top performers remained concerning, with 5% in Italy compared to 10% of the OECD average.

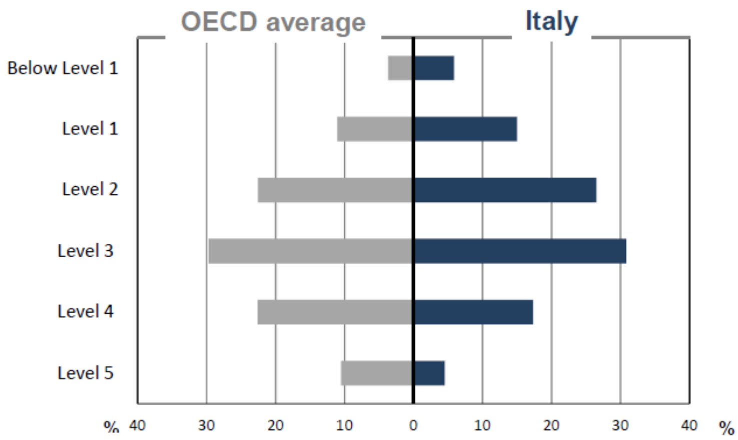


Figure 9. Percentage of students at each level of proficiency in financial literacy. [10]

The gender gap was also significant with boys scoring an average of 15 points more than girls. The gap in scores by socio-economic status persisted, as advantaged students scored 66 points higher than disadvantaged schools. There has consistently been a gap between students with an immigrant background and those without, with the latter scoring on average 34 points higher. This gap has increased compared to 2015, where it was only 18 points

[10] Source: OECD. (2020). *Results from PISA 2018 – Country Note: Italy.* OECD Publishing.

Financial product ownership rose among Italian students, and this was associated with better financial literacy. In fact, pupils with a bank account or payment/debit card performed better on the survey, as evidence of how practical financial experience is king. The main problem is that despite the increased interaction with financial products, the number of Italian students who had a bank account or use prepaid or debit cards is still lower than the OECD average. It’s possible to observe more detailed information in the two charts below.

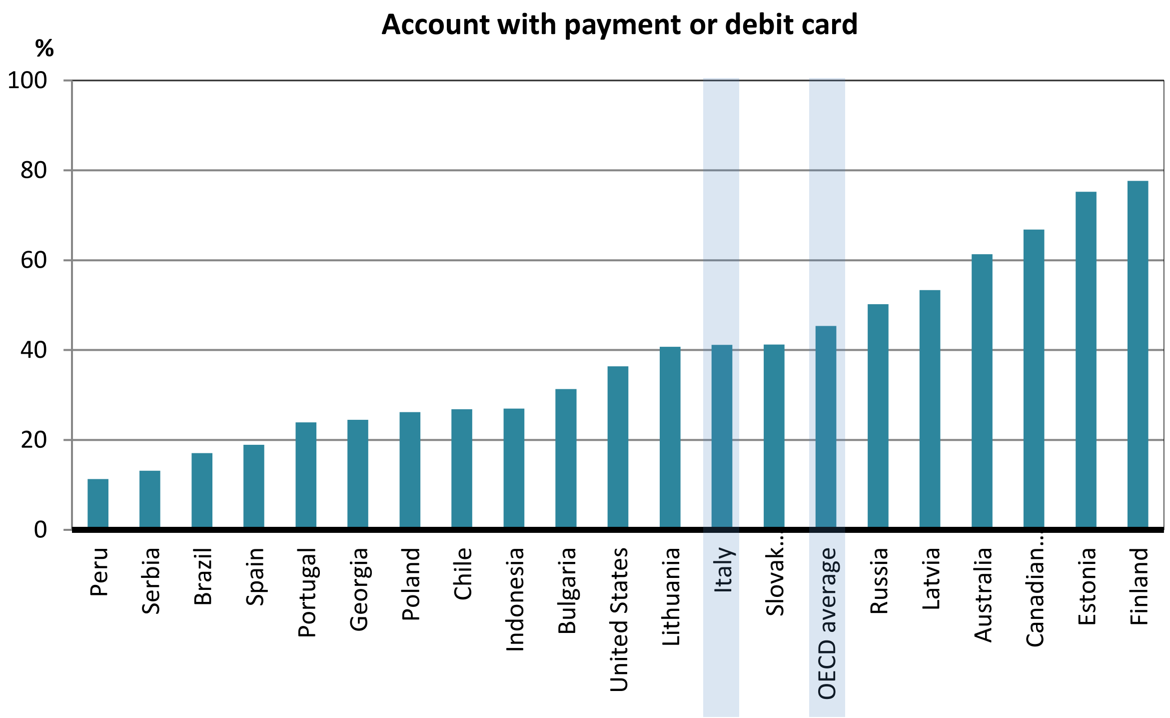


Figure 10. Account with payment or debit card. [11]

[11] OECD. (2020). *PISA 2018 results (Volume IV): Are students smart about money?* OECD Publishing.

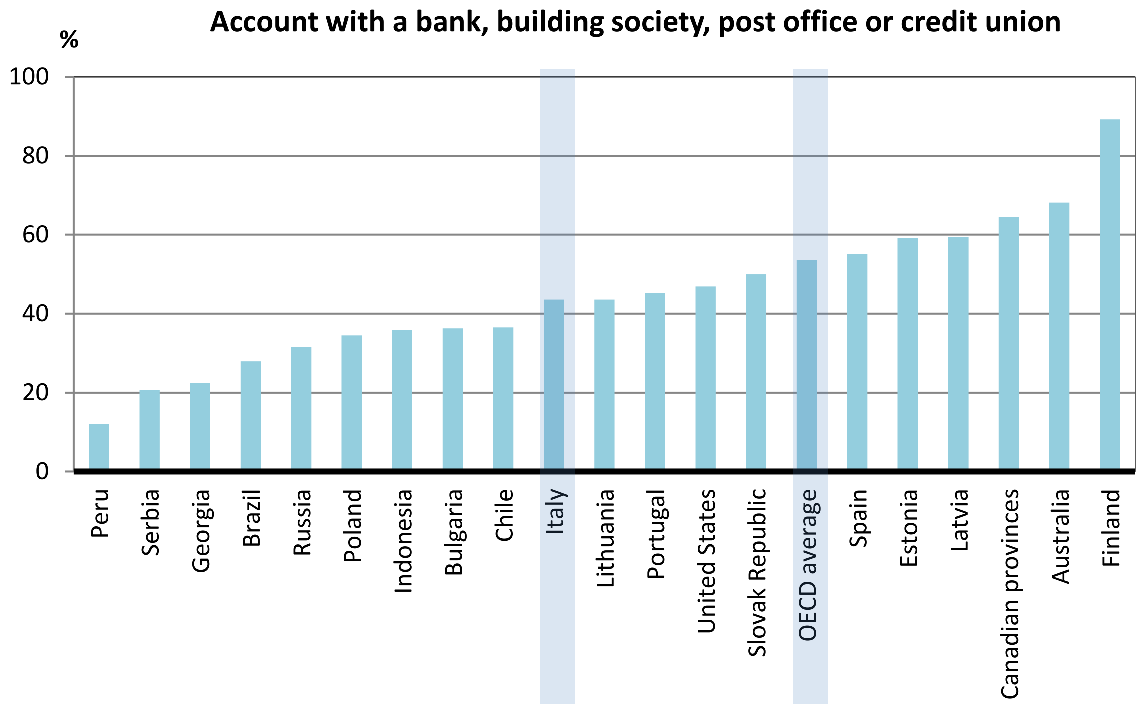


Figure 11. Account with a bank, building society, post office or credit union. [12]

In detail, holding a bank account is associated with a 12-point increase in financial literacy performance, while holding a payment/debit card is associated with a 22-point increase in financial literacy performance. The number of students holding a bank account has increased but not significantly: 36% in PISA 2012, 35% in PISA 2015, and 44% in PISA 2018. The situation is different for the number of students holding a credit or debit card. Here, the situation improved significantly: in PISA 2012, the number of students holding a payment card was 19%, which increased to 37% in PISA 2015 and reached 45% in PISA 2018.

Financially responsible behaviours, including balance checking and comparing prices were common and strongly related to higher financial literacy scores. The results showed that

[12] OECD. (2020). *PISA 2018 results (Volume IV): Are students smart about money?* OECD Publishing.

students reporting a recent online purchase scored better, suggesting the increasing relevance of digital financial transactions.

Financial literacy for students was significantly influenced by their learning about financial issues from parents and internet. Scores were higher if discussions about money matters: these results underscore the need for parents to talk with their children about financial topics as early and often as possible at home.

Even though financial literacy in Italy was included in the national curriculum, extracurricular programs and initiatives continued to improve students' financial knowledge and skills. The PISA 2018 evaluation thus showed an urgency to promote financial literacy among Italian students, especially considering the huge impact of socio-economic status and gender performance.

PISA 2022: Recent Insights

Although the average financial literacy score of Italian students, 484 points from 2022, had improved compared to earlier years, it remained below the OECD standards that were 498 points this time. However: the proportion of students that did not reach this baseline proficiency level is 18%, matching OECD average. In Italy, just 5% scored the highest proficiency level, compared with an average of 11% among global grade school.

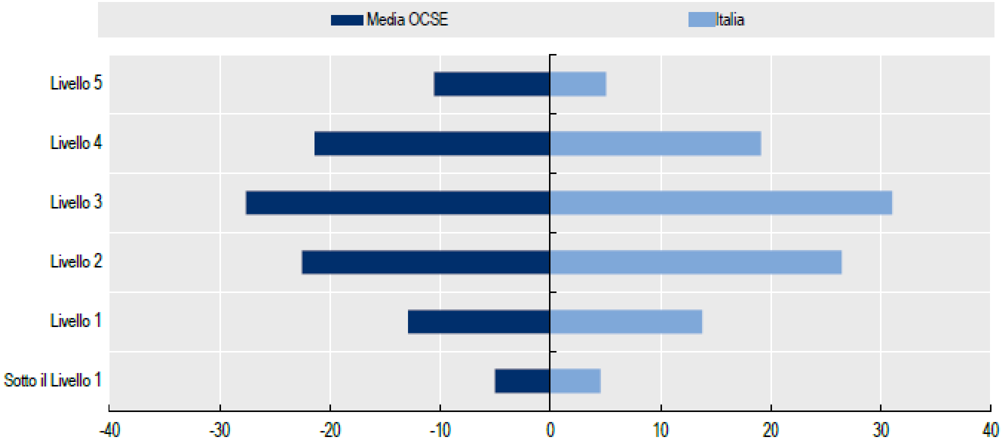


Figure 12. Percentage of students at each level of financial literacy proficiency. [13]

The gender gap was another time significant with boys scoring an average of 20 points higher than girls. The gap in scores by socio-economic status persisted, as advantaged students scored 68 points higher than disadvantaged schools. There has consistently been a gap between students with an immigrant background and those without, with the latter scoring on average 12 points higher.

Italian students had less exposure to school activities focusing on financial literacy than the OECD average. Higher financial literacy scores were tied to positive attitudes towards money management, but talking with parents about finance did help to improve the score. More than 50 % of Italian students reported that they were learning about terms like salary, budgets, entrepreneurship or bank loans at school.

However, Italian students' ownership of financial products fell below the OECD average: 37 % held a bank account and only around 29% had their own debit or ATM card, while the OECD averages were 63% and 62%. Internet purchasing seemed to be very common, and positively correlated with higher financial literacy scores, showing the increasing importance of digital financial transactions. Practical financial learning experiences were revealed as a

[13] Source: OECD. (2024). *Results from PISA 2022 – Country Note: Italy.* OECD Publishing.

key factor in improving the financial literacy of students, according to results from the PISA 2022 assessment.

In the fall of 2017, the Italian government developed a national strategy for financial education that aimed to introduce financial literacy into every school curriculum by 2024. Public authorities continue to propose additional-curricular programs for a true appreciation relating students about cash and investments. Hopefully, with this strategy, we can give students a more well-rounded financial education than they get now and get them ready for future financial challenges.

Main takeaways

From 2012 to 2022, financial literacy among Italian students was still low at the beginning, even though it started to improve. Despite these improvements, Italy has always scored below the OECD average. It's possible to see the comparison in the chart below. Since then, several trends and patterns have appeared, they will be explained below.

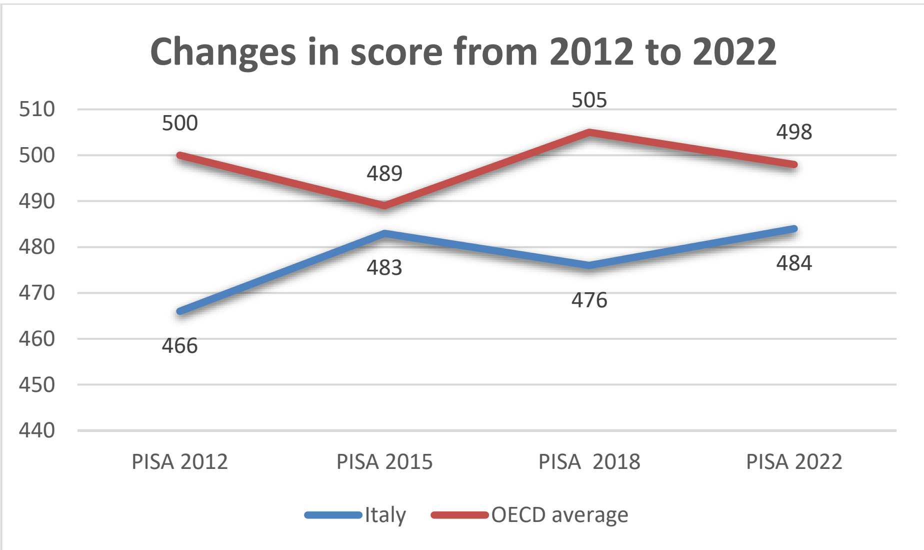


Figure 13. Performance in financial literacy from 2012 to 2022. [14]

[14] Source: Author's own elaboration.

Regional Disparities: Persistent low financial literacy scores in some regions. The students in northern regions (e.g., Friuli Venezia Giulia and Veneto) always do better than southern regions (Calabria, for example). These differences show that special steps should be taken to ensure financial education is available everywhere, so people in all areas have equal opportunities to access it.

Gender Differences: Gender differences are also among students. Boys tend to have better scores on financial literacy in all the four studies. This means that gender-inclusive strategies are needed to reverse this trend. It’s important to fix the reasons behind this difference and make sure all boys and girls have the same chances to learn financial skills.

Socio-Economic Influences: Societal position is a crucial factor in the effectiveness of financial literacy. The advantaged students did much better than the disadvantaged ones, showing the need for global policies to fix socio-economic gaps.

Concrete Financial Experiences: Ownership of financial products or concrete experiences with money matters are correlates with having higher levels of financial literacy. Those students who engage responsible financial behaviours (check balances, compare prices, etc.) perform better. Digital financial literacy and the online shopping has been facilitated by advances in digital technology and they are another consequence of improved economic literacy among the younger generation.

Involvement of Parents: The involvement and discussion about the financial instruction has huge positive impacts for the students. That was the general message of a new study by Financial Consumer Agency of Canada (FCAC), who found students performed better when they talked more about money with their parents.

All Education Initiatives: Italy, which has implemented numerous financial education initiatives, but they have not yet been fully introduced into the national curriculum. The creative response to the challenge of integrating financial literacy into school learning by 2024. The introduction of a national strategy for financial education in 2017 shows great determination to increase the level of Financial Literacy among students. Subsequently, a chapter will be dedicated to this topic and to all the financial education initiative that arise during years.

After all that has been achieved so far, it is now clear that there are several ongoing mistakes and delays in financial literacy in Italy that need to be addressed promptly if we want all students, regardless of their background, gain an adequate money management skill. Including financial literacy in the national curriculum by 2024 is a big step in the right direction. Efforts to eliminate regional disparities, gender gaps, and socio-economic inequalities must continue if we hope to build a financially literate future generation. In an increasingly complex, finance-based world, having strong financial literacy among young people is no longer optional but essential for their future success.

Behavioral Finance

Behavioral finance is a relatively new field of study that integrates psychology, neuroscience and economics to explore how psychological factors affect economic decision-making. The main ideas of traditional financial economics don't need to be completely changed. Any adjustments are usually just practical modifications to financial planning and judgment.

Basics of Behavioral Finance

Behavioral finance looks at the impact of psychological factors on financial decisions. Typically, classical finance assumes that everyone is perfectly rational (always working to optimize their utility) while the behavioral science of this area explores why people are so irrational in practice by considering things like cognitive biases, emotions and also what we call social factors. Behavioral finance is a more complete approach to financial decision-making and market dynamics by integrating knowledge from psychology, neuroscience, etc.

Harry Markowitz established the foundation for what we would now refer to as modern financial theory in the 50s. Markowitz established the notion of optimal portfolios, highlighting that risk could be reduced through diversification. His research showed that a person could reduce the overall risk of their stock investments by balancing one type of stock with another, without having to give up expected returns. The concept became a bulwark of the new modern finance theory and had significant implications for financial practice.

Some years later, the development of the Capital Asset Pricing Model (CAPM) by William Sharpe and others provided a formal means for assessing risk versus return; The CAPM also introduced the concept of systematic risk which could not be diversified away and how it was priced in the market. Eugene Fama extended these ideas in his Efficient Market Hypothesis (EMH) which always states that security prices accurately reflect all available public information and therefore it is impossible for active managers to earn additional returns over an appropriate benchmark without assuming higher levels of risk.

Behavioral Biases

Behavioral biases are systematic distortions of rationality that impact people's decisions, creating a subjective reality. Various cognitive and emotional biases make people susceptible to making poor financial decisions. Addressing these biases is an important aspect of enhancing financial decision-making. Here are the most important behavioral biases that have been discovered over the years:

Confirmation Bias

Definition:

The tendency to seek information that supports one's own opinions or to interpret facts in a way that aligns with one's worldview. This bias also drives people to operate within a framework defined by their acquired knowledge.

Impact:

People could selectively interpret financial news and reports, only paying attention to the aspects confirming their actions which will result in undiversified portfolios as well as lost opportunities.

Mitigation:

Practice critical thinking by searching for opposing arguments, show the true motives that drive financial decisions and encourage honesty and self-reflection.

Availability/Attention Bias

Definition:

When people estimate the likelihood of something, they are utilizing this mental shortcut often unconscious to base it on how frequently or recently similar event has occurred in a short-term memory.

Impact:

Individuals might focus on financial choices that get the most recent media attention, ignoring other possibly more profitable or safer options.

Mitigation:

Doubting the origin and timeliness of what occurs to your mind, exploring other financial solutions and asking neutral people for advice can help to see different viewpoints.

Home Bias

Definition:

The tendency of an investor to buy domestic assets rather than foreign ones, often because the people are more familiar and have lots of media coverage.

Impact:

This may result in an under-diversified portfolio, as people might not take complete benefit from international diversification mechanisms, which can further increase the risk associated with financial decisions at their ends.

Mitigation:

Encourage investors to diversify their portfolios globally, provide education on the benefits of international investments, and improve access to global markets through various investment vehicles and advisory services.

Anchoring Bias

Definition:

The tendency, when making a decision, to rely excessively on the first piece of information received.

Impact:

People may take the wrong actions because they believe only some data are relevant and should influence their financial decisions, just as some might incorrectly extrapolate from past performance.

Mitigation:

Evaluate the potential future of a financial decision with none of the preconceived biases. For example, it is not important if an investment made you money or resulted in a loss in the past; you must look only at the future prospects.

Experiments:

In 1995, Kahneman conducted an experiment in which he divided subjects into two groups.

He asked both groups whether they thought the tallest sequoia in the world was taller or shorter than a given value and then asked them what they believed the height of the sequoia was. He presented each group with a vastly different value (the given value was 365m for the first group and 54m for the second group). The estimates provided by the two groups were, on average, very close to the values suggested by Kahneman. The first group gave an average response of 257m, while the second group gave an average response of 86m. The difference between the average responses of the two groups was 171m, this clearly illustrates how Anchoring Bias works.

Mental Accounting

Definition:

People treat money in different ways, which can depend on various factors such as its origin, how they save it, or how they spend it.

Impact:

This results in inconsistent decision-making, causing money to not be invested appropriately across financial options.

Mitigation:

Avoid dividing the money into categories and be aware when this mistake is made.

Disposition Effect

Definition:

The tendency to sell winning investments too soon and hold onto losing investments longer to delay the moment of regret. This because turning paper profit into real profits make people happy, while turning a paper loss in real loss make people sad.

Impact:

Such bias can result in lower returns because it prevents the ability to profit more from winning investments.

Mitigation:

Stick to a predetermined financial plan, keep records of all trades with the economic justification and read them before you buy or sell anything.

House Money Effect

Definition:

Tendency of investors to undertake greater risks when reinvesting gains than they would when investing their savings or wages. This is a consequence of the Mental Accounting Bias because people think that money earned with investments is different from money earned in life with their jobs.

Impact:

Can contribute to even more dangerous financial behaviour as people may not care so much about the money that gains through investments and so they have a greater risk tolerance with them.

Mitigation:

Understand that money does not change regardless of where it comes from.

Representative Bias

Definition:

Tendency towards fast generalizations based on stereotypes or previously learned patterns, leading to inaccurate conclusions.

Impact:

People will make decisions based on surface similarity to the past and can lead to who knows what ignoring any of their different course conditions.

Mitigation:

Take a more expanded view across longer time horizons, seek out additional data before making determinations and avoid quick decisions.

Example Linda Paradox:

"Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations.

Which is more probable?

1. Linda is a bank teller.

2. Linda is a bank teller and is active in the feminist movement."

Most people choose the second option, even though it is logically less probable. This happens because option 2 seems more representative of the image described of Linda, even though it cannot be more likely than Linda simply being a bank teller (because the second option is a more specific and therefore narrower condition than the first).
This error in judgment is an example of the representative bias, where people judge the probability of an event not based on logic and statistics, but on how much the event seems to represent the characteristics of a person or situation.

Regret Avoidance

<u>Definition</u>:

The decision to make safe or popular financial choices even if they are not the best option. This is human and is done to avoid regret.

<u>Impact</u>:

People can follow the crowd and miss out on better opportunities. Many of them avoid making decisions that could lead to superior results because they fear regret.

<u>Mitigation</u>:

No one is immune to occasional regrets regarding their finances. Instead, it is helpful to use empathy when making informed decisions. Focus on choices that offer the best odds and highest probability of success, rather than aiming to eliminate regret entirely.

Overconfidence:

<u>Definition</u>:

This refers to being overly sure of one's abilities, there are two forms: one believes to be better than others while the other one is self-confidence.

<u>Impact</u>:

Could lead to illusion of control and knowledge and to underestimates risks.

<u>Mitigation</u>:

It's important to consult experts when making decisions. At the same time, it's important to verify the data, evaluate alternative scenarios, and be aware of the existence of this bias.

Endowment:

Definition:

The tendency to assign a higher value to owned items than the value one would be willing to pay for the same asset if it was not owned.

Impact:

This bias could influence people to retain the asset for emotional reasons instead rational one.

Mitigation:

Try to give an objective valuation of the good, it’s better to have an external perspective and focus on the goal and plans that must be made.

Naïve diversification:

Definition:

Is an investment strategy where an investor distributes their funds equally among available options without a thorough analysis of each option's characteristics.

Impact:

This approach aims to reduce risk through simple distribution but may lack strategic consideration to optimize portfolio returns.

Mitigation:

Strategic diversification of investments, after a deep analysis and continuous monitoring, are two instruments that could help mitigate this bias. In the finance world, there are many "instruments" like mean-variance optimization, Monte Carlo simulation and Treynor-Black model that could help.

Preference for the present:

Definition:

The inclination to prefer a smaller present reward over a larger later reward. People with this bias tend to give excessive weight to short-term gratification over long-term benefits.

Impact:

People prefer immediate gratification over long-term benefits, negatively affecting saving, debt accumulation, investments, and procrastination.

Mitigation:

Awareness of this bias and creating a reward system that incentivizes long-term planning could help mitigate its effects.

Prospect theory

In 1979 Kahneman and Tversky, educated at Hebrew University of Jerusalem, conducted psychological experiments in the US and developed the so called “Prospect theory”, for which Kahneman got the Nobel Prize for Economics in 2002.

This theory put in evidence 3 different aspects, which will be analyzed subsequently.:

1. Framing
2. Loss Aversion
3. Isolation effect

Framing Bias

Definition:

Decisions differ depending on how the relevant information is presented. An example can be seen in the image below, where the same product is presented in two different ways. On the right, the label of the yogurt jar reads “1% FAT,” while on the left, it reads “99% FAT FREE.” It’s clear that people are influenced to choose the second alternative because it makes the product more attractive, despite the product being the same.

Figure 14. Influence of Framing Bias on Yogurt Selection.[15]

Impact:

Decisions are influenced by how the information is presented.

Mitigation:

Take an interdisciplinary approach to information and understand how the framing of a simple piece of data can affect decision processes.

Loss aversion:

Definition:

People tend to perceive losses in a more painful way than equivalent gains. This can be illustrated in the figure below: there is a gain of *x* and a loss of the same amount *x* (with the negative sign), but the value associated with the gain represented by the segment (B, D) is clearly smaller than the value associated to the losses represented by the segment (C, E).

[15] Source: www.deviantrobot.com/ideas/cognative-bias/the-framing-effect/

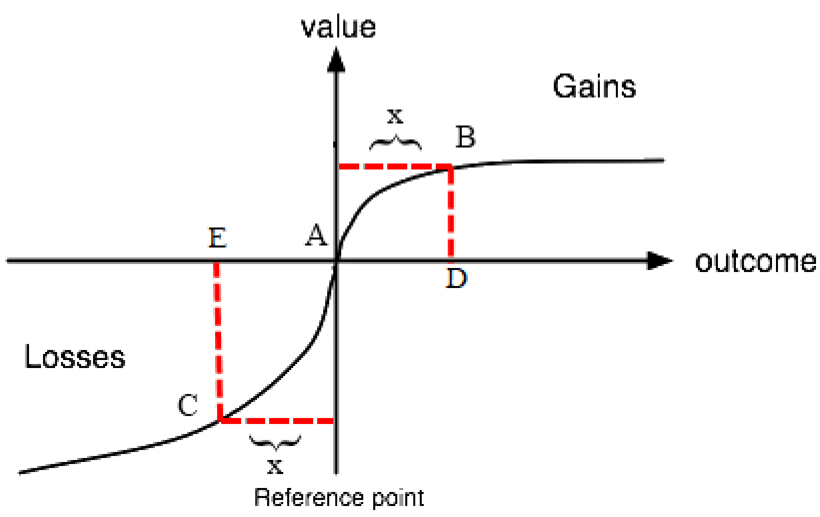


Figure 15. Impact of Loss Aversion Bias on Gains and Losses. [16]

Marginal utility refers to the additional satisfaction or value that an individual gains from consuming one more unit of a good or service. An important derivation from the Loss Aversion Theory is the different way in which marginal utility increases (in absolute value) respect to gains and losses. It's important to understand that the marginal utility increases in both cases of gains and losses (considering only the absolute value for simplicity). However, with gains, the increase occurs with a decreasing rate. With losses, the increase occurs at a decreasing rate, but is perceived more intensely than gains.

Impact:

Choices are made differently if things are presented in terms of gains or losses.

Mitigation:

Presenting options in a way that emphasizes gains rather than losses can help mitigate the effects of loss aversion. Educate people about Loss Aversion Theory.

Isolation effect:

Definition:

[16] Source: www.interaction-design.org/literature/topics/loss-aversion

Individuals' tendency to isolate consecutive probabilities instead of treating them together. In the evaluation phase, people tend to calculate a value based on potential outcomes and their respective probabilities, choosing the alternative with the highest utility. This can lead to inconsistent preferences because prospects can be decomposed in different ways, leading to different preferences.

Impact:

This approach to decision-making can produce inconsistent preferences and irrational decisions. People often ignore the probabilistic components of alternatives and focus on degenerate branches, leading to different choices depending on how the problem is presented.

Mitigation:

Educate people to consider all joint probabilities instead of isolating consecutive events, present information clearly and consistently to avoid arbitrary decomposition of prospects and use decision-making tools that help evaluate all probabilities together.

Example:

Imagine two choice scenarios:

Scenario A and B:

Choice between A ($4000 with a 0.20 probability) and B ($3000 with a 0.25 probability).

Choice A is selected 65% of the time.

Scenario C and D in two stages:

First stage: 0.75 probability of not winning and 0.25 probability of moving to the second stage.

Second stage: choice between C (certain $3000) and D ($4000 with a 0.80 probability).

The actual choice is between a combined probability of 0.20 of winning $4000 and a combined probability of 0.25 of winning $3000.

Choice C is selected 78% of the time.

Despite the probabilities and rewards being identical (choice A is equal to choice D while choice B is equal to choice C), preferences change due to the isolation effect.

Final remarks

To conclude we know that behavioral finance provides an invaluable framework for understanding how psychological factors and financial decision-making intersect. Individuals can make rational choices about financial matters, and largely superior long-term consequences. Combining psychological insights with traditional financial theories helps us better understand finance and human behavior.

While this does help deepen our understanding of human nature and market phenomena, it also provides very actionable advice around how to improve the ways we make financial decisions. This field provides key tools that need to be widely known and understood for both financial users but also psychologists.

Financial Education: Initiatives and Key Players in Italy

Key Stakeholders

In Italy, many players intervene to promote and implement the financial education process among citizens. The strategies for improving financial education and awareness are multifaced, needing to be implemented in an interactive way, integrating any shortcomings from numerous participants. These actors include government institutions, regulatory authorities and Non-Governmental Organizations (NGOs) as well as the private sector. All are critical partners in the development, support and carrying out of financial education programs that help to provide individuals with the knowledge and skills needed to make informed financial decisions.

Government and regulatory bodies

Obviously, as one might easily think, the role of the government is fundamental and at the same time primary in the development and promotion of financial education initiatives.

Comitato EduFin

It is an organization that was born with the idea of promoting financial, insurance and social security education in Italy. However, it carries out numerous activities, among the main ones we have:

1. **Development of educational programs**: it deals with creating different initiatives that target different age groups. The main objective remains to improve the financial skills of the population.
2. **Promotion of financial education initiatives**: it deals with promoting financial education initiatives and projects, these can be in collaboration with public and private institutions, schools, universities, banks and other entities.
3. **Information awareness**: the committee organizes campaigns to raise awareness and increase knowledge of what are considered the "7 things to know": interest rate, compound interest rate, inflation, risk diversification, risk-return relationship, longevity risk, insurance and risk transfer.

4. **Research**: it conducts research to monitor the level of financial education and therefore evaluate the programs implemented.
5. **Educational Material Development**: provides materials such as guides and educational tools, which can be useful for both teaching and personal learning about finance.

"The Committee is composed of eleven members and is chaired by a director, appointed by the Minister of Economy and Finance in agreement with the Minister of Education, University and Scientific Research from among personalities with proven skills and experience in the sector.

Members other than the director, chosen with the same criteria, are designated: by the Minister of Economy and Finance, the Minister of Education, University and Research, the Minister of Economic Development, the Minister of Labor and Social Policies, the Bank of Italy, the National Commission for Companies and the Stock Exchange (CONSOB), the Institute for Insurance Supervision (IVASS), the Pension Fund Supervisory Commission (COVIP), the National Council of Consumers and Users (CNCU) and the Supervisory Body and Maintenance of the Register of Financial Advisors (OCF).

The Committee operates through periodic meetings, providing, where necessary, for the establishment of specific research groups in which academics and experts in the field may participate.

Participation in the Committee does not entitle to any emolument or compensation or attendance fee." [17]

Ministry of Education

The Minister of Education, University and Research has a fundamental role in promoting and integrating financial education into the Italian education system. It's important to say that the Council of Ministers has approved the Competitiveness bill, which integrates Financial Education into the teaching of Civic Education starting from the 2024-2025 school year. On

[17] https://www.mef.gov.it/ministero/comitati/comitato-educazione-finanziaria/index.html

the other sides, some teacher training programs for the training of teachers on financial education topics have been launched.

CONSOB

The National Commission for Companies and the Stock Exchange (CONSOB) believes that financial education is correlated with stock market participation as highlighted by Di Cagno and Panaccione[18] and that it is also fundamental for investor protection. This result was already highlighted in the introductory chapter, more precisely in the section where the advantages of a good level of financial education were exposed. The studies were "Information Sharing and Stock Market Participation: Evidence from Extended Families" by Geng Li.

Bank of Italy

Many reasons why the Bank of Italy is a central institution in financial education in Italy:

1. **Authority and Credibility**: Part of the authority and credibility that makes this Bank so powerful comes from its brand as Italy's central bank. As such, it is a reliable source of financial information for the public.
2. **Experience and Expertise**: The Bank of Italy has a long history both in the supervision of the Italian financial system and economic analysis. This technical capability facilitates it in building a robust education library on various financial topics.
3. **Partnerships with other institutions**: The Bank of Italy, seeing his strong authority, works with the Ministry of Education, Consob (National Commission for Companies and the Stock Exchange), as well as NGOs to jointly build a national financial education strategy.
4. **Research and Analysis**: The Bank of Italy provides detailed insights into the extent to which Italians are financially literate and behavior related to finance.
5. **Creating Educational Resources**: For these purposes, the educational unit has created and made available to citizens for free distributed on paper as well a set of guides brochures videos interactive tools. These resources address everything from

[18] Linciano, N., & Soccorso, P. (2024). *Le sfide dell'educazione finanziaria: La rilevazione di conoscenze e bisogni formativi, l'individuazione dei destinatari delle iniziative, la definizione di una comunicazione efficace*. Consob.

managing the family budget, to understanding financial products and staying safe from con fraudsters.

“The financial education activities of the Bank of Italy are part of a broader commitment to ensuring the protection of customers of banking and financial intermediaries, using various tools. The system of protections is based on four pillars: regulations, oversight of intermediary behavior, individual protection tools such as the Banking and Financial Ombudsman and the handling of complaints to the Bank of Italy, and, specifically, financial education programs. The increasing commitment to financial education has been realized with the understanding that other customer protection tools are less effective if customers are unaware of them or unable to understand their significance.”[19]

Non-Governmental Organizations

NGOs play an important role in implementing financial education programs through awareness campaigns, workshops, and collaborations with schools.

Fondazione per l’Educazione Finanziaria e al Risparmio (FEduF) (Associazione Bancaria Italiana)

A no-profit association that aims to promote financial education among individuals in Italy, to create awareness among the people relating their financial decisions and also helping in making them financially independent. FEduF declares that financial literacy is the key which allows one to successfully navigate their way through today's complicated world of finance. FEduF tries to teach a savings culture among individuals through which they exercise careful financial behaviour and save for future targets. The foundation is cooperating with schools, universities, financial institutions and others in order to realize programs to spread throughout Italy.

Osservatorio nazionale di educazione economica finanziaria ONEEF (University of Milan-Bicocca and FEduF)

[19] De Bonis, Riccardo, Marilisa Guida, Angela Romagnoli, e Alessandra Staderini. 2024. *Educazione finanziaria: presupposti, politiche ed esperienza della Banca d’Italia*. Questioni di Economia e Finanza (Occasional Papers). Banca d’Italia.

“ONEEF – the National Observatory of Economic and Financial Education – is a project dedicated to monitoring financial and economic education programs implemented in Italy.

This initiative emerged from a multidisciplinary research project created by a group of researchers from the University of Milan-Bicocca and the University of Udine. It was developed in collaboration with the Ministry of Education's Economy and Legality table, the Foundation for Financial Education and Savings (FEduF), and UnipolSai Assicurazioni. The project aims to monitor economic and financial education pathways within the Italian context. It provides a service for monitoring, documenting, and archiving online basic information about educational and awareness projects related to economics and finance. These topics also include taxation, active citizenship, investments, gambling, legality, pensions, planning, and related themes.

The primary objectives of ONEEF are:

1. **Documentation**: To document programs, initiatives, and activities undertaken by various actors through an easily accessible virtual space. This space provides basic information about projects to different stakeholders interested in economic and financial education.
2. **Scientific and Independent Reference**: To offer a scientific and independent reference point for those approaching the topic of economic and financial education in Italy, providing updated data on various projects.
3. **Independent Monitoring**: To provide an independent observatory that monitors initiatives in Italy, linking them to territorial characteristics and other project variables (audiences involved, themes, methodologies, evaluation processes, etc.). This observatory offers updated data useful for research, project design, and the dissemination of economic and financial education projects in Italy.
4. **Network Stimulation**: To stimulate the creation of networks within the territory. By understanding the projects and the coordination of ONEEF, promoting entities can establish mutual relationships and create collective projects through "purpose associations," virtual communities, work networks, etc.

These goals underline the importance of financial literacy and the efforts to enhance understanding and informed decision-making in financial matters across Italy.” [20]

Collaborations with Schools

There are many collaborations between non-governmental organizations and schools to bring students closer to economics. These collaborations are developed through workshops with experts in the sector or training of teachers, to make them competent in transmitting the financial notions learned. This is becoming a fundamental channel for the diffusion of financial education among the young.

Events and Conferences

Events and conferences organised by non-governmental organizations (NGOs) to promote financial education programs at the national and international levels. These organizations use professional conferences, where experts and educators meet with policy makers to make public visible their own activities in the field of financial education. It also allows experiences and outcomes to be exchanged, increasing collaboration between schools with communities as well as others that are dedicated to the teaching of financial topics.

Private Sector Involvement

The private sector, composed of banks, financial institutions and companies, is very important for spreading financial education in Italy.

Educational programs from banks

Italian banks are among the major exponents of financial education initiatives, the targets of these initiatives are very wide from the youngest to adults. Major financial institutions like Intesa Sanpaolo and UniCredit lead these efforts with comprehensive programs designed to teach financial literacy from the basics of budgeting to more advanced topics like investment strategies and financial planning. In addition to the largest banks, there are also initiatives promoted by smaller banks at regional or provincial level. Some examples are Gruppo BPER

[20] https://oneef.unimib.it/

(Banca Popolare dell'Emilia-Romagna) and BTL (Banca del Territorio Lombardo). These programs usually consist of workshops, seminars and interactive sessions.

Awareness campaigns

In addition to the formal education programmes, banks and financial institutions conduct numerous awareness campaigns. The campaigns put information that is intended to be helpful and educational for the public in terms of crucial financial issues including saving, investing and debt management. They tend to go broad with their approach leveraging different media channels whether social, tv or print. It is time and cost effective, as campaigns are designed to address specific needs of different demographic groups, such as students, young professionals, and retirees.

Corporate volunteering projects

In the course of their corporate social responsibility, numerous banks carry out voluntary tasks. These might consist of workshops where employees can learn about finances, along with personal coaching in specific key areas like planning for your budget or boosting credit score and even getting a checking/savings account. In doing so, they make use of their professional skills to combat and end financial illiteracy in particularly underserved communities. It not only supports the development of people's financial skills, but it pushes companies to become philanthropic, over time developing around a sort of altruism within these organizations.

Overview of Financial Education Initiatives in Italy

Given the significant issues with financial literacy in Italy, numerous initiatives have been promoted over the years. The most important ones are illustrated below:

"L'economia per tutti" (Bank of Italy)

It's a portal for the financial education promoted by the Bank of Italy. The aim is to engage people who are less informed about economics and finance, with the goal of enhancing their knowledge and encouraging informed and rational financial choices, avoiding the most common mistakes. The website is divided in five different macro-categories: to plan, to pay, to request for a loan, to save, and to invest. On the portal is possible to find news, videos, calculators and games that will allow for an interactive and engaging learning experience. Furthermore, increasing emphasis is being placed on sustainable finance, a topic that is becoming increasingly important in today's world. On the portal, it’s possible to find many of the financial education initiatives discussed in this chapter.

Mitigated bias:

- Overconfidence bias: The initiative provides a lot of detailed information; this helps users to become aware of their limits and at the same time make more informed choices.

- Availability/Attention bias: it presents different contents, and this helps to counteract the tendency to focus only on the most recent or most readily available information.

- Anchoring bias: it teaches users to evaluate financial decisions based on all the information available to them rather than on specific data they are given.

Global money week 2024 (OECD and in Italy Bank of Italy on behalf of the Financial Education Committee)

It’s a global initiative organized by OECD (Organization for Economic Co-operation and Development) that takes place in the month of March every year. The aim is to promote the financial literacy among all people, but especially among the young. The event has been very successful since 2012, its first year of launch. Since then, 176 countries have participated in this initiative, reaching 60 million children and young people.

Mitigated bias:

- Confirmation bias: promotes financial awareness and this teaches young people to consider all financial information and not just the latest or most relevant.

- Availability/Attention bias: participants are involved in activities to question their pre-existing beliefs; this is done through comparing and learning different ideas.

- Naïve diversification: young people are educated on the principles of diversification; in this way the initiative helps to avoid distributing funds superficially without first doing a thorough analysis.

Perché le competenze finanziarie degli italiani faticano a migliorare? Riflessioni multidisciplinari, best practices e proposte per il futuro (ONEEF)

The workshop aims to try to answer some questions regarding financial education in Italy. Here are some examples:
Why, then, do Italians' financial skills struggle to improve?
What factors have influenced the financial socialization processes of Italians over the years?
What has not worked in the implementation of initiatives dedicated to financial education?
What has worked but can be improved? Or is it perhaps an issue related to the type of research conducted in Italy on financial literacy?

The initiative is divided into two parts: the first explains some reasons why financial education is so low (the results are based on surveys conducted by ONEEF), and the second presents some research works on the financial skills of Italians and the best practices identified by the research.

Mitigated bias:

- Confirmation bias: the initiative encourages critical reflection and the comparison of different perspectives, helping participants to challenge their pre-existing beliefs.

- Representative bias: uses hard data and research to show how financial decisions should be based on facts rather than superficial similarities or stereotypes.

Museo del risparmio (Intesa San Paolo)

It was created in 2012 by Intesa San Paolo in Turin. The most important concepts these initiatives aim to convey are saving and investment. This place has a completely different approach; in fact, it is not a common museum. The goal was for children and young people to engage with these concepts through games and an interactive approach. This forms the basis of the edutainment project, which combines education and entertainment to both educate and entertain.

<u>Mitigated bias:</u>

- Naïve diversification: the importance of strategic diversification is explained, highlighting how it is better than a distribution based on a superficial analysis.

- Availability/Attention bias: many different financial concepts are provided which make participants aware of different aspects and not just the ones they hear about most often or more recently.

- Disposition effect: participants are educated on the benefits of holding on to winning investments and selling losing ones, which helps mitigate this bias.

Casa Mica (Museo del Risparmio)

It's a podcast for children produced by "Museo del Risparmio" in collaboration with "Mosaico Studio". The aim of this initiative is to promote the economy in a fun game to attract the attention of the little ones. The podcast is divided into 10 episodes, and each of them introduce a financial topic in about 10 minutes:

- Episode 0: "Welcome to CasaMica"
- Episode 1: "Strolling Through Time with Piggy Banks"
- Episode 2: "Once Upon a Time, There Was Saving"
- Episode 3: "An Allowance for a Friend"
- Episode 4: "Dreams Are Desires... to Plan!"

- Episode 5: "Okay, Saving Is Right!"
- Episode 6: "For a World Without Waste"
- Episode 7: "The Colours of Sustainability"
- Episode 8: "Saving Exercises"
- Episode 9: "Safety (Digital) Comes First"
- Episode 10: "And They Lived Happily Ever After, Aware and Informed"

As can be inferred from the episode titles, the podcast is a journey through time that will help young listeners understand the concept of a piggy bank, and then introduce them to the ideas of planning, interest, and circular economy.

<u>Mitigated bias:</u>

- Mental accounting: children are taught the importance of treating money equally regardless of where it comes from, this obviously leads to improved financial management.

- Preference for the present: teach children to consider the long-term benefits of saving, moving them away from the idea that immediate gratification is better.

- Representative bias: through stories, children are taught to make financial decisions that are based on facts rather than stereotypes or appearances.

Mica solo parole (Museo del Risparmio)

It's a podcast produced by "Museo Del Risparmio" in collaboration with "Mosaico Studio". The aim of this podcast is to educate listeners about finance, sustainability and current economic issues. The podcast is divided into 10 episodes, and each of them introduce a topic in about 10 minutes:

- Episode 1: "Sustainable Fashion: Why Choose It" with Fabiana Giacomotti

- Episode 2: "Cybersecurity: The Rules for Safe Browsing" with Mauro Marigliano
- Episode 3: "Artificial Intelligence Goes Cultural" with Antonio Lieto
- Episode 4: "Circular Economy: How to Foster the Virtuous Circle" with Max Tellini
- Episode 5: "Women and Money: A Complicated Relationship" with Giovanni Paladino
- Episode 6: "Finance and Popcorn: When Movies Explain It"
- Episode 7: "Behavioral Economics: The Importance of Decision-Making" with Luciano Canova
- Episode 8: "Learning the ABCs of Money Management While Having Fun: Gamification (When Economics Becomes a Game)"
- Episode 9: "Cryptocurrencies vs Digital Euro: What Will the Future Hold?" with Savino Damico
- Episode 10: "Finance and Sustainability: Why Start with the Young" with Giovanna Paladino

This time, however, the target population ranges from Generation Z to Generation X and also includes Millennials. Another topic discussed in this series is sustainability, a theme that is becoming increasingly important nowadays.

Mitigated bias:

- Anchoring bias: people are taught not to rely on the first piece of information they receive, but to evaluate the entire picture of information.

- Overconfidence: the various episodes also feature experts who discuss issues such as financial uncertainty, which helps listeners to question themselves and recognize their own limits.

- Framing bias: financial information is presented in different ways, which helps listeners understand how the way information is presented can be a determining factor in making decisions.

Festival Internazionale dell'Economia 2024 – activities for schools organised (Museo del Risparmio)

In conjunction with the International Festival of Economics 2024, the "Museo del Risparmio" has organized an extensive program of on-site activities for schools of all levels. The activities that have been organized are:

1. Monetopoli - Primary Schools: Students will watch videos from the Museum of Savings about money and engage in challenges, games, and exercises to ensure understanding and practical application of the information, aiming to acquire or reinforce basic financial knowledge.

2. Alla ricerca del salvadanaio "In Search of the Piggy Bank" - Lower Secondary Schools: After an introduction on the importance of correctly understanding, selecting, and using information, particularly in economics, students will partake in a challenge to find a piggy bank within the "Museo del Risparmio" collection based on clues, distinguishing between true information and fake news.

3. Economia per tutti "Economics for everyone" - Upper Secondary Schools**:** Students will read an economic news article and test their research, comprehension, and communication skills, learning to decode the complex terminology used by financial media.

These activities are designed to enhance financial literacy and critical thinking among students, fostering an early understanding of economic concepts and responsible money management.

<u>Mitigated bias:</u>

- Confirmation bias: activities are proposed in such a way that students are encouraged to compare different sources of information, this helps them to question their pre-existing beliefs.

- Representative bias: through the games and challenges within this festival, students are educated to make decisions based on concrete data and not on similarities or appearances.

- Loss aversion: students are educated to evaluate risks and benefits in an equilibrated way, and this helps to avoid the tendency to be afraid too much about losses.

Disegnamo l'Arte 2024 - laboratorio "SAVE. La città ideale" (Museo del Risparmio)

This laboratory SAVE is organized by "Museo del Risparmio" and the targets are the children between 11 and 13 years old. In this workshop, after a theoretical introduction, participants will challenge themselves by inventing, describing, and designing the ideal sustainable city. The event was organized on the 7th of April 2024.

<u>Mitigated bias:</u>

- Framing bias: in the laboratory, we show how different representations of the same information can lead to shared decisions, which helps the little ones to develop a more critical vision.

- Confirmation bias: encourage children to explore and discuss different perspectives in designing the ideal city, challenging their preconceived ideas.

- Isolation effect: helps children to consider all aspects of a decision trying to avoid isolating consecutive events.

Il manifesto dell'educazione finanziaria (Gruppo 24 ORE)

The "Manifesto for Financial Education" by Sole 24 Ore is an initiative to increase financial awareness and literacy among young people, families, and especially women. The manifesto is based on ten key principles: education, young people and women, longevity, savers, securities, investments, alliances, sustainability, technologies, future. The initiative aims to fill gaps in financial literacy, encouraging mindful management of money and investments from a young age.

4

Il Manifesto dell'Educazione Finanziaria

I NUMERI DELL'ECONOMIA SONO SEMPRE PIÙ IMPORTANTI,
LE COMPETENZE PER COMPRENDERLI SONO SEMPRE PIÙ ESSENZIALI

In un contesto macro-economico e geo-politico sempre più articolato, si ritiene indispensabile divulgare e promuovere le competenze di base dell'educazione finanziaria ad ogni livello dei contesti accademici come ponte e preparazione verso le istituzioni del paese e il mondo del lavoro.

A tale fine abbiamo riassunto i 10 principi alla base della promozione dell'educazione e la cultura finanziaria, cominciando dalle scuole superiori fino alle università.

1 EDUCAZIONE

Nella società globale essere cittadini significa anche essere consumatori, lavoratori, imprenditori e risparmiatori: per questo motivo è fondamentale che l'educazione finanziaria sia parte dell'educazione civica anche a scuola.

2 GIOVANI E DONNE

In un mondo sempre più globalizzato e accelerato dalla velocità di diffusione delle informazioni sul web e sui social media, ragazzi e bambini diventano soggetti dell'economia sempre prima ed è bene che si cominci ad insegnare l'educazione finanziaria il più presto possibile. Inoltre va colmata la disparità economica delle donne spesso derivata anche da scarse competenze finanziarie.

3 LONGEVITÀ

In una società di persone che vivono e sono attive sempre più a lungo bisogna iniziare sempre prima a pensare alla protezione della propria salute e del proprio benessere ma anche dei propri risparmi, prima, durante e dopo la fase lavorativa della vita.

4 RISPARMIATORI

In un paese di risparmiatori come l'Italia è ancora più urgente evitare ritardi nella comprensione delle basi della finanza e vanno colmate con informazioni chiare e corrette le aree di analfabetismo economico-finanziario che ancora esistono anche per ridurre il divario tra le diverse classi sociali.

5 SICUREZZA

In un mondo in continuo e rapido cambiamento l'economia e la finanza sono sempre più complesse e volatili, bisogna dunque evitare alti tassi di indebitamento e investimenti ad alto rischio. Per questo motivo è importante comprendere prima possibile rischi e opportunità.

6 INVESTIMENTI

In un mercato sempre più sviluppato e ricco di opportunità di investimenti di ogni tipo investire con attenzione è sempre più necessario. Per questo motivo capire le regole e il linguaggio della finanza è ormai indispensabile per tutti.

7 ALLEANZA

Le crisi sono sempre più frequenti e c'è sempre più bisogno di un consiglio qualificato. Servono interlocutori autorevoli come scuole, università, banche, organi di informazione più accreditati e specializzati, in un'alleanza dei saperi per promuovere la cultura finanziaria.

8 SOSTENIBILITÀ

La finanza è in continua e rapida evoluzione. Sostenibilità, trasparenza nelle relazioni, innovazione digitale ed ecologica, parità di genere sono le nuove basi dell'economia. Conoscerle significa essere predisposti alla formazione continua delle competenze nella giusta direzione.

9 TECNOLOGIE

Nuove tecnologie e intelligenze artificiali pongono interrogativi inediti, ma possono essere strumenti utili contro rischi di volatilità, frodi e danni alla sicurezza, non solo informatica. Lo studio di questi temi è indispensabile anche per l'educazione finanziaria.

10 FUTURO

Nel poco tempo che le turbo-società di massa lasciano all'approfondimento individuale, conoscere il passato e il presente per pianificare il domani è il modo per non perdere l'orientamento e costruire il futuro del futuro a partire dalla scuola.

Il Sole 24 ORE

Figure 16. Il Manifesto dell'educazione finanziaria. [21]

1. **Education:** Being citizens also means consumers, workers, entrepreneurs and savers.

[21] Source: https://lab24.ilsole24ore.com/manifesto-educazione-finanziaria/Manifesto_E_F_23.pdf

2. **Young people and women:** In Italy, as already analyzed previously, is present a gender disparity regarding financial education. Furthermore, the world is becoming increasingly globalized young people enter in contact with financial decision earlier and for this financial education is important.
3. **Longevity:** The retiring age of people is changing, in Italy for example it is extending. All this also leads to more complex financial choices regarding the issue of savings.
4. **Savers:** In a country of savers like Italy, it is even more urgent to avoid delays in understanding the basics of finance, and the areas of economic and financial illiteracy that still exist must be filled with clear and correct information to also reduce the gap between different social classes.
5. **Security:** Economy and finance are becoming increasingly complex, so it is very important to know the right choices to make (debt, investments) and at the same time be able to understand the risks and opportunities.
6. **Investments:** The markets have developed significantly and offer more and more opportunities. At the same time, it is increasingly easy to encounter financial choices through mobile devices, so it is very important to have basic financial education concepts.
7. **Alliance:** The need of synergy of knowledge and authoritative interlocutors such as schools, universities, financial consultants, to promote financial culture.
8. **Sustainability:** Sustainable finance refers to finance that takes into account environmental, social and corporate governance factors, the so-called ESG factors, in the investment decision-making process, directing capital towards more long-term sustainable activities and projects. This is a field that is becoming increasingly important.
9. **Technologies:** New technologies have spread everywhere, and the latest and most significant is certainly artificial intelligence. These technologies can be used to mitigate risks in the economic and financial sectors, so understanding how they work is important.

10. **Future:** Knowing the past and the present to plan for tomorrow is the way not to lose direction and to build the future starting from school.

Mitigated bias:

- Confirmation bias: financial awareness is promoted through the analysis of different information and not pre-existing beliefs.

- Naïve diversification: this initiative, talks about the best investment practices, which obviously helps to prevent superficial diversification that is not based on strategic choices.

- Overconfidence: more prudent management of finances is discussed; this helps to re-evaluate the financial capabilities of the participants.

Capire l'economia (e non solo) con il Sole 24 Ore (Gruppo 24 ORE)

This is a book that with articles, reports, multimedia enrichments, and in-depth links, the book initiates a project to disseminate the topics that the Sole 24 Ore presents, daily, ranging from economics to finance to savings, with a keen eye on the interconnections with sustainability and innovation.

> *"Understanding the Economy (and More) with Il Sole 24 Ore" is an essential book for anyone who wants to understand the economy, finance, laws, politics, both Italian and international. It is an indispensable work tool, offering valuable insights into the realms of digital economy, technology and new media, the metaverse, artificial intelligence, and much more.*
>
> *Fabio Tamburini director of Sole 24 Ore*

Mitigated bias:

- Availability/Attention bias: a variety of information is provided, which helps you avoid focusing on the most recent or obvious information.

- Home bias: an international vision of finance is promoted which pushes participants to consider foreign investments.

- Endowment: participants are educated on the objective value of assets; this helps to not overestimate the value of their assets.

Young Finance (Gruppo 24 ORE)

It's a podcast composed of 27 episodes concerning different financial topics. All the episodes could be found at the following link:
https://stream24.ilsole24ore.com/serie/young-finance

<u>Mitigated bias:</u>

- Availability/Attention bias: the site includes many episodes that deal with different financial aspects, this helps young people to consider different information and not just a few.

- Representative bias: shows how it is convenient to make decisions on concrete data and not on similarities or preconceptions.

- Preference for the present: young people are educated that long-term savings are better than immediate gratification.

Quello che conta (Comitato per la programmazione e il coordinamento delle attività di educazione finanziaria)

Is the public portal for financial, insurance, and pension educations managed by the Committee.

Mitigated bias:

- Home bias: provides information about global investment opportunities and this helps mitigate the tendency of investors to make local investments.

- Availability/Attention bias: there is a lot of financial content, which helps reduce the dependence on more recent or easier to find information.

- Preference for the present: the importance of long-term planning and saving is emphasized, helping to counteract the tendency to prefer immediate gratification.

Mese dell'Educazione Finanziaria (Comitato per la programmazione e il coordinamento delle attività di educazione finanziaria)

It's an initiative promoted by the "Committee for the Planning and Coordination of Financial Education Activities" that takes place each year in October since 2018. A lot of subjects participate in this initiative: associations, financial institutions, pension funds, consumer associations, non-profit organizations, government institutions, and entities of the insurance world. During this period, many free events and workshops are organized to increase knowledge on insurance, pension's themes, and the management and planning of personal and family financial resources. This year, the initiative starts on October 31st, which is the National Day of Saving.

Mitigated bias:

- Confirmation bias: in this initiative, there are many workshops, these help to offer new perspectives and challenge preconceptions.

- Loss aversion: teaches to balance risks and benefits in a more balanced way, thus reducing the tendency to fear losses excessively.

- Representative bias: in many initiatives the importance of making decisions based on concrete data and not on superficial similarities is shown.

Carta degli Investitori (CONSOB)

"Carta degli Investitori" project, is a joint initiative by Consob (Italian securities market regulator) and consumer associations, aimed at enhancing investor protection and financial literacy among savers. The project, launched in January 2014, is structured into three main sub-projects:

1. A campaign to raise awareness of savers' rights, involving a network of information and education between Consob and consumer associations. This includes the development of a dedicated financial education portal on Consob's website, modeled after best practices from countries like the UK, USA, and Australia.
2. A reform of the Conciliation and Arbitration Chamber to introduce a mandatory dispute resolution body for financial intermediaries, similar to the existing Arbitro Bancario Finanziario (ABF) for banking disputes. This aims to provide investors with a faster and more economical alternative to court proceedings.
3. An improvement in the management of complaints submitted to Consob, making the process more user-friendly and efficient, especially through online submission. This includes the creation of a new online form and an informative brochure to guide investors on how to submit complaints effectively.

<u>Mitigated bias:</u>

- Anchoring bias: provides detailed information, which helps investors make decisions based on a reasonable amount of data rather than the first data received.

- Overconfidence: promotes awareness of financial risks and helps to manage investments more prudently.

- Mental accounting: participants are educated on the importance of considering money uniformly and this helps to make more consistent financial decisions.

Edufin Index (Alleanza Assicurazioni, in collaboration with Fondazione Mario Gasbarri and SDA Bocconi School of Management)

An initiative by Alleanza Assicurazioni, Fondazione Gasbarri, and SDA Bocconi. This study focuses on the financial and insurance awareness and behaviors of Italians and new Italians.

The Edufin Index measures financial and insurance awareness and behaviors of the population, based on a questionnaire. The index is divided into two sub-indicators: the Awareness Index and the Behavioral Index.

The awareness index, which is of interest to us in the context of this study, assesses the awareness of the respondents' level of financial knowledge. The score of this indicator ranges from 0 to 100, with a passing level achieved by reaching a minimum of 60 points. The financial concepts on which the index is calculated are inflation, compound interest rate, risk diversification, risk-return relationship, deductible, coverage limit, and insurance premium.

Mitigated bias:

- Availability/Attention bias: provides a comprehensive assessment of financial literacy, helping to mitigate reliance on the most recent or salient information.

- Overconfidence: compares financial knowledge, thus helping people recognize their limitations by highlighting overestimations of their capabilities.

- Isolation effect: presents an integrated view of financial awareness, encouraging people to consider all aspects of financial decisions.

Summary of the analyzed initiatives

Initiative	**Organizing Entity**	**Type of Entity**	**Target Age Group**	**Mitigated Biases**
L'economia per tutti	Bank of Italy	Government and regulatory bodies	All Ages	Overconfidence Bias, Availability/Attention Bias, Anchoring Bias
Global money week 2024	OECD and Bank of Italy	Government and regulatory bodies	Youth	Availability/Attention bias, Confirmation Bias, Naïve Diversification
Perché le competenze finanziarie degli italiani faticano a migliorare?	ONEEF	Non-Governmental Organizations	All Ages	Confirmation Bias, Representative Bias
Museo del risparmio	Intesa San Paolo	Private Sector Involvement	Children and Youth	Naïve Diversification, Availability/Attention Bias, Disposition Effect
Casa Mica (Podcast)	Museo del risparmio (Intesa San Paolo)	Private Sector Involvement	Children	Mental Accounting, Preference for the present, Representative Bias
Mica solo parole (Podcast)	Museo del risparmio (Intesa San Paolo)	Private Sector Involvement	Adults	Anchoring bias, Overconfidence, Framing Bias
Festival Internazionale dell'Economia 2024 – activities for schools	Museo del risparmio (Intesa San Paolo)	Private Sector Involvement	Students (all school ages)	Confirmation Bias, Representative Bias, Loss Aversion
Disegnamo l'Arte 2024-laboratorio "SAVE. La città ideale"	Museo del risparmio (Intesa San Paolo)	Private Sector Involvement	Children (11-13 years)	Framing Bias, Confirmation Bias, Isolation Effect
Il manifesto dell'educazione finanziaria	Gruppo 24 ORE	Private Sector Involvement	All Ages	Confirmation Bias, Naïve Diversification, Overconfidence
Capire l'economia (e non solo) con il Sole 24 Ore	Gruppo 24 ORE	Private Sector Involvement	All Ages	Availability/Attention Bias, Home Bias, Endowment

Young Finance	Gruppo 24 ORE	Private Sector Involvement	Youth	Availability/Attention Bias, Representative Bias, Preference for the present
Quello che conta	Comitato per la programmazione e il coordinamento delle attività di educazione finanziaria	Government and regulatory bodies	All Ages	Home Bias, Availability/Attention Bias, Preference for the present
Mese dell'Educazione Finanziaria	Comitato per la programmazione e il coordinamento delle attività di educazione finanziaria	Government and regulatory bodies	All Ages	Confirmation Bias, Loss Aversion, Representative Bias
Carta degli Investitori	CONSOB	Government and regulatory bodies	All Ages	Anchoring Bias, Overconfidence, Mental Accounting
Edufin Index	Alleanza Assicurazioni, Fondazione Mario Gasbarri and SDA Bocconi	Private Sector Involvement	All Ages	Availability/Attention Bias, Overconfidence, Isolation Effect

Table 2. Summary of financial education initiatives. [22]

[22] Source: Author's own elaboration.

Assessing the Success of Financial Education Initiatives in Italy through Case Studies

Evaluating financial education initiatives in Italy is a task that involves considerable difficulties, mainly because there is not enough complete and clear data on the subject. Even though financial literacy comes to public attention, there are few detailed studies, as well as very few reports that systematically evaluate and finally draw conclusions from past experience. This chapter tries to fill this gap, limiting its attention only to case studies that offer a more detailed view of a particular program, revealing the effect of its implementation. Continuing with this side, we intend to identify key points and draw significant conclusions on the overall performance of financial education initiatives in Italy.

Case study 1: "La Torta dell'economia"

The "la Torta dell'Economia" project was born with a dual objective, that of improving financial literacy and at the same time promoting pro-social behaviors among primary school students throughout Italy. Since these are two fundamental skills in today's society, the project also set itself the objective of evaluating its effectiveness, therefore a controlled experiment was chosen. This approach was selected because it is able to provide reliable data on the impact of the initiative analyzed and at the same time allows the results to be isolated from other possible influences.

Why choose a controlled experiment?

The controlled experiment was necessary because it allows to obtain accurate results and at the same time is not influenced by external factors. If only the pre- and post-intervention results had been compared, it would not have been possible to determine whether the changes had been directly attributable to the project. Other factors that could have influenced the results could have been the natural cognitive development of the students, the family environment or external events.

Likewise, the comparison between students participating in the project and non-participating students would have been problematic. The two groups, in fact, could differ in ways unrelated to the intervention and therefore influence the results leading to inappropriate conclusions.

Using this controlled trial method with random assignment of classes, the study ensured that the two groups were statistically equivalent at the beginning. This random assignment process ensured that the differences observed between the two groups were entirely attributed to the project and not to pre-existing factors such as average grades in math, percentage of males/females, geographical origin etc.

Differences pre- and post-intervention?

Several results emerged from this study, all of which confirm the effectiveness of "La torta dell'Economia" project. Among the main ones we certainly have:

Interest in Economics: one of the main results was the increase in students' interest in economics. This is very important because students felt involved and intrigued by financial issues, an element that in the long term is very important for financial literacy.

Financial knowledge: students who participated in the intervention showed a slight improvement in financial knowledge compared to the control group. All this indicates that the initiative, although not in an abundant way, was effective in promoting the understanding of economic and financial concepts.

Price knowledge: the intervention also led to a slight improvement in the participants' knowledge of prices. The students participating in the project were, in fact, able to better understand the economic value, as well as the value of expenses.

All the detailed values of the project results are shown in the table below.

Outcome index	Effect on treaties	Standard error of the effect	p-value
Priority outcomes			

Financial knowledge	0.1	0.1	0.15
Price knowledge	0.1	0.1	0.34
Interest in economics	0.7	0.2	0.00
General altruism	0.2	0.2	0.09
Narrow altruism	0.1	0.1	0.50
Extended altruism	0.0	0.1	0.99
Secondary outcomes			
Materialism	0.2	0.2	0.41
Commodification	-0.1	0.1	0.11
Propensity to save	0.2	0.2	0.20

Table 3. Estimates of the effects of the intervention "La torta dell'Economia" on the outcomes (coefficients from OLS regression models). [23]

Closing Thoughts and Implications

In summary, "La torta dell'Economia" project demonstrated positive effects on several important outcomes. The increase in students' interest in economics was particularly significant, as this factor is essential to promote responsible and socially aware financial behavior in the future. Although the improvements in financial knowledge and price awareness were more modest, they still represent a step forward in financial education at the primary school level.

The use of controlled experimentation was necessary to have reliable results of this financial education initiative. The treatment groups were guaranteed to be equivalent and therefore the study could state that all the results were directly attributable to the initiative and not to external factors. This proves that "La torta dell'Economia" can be an effective tool to promote financial education among young people.

[23] Source: Rinaldi, E. E., & Argentin, G. (2020). *La torta dell'economia: Valutazione di un progetto di educazione finanziaria per gli studenti delle scuole primarie*. In L. Refrigeri, E. E. Rinaldi, & V. Moiso (Eds.), *Scenari ed esperienze di educazione finanziaria: Risultati dell'indagine nazionale ONEEF e riflessioni multidisciplinari* (pp. 223-246). Pensa Multimedia.

These findings indicate that more widespread educational interventions, if carefully conceived and rigorously tested with replicable results, could dramatically alter student's financial knowledge and social preferences. These experiences may be useful in informing future curriculum, improving and tailoring financial education for students at large.

Case study 2: "Impresa in azione"

Introduction to Junior Achievement and "Impresa in azione"

Junior Achievement is the largest non-profit organization in the world that deals with entrepreneurship among young entrepreneurs. Is more than 100 years old and operates in over 120 countries every year with about 10 million students involved. Junior Achievement supports the professional development of young people by equipping them with essential skills in entrepreneurship and business, while also addressing key economic concepts. Through this training, it empowers young individuals to become valuable contributors to the workforce and society. One of their key programmes is "Impresa in azione" where they set up and run a mini business. The program can be operated in various countries and serves as one of the connections between school education and work, providing students who have acquired basic business materials to become future managers or founders.

The Importance of Financial Education in the Curriculum

Financial education is one of the most crucial aspects of the "Impresa in azione" program. Given the complex economic environment, young people must learn how to take care of their money and divide it between investments, and they must also understand what financial markets are. In addition to learn how to manage the resources that any given company has at its disposal, "Impresa in azione" teaches students how to use their own money. Some of the monetary skills learnt are budgeting, cash flow analysis, an understanding of cost of capital and assessing all possible investment opportunities. Not only these skills are essential for any young person aspiring to be an entrepreneur, but they also help students to make better financial decisions in day-to-day life. The program conveys a clear picture of the financial challenges and opportunities faced soon by young people through practical exercises and intervention in real situations.

Results and Impact on Financial Education

The analysis of the “Impresa in azione” program has shown that it had a meaningful positive impact on participating students' financial literacy. The study period was from 2017 to 2018, and there were 737 participating high school students selected for a test. They were divided into treatment and control groups, including 500 and 237 students from different types of Italian high schools: “liceo,” technical and professional school.

The regression analysis showed that the main variables significantly influencing the financial literacy improvement were the following ones:

- **Program “Impresa in azione” participation:** The participation coefficient was 0.325, the t-test was 2.30 demonstrating the significantly positive impact of program participation on financial literacy growth.
- **The number of books at home:** The number of books at home coefficient was 0.0924, whereas the t-test was 1.83, concluding that the more books there were in the home, the greater the increase in financial literacy, but this effect had a weaker influence than other variables. The number of books at home is considered a fundamental indicator of scholastic performance in general, in fact it is used by INVALSI studies as an approximation of the cultural level breathed in the student's family.
- **“Liceo”**: High school (“liceo”) students demonstrated a small but significant coefficient of 0.326, and t-test - 2.17. It means that school type, specifically “liceo”, significantly influenced financial literacy compared to technical or professional school. The explanation is that while students attending technical and professional schools deal with these topics during the normal course of the school program and therefore start from a higher level of skills, their colleagues in “liceo” start from a lower level of skills and, for this reason, have greater possibilities to increase their knowledge on this topic.

- **The mother's socioeconomic level:** The coefficient was -0.0327, with t-test - 3.39 which means that the higher the socioeconomic level of the mother, the worse the results were after the project. Obviously, a decrease in economic knowledge is not possible. However, this result means that there were no major improvements in students with a mother with a higher socioeconomic level, this is probably due to the higher initial level of financial education.
- **The school debts:** This variable refers to the number of debts received between the end of the 2016/2017 school year and the end of the following one. The coefficient was 0,209, with t-test 1.82. This result shows how students with more debt had an easier time improving their financial skills through the program, probably, also this time, because they started from a lower initial level.

Variables	**Regression 1 (Communication)**	**Regression 2 (Problem-Solving)**	**Regression 3 (Financial Skills)**	**Regression 4 (Attitude Toward Future Work)**
Treatment (participation in the IIA path)	0.261* (1.63)	0.255* (1.65)	0.325** (2.30)	0.210 (1.37)
Geographical origin (North, Central, South Italy)	0.200** (2.05)	-0.102 (-1.07)	0.121 (1.37)	-0.0412 (-0.42)
Gender		0.293** (1.99)	0.159 (1.18)	
Age				0.155** (2.07)
Number of books at home (excluding schoolbooks)			0.0924* (1.83)	0.101* (1.89)
Mother's socioeconomic status			-0.0327*** (-3.39)	
Technical or professional school		0.328** (2.07)		
High school ("Liceo")			0.326** (2.17)	
Grade in Italian	0.177 (1.52)			
Grade in Math		0.187** (2.00)		
School debts			0.209* (1.82)	
Organization and planning	0.287*** (2.59)			

Confidence in the job market	0.216** (2.24)			0.335*** (3.62)
Creativity	0.210* (1.73)			
Self-esteem	0.476*** (3.37)			
Self-efficacy	0.677*** (4.00)	1.443*** (9.14)		0.353** (2.26)
Entrepreneurship	0.178** (2.37)			0.109 (1.55)
Teamwork		0.233** (2.57)		
Communication			0.115 (1.29)	

Table 4. Regression Analysis Results of 'Impresa in Azione' project. [24]

This table presents the results of multiple regression analyses evaluating the impact of various factors on different outcomes, including communication, problem-solving, financial skills, and attitudes toward future work. Each row represents a different variable included in the regression models.

- The first column lists the independent variables used in the analyses.
- The subsequent columns display the coefficients for each regression, indicating the strength and direction of the relationship between the independent variables and the outcomes.
- Values in parentheses next to each coefficient represent the *t-value*, which is used to determine the statistical significance of the coefficients.

Statistical significance levels are indicated as follows:

- *p < 0.104 (*)*: marginally significant
- p < 0.05 (**): significant
- *p < 0.01 (***)*: highly significant

A positive coefficient indicates a positive relationship between the variable and the outcome, while a negative coefficient indicates a negative relationship.

[24] Source: Junior Achievement Italia. (2019). *Indagine conoscitiva in materia di innovazione didattica*. Junior Achievement Italia.

Closing Thoughts

In conclusion, the results of the "Impresa in azione" program clearly demonstrate its effectiveness in improving students' financial skills. The experiential and practical approach adopted has had a significant impact not only on the development of technical skills, but also on the soft skills essential for professional success. The program has had a positive impact on the entire population involved, with particular benefits for students from less favored socioeconomic backgrounds, this result can be intuited by aggregating the results obtained. The project "Impresa in azione", as analyzed, improves the financial skills of students. The socio-economic level of the mother, which can be associated with a more favorable background of the students, has however a negative impact, even if minimal, on the effectiveness of the project. For this reason, it is possible to affirm that the project has a greater effectiveness on the less advantaged students since these probably have a lower starting level of financial education compared to their classmates with a different background. These results underline the importance of continuing to invest in financial education programs based on a practical approach, capable of stimulating a significant improvement in students' financial skills and work attitudes, regardless of their background.

Personal reflections

I think this initiative can be an important basis for the future. Personally, I believe that approaches of this type, being very practical, are more stimulating for students, thus optimizing their learning capacity.

As for the results, it would have been very useful to have a more in-depth explanation or a greater investigation on some of them. Geographical origin, for example, has an impact, albeit minimal, on the test results, and it would have been interesting to understand whether the students who show the greatest improvements attend schools located in the North, Center or South of Italy. This information would have been significant, since, as already observed, the level of financial education varies considerably between the different Italian geographical areas. For example, a more marked improvement in the Center or South of Italy would have confirmed the thesis that the students who benefit most from this initiative are those with a lower starting base. The same goes for the gender variable, which unfortunately has not been adequately explained. As analyzed during this research, the level of financial education of girls is on average lower than boys. An in-depth analysis of the gender variable, especially if it had shown a greater improvement among female students, would have further confirmed the hypothesis that those who benefit most from the initiative are precisely the students with a lower starting level of financial literacy.

Another aspect on which I would have paid more attention is the improvement associated with the mother's economic background and the grade in mathematics. Although the grade in mathematics was not used as a variable related to improvement, it is known, from the PISA studies, that it is a significant indicator to explain the level of financial education. It would have been interesting to observe how much this variable influences the improvement, also to evaluate the opportunity to enhance the benefits deriving from the integration of exercises on financial topics in mathematics lessons. The anomalous result relating to the socioeconomic background of the mother is particularly interesting, since it is difficult to worsen one's level of financial education. However, if this data were confirmed, it would mean that the program helps to reach a certain level of financial knowledge but does not go beyond that for those who already have a good starting level.

"Impresa in azione" proved to be a very productive program, since it contributed to improving the financial skills of the participants. There are certainly still some open questions from this study that will require further exploration in the future. It will be crucial to determine precisely who benefits most from the program, to assess the extent to which it can improve skills, and also to understand whether it can be further enhanced by introducing more complex concepts.

Case Study 3: "Donne al quadrato"

Introduction to Financial Well-being

Financial well-being can be defined as the state in which an individual can successfully deal with all debts and financial obligations, feels secure about his or her financial future, and has the ability to make independent financial choices. This concept highlights the inseparable relationship between the economy and social well-being, highlighting the importance of sufficient financial preparation to improve people's quality of life. In order to measure financial well-being and its growth after the training courses, the Global Thinking Foundation organizes the project "Donne al Quadrato".

The Financial Well-being Index

To study the impact of the project, a specific indicator called the Financial Well-being Index or FWI was created. This unit of measurement was developed to verify how much a course on financial well-being directly influences the perception of security and economic freedom of a participating woman. The FWI is divided into two main calculations: A micro-index whose share is equal to 83% of the total index, is based on research carried out through questionnaires among participating women. A macro-index that accounts for 17% of the total and is based on national and regional economic indicators.

The total index is the result of fifteen micro, and three macro aspects, and each individual factor is evaluated on a scale of one to ten, for a total of 180 points. In fact, the effect of the 15 microfactors can vary from 0 to 150, influencing 83% of the total; while the effect of the 3 macrofactors can vary from 0 to 30, influencing 17% of the total. The micro factors are determined based on the personality, financial preparation and attitudes among the participants. The macro indicators include the unemployment rate, the equality of income distribution and the variability of per capita GDP. In this way, each individual factor influences the final FWI result.

Results of the Experiment

The use of the Financial Well-being Index has led to significant results on the consequences of participation in the “Donne al Quadrato” program among the people involved. The financial literacy module has led to better measurable results in various aspects of financial behavior, indicating greater general financial health among the women treated. One aspect in which there has been greater growth is debt awareness, which has increased by 21%. This implies that the treated females will now pay more attention before engaging in debt; this will direct to a reduction in their level of over-indebtedness in the future otherwise.

Similarly, impulsivity, or the dimension of thinking before acting, increased by 10% (a higher score on this microindex corresponds, contrary to what one might intuitively think, to a lower impulsiveness in decisions). It can be assumed that the participants now have been in the course of developing a greater reflective capacity for money related decisions to reduce their impulsivity and, therefore, the risk of making decisions that can damage their long-term financial stability. Finally, the financial locus of control increased by 9%. This reflects an increase in believing that the events of our life are based on our behavior rather than on uncontrollable elements. With regard to behavior, the data shows a 12% increase in the ability to monitor spending and savings. The project participants seem to pay more attention to tracking their spending, which could lead to a more rigorous control of personal financial resources. This result seems significant since monitoring spending is one of the key factors that ensure financial balance and prevent the accumulation of unsustainable debts. Overall, the data show that the project had a substantial impact, not only on the knowledge, but also on the financial skills and behaviors of the participants. The improvement of money manipulation skills and the disintegration of future fears regarding women's individual economic life indicate a good path towards increasing financial well-being.

Personal reflections

The initiative is innovative and represents a valid contribution to addressing a deep-rooted problem in our country, the fact that girls have a lower level of financial literacy than boys. Unfortunately, the results for all 15 micro factors analyzed are not available, but only those for the main ones and those that have undergone a more significant change. It would certainly have been useful to have the results for the micro factor "financial knowledge", as well as those relating to confidence in managing money and the perception of one's future economic situation. Another crucial aspect for the research would have been the repetitiveness of the results over time, to be able to observe how they evolved over the years and identify any trends; however, this was not done. Therefore, many open questions remain that need to be answered, the main one being: why do girls have a lower level of financial education than boys?

Final Insights

Financial education is an obviously essential tool in the final order of financial well-being, as made clear by this project. The Financial Wellbeing Index (FWI) not only measures and quantifies the benefits of this education intervention but will also serve as a solid foundation for programs that are designed to advance financial literacy, ultimately leading towards greater long-term financial wellness.

Final Reflections

Recap of Objectives

The aim of this thesis is an analysis of the situation regarding financial education in Italy. We started with the explanation of the concept of financial literacy, highlighting its advantages and, at the same time, highlighting the disadvantages of not being financially literate. It should be remembered that a good level of financial education has among its main advantages: greater participation in the markets and greater awareness in savings choices, allowing a safer approach to retirement. Other important advantages are linked to a better quality of economic life, greater preparation for financial emergencies and above all a reduction in the possibility of being involved in financial traps. This last aspect cannot be considered negligible in today's world, with the development of social media, in fact, we are increasingly "assaulted" by investment proposals of all kinds. It is therefore very useful to know how to distinguish between useful and profitable opportunities and proposals made exclusively with the intent of stealing money. The main costs resulting from the lack of financial education were also illustrated, including poor participation in the financial market, unprofitable use of debt and the lack of retirement planning.

As a starting point, a comparison was made between Italy and other developed European countries, to have a general overview of the position of our nation compared to other advanced economies. For this analysis, the PISA studies were used, which allowed us to compare the financial skills of fifteen-year-old Italian students with those of their peers in other countries, highlighting significant differences.

The thesis continued with a study of behavioral biases, starting from the main theories up to discussing the individual biases. For each one was provided a description, an analysis of the practical effects that could occur and finally some solutions to mitigate them.

Subsequently, a general overview of the most important financial education initiatives in Italy was shown, with the aim of analyzing the behavioral biases mitigated by each of them.

The thesis concluded with the analysis of three case studies, selected to evaluate the concrete effectiveness of financial education initiatives in the Italian context. However, it emerged that the availability of quantitative and qualitative data in this area is limited, making a comprehensive and in-depth evaluation complex. Despite these difficulties, the case studies offered significant insights on how to improve future strategies and promote a more widespread and deep-rooted financial culture among the population.

Summary of Findings

Already from the analysis of the PISA studies, notable differences have emerged compared to other developed countries. First of all, it is useful to remember that the score obtained by Italian students has always been lower than the OECD average; however, there has been a general improvement over the years of the analysis, in fact it has gone from 466 points in 2012 to 484 points in the last year, 2022. During these studies, unfortunately, similar trends have been found over the years. A difference has always emerged at a territorial level, students from central and southern Italy, in fact, have obtained lower scores compared to their peers in the North, highlighting how it is necessary to reach the entire peninsula with initiatives and not just the most developed regions.

Another important result, which persists in all years, is the difference in scores at gender level, this highlights the need to promote initiatives that are gender inclusive, such as for example the initiative "Donne al quadrato" analyzed in this thesis. The socio-economic level is also a very determining factor for the score, confirming the idea that financial education initiatives must reach the entire population and not just the most advantaged.

Practicality is another very important aspect: in fact, the use of credit cards, the ownership of bank account and the discussion of financial issues in the family, help to enter more in this world. An example analyzed in this research was the program "Impresa in azione" where it was demonstrated how practical experience improves financial skills, but not only, in fact, it stimulates young people to have more entrepreneurial initiatives but also to think more about their future.

From the study relating to behavioral biases, not many new results emerged, since all the initiatives analyzed, contribute to mitigating various biases. This result confirms all the studies in which it is discussed that greater knowledge of the subject and of possible behavioral errors helps to make wiser and less impulsive decisions.

Finally, some financial education initiatives were analyzed to verify whether they actually had a practical impact, and the results confirmed this hypothesis. All three initiatives, although one less evidently, have contributed to improving people's financial knowledge, in addition to offering other benefits, such as increased interest in the subject, better understanding of prices, increased ability to manage expenses and reduced impulsiveness in decisions.

As has been demonstrated in this paper, there are no disadvantages to being financially educated; on the contrary, there are numerous advantages. For this reason, a basic understanding of financial concepts is essential in today's world.

Critical Discussion and Future Proposals

Overall, the analysis conducted on the situation of financial education in Italy defines a framework characterized by several critical areas that require targeted and systematic interventions. Both the practical implications and the future proposals resulting from the research conducted here represent key elements for the future of national educational policies and the increase of financial awareness. First, the current results underline to solve the geographical gap. It is no coincidence that Northern and Southern Italy present different achievements by students: as indicated in chapter two, the Southern areas show living conditions and levels of well-being, lower than those of the North. However, the gap in terms of financial education is mainly influenced by the level of access to resources: in order for this form of education to be truly effective, it is necessary to ensure that initiatives can homogeneously reach all Italian regions. This could be achieved with the implementation of online educational programs, which can overcome territorial barriers and make the subject easier to understand and effective, even for less developed areas. In addition, regional administrations and schools should be more involved in the awareness-raising and development process of the subject, to allow the promotion of regional support networks.

At the same time, gender disparities emerge in the analysis, underlining the importance of promoting inclusive financial education, which considers the specific needs of women and minorities. Interventions should aim not only to fill knowledge gaps, but also to challenge and change perceptions and stereotypes that may limit women's access to the financial world. In this sense, programs such as "Donne al Quadrato" are a model to follow and expand, integrating them with policies that encourage female participation in economic and entrepreneurial leadership roles.

Another important aspect concerns the importance that the socioeconomic context plays for financial skills. So, financial education initiatives should also reach a wider and more diverse group of people, including those from less privileged economic backgrounds. This can be done, for example, by developing programs that encourage financial education during extracurricular activities and by promoting family involvement, so that financial awareness becomes a specific part of our basic culture.

Another key factor in ensuring the success of such initiatives has been the practical aspect of financial education. Clearly, hands-on experience, such as simulating the management of a business or using financial instruments in practice, significantly strengthens skills. Therefore, it can be argued that future educational programs need to include practical and active components, like interactive elements that not only make learning easier but also make financial education more relevant and applicable in daily life. Their model could be significantly expanded through the expansion of activities such as “Impresa in azione”.

Another critical point is the need to support these initiatives through robust public policies and effective coordination between the public and private sectors and educational institutions. Supporting local initiatives and collaborating with non-profit organizations could contribute to a wider variety of training activities. This also requires the commitment of companies and the banking system, which could provide resources, skills and opportunities for practical training.

Systematic collection and analysis of data on the impacts of educational strategies, should be an area of major concern, as it will promote the identification of best practices and the adaptation of policies to emerging needs. It will improve the effectiveness of current initiatives and guide the development of new solutions, ensuring that they are targeted and inclusive.

Closing Thoughts

In summary, by the end of this analysis we can affirm that financial literacy is a must. It helps individuals to learn about financial knowledge and skills as well, provides them the best advantages of today's world. Also, a considerable financial education will make for a more aware and prepared society to avoid committing the same mistakes that have been made before. By investing in these programs and learning opportunities, Italy can build long-term economic stability and social security, with future generations becoming much more financially informed.

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