

A DEEP DIVE INTO FINANCIAL CONFIDENCE OF ROMANIANS: DRIVERS AND BLOCKERS WHO SHAPE FINANCIAL PERCEPTION

Marian SIMINICĂ ^{1,2}, Alina ZAHARIA ³, Georgiana-Raluca LĂDARU ^{3✉}, Daniel CÎRCIUMARU ¹,
Cătălin CÂMPEANU ^{1,2}

¹Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania

²Institute of Financial Studies, Bucharest, Romania

³Faculty of Agrifood and Environmental Economics, Bucharest University of Economic Studies, Bucharest, Romania

Article History:

- received 5 December 2025
- accepted 11 August 2026

Abstract. This paper investigates the predictors of perceived financial knowledge among the adult population in Romania, using a multivariate logistic regression model based on data collected through a nationally representative survey conducted in early 2023. The following predictors were analyzed: real financial knowledge, socio-demographic and economic factors (age, education, income, gender, region), financial resilience (ability to cover major expenses), financial fragility (concerns about regular expenses), and financial behavior variables (affordability consideration). The findings reveal that the Romanians' perceived financial knowledge is positively associated with real financial knowledge, higher education levels, younger age (18–39), and financial resilience, particularly the ability to cover major expenses without external help. Conversely, individuals from economically less developed regions, with lower household income and lower education levels recorded lower odds of reporting higher perceived financial knowledge. The study emphasizes the need for targeted financial education programs adapted to the specific needs of different population segments, and recommends a collaborative approach between public authorities, the private sector, and NGOs to enhance financial resilience and well-being in Romania. In the study, comparative references to other countries are included to provide contextual discussion.

Keywords: self-assessed financial knowledge, subjective financial knowledge, perceived financial education, perceived financial literacy, objective financial knowledge, logit regression, survey.

JEL Classification: G53, D14, G41, D12, D83.

✉ Corresponding author. E-mail: raluca.ladaru@eam.ase.ro

1. Introduction

With a growing consensus that financial education is more important than ever (OECD, 2023a; Goyal & Kumar, 2021), assessing its first component – financial knowledge – could explain the efficiency of financial educational programmes and the changes in financial behaviour (Allgood & Walstad, 2011). Thus, it could support the policymakers and other involved organizations with valuable data and tools for creating a more coherent approach of financial education initiatives. As financial knowledge is regarded from two perspectives – perceived and real, the differences between the two are likely to create premises for bad financial de-

cisions, and higher exposure to scams (OECD, 2023a). For example, countries like Romania and Bulgaria top the list with only 7% considering their knowledge as low or quite low compared with other countries, whereas countries like Italy or Austria reach over 20% (European Commission, 2023). Although lately research is focusing on evaluating the actual financial knowledge, the self-assessed one should be reconsidered in order to close the gap between the two (Allgood & Walstad, 2016).

Internationally, there are few scientific studies involving perceived financial knowledge (Maji, 2025; Núñez-Letamendia et al., 2025; Goyal & Kumar, 2021). Most of them uses this variable as a predictor, such as in the study of Wann and Burke-Smalley (2023) and Xiao et al. (2024), while, this research explores a reverse approach, by considering perceived financial knowledge as a dependent variable, which is being influenced by the financial behavior (affordability considerations before buying something) and financial stress variables (concerns and worries for expenses). These predictors are newly used in estimating their impact on the perceived financial knowledge compared to past studies, such as Allgood and Walstad (2016) and Robb and Woodyard (2011). Additionally, the international literature (Kaiser & Lusardi, 2024; Fernandes et al., 2014; Allgood & Walstad, 2011, 2016; Lusardi & Mitchell, 2013; Gunawan et al., 2021) usually considers behavior (affordability) as an outcome, while the perceived financial knowledge as a predictor in models. However, this study reverses the relationship by trying to expose if people who consider affordability before purchase develop overconfidence or higher self-assessed financial knowledge. Also, most of the scientific publications are specific to one group of the adult population, such as millennials (Kim et al., 2019) or university students (Ergün, 2018; Barış & Dilek, 2024), or sectorial, like retail investment (Bellofatto et al., 2018). However, our paper considers the statistically significant sample of the adult population for a country – Romania, not some specific groups of people or economic sub-sectors. Moreover, Romania is different than other countries where the perceived financial knowledge was investigated from multiple perspectives. Firstly, Romanians have Latin-Slavic and oriental-occidental cultural mix, which gives them unique positioning of traits, such as those presented in the national and the personality profiles presented by David et al. (2015a): average levels of neuroticism and agreeableness and levels above the mean for extraversion, openness and conscientiousness compared with the global level of 50 cultures. David et al. (2015b) also point out the existence of two bipolar personality profiles, which sustain Romanians' traditionalism and resistance to change. Secondly, Romania is an ex-communist country, which could mean that older generation of Romanians might be overconfident in their financial knowledge due to life experience, but they were not exposed to modern financial education. Further, although there were several Romanian studies (Sidor & Manațe, 2023b; Nițoi et al., 2022) which tried to assess the perceived financial knowledge, none of them used respondents' financial behavior and financial stress (considering affordability before making a purchase, ability to cover major expenses, concerns about regular expenses) to observe how they self-assess their financial knowledge. Furthermore, the previous Romanian literature (Sidor & Manațe, 2023b; Nițoi et al., 2022) lacks the identification of different profiles of people considering their perceived financial knowledge, which is done in this paper. The logistic regression allows for explaining the differences in groups of people.

By bridging the gaps previously stated, we contribute to the ongoing efforts to measure the impact of the main drivers and the blockers of perceived financial knowledge, seen as a proxy for financial self-confidence, by integrating financial behavior (affordability) and stress constraints as predictors of perceived financial knowledge beside the actual financial knowledge and the socio-demographic and economic variables. Thus, our paper aims to contribute

in determining the influence of income, socio-demographic and economic factors, financial stress (financial resilience and financial fragility) and financial behavior-related variables on the perceived financial knowledge from a statistically significant adult survey applied in Romania in 2023. The results are generated from a survey report of the Romanian Institute of Financial Studies (Siminică et al., 2024), with data collected from the adult population resident in Romania with the age between 18 and 79 years old, between January 31st and February 21st, 2023.

2. Literature review and hypotheses

Financial literacy research increasingly distinguishes between objective (real) financial knowledge and subjective (perceived) financial knowledge. Objective knowledge refers to individuals' actual understanding of financial concepts, typically measured through test-based questions, while perceived knowledge captures how individuals evaluate their own financial competence (Prabhakaran & Mynavathi, 2023). The distinction is important because financial behavior is influenced not only by what individuals know, but also by what they believe they know (Allgood & Walstad, 2016; Bellofatto et al., 2018).

Previous studies show that perceived and actual financial knowledge are correlated but conceptually distinct, and both can independently influence financial decision-making (Allgood & Walstad, 2016; Bellofatto et al., 2018). Individuals may exhibit high confidence despite limited knowledge, or conversely, may underestimate their competence. Therefore, perceived financial knowledge should not be treated as a simple proxy for objective literacy, but rather as a separate construct shaped by cognitive, behavioral, and contextual factors. Recent conceptual contributions also support this multidimensional view. For example, Tohar and Akron (2025) propose a framework in which financial knowledge, attitudes, and awareness interact to shape financial behavior, particularly among younger individuals.

The gap between perceived and actual knowledge is often explained through self-assessment bias, particularly overconfidence and underconfidence. Overconfidence occurs when individuals overestimate their financial competence, while underconfidence reflects an underestimation of actual knowledge (Lind et al., 2020). These biases can lead to different behavioral outcomes, such as excessive risk-taking or financial passivity (Balasubramnian & Sargent, 2020; Aristei & Gallo, 2022).

In addition, perceived financial knowledge is influenced by individuals' financial context, especially their level of financial resilience. The ability to cope with financial shocks and manage expenses may strengthen self-confidence, while financial fragility may reduce perceived competence (Klapper & Lusardi, 2020; Netemeyer et al., 2018). Therefore, subjective financial knowledge should be understood as the result of interactions between cognitive, behavioral, and contextual factors.

The past literature usually uses the perceived financial knowledge as a predictor in various financial education modelling (Wann & Burke-Smalley, 2023; Allgood & Walstad, 2016; Xiao et al., 2014). Only recently, the focus started to switch on how different drivers influence it (Maji, 2025; Núñez-Letamendia et al., 2025). For example, Núñez-Letamendia et al. (2025) showed that peoples' confidence is a more powerful driver of saving behavior than the actual knowledge and financial fragility influences the perceived financial knowledge. Additionally, Maji (2025) showed that financial behavior influences the perceived financial knowledge. Thus, this research adds a new layer to the foundations laid by these previous works (Maji, 2025; Núñez-Letamendia et al., 2025).

Moreover, although there were several Romanian studies (Sidor & Manațe, 2023b; Nițoi et al., 2022) which tried to assess the perceived financial knowledge, none of them used respondents' financial behavior, resilience and fragility (considering affordability before making a purchase, ability to cover major expenses, concerns about regular expenses) to observe how they self-assess their financial knowledge. Furthermore, the previous Romanian literature (Sidor & Manațe, 2023b; Nițoi et al., 2022) lacks the identification of different profiles of people considering their perceived financial knowledge, which is done in this paper through logistic regression in order to explain the differences in groups of people.

The literature suggests that perceived financial knowledge is not merely a reflection of objective knowledge, but also of confidence, self-assessment bias, and financial conditions (Yeh & Yue, 2021). This implies that its predictors should be analyzed across three dimensions: cognitive (actual financial knowledge), behavioral (overconfidence and underconfidence), and contextual (financial stress and socio-demographic factors) (Leal & Pereira, 2025). In line with this framework, the empirical model estimated in this paper examines how these factors influence individuals' perceived financial knowledge in the Romanian context.

These factors are particularly relevant in the Romanian context, where regional disparities, income inequalities, and differences in access to financial services may influence both financial capability and self-perceived competence. Therefore, socio-demographic variables are not only control factors, but essential components of the analytical framework, as they help capture structural and contextual influences on individuals' financial self-assessment.

The hypotheses of this research are presented below, under four thematic sections:

(1) The hypothesis which considers cognitive biases in financial knowledge dealing with self-confidence:

H1. Real financial knowledge is a positive predictor of perceived financial knowledge.

Empirical evidence suggests that financial resilience and subjective financial knowledge are closely interconnected. The ability to cope with financial challenges may reinforce perceived competence, while financial stress may lead to lower confidence, even in the presence of adequate knowledge (Netemeyer et al., 2018). At the same time, exposure to financial shocks and constraints influences both financial behavior and subjective evaluations (Larsen et al., 2023; Flaherty & Banks, 2013; Mosedale et al., 2018). Also, several studies (Allgood & Walstad, 2011, 2016; Gunawan et al., 2021; Cude, 2022) test the association between these two variables, however, they do not illustrate the odd ratios of the effect of the real financial knowledge on the perceived one, which allows grouping the respondents in different profiles. While, policy frameworks and academic literature increasingly emphasize resilience as a key dimension of financial capability, alongside knowledge and behavior (European Union/OECD, 2022; Klapper & Lusardi, 2020). Individuals who are able to manage major expenses, avoid excessive debt, and maintain financial stability are more likely to perceive themselves as financially competent. Conversely, financial vulnerability, such as difficulties in covering regular expenses, may reduce confidence and negatively affect self-assessment. Thus, this hypothesis is based on European Union/OECD (2022), Klapper and Lusardi (2020), and Allgood and Walstad (2016), who emphasize that perceived financial literacy should be more considered in the literature as it may be as important as the real financial literacy. Also, it reverses the financial Dunning-Kruger Effect explained by Gunawan et al. (2021), as individuals with low actual financial knowledge significantly overestimate their expertise.

(2) The hypothesis which considers financial stress:

(2.1) financial resilience:

H2.1. Having the ability to pay for major expenses is a positive predictor of perceived financial knowledge, meaning having higher perceived financial knowledge. Financial resilience is the capacity of a person to deal positively with financially impactful shocks during individual financial crisis (Brüggen et al., 2017) Thus, it is essential to determine if people have financial resilience, as it might render a better self-assessed financial knowledge, because the confidence in themselves might be higher. Even more, when the past Romanian literature (Nițoi et al., 2022; Sidor & Manațe, 2023b) does not consider financial resilience when predicting Romanians' financial literacy, this should be analyzed to observe how people behave when dealing with this type of financial stress and how they approach risk tolerance, in order to better propose educational policies and programmes. This hypothesis continues the work of Allgood and Walstad (2016) and Robb and Woodyard (2011), by adding financial resilience – one type of financial stress – as a predictor of financial literacy.

(2.2) financial fragility:

H2.2. Worrying about paying for regular expenses is a positive predictor of perceived financial knowledge. Financial fragility refers to the financial status of a person to find themselves or to believe they are in struggle with regular expenses during consistent individual financial crisis. Lusardi et al. (2011) was one of the pioneers in considering financial fragility in their study. Although, previously, we found no consideration of this variable – worrying about paying for regular expenses – as predictor for perceived financial knowledge, it was used in studies to predict actual financial knowledge (Simincă et al., 2024) or financial satisfaction (Xiao et al., 2024). Thus, this hypothesis continues the work of Lusardi et al. (2011), Allgood and Walstad (2016) and Robb and Woodyard (2011), by adding financial fragility – one type of financial stress – as a predictor of perceived financial knowledge.

(3) The hypothesis which considers financial behavior, which tests the prudence when buying something:

H3. Considering affordability is a negative predictor of perceived financial knowledge.

This hypothesis aims to reverse the usually used behavior test conducted in previous literature financial knowledge, when financial knowledge is considered to observe how it affects financial behavior (Kaiser & Lusardi, 2024; Fernandes et al., 2014; Allgood & Walstad, 2011, 2016; Lusardi & Mitchell, 2013; Gunawan et al., 2021). For example, Gunawan et al. (2021) indicate perceived financial knowledge as a predictor of self-reported financial behavior. However, this study reverses the relationship by trying to expose if people who consider affordability before purchase develop overconfidence or higher self-assessed financial knowledge.

(4) The hypotheses which consider the socio-demographic and economic predictors, usually used in previous literature on financial knowledge modelling. Although these predictors related with age, income, formal education, and occupational status were previously tested in other international studies, the Romanian context is different, as we are at the culturally confluence of the West and the East, which it gives us unique traits (David et al., 2015a): average levels of neuroticism and agreeableness and levels above the mean for extraversion, openness and conscientiousness compared with the global level of 50 cultures; two main bipolar personality profiles, which sustain Romanians' traditionalism and resistance to change; and an important distrust in others. Plus, Romania is an ex-communist country, which could mean that older generation of Romanians might be overconfident in their self-assessed financial knowledge due to life experience, even though they lack modern financial education,

as historical context is substantially influences the Romanians' physiological structure (David et al., 2015b). Moreover, the Romanian literature which investigate the perceived financial knowledge (Sidor & Manațe, 2023b; Nițoi et al., 2022) missed the consideration of Romania's regional disparities, which were considered in this study. Also, most of them are not statistically significant for the whole adult population, as it is the case of our study.

Thus, the main socio-demographic and economic hypotheses are:

H4.1. Elder age of respondents and men are positive predictors of perceived financial knowledge. The literature on gender impact on financial knowledge presents mixed results. Some studies (Aristei & Gallo, 2022; Gunawan et al., 2021; Balasubramnian & Sargent, 2020; Bucher-Koenen et al., 2017; Beckmann, 2013) confirm the existence of gender differences in terms of reporting the perceived literacy, while others (Potrich et al., 2015; Aristei & Castellani, 2020) indicate no differences. For example, Gunawan et al. (2021) showed that men tend to report higher perceived literacy compared to women and women tend to underestimate themselves (Bucher-Koenen et al., 2017; Aristei & Castellani, 2020), regardless of their actual financial knowledge. Conversely, it seems like the new generation of young adults, with high level of education, specifically to Brazil, tend to not register differences in the confidence gap (Potrich et al., 2015). Thus, age seems as important to consider as gender, its association with financial knowledge being pointed out by Robb and Woodyard (2011) and Lusardi and Mitchell (2011). Also, elderly people tend to have a higher confidence gap (Finke et al., 2017).

H4.2. The formal education and the income are positive predictors of perceived financial knowledge. David et al. (2015a) pointed out the importance of education and environment in personality traits development, while Brügger et al. (2017) linked income with living standards and financial well-being. Considering their importance, these two factors should be considered into any analysis as perception might change overtime, with the change of generations. Some studies confirm the existence of an income impact in terms of reporting the perceived literacy (Robb & Woodyard, 2011; Lusardi & Mitchell, 2011), while others indicate lower impact (Rocha & Ponczek, 2011). As well is the case for education, its association with perceived knowledge might be positive (van Rooij et al., 2011) or register weak or no results (Fernandes et al., 2014; Huston, 2010). An interesting point is made by Huston (2010), who emphasizes that education is an important predictor of financial confidence if financial topics were studied in the educational institution they went to.

H4.3. The active status on the labor market is a positive predictor of perceived financial knowledge. Professional experience might improve the perceived financial knowledge, as it offers active people the ability to answer financial questions as stated by Čumurović and Hyll (2019).

H4.4. Respondents from the Bucharest-Ilfov region, which is the richer in Romania compared with the other seven development regions, is a positive predictor of perceived financial knowledge. Although specific personality traits of Romanians were found almost evenly distributed among the regions (David et al., 2015b), economic disparities among the Romanian development regions are still present, Bucharest-Ilfov region being the wealthiest region of all (Eurostat, 2024). Thus, this predictor is critical to test in order to better create education programs developed for rural areas and vulnerable groups in all regions to reduce existing gaps.

3. Methodology

3.1. Survey information and data management

Many studies (Siminică et al., 2024; Sidor & Manațe, 2023a; Nițoi et al., 2022) focusing on financial literacy or financial knowledge use data collection through surveys to better understand the self-assessments of a certain population in this subject, usually called perceived financial knowledge. Although the survey method is usually used in this field, the data processing and the interpretation of information is regularly conducted traditionally, especially in Romania (Siminică et al., 2024; Sidor & Manațe, 2023b; Nițoi et al., 2022), by only presenting the results under the form of percentage in the total value of the results, meaning simple descriptive statistics. The logistic regression method was used for illustrating the differences in groups of people by considering their multivalent characteristics. Also, it eliminates the need to comply with the basic assumptions of linear regressions, i.e. heteroscedasticity, and it allows to interpret the results as probabilities (Menard, 2010, pp. 7–9). Additionally, the ordinary least squares regressions are less effective in predicting very well the dichotomous, nominal, or ordinal dependent variables (Menard, 2010, pp. 1–2). Further, providing odd ratios as results, the logit regression allows for easier understanding compared to other methods (Train, 2009). Among its limits could be found: the way odds are interpreted in relation with risks, sensibility to outliers, a minimum number of events per variable, and correlation between variables (Ranganathan et al., 2017; Stoltzfus, 2011). Model viability and the robustness check was tested to address these limitations in section 4.2. of this paper. Finally, the specific mathematical steps to apply the logit regression models are described in Siminică et al. (2024), based on the information from Greene (2018), James et al. (2013), and Train (2009), while the logit model is presented in section 3.2.

This paper provides advanced insights into the data collected by the Romanian Institute of Financial Studies (Siminică et al., 2024) between January 31 and February 21, 2023. It used multivariate logistic regression to analyze data and to interpret the results. The adult population resident in Romania, with the age between 18 and 79 years old represented the target population, which was 14,471,997 persons at the end of 2022, according to the Romanian National Institute of Statistics [RNIS] (2024). Out of the target population, the survey sample was 1005 people, with a $\pm 3.1\%$ error margin at the 95% confidence level (Siminică et al., 2024). The data was curated by leaving only the responses of those who answered to all of the questions from the survey considered in this paper. Thus, we observed that 75.62% of 1,005 Romanian respondents have self-assessed their financial knowledge and other questions related to the financial burden and socio-demographics.

In terms of the survey's descriptive statistics, the majority of respondents (57.2%) reported perceiving themselves of having higher knowledge than other adults, while 42.8% perceived themselves of having lower knowledge about financial issues compared to others. The results revealed that 55.7% of them had in reality lower/no knowledge, whereas 44.3% possessed higher real knowledge. In this regard, a recent study of the European Commission (2023), who assessed the perceived financial knowledge in comparison, this time, with other countries, showed that Romanians' perceptions about their self-assessed financial knowledge is really good when comparing with other countries, as only 7% of respondents have a negative opinion about themselves. However, as it can be seen from this study conducted on a statistically significant Romanian adult population in 2023, the perception of Romanian adult population is actually split in almost half, meaning that Romanians self-assessed financial knowledge

is both overestimated or underestimated. Thus, the Romanians' confidence in themselves should be considered when approaching the financial education programmes.

Regarding the ability to cover major expenses, 10.7% expressed uncertainty (do not know), 41.4% affirmed they could cover it without assistance (yes), and 47.9% indicated they would struggle to cover a major expense without borrowing or seeking help from family/friends (no). In this regard, Romania is under the average of the 39 countries participating in an OECD (2023a) report on financial education, with around 13% difference, indicating Romanians' lower financial resilience compared to other economies in the world (Siminică et al., 2024). Worries about regular expenses were distributed as follows: 32.2% reported worrying always/often, 32.2% sometimes, and 35.5% rare/never experienced such concerns. In contrast with the previous situation, Romanian population tends to have less worries to cover regular expenses than the average at the 39 participating countries from OECD survey conducted in 2023 (OECD, 2023a; Siminică et al., 2024). When considering affordability before making a purchase, 65.1% claimed to do so always/often, 23.6% sometimes, and 11.3% rare/never. According to OECD (2023a) and Siminică et al. (2024), Romanians are less conscious about their affordability before buying something, meaning that financial planning is a bigger issue in this case compared to other economies.

Demographic details revealed a relatively balanced distribution of gender, with 48.7% identifying as male and 51.3% as female. The age group distribution included 6.6% in the 18–29 age range, 16.2% in the 30–39 age range, 27.5% in the 40–49 age range, 20.5% in the 50–59 age range, and 29.2% aged 60 and above. In terms of education level, 9.2% had a graduate or more degree, 24.5% were undergraduate, the majority (54.5%) had completed high school similar programs, and 11.8% had secondary or less education. The monthly household income distribution of the sample indicated that 48% had an income of less of 5000 RON – 1019 EUR (National Bank of Romania, 2023), 42.1% fell into the 5001–9000 RON bracket – 1019–1835 EUR (National Bank of Romania, 2023), and 9.9% reported an income of over 9000 RON – 1835 EUR (National Bank of Romania, 2023). The EUR conversion values were calculated as an average of the National Bank of Romania's exchange rates for the period between January 31 and February 21, 2023, namely 4.9046 RON/1 EUR, when the survey was conducted. Geographically, respondents were distributed across different development regions in Romania, with 27.6% in North-East and South-East, 25.1% in South and South-West, 33.6% in West and North-West and Centre, and 13.7% in Bucharest-Ilfov. Finally, regarding the occupation, 32.2% identified as employee and entrepreneur, while 67.8% fell into other categories – inactive and unemployed. For a more systemic view of the descriptive statistics, please see Table 1 from the study of Siminică et al. (2025).

3.2. Multivariate logistic regression model

The logit model has been chosen among different discrete choice models to understand the differences between Romanian adults in term of perceived financial knowledge, because the results are easier to understand for any reader (Stockemer, 2019; Greene, 2018; Ranganathan et al., 2017; Baltagi, 2011; Train, 2009). The mathematical equation (1) estimates the odds generated by the logistic regression model (Greene, 2018; James et al., 2013; Train, 2009), where *Fin_knowledge_perceived* represents a binary explainable variable.

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 \times \text{Fin_knowledge_actual} + \beta_2 \times$$

$$\begin{aligned}
& ability_cover_major_expense(1) + \beta_3 \times ability_cover_major_expense(2) + \\
& \beta_4 \times worries_regular_expenses(1) + \beta_5 \times worries_regular_expenses(2) + \\
& \beta_6 \times considering_affordability(1) + \beta_7 \times considering_affordability(2) + \\
& \beta_8 \times gender + \beta_9 \times age(1) + \beta_{10} \times age(2) + \beta_{11} \times age(3) + \beta_{12} \times age(4) + \\
& \beta_{13} \times education(1) + \beta_{14} \times education(2) + \beta_{15} \times education(3) + \beta_{16} \times \\
& income(1) + \beta_{17} \times income(2) + \beta_{18} \times development_region(1) + \beta_{19} \times \\
& development_region(2) + \beta_{20} \times development_region(3) + \beta_{21} \times occupation, \quad (1)
\end{aligned}$$

where: p is the probability attributed to the respondents who perceive themselves as having the same or higher level of knowledge about financial issues compared to other adults in Romania ($Fin_knowledge_real = 1$) given the independent variables x_i ; β_0 , β_i represent the regression coefficients attributed for each i independent variable.

The independent variables are similar to those from Siminică et al. (2025), and are described below.

Ability_cover_major_expense(1) – 1 don't know, otherwise 0 for no
Ability_cover_major_expense(2) – 1 yes, otherwise 0 for no
Worries_regular_expenses(1) – 1 always/often, otherwise 0 for rare/never
Worries_regular_expenses(2) – 1 sometimes, otherwise 0 for rare/never
Considering_affordability(1) – 1 always/often, otherwise 0 for rare/never
Considering_affordability(2) – 1 sometimes, otherwise 0 for rare/never
Age(1) – 1 Age_18-29, otherwise 0 for age_60+
Age(2) – 1 Age_30-39, otherwise 0 for age_60+
Age(3) – 1 Age_40-49, otherwise 0 for age_60+
Age(4) – 1 Age_50-59, otherwise 0 for age_60+
Education(1) – 1 graduate+, otherwise 0 for highschool&similar
Education(2) – 1 undergraduate, otherwise 0 for highschool&similar
Education(3) – 1 secondary&less, otherwise 0 for highschool&similar
Income(1) – 1 average_monthly_household_income_<=5000RON, otherwise 0 for average_monthly_household_income_9000+ RON
Income(2) – 1 average_monthly_household_income_5001-9000 RON, otherwise 0 for average_monthly_household_income_9000+ RON
Development_region(1) – 1 for North-East and South-East, otherwise 0 for Bucharest-Ilfov
Development_region(2) – 1 for South and South-West, otherwise 0 for Bucharest-Ilfov
Development_region(3) – 1 for West, North-West and Center, otherwise 0 for Bucharest-Ilfov
Occupation – 1 for employee and entrepreneur, otherwise 0 for other categories - inactive and unemployed

The logit regression model was tested by using the IBM SPSS software. Initially, multiple tests were performed to assess the validity of the model: the chi-square test, and the likelihood ratio, which allowed for applying the forward stepwise selection (James et al., 2013). These showed that the model is consistent and robust, thus allowing the logistic regression model.

4. Results and discussions

4.1. Baseline logit model

The results of the logistic regression analysis from Table 1 show that the respondents with a one-unit higher real financial knowledge index (*Fin_knowledge_real*) recorded 2.143 times higher odds of having higher perceived financial knowledge (*Fin_knowledge_perceived*) than those with lower real financial knowledge index. This result confirms the 1st hypothesis of this research, H1, and it is partially supported by Cude (2022), who found that objective financial knowledge moderately predicts perceived financial knowledge. Moreover, the finding is somewhat also supported by the study of Allgood and Walstad (2016), in which they concluded that both real and perceived financial literacy appear to influence financial behaviors and that perceived financial literacy may be as important as real financial literacy in ensuring the needed financial education of people. In this context, online financial literacy testing tools by financial market entities could allow for accurate self-assessment of the level of financial literacy for as many people as possible. In Romania, direct experience and informal learning play an important role in shaping individuals' perceptions of their own financial competencies. Moreover, the direct involvement of individuals in managing their personal financial resources contributes to a more realistic perception of their own financial capabilities.

Table 1. Estimates of the logistic regression when perceived financial knowledge of Romanian respondents (*Fin_knowledge_perceived*) is explained

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
<i>Fin_knowledge_real</i>	0.762	0.192	15.762	0	2.143	1.471	3.123
<i>Ability_cover_major_expense</i>			7.386	0.025			
<i>Ability_cover_major_expense</i> (1)	0.172	0.316	0.297	0.586	1.188	0.639	2.208
<i>Ability_cover_major_expense</i> (2)	0.589	0.218	7.328	0.007	1.802	1.176	2.76
<i>Worries_regular_expenses</i>			6.682	0.035			
<i>Worries_regular_expenses</i> (1)	0.353	0.271	1.698	0.193	1.423	0.837	2.418
<i>Worries_regular_expenses</i> (2)	−0.261	0.23	1.28	0.258	0.771	0.49	1.21
<i>Considering_affordability</i>			2.811	0.245			
<i>Considering_affordability</i> (1)	−0.526	0.331	2.523	0.112	0.591	0.309	1.131
<i>Considering_affordability</i> (2)	−0.543	0.346	2.466	0.116	0.581	0.295	1.144
<i>Gender_female</i>	0.125	0.182	0.47	0.493	1.133	0.793	1.617
<i>Age</i>			15.747	0.003			
<i>Age</i> (1)	1.231	0.446	7.602	0.006	3.423	1.427	8.209
<i>Age</i> (2)	0.957	0.357	7.185	0.007	2.603	1.293	5.238
<i>Age</i> (3)	0.53	0.333	2.525	0.112	1.699	0.884	3.266
<i>Age</i> (4)	0.079	0.325	0.059	0.809	1.082	0.572	2.047
<i>Education</i>			63.914	0			
<i>Education</i> (1)	2.553	0.618	17.048	0	12.842	3.823	43.143
<i>Education</i> (2)	1.111	0.233	22.65	0	3.038	1.922	4.8
<i>Education</i> (3)	−1.757	0.365	23.154	0	0.172	0.084	0.353

End of Table 1

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Income			9.799	0.007			
Income(1)	−1.162	0.432	7.23	0.007	0.313	0.134	0.73
Income(2)	−0.698	0.421	2.744	0.098	0.498	0.218	1.136
Development_region			9.721	0.021			
Development_region(1)	−0.975	0.326	8.936	0.003	0.377	0.199	0.715
Development_region(2)	−0.828	0.331	6.251	0.012	0.437	0.229	0.836
Development_region(3)	−0.896	0.318	7.918	0.005	0.408	0.219	0.762
Occupation	−0.295	0.285	1.071	0.301	0.745	0.426	1.302
Constant	1.376	0.634	4.713	0.03	3.96		

Respondents who have the ability to cover major expenses without borrowing or seeking external support recorded 1.802 times higher odds of having higher perceived financial knowledge compared to respondents lacking such capacity. Thus, this finding confirms the H2.1 hypothesis of this research. This supports previous research showing that financial resilience – shaped by factors such as savings, income stability and psychological coping mechanisms – strengthens financial confidence (Mosedale et al., 2018; Flaherty & Banks, 2013). Moreover, Larsen et al. (2023) demonstrate that individuals manage expense shocks better than income shocks, reinforcing the role of resilience in financial self-assessment. To improve this capability, policies and strategies, as The National Financial Education Strategy 2024–2030 (The Romanian Government, 2024), should encourage budgeting practices, maintaining an emergency fund, and using digital tools for monitoring personal finances (Bhutta et al., 2023).

By contrast, individuals uncertain about their ability to cover major expenses did not show a statistically significant difference ($p = 0.586$) from those who could not cover a major expense, which suggests the need for further investigation. The relatively low-income levels for a significant share of the population and the limited level of savings increase vulnerability to unexpected financial shocks. Individuals who are able to cover major expenses without external support tend to display higher financial discipline, through saving behavior, personal budget planning, or prudent management of financial resources.

Although the overall variable of worrying about regular expenses is statistically significant, neither the always/often nor the sometimes category did not show statistical significance on influencing perceived knowledge ($p = 0.193$; $p = 0.258$), potentially reflecting financial reliance within households, where responsibility for day-to-day budgeting is shared or transferred (OECD, 2023a; Siminică et al., 2024). Thus, this finding neither confirms nor rejects the H2.2 hypothesis of this research. In the case of Romania, this situation may be explained by the structural characteristics of households, where financial decisions are frequently made at the family level, while the management of current expenditures is often carried out by a single household member. In this context, concerns regarding the payment of current expenses may reflect budget constraints rather than the level of perceived financial knowledge, which may explain the absence of a statistically significant relationship between these variables.

Similarly, considering affordability before purchases did not show a statistically significant relationship ($p = 0.112$; $p = 0.116$), possibly indicating low confidence in budget management or increased awareness of financial constraints. Thus, this finding does not confirm the H3 hypothesis.

Gender differences were statistically insignificant ($p = 0.493$), although several studies emphasize that women tend to exhibit lower self-confidence regarding financial decisions compared to men, driven by differing education levels, household roles or risk attitudes (Balasubramnian & Sargent, 2020; Aristei & Gallo, 2022; Beckmann, 2013; Hsu, 2016). Thus, this finding neither confirms nor rejects the H4.1 hypothesis of this research. In the case of Romania, the absence of a significant difference may be explained by the active participation of women in the labor market and by their broader access to education, which contribute to reducing gender gaps in the management of financial resources. Focused interventions could therefore support women's financial autonomy in the current demographic context (RNIS, 2024).

Age proved significant only for younger adults (18–29 and 30–39), who show 3.423- and 2.603-times higher odds, respectively, of reporting greater perceived financial knowledge compared to respondents aged 60+ ($p = 0.006$; $p = 0.007$). The greater exposure of younger generations to digital financial services, online banking platforms and personal finance management tools facilitates access to financial information and the development of financial competencies. Thus, our finding rejects and opposes the H4.1 hypothesis related with age. These results align with evidence that younger generations, exposed to more dynamic financial environments, display higher confidence (Balasubramnian & Sargent, 2020; Beckmann, 2013). Tailored face-to-face trainings are recommended for older adults, given their increased vulnerability to financial risks and limited digital access.

Education shows the strongest association: graduates have 12.842 times higher odds, and undergraduates have 3.038 times higher odds, to report higher perceived financial knowledge versus high-school graduates, while those with secondary education and less demonstrate 82.8% lower odds (0.172) of having higher perceived financial knowledge. Thus, our finding confirms the H4.2 hypothesis related with education, differing from Fernandes et al. (2014) and Huston (2010). An interesting point is made by Huston (2010), who emphasizes that education is an important predictor of financial confidence if financial topics were studied in the educational institution they went to. Moreover, a higher level of education is associated with more active participation in the formal financial system and more frequent use of financial products and services, factors that contribute to strengthening financial experience and confidence in one's own abilities. These findings highlight the importance of structured financial learning in both formal education and adult-training programs.

Households with lower income (<5000 RON – 1019 EUR) show 68.7% (0.313) lower odds of higher perceived financial knowledge, and those earning 5001–9000 RON (1019–1835 EUR) show 50.2% (0.498; marginally significance level of 9.8%) lower odds, compared to high-income respondents (≥ 9000 RON – 1835 EUR), confirming the H4.2 hypothesis, the part related with income. Thus, individuals with higher incomes are more likely to use a wider range of financial products, such as loans, investments, or savings instruments, which may provide them with more diversified financial experience and contribute to increased confidence in their financial competencies. Budget constraints may lead these households to focus primarily on managing current expenses, thereby reducing opportunities to accumulate experience in more complex financial decision-making. This negative relationship contrasts with evidence of overconfidence among high-income individuals in other countries (Balasubramnian & Sargent, 2020) and may reflect the necessity of stricter financial management at lower income levels.

Occupation does not confirm H4.3, as it is statistically insignificant ($p = 0.301$).

Significant territorial disparities exist, confirming H4.4 hypothesis: residents in all regions outside Bucharest-Ilfv report notably lower perceived financial knowledge (–62.3% to –56.3%), which may reflect structural development gaps in income, employment and access to financial services. Territorial differences may be associated with varying levels of economic development across regions, different degrees of urbanization, and unequal access to financial infrastructure and financial education programs. The Bucharest–Ilfv region concentrates the largest share of economic activity, financial institutions, and educational opportunities, which may facilitate the population's access to financial information, diversified financial products, and financial advisory services. Policies addressing financial literacy in these areas should be aligned with broader regional development objectives (OECD, 2023b; Romanian National Strategy and Forecasting Commission, 2023).

The results from Wald tests indicate significant contributions of education, real financial knowledge, age, income, region, and financial resilience to explaining perceived financial knowledge in Romania, whereas financial fragility, financial behavior, gender, and occupation are less conclusive. Strengthening saving behavior, access to financial learning tools and targeted support for vulnerable groups can enhance both perceived and real financial capabilities in the long term.

4.2. The robustness checks of the logit model

Several checks were performed to test the robustness of the estimated model: omnibus test, Hosmer–Lemeshow test, model summary, multicollinearity checks, the existence of outliers, and alternative models to the baseline model discussed in section 3.1, which specifically tests the robustness. The omnibus test of model coefficients ($\chi^2 = 277.202$, $p = 0.000$) showed that the model including the explanatory variables provided a significantly better fit than the intercept-only model. The Hosmer–Lemeshow goodness of fit test ($\chi^2 = 12.413$; $p = 0.134$) indicated a fit model for predicting the perceived financial knowledge (Hosmer et al., 2013). The model explained between 30.6% (Cox & Snell R^2) and 41.0% (Nagelkerke R^2) of the variation in perceived financial knowledge and correctly classified 75.3% of the cases. However, when performing the correlation matrix, several coefficients of variables were registering quite high correlations for the relationships between: Worries_regular_expenses(1) and Worries_regular_expenses(2), with a value of 0.556; Worries_regular_expenses(1) and Ability_cover_major_expense(2), with a value of 0.348; Considering_affordability(1) and Considering_affordability(2), with a value of 0.775; Age_cat(1) and Age_cat(3), with a value of 0.419; Age_cat(2) and Age_cat(3), with a value of 0.637; Age_cat(2) and Age_cat(4), with a value of 0.594; Age_cat(3) and Age_cat(4), with a value of 0.691; Age_cat(2) or Age_cat(3) or Age_cat(4) and Occupation, with –0.546, –0.643, –0.574. These results might suggest the presence of significant multicollinearity if the values are above 0.8 (Menard, 2002). Thus, the value registered between Considering_affordability(1) and Considering_affordability(2), as well as those between the constant and the income categories, indicate moderate to high possible multicollinearity.

Also, the correlation between variables were tested to observe possible associations between variables, by applying Spearman test due to categorical data (Schober et al., 2018; Pallant, 2020). The results suggested that the variables Considering_affordability(1) and Considering_affordability(2) were highly correlated with a Spearman correlation coefficient of –0.759, while there was a moderate correlation between Worries_regular_expenses(1) and Worries_regular_expenses(1) with a p value of –0.476, and between Development_region(3)

and the other two variables of development regions – Development_region(1) and Development_region(3) with the p values of -0.439 and -0.412 . As several studies emphasize that a correlation coefficient over 0.7 represent a high correlation, this could indicate to test another model without one of these variables (Schober et al., 2018; Pallant, 2020).

Additionally, the multicollinearity was further investigated by testing the variance inflation factor (VIF), the tolerance, and other parameters, which are presented in Appendix – Table A1. As values of VIF under 5 are considered acceptable in terms of multicollinearity (Hair et al., 2019; Field, 2018; Menard, 2002) and our baseline model registered values between 1.03 and 3.97 , the results indicate no serious multicollinearity issues.

Furthermore, to test for outliers, we looked at the casewise list generated by SPSS, which illustrated 14 cases of outliers, with the standardized residuals over 2 , specifically with values between $[2.46]$ and $[5.46]$. The methodological studies (Field, 2018; Hosmer et al., 2013, p. 182; Hair et al., 2019, p. 245) suggest that these values could be accepted until $2.5-3$, but what surpasses these values could be possible outliers, which should be further investigated. Thus, Cook's distance test was also performed, recording values between 0 and 0.012 , the mean being 0.001 . As these values tend towards zero, then it means some influential observations are present, but not problematic (Field, 2018; Tabachnick & Fidell, 2019).

Considering the previous robustness tests, three sensitivity analyses (Appendix, Tables A2–A4) were further performed to assess the baseline model stability. First model considered only socio-demographic and economic variables to assess sensitivity of the estimated effects when eliminating variables related to real financial knowledge, financial resilience, financial fragility, and financial behavior; Second model eliminated all variables which registered moderate correlated coefficients (Ability_cover_major_expense(1), Age(3), Age(4), Worries_regular_expenses(1), Considering_affordability(2), Development_region(3), Income(1), Occupation) to assess the sensitivity of baseline coefficients to correlated predictors; Third model considered all statistically significant predictors into the model to assess the sensitivity of statistically insignificant predictors. Their robustness checks were also performed like the tests for the baseline model, generating good results.

The main results of the sensitivity analyses from the Appendix are the following:

- Comparing Table A2 with the baseline model, the elimination of the variables related with real financial knowledge, financial stress, and financial behavior does not produce significant changes to the signs, odds ratios, and statistical significance of the estimated coefficients from the baseline model, except the case of variables: Age(3), Age(4), and Income(2). Age(3) becomes marginally significant ($p = 0.067$), but this result is not retained by the findings from Table A4. Age(4) changes the sign in both Table A2 and Table A4 compared to the baseline model, but all results are statistically insignificant. Income(2) recorded an improved significance level compared to the baseline model ($p = 0.03$), thus becoming more precisely estimated when considering the results from Table A2.
- Comparing Table A3 with the baseline model, although the signs of the coefficients did not change, Worries_regular_expenses(2) became statistically significant ($p = 0.011$), while Development_region(1) and Development_region(2) became statistically insignificant (0.133 and 0.769). Thus, eliminating moderately correlated variables partially improves the precision of estimation for financial fragility (Worries_regular_expenses(2)), while showing higher sensitivity of model specification in the case of two regional variables.

- Comparing Table A4 with the baseline model, the signs and the statistical significance of the estimated coefficients are similar to the baseline model, except Age(4) which is statistically insignificant.
- Overall, the sensitivity analyses indicate the stability of the main findings and support the robustness of the baseline model, especially for the predictors related to education, real financial knowledge, lowest household income category, younger adults (18–39 years old), and the ability to cover major expenses without external help.

In addition, we also performed checks of different regression models which eliminates the moderate correlated variables, one by one. For example, we started by eliminating the moderately high correlated relationship between variables suggested by Spearman test (-0.75), which assumed to delete the Considering_affordability2, but the results of the Hosmer and Lemeshow test indicates unfitness, as the p values was 0.06 (Schober et al., 2018; Pallant, 2020). And so, we did for all financial stress and behavior variables, one by one. Additionally, when testing a regression model for the baseline model but without constant, it seemed like it generated little smaller effects of predictors, but their sign was the same as the baseline models. Thus, the robustness tests suggest that the baseline model is suitable.

5. Conclusions

As past literature indicates an increased interest in this topic – from researchers, the European Union and other private or public organizations – this study aimed to assess the main predictors of the perceived financial knowledge of the resident Romanian adult population for emphasizing the differences between groups of people, by using the logistic regression on a survey's results from 2023. The main findings indicate positive associations between the dependent variable – perceived financial knowledge – and the following independent variables: real financial knowledge, the ability to pay for major expenses without borrowing the money or asking for help, the age between 18 and 29 years old, the age between 30 and 39 years old, the graduate+ and undergraduate education levels. Meanwhile, the results also indicate negative associations between the perceived financial knowledge and secondary & less education level, less than 5000 RON (1019 EUR) income, the North-East and South-East development region, the South and South-West development region, and the West, North-West and Centre development region. The impacts of the other independent variables on the perceived financial knowledge analyzed in this research were insignificant and future studies should investigate more those, such as gender or occupation variables. Thus, we recommend stakeholders to promote financial education aimed at developing financial resilience and the ability to manage economic shocks. Specifically, policymakers should develop public policies that support saving through fiscal incentives for long-term savings, they should create periodically national financial education programs integrated into school curricula and professional trainings, and they should develop social protection mechanisms that minimize the impact of major financial shocks on the vulnerable population.

Considering the differences identified across various Romanian population groups, public policies should target specific categories in a differentiated manner. The findings show that individuals with lower income levels report significantly lower levels of perceived financial knowledge. In this context, public authorities could implement financial education programs targeting low-income households, with a focus on practical financial management skills such as personal budgeting, debt management, and the development of saving behaviors. Local

authorities, banks, and non-governmental organizations could be involved in this process. Also, the territorial disparities identified suggest the need for interventions adapted to regions with lower levels of economic development. In these areas, access to financial services and financial education programs is often more limited. In this regard, policymakers could develop regional financial education centers in partnership with universities and financial institutions and introduce financial education programs in schools.

Further, older individuals report lower levels of perceived financial knowledge and are more vulnerable to financial fraud or complex financial products. In this context, financial education programs organized face-to-face in local communities could be implemented, along with awareness campaigns regarding the risks of financial fraud and simplified banking advisory services tailored to older adults. Additionally, the private sector should develop financial products that support saving and financial resilience (automatic savings accounts, low-risk mutual funds, etc.), while organizing events and workshops on financial education addressed to both employees and clients. Moreover, the non-profit organizations could implement workshops and mentoring programs to support vulnerable populations in developing financial literacy, while creating partnerships with: the private sector to expand access to affordable and inclusive financial services, the academia for additional research on factors that contribute to financial resilience, and the public institutions for improving the legislative framework and ensuring different types of support (education, incentives, etc.) for the citizens who benefit them. Furthermore, the consumers should be encouraged to have a proactive attitude towards saving through awareness campaigns on the importance of an emergency fund, they should be stimulated to access digital tools and financial applications that support the monitoring and management of personal budgets, as well as they should be supported to understand the risks associated with excessive lending and the benefits of financial planning.

Future studies targeting Romania or other geographic area should tackle the limits of this research, such as the retesting of inconclusive variables and adding other new possible drivers of the dependent variable, especially technology and digital-related factors, as well as applying another methodological framework.

Our study demonstrates that financial resilience not only positively influences the perception of financial knowledge, but also contributes to better management of financial stress. By implementing the proposed recommendations, we can build a more financially resilient society, able to cope with both economic shocks and structural changes in the labor market and the global economic environment.

Funding

This research received no external funding.

Author contributions

M.S. and G.R.L. conceived the study and were responsible for the research design and the development of the analysis model. M.S. and D.C. collected and processed the national survey data. G.R.L., A.Z. and C.C. conducted the statistical analysis and interpretation of the results. M.S., G.R.L. and A.Z. contributed to the drafting of the first version of the article, and all authors critically reviewed the final content and approved the manuscript.

Disclosure statement

The authors declare no conflict of interest.

References

- Allgood, S., & Walstad, W. B. (2011). The effects of financial literacy on financial behavior. *Journal of Consumer Affairs*, 45(1), 127–146.
- Allgood, S., & Walstad, W. B. (2016). The effects of perceived and actual financial literacy on financial behaviors. *Economic Inquiry*, 54(1), 675–697. <https://doi.org/10.1111/ecin.12255>
- Aristei, D., & Castellani, S. (2020). Confidence, financial literacy and investment in risky assets: Evidence from Italian households. *Journal of Family and Economic Issues*, 41(2), 294–315.
- Aristei, D., & Gallo, M. (2022). Assessing gender gaps in financial knowledge and self-confidence: Evidence from international data. *Finance Research Letters*, 46, Article 102200. <https://doi.org/10.1016/j.frl.2021.102200>
- Balasubramnian, B., & Sargent, C. S. (2020). Impact of inflated perceptions of financial literacy on financial decision making. *Journal of Economic Psychology*, 80, Article 102306. <https://doi.org/10.1016/j.joeop.2020.102306>
- Baltagi, B. H. (2011). *Econometrics* (5th ed.). Springer. <https://doi.org/10.1007/978-3-642-20059-5>
- Barış, S., & Dilek, D. (2024). The effect of financial literacy on participation in investment markets: A study on University of Health Sciences students. *Journal of Economic Policy Researches*, 11(2), 204–225.
- Beckmann, E. (2013). Financial literacy and household savings in Romania. *Numeracy*, 6(2), Article 9. <https://doi.org/10.5038/1936-4660.6.2.9>
- Bellofatto, A., D'Hondt, C., & De Winne, R. (2018). Subjective financial literacy and retail investors' behavior. *Journal of Banking & Finance*, 92, 168–181. <https://doi.org/10.1016/j.jbankfin.2018.05.004>
- Bhutta, N., Blair, J., & Dettling, L. (2023). The smart money is in cash? Financial literacy and liquid savings among US families. *Journal of Accounting and Public Policy*, 42(2), Article 107000. <https://doi.org/10.1016/j.jaccpubpol.2022.107000>
- Brüggen, E. C., Hogreve, J., Holmlund, M., Kabadayi, S., & Löfgren, M. (2017). Financial well-being: A conceptualization and research agenda. *Journal of Business Research*, 79, 228–237. <https://doi.org/10.1016/j.jbusres.2017.03.013>
- Bucher-Koenen, T., Lusardi, A., Alessie, R., & Van Rooij, M. (2017). How financially literate are women? An overview and new insights. *Journal of Consumer Affairs*, 51(2), 255–283. <https://doi.org/10.1111/joca.12121>
- Cude, B. J. (2022). Financial literacy and education: What we know and still need to learn. *International Review of Financial Consumers*, 7(2), 35–41.
- Ćumurović, A., & Hyll, W. (2019). Financial literacy and self-employment. *Journal of Consumer Affairs*, 53, 455–487. <https://doi.org/10.1111/joca.12198>
- David, D., Ion, A., Stăiculescu, C., & Ștefan, C. (2015a). *Psihologia Poporului Român: Profilul Psihologic al Românilor într-o Monografie Cognitiv-Experimentală*. Editura Polirom.
- David, D., Iliescu, D., Matu, S., & Balaszi, R. (2015b). The national psychological/personality profile of Romanians: An in depth analysis of the regional national psychological/personality profile of Romanians. *Romanian Journal of Psychology*, 17(2), 34–44.
- Ergün, K. (2018). Financial literacy among university students: A study in eight European countries. *International Journal of Consumer Studies*, 42(1), 2–15. <https://doi.org/10.1111/ijcs.12408>
- European Commission. (2023). *Monitoring the level of financial literacy in the EU. Flash Eurobarometer 525*. https://cdn.eduped.ro/wp-content/uploads/2023/07/Monitoring_the_level_of_financial_literacy_FL525_report_en.pdf
- European Union/OECD. (2022). *Financial competence framework for adults in the European Union*. Retrieved September 29, 2024, from https://finance.ec.europa.eu/system/files/2022-01/220111-financial-competence-framework-adults_en.pdf

- Fernandes, D., Lynch Jr, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. *Management Science*, 60(8), 1861–1883.
<https://doi.org/10.1287/mnsc.2013.1849>
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE Publications.
- Finke, M. S., Howe, J. S., & Huston, S. J. (2017). Old age and the decline in financial literacy. *Management Science*, 63(1), 213–230. <https://doi.org/10.1287/mnsc.2015.2293>
- Flaherty, J., & Banks, S. (2013). In whose interest? The dynamics of debt in poor households. *Journal of Poverty and Social Justice*, 21(3), 219–232. <https://doi.org/10.1332/175982713X13812262277493>
- Goyal, K., & Kumar, S. (2021). Financial literacy: A systematic review and bibliometric analysis. *International Journal of Consumer Studies*, 45(1), 80–105. <https://doi.org/10.1111/ijcs.12605>
- Greene, W. H. (2018). *Econometric analysis* (8 ed.). Pearson Education.
- Gunawan, V., Dewi, V. I., Iskandarsyah, T., & Hasyim, I. (2021). Women's financial literacy: Perceived financial knowledge and its impact on money management. *Economics and Finance in Indonesia*, 67(1), 2. <https://doi.org/10.47291/efi.v67i1.720>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression* (3rd ed.). John Wiley & Sons. <https://doi.org/10.1002/9781118548387>
- Hsu, J. W. (2016). Aging and strategic learning: The impact of spousal incentives on financial literacy. *Journal of Human Resources*, 51(4), 1036–1067. <https://doi.org/10.3368/jhr.51.4.1014-6712R>
- Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44, 296–316. <https://doi.org/10.1111/j.1745-6606.2010.01170.x>
- James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). *An introduction to statistical learning with applications in R*. Springer. <https://doi.org/10.1007/978-1-4614-7138-7>
- Kaiser, T., & Lusardi, A. (2024). *Financial literacy and financial education: An overview* (NBER Working Paper No. 32355). National Bureau of Economic Research. <https://doi.org/10.3386/w32355>
- Kaiser, T., Lusardi, A., Menkhoff, L., & Urban, C. (2022). Financial education affects financial knowledge and downstream behaviors. *Journal of Financial Economics*, 145(2), 255–272. <https://doi.org/10.1016/j.jfineco.2021.09.022>
- Kim, K. T., Anderson, S. G., & Seay, M. C. (2019). Financial knowledge and short-term and long-term financial behaviors of millennials in the United States. *Journal of Family and Economic Issues*, 40, 194–208. <https://doi.org/10.1007/s10834-018-9595-2>
- Klapper, L., & Lusardi, A. (2020). Financial literacy and financial resilience: Evidence from around the world. *Financial Management*, 49(3), 589–614. <https://doi.org/10.1111/fima.12283>
- Larsen, V., Carriaga, R., Wething, H., Zhao, J., & Hall, C. (2023). Behavioral consequences of income and expense shocks. *Journal of Behavioral and Experimental Economics*, 106, Article 102067. <https://doi.org/10.1016/j.soceec.2023.102067>
- Leal, C. C., & Pereira, M. (2025). Determinants of financial literacy: The role of behavioral biases, experience, and sociodemographic factors. *Portuguese Journal of Finance Management and Accounting*, 11(22), 60–85. <https://doi.org/10.54663/2183-3826.2025.v11.n22.60-85>
- Lind, T., Ahmed, A., Skagerlund, K., Strömbäck, C., Västfjäll, D., & Tinghög, G. (2020). Competence, confidence, and gender: The role of objective and subjective financial knowledge in household finance. *Journal of Family and Economic Issues*, 41, 626–638. <https://doi.org/10.1007/s10834-020-09678-9>
- Lusardi, A. & Mitchell, O. (2013). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
- Lusardi, A., & Mitchell, O. S. (2011). Financial literacy around the world: An overview. *Journal of Pension Economics & Finance*, 10(4), 497–508. <https://doi.org/10.1017/S1474747211000448>
- Lusardi, A., Schneider, D. J., & Tufano, P. (2011). Financially fragile households: Evidence and implications. In *Brookings papers on economic activity* (pp. 83–134). Brookings Institution Press. <https://doi.org/10.1353/eca.2011.0002>
- Maji, S. K. (2025). Overconfidence in financial literacy and its determinants: The Indian Scene. *IIM Kozhikode Society & Management Review*, 15(2), 160–174. <https://doi.org/10.1177/22779752251323718>

- Menard, S. (2002). *Applied logistic regression analysis* (2nd ed.). Sage Publications. <https://doi.org/10.4135/9781412983433>
- Menard, S. (2010). *Logistic regression: from introductory to advanced concepts and applications*. Sage Publications. <https://doi.org/10.4135/9781483348964>
- Mosedale, S., Simpson, G., Popay, J., McGill, R., Cooper, P., Taylor, C., Fisher, K., & Sant, H. (2018). Tackling vulnerability to debt. Affordable lending alternatives and financial education: An evidence review. *Journal of Poverty and Social Justice*, 26(3), 315–333. <https://doi.org/10.1332/175982718X15299593316586>
- National Bank of Romania. (2023). *NBR, statistics, statistical domains, financial markets, foreign exchange market, exchange rates, exchange rate list in XML format*. Retrieved March 15, 2026, from <https://www.bnr.ro/en/23792-exchange-rates-daily-series>
- Netemeyer, R. G., Warmath, D., Fernandes, D., & Lynch Jr, J. G. (2018). How am I doing? Perceived financial well-being, its potential antecedents, and its relation to overall well-being. *Journal of Consumer Research*, 45(1), 68–89. <https://doi.org/10.1093/jcr/ucx109>
- Nițoi, M., Clichici, D., Zeldea, C., Pochea, M., & Ciocîrlan, C. (2022). Financial well-being and financial literacy in Romania: A survey dataset. *Data in Brief*, 43, Aarticle 108413. <https://doi.org/10.1016/j.dib.2022.108413>
- Núñez-Letamendia, L., Sánchez-Ruiz, P., & Silva, A. C. (2025). More than knowledge: Consumer financial capability and saving behavior. *International Journal of Consumer Studies*, 49(1), Article e13097. <https://doi.org/10.1111/ijcs.13097>
- OECD. (2023a). *OECD/INFE 2023 International survey of adult financial literacy* (OECD Business and Finance Policy Papers, No. 39). OECD Publishing. <https://doi.org/10.1787/56003a32-en>
- OECD. (2023b). *Enhancing Strategic Planning and Innovation Services: Supporting Romanian Regional Development Agencies* (OECD Regional Development Studies). OECD Publishing. <https://doi.org/10.1787/8d80ef62-en>
- Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (7th ed.). McGraw-Hill Education. <https://doi.org/10.4324/9781003117452>
- Potrich, A. C. G., Vieira, K. M., Coronel, D. A., & Bender Filho, R. (2015). Financial literacy in Southern Brazil: Modeling and invariance between genders. *Journal of Behavioral and Experimental Finance*, 6, 1–12. <https://doi.org/10.1016/j.jbef.2015.03.002>
- Prabhakaran, S., & Mynavathi, L. (2023). Perception vs. reality: Analysing the nexus between financial literacy and fintech adoption. *Investment Management and Financial Innovations*, 20(4), 13–25. [https://doi.org/10.21511/imfi.20\(4\).2023.02](https://doi.org/10.21511/imfi.20(4).2023.02)
- Ranganathan, P., Pramesh, C. S., & Aggarwal, R. (2017). Common pitfalls in statistical analysis: logistic regression. *Perspectives in Clinical Research*, 8(3), 148–151. https://doi.org/10.4103/picr.PICR_87_17
- Romanian National Institute of Statistics. (2024). POP105A – Resident population on January 1 by age and age groups, sexes and areas of residence, macro-regions, development regions and counties. *TEMPO Online*. <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>
- Robb, C. A., & Woodyard, A. (2011). *Financial knowledge and best practice behavior*. SSRN. <https://ssrn.com/abstract=2061308>
- Rocha, M. S. de B., & Ponczek, V. (2011). The effects of adult literacy on earnings and employment. *Economics of Education Review*, 30(4), 755–764. <https://doi.org/10.1016/j.econedurev.2011.03.005>
- Romanian National Strategy and Forecasting Commission. (2023). *Projection of the main economic and social indicators in the territorial profile 2022–2026*. <https://cnp.ro/wp-content/uploads/2023/01/PROG-NOZA-2022-2026-in-profil-teritorial-aferenta-Prognostici-macroeconomice-de-toamna-2022-.pdf>
- Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia & Analgesia*, 126(5), 1763–1768. <https://doi.org/10.1213/ANE.0000000000002864>
- Sidor, V. & Manațe, D. (2023a). Financial education among adults in Romania. *Journal of Financial Studies*, 8, 165–180. <https://doi.org/10.55654/JFS.2023.8.14.11>
- Sidor, V. L., & Manațe, D. (2023b). Optimizing the financial education of adults in Romania. *Journal of Financial Studies*, 8 (Special Issue), 101–113.
- Siminică, M., Lădaru, R. G., & Câmpeanu, C. (2024). *Evaluarea nivelului de educație financiară din România*. Editura Economică.

Siminică, M., Zaharia, A., Lădaru, G. R., Cîrciumaru, D., & Dobrotă, C. E. (2025). Determinants of the actual financial knowledge—multivariate logistic regression. *Journal of Applied Economics*, 28(1), Article 2482546. <https://doi.org/10.1080/15140326.2025.2482546>

Stockemer, D. (2019). *Quantitative methods for the social sciences. A practical introduction with examples in SPSS and Stata*. Springer. <https://doi.org/10.1007/978-3-319-99118-4>

Stoltzfus, J. C. (2011). Logistic regression: A brief primer. *Academic Emergency Medicine*, 18(10), 1099–1104. <https://doi.org/10.1111/j.1553-2712.2011.01185.x>

Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson.

The Romanian Government. (2024). *Strategia Națională de Educație Financiară 2024–2030* [The National Financial Education Strategy 2024–2030]. <https://sgg.gov.ro/1/wp-content/uploads/2024/04/ANEXA-11.pdf>

Tohar, G., & Akron, S. (2025). Financial literacy cognitions and optimal financial behavior. *Finance Research Letters*, 83, Article 107455. <https://doi.org/10.1016/j.frl.2025.107455>

Train, K. (2009). *Discrete choice methods with simulation* (2nd ed.). Cambridge University Press.

Van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, 101(2), 449–472. <https://doi.org/10.1016/j.jfineco.2011.03.006>

Wann, C. R., & Burke-Smalley, L. A. (2023). Attributes of households that engage in higher levels of family financial planning. *Journal of Family and Economic Issues*, 44(1), 98–113. <https://doi.org/10.1007/s10834-021-09805-0>

Xiao, J. J., Kim, K. T., & Lee, S. (2024). Consumer financial capability and financial wellbeing; Multi-year analyses. *Applied Research in Quality of Life*, 19(2), 547–580. <https://doi.org/10.1007/s11482-023-10253-1>

Yeh, T., & Yue, L. (2021). Confidence in financial literacy, stock market participation, and retirement planning. *Journal of Family and Economic Issues*, 43(1), 169–186. <https://doi.org/10.1007/s10834-021-09769-1>

APPENDIX

Table A1. Results of the collinearity tests for the baseline model of logistic regression

Baseline model	Tolerance	VIF	Eigenvalue	Condition Index
(Constant)			7.903	1.000
Fin_knowledge_real	.811	1.233	1.813	2.088
Ability_cover_major_expense(1)	.862	1.161	1.232	2.532
Ability_cover_major_expense(2)	.669	1.495	1.119	2.658
Worries_regular_expenses(1)	.494	2.023	1.072	2.715
Worries_regular_expenses(2)	.652	1.534	1.039	2.758
Considering_affordability(2)	.404	2.477	.980	2.839
Considering_affordability(1)	.359	2.784	.930	2.915
Gender_female	.968	1.033	.901	2.962
Age(1)	.684	1.462	.879	2.998
Age(2)	.436	2.294	.811	3.121
Age(3)	.331	3.018	.694	3.374
Age(4)	.434	2.302	.529	3.865

End of Table A1

Baseline model	Tolerance	VIF	Eigenvalue	Condition Index
Education(1)	.815	1.227	.490	4.015
Education(2)	.785	1.273	.482	4.050
Education(3)	.803	1.245	.353	4.729
Income(1)	.252	3.976	.301	5.127
Income(2)	.295	3.386	.178	6.672
Development_region(1)	.430	2.326	.112	8.400
Development_region(2)	.448	2.230	.084	9.693
Development_region(3)	.416	2.406	.076	10.192
Occupation	.414	2.417	.021	19.298

Table A2. Sensitivity analysis – if we consider only socio-demographic and economic variables from the baseline model

Variable	B	S.E.	Wald	Sig.	Exp(B)
Gender_female	.136	.175	.605	.436	1.146
Age1	1.192	.425	7.858	.005	3.293
Age2	.956	.344	7.723	.005	2.601
Age3	.579	.316	3.345	.067	1.783
Age4	-.037	.311	.014	.905	.963
Education1	2.522	.611	17.030	.000	12.452
Education2	1.051	.221	22.569	.000	2.861
Education3	-1.793	.354	25.630	.000	.166
Income1	-1.459	.415	12.380	.000	.232
Income2	-.881	.409	4.639	.031	.414
Development_region1	-1.196	.319	14.065	.000	.303
Development_region2	-.987	.324	9.273	.002	.373
Development_region3	-1.032	.312	10.911	.001	.356
Occupation	-.234	.275	.724	.395	.791
Constant	1.871	.521	12.884	.000	6.496

Table A3. Sensitivity analysis – if we consider stricter restrictions for multicollinearity

Regression model for estimating perceived financial knowledge – stricter considerations for multicollinearity					
Variable	B	S.E.	Wald	Sig.	Exp(B)
Fin_knowledge_real	.855	.183	21.865	.000	2.351
Ability_cover_major_expense2	.523	.187	7.831	.005	1.687
Worries_regular_expenses2	–.469	.186	6.382	.012	.626
Considering_affordability1	–.094	.189	.247	.619	.910
Gender_female	.087	.176	.247	.619	1.091
Age1	.917	.392	5.478	.019	2.503
Age2	.601	.255	5.547	.019	1.824
Education1	2.776	.608	20.877	.000	16.052
Education2	1.201	.217	30.744	.000	3.324
Education3	–1.694	.352	23.145	.000	.184
Income2	.316	.183	2.974	.085	1.371
Development_region1	–.316	.211	2.246	.134	.729
Development_region2	–.063	.216	.086	.769	.939
Constant	–.530	.253	4.376	.036	.588

Table A4. Sensitivity analysis – all statistically significant predictors

Variable	B	S.E.	Wald	Sig.	Exp(B)
Fin_knowledge_real	.732	.187	15.238	.000	2.079
Ability_cover_major_expense1	.206	.306	.454	.500	1.229
Ability_cover_major_expense2	.515	.196	6.891	.009	1.674
Age1	.985	.415	5.639	.018	2.679
Age2	.701	.296	5.616	.018	2.015
Age3	.268	.251	1.139	.286	1.307
Age4	–.142	.262	.292	.589	.868
Education1	2.480	.614	16.307	.000	11.936
Education2	1.003	.225	19.895	.000	2.727
Education3	–1.638	.360	20.681	.000	.194
Income1	–1.125	.425	7.010	.008	.325
Income2	–.712	.415	2.938	.087	.491
Development_region1	–1.066	.323	10.913	.001	.344
Development_region2	–.874	.328	7.105	.008	.417
Development_region3	–1.004	.314	10.204	.001	.366
Constant	1.082	.549	3.887	.049	2.951