

THE RATIONALITY OF ECONOMIC DECISION-MAKING AND THE ROLE OF FINANCIAL COMPETENCE IN REDUCING BIASES

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Abstract

This paper analyzes the relationship between economic decision-making rationality, behavioral biases, and the role of financial literacy in mitigating decision-making distortions. The research is grounded in the premise that a higher level of financial literacy contributes to improving the quality of economic decisions, although it does not eliminate the influence of automatic cognitive mechanisms. The study applies a mixed-methods approach, combining a critical review of the specialized literature with the analysis of secondary data from OECD/INFE reports on financial literacy and PISA findings on young people's financial behavior. The methods used include comparative analysis, interpretation of financial literacy indicators and conceptual correlation between the level of financial competence and the manifestation of cognitive biases.

The results show that individuals with higher levels of financial literacy tend to display more prudent economic behaviors, such as saving, price comparison and long-term financial planning. However, the analysis confirms that biases such as loss aversion, overconfidence, anchoring and herd behavior persist even when financial knowledge is relatively high. The original contribution of the article lies in developing an integrated analytical framework that explains financial education not as a definitive solution, but as a mechanism for reducing behavioral vulnerabilities in economic decision-making.

Keywords

economic rationality, economic decision-making, behavioral biases, financial literacy, bounded rationality, behavioral finance

JEL Classification

G40, G41, G53

Introduction

Recent transformations in financial markets, characterized by digitalization and the increasing complexity of financial products, have significantly influenced the way individuals make economic decisions. Easier access to information, a wider range of

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investment opportunities, and market volatility have contributed to a context characterized by high uncertainty and increased cognitive pressure.

In this context, recent research in behavioral economics suggests that economic decisions are not governed exclusively by rational factors, as posited by economic theory, but are influenced by psychological and cognitive factors. Empirical studies demonstrate the presence of behavioral biases, such as loss aversion, overconfidence, and herd behavior, which have the potential to distort individual choices and lead to suboptimal outcomes.

In the same line of thought, the literature highlights the essential role of financial education in strengthening individuals' ability to make informed decisions; however, recent research indicates that the level of financial knowledge is not always sufficient to eliminate irrational behaviors. The influence of emotional factors and cognitive mechanisms persists even among individuals with a high level of financial literacy, highlighting the limitations of traditional approaches. However, the existing literature often analyzes the role of financial literacy and the impact of behavioral biases separately, without sufficiently exploring the interdependence between these factors in shaping economic decision-making.

In this context, there is a need for an integrated perspective that combines the analysis of economic rationality with the behavioral dimension of the decision-making process. Therefore, this paper aims to examine the interdependence between the rationality of economic decision-making and behavioral biases, as well as to analyze how financial education influences individuals' vulnerability to these distortions.

The central research problem consists of identifying the extent to which financial competence can contribute to reducing behavioral biases that affect economic decision-making. Although the literature confirms the importance of financial literacy for adopting more responsible decisions, it remains insufficiently clear whether financial education can effectively eliminate irrational behaviors or only reduce their intensity. This issue becomes particularly relevant in the context of financial market digitalization, rapid access to investment instruments and individuals' increased exposure to incomplete information, emotions and social pressure.

The research hypothesis states that financial literacy contributes to reducing the effects of behavioral biases, but its effectiveness is limited by the nature of human rationality, which is shaped by cognitive, emotional and informational constraints. The original contribution of the paper consists of integrating the economic and behavioral approaches into a common analytical framework that explains the relationship between financial competence, bounded rationality and the quality of economic decisions.

The structure of the article is organized as follows: the first section presents the main contributions from the literature on behavioral economics and financial education; the second section describes the research methodology; and the final section is dedicated to the analysis of the results and the formulation of conclusions.

1. Review of the scientific literature

The foundations of behavioral finance were laid by psychologists Daniel Kahneman and Amos Tversky, whose work in prospect theory during the second half of the 20th century demonstrated how people behave when evaluating probable losses and gains in

a non-systematic manner. Nobel Prize winner Richard Thaler subsequently built upon this work and developed concepts such as “nudging” and “mental accounting” in the fields of personal finance and public policy. These pioneers have established behavioral economics and behavioral finance as core disciplines of contemporary financial theory.

Table no. 1. Summary of key studies on behavioral biases and financial education

Author(s)/Year	Reviewed concept	Methodology	Key findings
Kahneman & Tversky (1979)	Prospect Theory	Theoretical model + experiments	Individuals exhibit a loss aversion and are not entirely rational; this constitutes a theoretical foundation of behavioral economics.
Thaler (1985, 1999)	Behavioral economics	Conceptual analysis	The integration of psychological concepts into economics explains deviations from rationality.
Shiller (2000)	Herd behavior	Macroeconomic analysis	Collective decisions can lead to speculative bubbles that further influence market stability.
Lusardi & Mitchell (2014)	Financial literacy	Empirical analysis	The level of financial literacy influences economic decisions
OECD (2020, 2023)	Financial literacy	International studies	The level of financial literacy varies from country to country and is influenced by factors such as access to information, income levels, and the population's level of economic development.
Kahneman (2011)	Heuristics and biases	Theoretical analysis	Decisions are influenced by the intuitive system; there are System 1 and System 2 modes of thinking.

Source: elaborated by the author

As can be seen, the literature suggests that economic decisions are significantly influenced by behavioral biases and that financial education, while important, is insufficient without an understanding of the underlying psychological mechanisms. This highlights the need for an integrated approach to the analysis of economic behavior.

2. Research methodology

The research applies a mixed-methods approach, combining qualitative and quantitative-descriptive elements, with the aim of analyzing the relationship between financial competence and the reduction of behavioral biases in economic decision-making. The qualitative component is based on a critical review of the literature in behavioral finance, behavioral economics and financial education. Concepts such as

bounded rationality, loss aversion, overconfidence, herd behavior, availability heuristic and anchoring were examined.

The quantitative-descriptive component is based on secondary data from OECD/INFE reports on adult financial literacy and PISA findings on young people's financial competence. The dataset includes indicators such as the overall financial literacy score, financial knowledge, financial behavior, financial attitudes, saving behavior, price comparison and orientation toward financial planning. The analyzed period corresponds to the most recent reports used in the article, particularly OECD/INFE 2020, OECD/INFE 2023 and PISA 2022 data.

The selection of sources was based on three criteria: relevance to economic decision-making, international comparability of the data and institutional credibility of the data providers. The analysis does not aim to estimate a causal relationship through an econometric model, but to identify relevant associations between the level of financial literacy and observable economic behaviors. The methods applied include comparative analysis, interpretative analysis, conceptual synthesis and descriptive correlation of the available indicators.

The main methodological limitation lies in the use of secondary data and the absence of an original population survey. Therefore, the conclusions should be interpreted as analytical and conceptual findings rather than definitive statistical validations. Nevertheless, this approach allows for the development of a relevant explanatory framework regarding the role of financial literacy in reducing behavioral vulnerabilities.

3. Results and discussion

Behavioral finance is an interdisciplinary field that explains deviations from rational behavior in decision-making by integrating concepts from psychology and economics. This theoretical framework challenges the assumptions of traditional economics, which hold that individuals act strictly rationally. In this context, behavioral finance highlights the influence of heuristics, emotional reactions, and social factors on economic decisions, frequently yielding results that differ from those predicted by classical economic models. (López-Rodríguez et al., 2026)

Economic decisions, made under various conditions such as uncertainty, incomplete information, or time pressure, are not always logical or rational. Thus, a key factor affecting the decision-making process is the limitation of an individual's cognitive capacities. This is where the theory of bounded rationality, developed by Herbert Simon, comes into play, arguing that individuals cannot process all available information and, consequently, do not always make perfect or "optimal" decisions. According to Simon's theory, due to cognitive and time constraints, people are not inclined to identify all the information necessary to make a rational decision (Figure no. 1). This constraint leads individuals to make choices that are merely satisfactory, rather than continuing to search for the best option. The choices are logical given the information realistically available to them, but not in light of all possible existing information. (Giarlotta & Petralia, 2024).

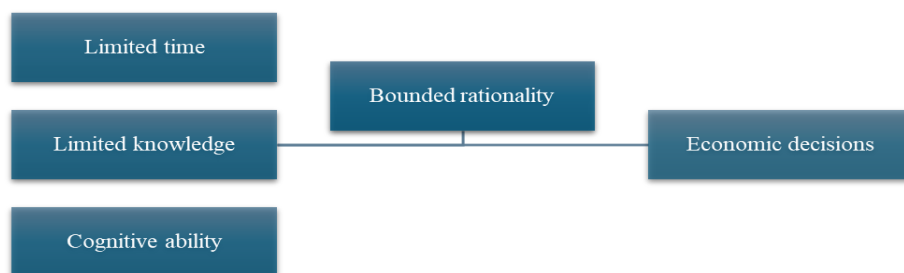


Figure no. 1. The model of bounded rationality in economic decision-making

Source: Elaborated by the author based on research

Therefore, they often resort to simplified mental mechanisms. In this context, some behavioral finance concepts that influence investors' decision-making processes include:

Loss aversion: Loss aversion represents one of the central concepts of behavioral economics and prospect theory. According to Kahneman and Tversky (1979), individuals tend to perceive losses more intensely than gains of an equivalent value. Consequently, the psychological impact of a financial loss is generally stronger than the emotional satisfaction associated with a comparable financial gain.

Overconfidence: Individuals frequently overestimate their abilities and the accuracy of their predictions. This can lead to increased trading, inappropriate investments, and an overestimation of their investment returns (G P, Pallavi, 2025). Similarly, research conducted by the Financial Industry Regulatory Authority showed that 64% of investors believe they have a high level of investment knowledge. This cognitive bias can lead investors to make high-risk investments based on an overestimation of their expertise (Financial Industry Regulatory Authority (FINRA), 2022).

Herding behavior: People engage in herding behavior when they choose to act in accordance with the crowd's decisions rather than making their own decisions. Herd mentality is one of the most impactful behavioral biases in investing, occurring when investors make decisions based primarily on group behavior rather than independent analysis. Herding behavior may intensify market instability by encouraging investors to imitate the actions of others rather than rely on their own evaluation of financial information. In periods of uncertainty, this tendency can contribute to speculative bubbles or impulsive selling decisions. Limiting the impact of such behavior requires investors to adopt a structured decision-making approach focused on risk evaluation, diversification strategies, and long-term financial objectives. (Almansour et al., 2023) .

Emotional bias: Investors feel that fear and greed have the power to significantly influence their financial decisions. For example, during a market downturn, greed can cause speculative bubbles, while fear can trigger panic selling (G P, Pallavi, 2025).

Analysis of behavioral biases highlights the fact that they directly influence the rationality of economic decisions, leading to deviations from optimal human behavior. In this context, rationality should not be interpreted in terms of perfect maximization,

but rather as the ability to make informed decisions under conditions of uncertainty. Thus, the decision-making process becomes limited but adaptive.

In this context, understanding the complexity of behavioral finance can offer insights into how to mitigate the negative effects of cognitive dissonance and make more rational financial decisions. It can also help individuals, investors, and policymakers understand the complexity of the financial decision-making process and market behavior.

Thus, behavioral finance has broad applicability in explaining the behavior of various categories of economic agents. First of all, it provides a clear explanation for market downturns, stock market bubbles, and other phenomena. Understanding these behaviors enables investors to make informed decisions and avoid common pitfalls. Similarly, the principles of behavioral finance are relevant to personal financial decision-making, including saving, budgeting, and retirement planning. Following the same line of thought, they have the ability to influence decisions at the corporate level, including risk management, procurement, and budget planning. Managers' cognitive biases, such as risk aversion or overconfidence, can affect strategic decisions. Of course, behavioral finance has implications for decision-making at the national level, particularly through nudges, which can help encourage desired behaviors among the population. (Kawadkar, Hemraj, 2024).

From this perspective, financial education becomes an essential mechanism for improving the quality of economic decisions and reducing individuals' vulnerability to behavioral biases.

According to data presented by the OECD, based on the 2022 PISA results, there is a direct link between financial literacy and positive financial behavior. Young people with stronger financial literacy skills behave more responsibly in financial matters and are more future-oriented and proactive financially. Students with high performance in financial literacy are 72% more likely than those with low performance to save money and 50% more likely to compare prices at different stores before making a purchase. (OECD, 2024)

An analysis of secondary data confirms the existence of a positive correlation between the level of financial literacy and prudent economic behaviors. The indicators used in the OECD/INFE reports demonstrate that financial literacy is not limited to the accumulation of knowledge, but also encompasses behavioral and attitudinal dimensions. Thus, individuals with a higher level of financial competence tend to compare available alternatives more carefully, save more frequently, and exhibit a stronger orientation toward long-term planning (Rehman & Mia, 2024; Nogueira et al., 2025).

At the same time, the analysis highlights the fact that financial literacy does not eliminate cognitive biases. For example, an individual may understand the principles of portfolio diversification but may act impulsively under conditions of high market volatility. Similarly, an informed investor may exhibit overconfidence in their own estimates or be influenced by the behavior of the majority. This finding confirms the limited nature of economic rationality and the need to integrate financial education with the development of behavioral skills, such as self-control, critical analysis of information, and emotional management in the decision-making process.

Therefore, the main finding of the research is that financial literacy reduces the likelihood of making impulsive economic decisions, but its effectiveness depends on the individual's ability to engage in deliberative cognitive processes. Financial education becomes more effective when it is not limited to conveying information about financial products but includes decision-making scenarios, simulations, case studies, and bias recognition exercises (Mandić et al., 2026).

Students' practical experience can provide them with a valuable learning opportunity, but the reverse may also be true—only those who show an interest in finance or who have a certain level of financial literacy are likely to seek out these experiences in the first place. Students interested in financial matters scored, on average, 11 points higher on financial literacy tests than those who did not show interest. Similarly, students who consider financial matters relevant scored 27 points higher than those who did not consider them relevant. This can create a vicious cycle in which students with financial knowledge continue to improve their skills, while those without basic knowledge fall further and further behind. (OECD, 2024).

Table no. 2. Relationship between financial literacy and financial behavior

Financial literacy level	Saving behavior	Price comparison	Rationality level
Low	Low	Rare	Low
Medium	Moderate	Occasional	Medium
High	High	Frequent	High

Source: elaborated by the author according to (Rehman & Mia, 2024)

The comparative analysis provided in Table 2 highlights the positive relationship between financial literacy and rational financial behavior, suggesting that a higher level of financial literacy contributes to more disciplined and analytical economic decision-making.

In view of the foregoing, the OECD has recommended strengthening public policies so that financial education becomes a national priority. Thus, several countries, including Romania, have developed National Financial Education Strategies, which aim to establish specific objectives and action plans through 2030, with a view to improving the level of financial education among students, adults, and economic operators in Romania. (Government of Romania, 2024). The relevance of this Strategy stems from the results of an international study, according to which the level of financial education in Romania is below the average score (Figure no. 2).

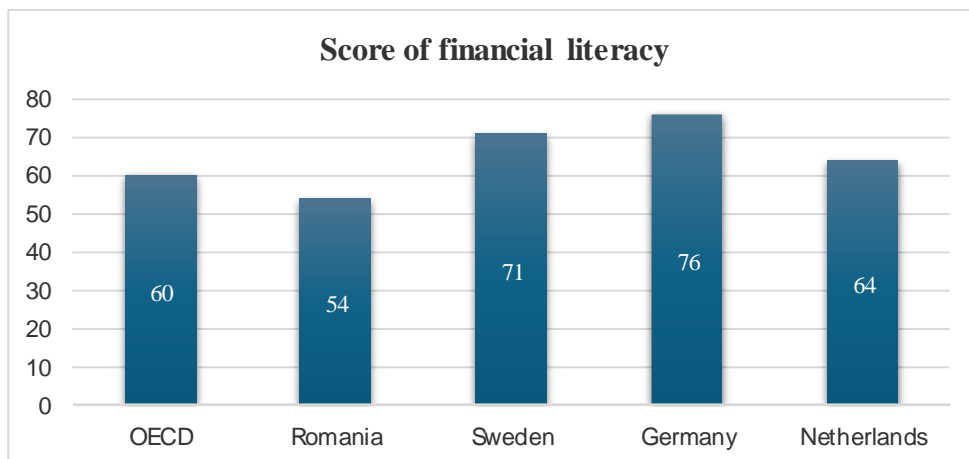


Figure no. 2. Level of financial literacy (score out of 100) – international comparison

Source: OECD/INFE 2023 International Survey of Adult Financial Literacy

Notes: The overall financial literacy score is computed as the sum of the scores on financial knowledge, financial behaviour and financial attitudes. The overall financial literacy score was scaled to range between 0 and 100.

As shown in Figure no. 1, Romania ranks below the OECD average in terms of financial literacy, highlighting the need to implement effective financial education policies and programs.

In this context, Romania's National Financial Education Strategy (NFES) recognizes, at the institutional level, the importance of developing financial literacy among the population. Financial education is considered the path to economic well-being, serving as a tool to drive economic development, particularly by influencing individuals' financial behavior.

According to the literature, a high level of financial education is associated with an increased ability to manage resources, plan, and make economic decisions. In pursuing this goal, NFES offers an integrated, population-segment-oriented approach aimed at building financial competencies among children and youth, as well as developing the skills of the adult population and various economic actors.

The main strategic directions include introducing financial concepts into the educational system, strengthening financial discipline in the business environment, and increasing the level of information among the adult population. The measures presented are aligned with the central objective of raising awareness of financial and fiscal rights and obligations, as well as with provisions for developing the population's financial resilience.

Thus, the implementation of the NFES specifically aims to create an optimal framework for the implementation and adoption of sound and responsible economic behaviors, as well as to improve financial literacy. In this context, financial education is not viewed

merely as a process of knowledge acquisition, but as an effective mechanism for influencing economic decisions.

Consequently, financial competencies contribute to improving the quality of economic decisions by enhancing analytical capacity and reducing impulsive behaviors. However, the results highlight the fact that financial education does not eliminate the influence of behavioral biases, which suggests the existence of structural limits to decision-making rationality.

Research limits

Analysis of the provisions included in the SNEF, as well as of the specialized literature in the fields of financial education and behavioral economics, suggests that developing financial literacy can mitigate the impact of cognitive biases, but cannot permanently eliminate their consequences.

This limitation is explained by the nature of human decision-making, as highlighted in Daniel Kahneman's theory of the dual-processing system (Kahneman, D., 2011). System 1 is fast, automatic, and intuitive, operating with little or no effort. This mode of thinking involves rapid decision-making based on patterns and experiences. In most economic decisions, people rely predominantly on System 1, which makes them vulnerable to systematic errors and irrational decisions.

Under these conditions, individuals are prone to using mental heuristics, which can lead to deviations from rational behavior. Under these conditions, financial education aims to activate and strengthen the analytical and deliberative thinking processes characteristic of System 2. However, the dominant nature of System 1 causes behavioral biases to persist, even among individuals with a high level of financial literacy.

Conclusions

The research confirms that economic rationality cannot be interpreted exclusively through the classical model of utility maximization, since economic decisions are influenced by cognitive, emotional and social factors. Behavioral biases such as loss aversion, overconfidence, anchoring and herd behavior generate deviations from optimal decision-making and reduce the quality of the decision-making process.

The main finding of the article consists of highlighting the dual role of financial literacy. On the one hand, it contributes to the development of more prudent economic behaviors by improving individuals' capacity for analysis, planning and risk assessment. On the other hand, financial literacy does not eliminate biases, as they are connected to automatic cognitive mechanisms and emotional reactions activated under conditions of uncertainty.

The original contribution of the paper lies in developing an analytical framework that links financial competence with bounded rationality and behavioral biases. This framework allows financial education to be understood not as a definitive solution, but as an instrument for reducing decision-making vulnerabilities.

The practical implications of the research point to the need to modernize financial education programs. These should include not only concepts related to budgeting, saving, credit and investment, but also behavioral components: recognizing biases, managing emotions, critically analyzing information and making decisions under

uncertainty. At the level of public policy, the findings support the integration of the behavioral dimension into national financial education strategies.

The main limitation of the research lies in the use of secondary data and the interpretative nature of the analysis. Future studies may further explore these relationships through empirical surveys, econometric approaches or behavioral experiments.

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