

KNOWLEDGE, ATTITUDE AND BEHAVIOUR TOWARD INVESTMENTS: PILOT STUDY ON LATVIAN SAMPLE

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Abstract. This paper reflects the results of the pilot research within the series of studies aimed at evaluating the level of knowledge about financial investments among Latvian citizens, perceived complexity of the investments-related issues, attitudes towards financial products, savings, and investments, as well as at getting a general insight about citizens' investment behaviour. The goal of the pilot research was to evaluate the perceived complexity of the investments-related questions, as well as to get an insight about the motives and barriers to start investing. The sample included 300 respondents. The survey was made using the authors' developed questionnaire; the data was processed by means of the frequency analysis. To analyze open-ended questions consistent with the discourse analysis methodology, the open-access software AntConc was used. Most difficult questions for respondents were those about bonds. Most respondents treat their knowledge about investments at the below-average level. Lack of free financial resources was mentioned as the most important barrier for making investments by 35% of respondents.

Keywords: investments, financial literacy, knowledge, attitude, behaviour, survey.

JEL Classification: G11, G40, G53, C83.

Introduction

Twelve million EUR is the total sum, which in 2022 collectively lost Latvians, who became the victims of financial frauds (Finance Latvia, 2023). This is a large sum for the country with the population of less than 2 million and GDP per capita of approximately 16 thousand EUR (Trading Economics, 2022). About a third of the sum was stolen by offering fake investment products and services. One of the major reasons accounting for the loss of financial resources to fraud in such cases has been a relatively low level of the awareness of financial matters, in other words, a low level of financial literacy.

Financial literacy is an essential life skill in the modern world, allowing individuals to make informed decisions about managing their money, saving for the future, and making wise investments. Despite its importance, however, many people in the European Union lack adequate financial knowledge, leaving them vulnerable to financial fraud, high levels of debt, and inadequate retirement savings, which would mean higher risk of poverty

in their senior years especially given demographical bias towards elderly population. In general, the level of financial literacy is low, according to OECD/INFE survey results conducted in 26 countries (Organisation for Economic Co-operation and Development [OECD], 2020). This lack of financial literacy is a significant challenge for policymakers, financial educators, and individuals themselves, and has implications for the economic well-being of individuals and society as a whole.

In recent years, there has been growing recognition of the importance of financial literacy in the European Union, and efforts have been made to improve financial education and increase awareness of financial issues. For example, European Commission created the European Union Initiative for Financial Inclusion, in partnership with the European Investment Bank, the European Bank for Reconstruction and Development, and Agence française de développement (European Commission, 2019).

This research is planned as series of separate studies focusing on different dimensions of financial literacy – knowledge, attitude and behaviour. The authors focus on

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the specific elements of financial literacy – savings and investments. The overwhelming goal of the research is to contribute to this ongoing discussion by providing a comprehensive overview of the current state of financial literacy in Latvia, examining the weakest and the strongest financial areas for most individuals, the challenges that individuals face, the obstacles for not saving and investing as well as the differences by age groups and genders. The identification of the weakest and strongest financial literacy components across various groups of the population is justified by the fact that such information can subsequently be embedded into educational policies for the purposes of more effective development of financial literacy because scientific evidence proves a positive relationship between financial literacy and educational achievements (Madeira & Margaretic, 2022), especially, financial education (Hermansson et al., 2022). Earlier Zhou et al. (in press) showed that proper education in specific areas of financial literacy could lead to higher levels of financial literacy, on the one hand, and on the other hand, Lin and Bates (2022) proved the existence of the relationship between cognitive abilities, economic knowledge and financial literacy, all of which are subject to educational policies.

The current paper reflects the results of the pilot study conducted among Latvian citizens with different socio-demographic characteristics. Sample included 300 respondents. The authors used their developed questionnaire to do the survey.

The goal of the paper is to evaluate the perceived complexity of the investments-related questions, as well as to get an insight about the motives and barriers to start investing.

The results of the current research and future investigations will contribute to the achievement of the goals defined in the Action Plan of the Financial Literacy Strategy 2021–2027 (Finansu pratiba, 2022). The representatives of the EKA University of Applied Sciences (EKA) and the Financial Education Society are members of the working group for strategy implementation. Since 2022, the coordinator of the Financial literacy strategy is the Latvijas Banka; before it was coordinated by the Financial and Capital Market Commission.

The current research is limited by the number of respondents (300) because the technical goal was to get preliminary results to make a report for the working group. The collection of data is still performing at the moment of paper submission. The authors expect to collect 700 responses. The minimum number of respondents for Latvian survey is 384 persons with the confidence level 95%. The analysis of several questions was skipped, for instance, the evaluation of knowledge was not reflected in the given paper.

The paper is structured as follows: part 1 provides a brief overview of the concept of financial literacy and short description of financial literacy issues in Latvia, part 2 described the research design and methodology used, part 3 presents empirical results, followed by conclusions.

1. Literature review

1.1. Financial literacy problem and importance

Ansari et al. (2023) accept the OECD definition of financial literacy as a combination of various types of knowledge and competences yielding effective decisions despite risks across various types of financial contexts. Thus, financial literacy could be defined as a concept referring to the knowledge and ability to reasonably plan the acquisition and distribution of financial resources in the short and long-term in order to secure financial stability by using various types of financial instruments.

Financial literacy is one of the most crucial instruments for the promotion of societal welfare on the individual and household levels because financial literacy is one of the preconditions of effective personal and household financial planning, which ensures the financial safety net. The importance of financial literacy has been accentuated by new economic realia, co-shaped by the financial crises of 2008 (Brounen et al., 2016), prolonged longevity of the population (Vieira et al., 2022), income fluctuations (Cai et al., 2023) and the Covid-19 pandemic (Stubbs et al., 2021). New economic contexts have required a higher share of personal and household monetary contributions to personal healthcare and pension funding (Brounen et al., 2016; Vieira et al., 2022) and to the security of ongoing living expenses of the present and the immediate future through the accumulation of liquid savings (Bhutta, in press). To be able to make such contributions, individuals and households should increase their levels of financial literacy, the result of which will be more effective distributions of financial resources both short- and long-term, including a more effective use of credit cards (Choung et al., 2022), and the accumulation of savings for managing unforeseen financial losses and investment products.

Despite obvious advantages of financial literacy and public promotion of more personal responsibility for financial decisions and planning (Brounen et al., 2016), the global level of financial literacy is extraordinary low, including the developed countries (Sekita et al., 2022). According to the worldwide survey of 2014, only 1 in 3 adults were found to be somewhat financially literate (Klapper et al., 2015). Consistent with the OECD survey of 2020, the average financial literacy score was 12.7 points out of max 21 point, which was just 61% of the maximum score (OECD, 2020). The highest results were registered in China (71% of maximum), while the lowest ones in Italy (53% of maximum). The most typical knowledge gap of financial literacy tends to relate to investment products and services. For example, over 70% of the Slovak population have difficulty differentiating between various types of investment and associated risks (Mihalčová et al., 2014). Such lack of knowledge could be attributed to the lack of savings and thus instruments for investment. Almost half of the Slovak respondents did not allocate even a cent to savings from their monthly salaries (Mihalčová et al., 2014).

In order to determine the aspects of financial literacy that cause the greatest concerns, OECD (2020) suggests the

review of financial literacy concept at 3 levels – knowledge, behavior and attitude. The most typical issue was the lack of general financial knowledge – 63% of the maximum score, while the behavior and the attitude received 59% of the maximum. In contrast, the awareness of specific financial products was solid > 80% level; yet, their use was substantially lower – 46% level. The most utilized product was the primarily payment, while the least used one covered the insurance products. Financial resilience turned out to be a serious problem as only 28% of adults reported having a financial cushion for one week. Overall, men generally tended to do better than women and the higher financial scores were common within the age group of 30–59 in contrast to either younger or more senior adults.

One question that has been of concern to both public and scientific bodies is as follows: what factors impede the development of financial literacy? According to some EU surveys on financial literacy, the issues hindering the emergence of financial literacy relate to the citizens' insufficient knowledge of financial products and services, lack of time for proper decision-making and high risks associated with activities on financial markets. Scientific literature additionally points to the lack of trust in financial markets (Changwony et al., 2021) and psychological and cognitive biases. For examples, stress and depressive states shorten the financial literacy horizon, or else the period for which financial decisions are made (Choung et al., 2022), leading to money traps. Workplace perceptions, produced by information processing mechanisms, sometimes lead to erroneous financial decisions (Athota et al., 2023), resulting in financial losses. The negative emotional and cognitive experience of financial matters has been affecting the global population so much that there has been coined a new type of anxiety – financial anxiety. Not only does financial anxiety lower the effectiveness of financial decision-making, it also prevents people from seeking professional financial advice because it has a global negative impact on people's mental health (Gignac et al., 2023). This creates both emotional and cognitive framing against the development of new types of financially literate behavior. It is for such reasons that people tend to prefer to engage in financially illiterate behavior, such as overconsumption and the immediate consumption rather than longer-term savings and investments (Changwony et al., 2021).

1.2. Financial literacy in Latvia

In Latvia Financial regulator tends to make surveys on the financial literacy creating financial literacy index (Financial and Capital Market Commission [FCMC], 2019). Latest survey conducted in 2019 shows that the index stands at 21.7 on the scale from –76 to +99, which could not be considered as stellar result. There are certainly the ways to grow it. It is also worth to notice that in 2019 as compared to previous survey results' the index grew insignificantly to 21.7 from 21.2 observed in 2015. Most notable improvements were detected with regards to the saving habits as many focus on saving nest creation as well as more critically consider information sources, tend to use more insurance

products. The areas evaluated as the weakest: 1) savings and financial planning among youngsters; 2) private pensions investments and planning. The positive developments are seen in understanding the importance of financial planning and increased attention to the saving. Additionally, the ability to cover unplanned large expenses has increased as well.

One more study on the financial literacy conducted among Latvian citizens in 2014 revealed that the weakest scores were received by seniors, who had substantial difficulty in answering the questions on financial matters (Ciemleja et al., 2014). Consider the whole sample the easiest questions were found to be on online banking services, spending habits and payment cards. The topics, where the respondents stumbled upon, were about the corporate finances, stocks markets and the notions of money time value and diversification.

The unique feature of the current research that it puts an emphasis on two elements of the financial literacy concept (Titko et al., 2015a) – savings and investments, but investigation is performed through all three dimensions and covers different aspects, such as information search, choice of the pension plan, barriers to investing, and etc.

2. Methodology

To achieve the research purpose, the authors developed a questionnaire consisting of three parts (Table 1): A. respondent profile, B. investment knowledge and C. self-assessment, attitude and behaviour.

The questionnaire was developed by the group of experts representing the EKA University of Applied Sciences and the Financial Education Society.

At the initial stage, the questionnaire was disseminated in the electronic format among students of the EKA, Stockholm School of Economics in Riga, BA School of Business and Finance, and Alberta College. However, the main contributors to the data collection were the students of the EKA study programme "Sociology" who disseminated hard copies of the questionnaire within their networks.

The current research was based on the data received from 300 respondents. The minimum number of respondents for Latvian survey is 384 persons with the confidence level 95%. However, for the pilot stage the number is sufficient considering the fact that the final conclusions will be made, based on the full sample data.

The sample includes 40% males and 60% females. The average age of the respondents was 25 years; the youngest respondent was 17 years old, the oldest – 55 years old. The place of residence for most of the respondents was Riga (46%); other large Latvian cities were represented by 9%. Latvian regions – Latgale, Kurzeme, Vidzeme and Zemgale - were represented by 45% of respondents. The most represented educational background was "Humanities and arts" and "Economics, finance" – 16% and 17% of respondents, respectively. 27% of respondents were unemployed students; 17% were representatives of the financial sector. Respondents according to their household type – "live alone", "live with parents", "live with

Table 1. The structure of the questionnaire (source: authors' contribution)

Part A. Respondent profile	
Questions	Evaluation scale
A1. Gender	Multiple-choice: 3 alternatives
A2. Age	Opened
A3. Place of residence	Multiple-choice: 7 alternatives (regions of LV)
A4. Field of education	Multiple-choice: 9 alternatives
A5. Social status	Multiple-choice: 4 alternatives
A6. Household type	Multiple-choice: 4 alternatives
A7. Average household income level per 1 family member	Multiple-choice: 4 alternatives
Part B. Knowledge about investments	
B1.1.-B1.7.	1 st scale: selection of the correct answer from 4 alternatives + 1 option "I don't know" 2 nd scale: 5 point scale to evaluate the level of perceived complexity
Part C. Self-perception, attitude and behaviour	
C1. General self-evaluation of knowledge about investments	5 point scale: 1 – very poor knowledge; 5 – very good knowledge
C2.1.-C2.2. Self-evaluation of knowledge about six investment products	5 point scale: 1 – very poor knowledge; 5 – very good knowledge
C3. Question about savings	Multiple-choice: 5 alternatives
C4. Usage of investment/savings products	Multiple-choice: 7 alternatives (possibility to select several answers)
C5. share of income to allocate to savings	Multiple-choice: 6 alternatives
C6. 2 nd pillar pension	Multiple-choice: 4 alternatives
C7.1.-C7.5. Statements about investments	5 point scale: 1 – least likely; 5 – most likely
C8.1.-C8.10. Information sources about investments	5 point scale: 1 – never use; 5 – always use
C9.1.-C9.6. Barriers to make investments	5 point scale: 1 – it is not a barrier; 5 – the most important barrier
Open question about the motives to start investing	

a partner with no children”, and “live with a partner with children” – were distributed as 22%, 27%, 33% and 17%, respectively. For 13% of respondents the average household income level per 1 family member was below EUR 500; for 42% – EUR 500–1000; for 35% – higher than EUR 1000; the others preferred not to answer.

Such a detailed respondent profile will allow the authors to test several hypotheses in the future studies, for instance, about the differences in attitude towards investments among different age or gender groups. The authors

plan also to test hypotheses about family wealth factor in influencing behaviour with regard to investments.

The hypotheses for the current research were stated by experts engaged in the development of the questionnaire about the perceived complexity of the questions. For this reason, the experts also evaluated the questions from the part B “knowledge about investments”. Based on their evaluation, as well as on the results of previous studies (Titko et al., 2015b), the hypotheses were formulated, as follows:

H1: the question covering financial concepts (“financial theory”) is the most complex question for respondents.

H2: respondents’ perceived complexity of the investments-related questions differs from the perceived complexity of the financial experts.

Frequency analysis and ranking procedure was used to indicate the most difficult questions forming “knowledge” part (B.), according to respondents. Responses to the open-ended question were analyzed by applying text analysis methods of word frequency, concordances, and the key-word-in-context analyses (KWIC). The textual data analysis was run on the text analysis platform *Voyant Tools*.

3. Results

3.1. Results of the frequency analysis

To test the research hypotheses, frequency analysis was performed. The questions were ranked according the number of respondents who selected the answers “difficult” and “very difficult” (“4” and “5”, respectively). The results are summarized in Table 2.

From Table 2, we can conclude that the first hypothesis can be rejected undoubtedly. The respondents treated the question on financial theory as the easiest one (the least number of respondents evaluated it as “4 – difficult” and “5 – very difficult”). The interesting fact is that it was

Table 2. Complexity of investments-related questions perceived by experts and respondents; 1 – very easy, 6 – very difficult (source: authors' contribution)

Questions' label	Rank, based on expert evaluation	Rank based on respondents' evaluation	Respondents who evaluated the question as difficult
B1.1 Deposit	3	4	43.67%
B1.2 Recovery of principal amount	5	3	49.67%
B1.3 Financial theory	1	6	32.67%
B1.4 Stocks	4	5	35%
B1.5 Bonds 1	4	2	52.33%
B1.6 Financial instruments	4	4	43.67%
B1.7 Bonds 2	2	1	64%

the most difficult from the viewpoint of experts. According to the respondents, the most difficult questions were the questions about bonds. These results are aligned with the previous research results (Titko et al., 2015b).

The second hypothesis can be confirmed because the most difficult and the least difficult questions are different in perception of respondents and experts. However, this hypothesis will be tested on a full sample to check the statistical significance of the differences in opinions.

The results of the responses to the questions C1 and C2 aimed to evaluate self-perception of respondents regarding their knowledge about investments are summarized in Table 3.

Only 8% of respondents evaluated their knowledge about investment as good or very good. Average evaluation is 2.25. It is more or less consistent with the results of the FCMC (2019) survey, in which an average self-evaluation of financial knowledge was 3.08, 3.19, and 2.99 in 2014, 2015 and 2019, respectively.

The situation with citizens' savings can be treated dramatically – 32% of respondents do not have any savings. Only 8% have savings to cover 4–6 months of expenses. According to the large-scale Latvian survey (FCMC, 2019), the proportion of all respondents who declared that they do not save, in all three conducted surveys (2014, 2015, 2019) are constant within 48–49%.

Answering the question about 2nd pillar pension, fortunately, nobody selected the answer “I do not know about 2nd pillar pension savings”. But still, 25% of

Table 3. Perceived level of knowledge about investments and financial products (number of respondents, %) (source: authors' contribution)

Question	1 – poor	2	3	4	5 – very good
C1. General knowledge about investments	23.3%	35.3%	30.0%	7.3%	1.0%
C2.1. Knowledge about stocks	26.7%	30.0%	29.3%	9.0%	3.3%
C2.2. Knowledge about bonds	47.3%	28.0%	16.0%	4.7%	1.3%
C2.3. Knowledge about investment funds	39.3%	30.0%	21.3%	6.7%	1.0%
C2.4. Knowledge about savings products (savings account, term deposit)	42.3%	25.0%	21.0%	8.3%	1.7%
C2.5. Knowledge about investments in commodities / raw materials	39.0%	25.7%	22.0%	8.3%	3.0%
C2.6. Knowledge about cryptocurrency	32.7%	19.7%	25.7%	14.0%	6.3%

Table 4. Perceived importance of barriers to make investments, % (1 – it is not a barrier; 5 – the most important barrier) (source: authors' contribution)

Barrier	1	2	3	4	5
I do not have free financial resources to make investments	14.7%	11.7%	16.0%	10.3%	33.7%
I'm afraid I lack decent level of understanding of investments	14.7%	15.7%	23.0%	20.0%	15.0%
I do not have time for it	20.3%	22.3%	21.3%	12.7%	14.0%
I do not know what to start with	14.0%	16.0%	23.0%	18.0%	20.7%
High commission fees	14.3%	20.3%	27.7%	13.7%	11.3%
I do not have savings yet	20.3%	11.0%	15.3%	12.7%	29.0%

respondents have no idea where their 2nd pillar pension savings are.

The responses about the barriers for making investments into financial products are summarized in Table 4.

The lack of financial resources is the most important barrier for majority of respondents. 35% of respondents pointed to the lack of understanding.

To investigate the motives to start investing, the content analysis of the responses to the last opened question was performed and described in the next sub-chapter. This analysis provides additional information also about barriers.

3.2. Results of the content analysis

Overall, the open-ended responses included 1578 word-tokens, of which 71% were lexical words. Of 1128 lexical tokens, the words with the highest frequency of use covered the financial, information and stability concepts. Taken together they formed 21% of the entire body of lexical items, which is a high percentage considering a high variation of lexical token forms – 44%, which is why they could be referred to as key words. The words other than those related to the key word concepts were discarded from further consideration, apart from those that formed collocations with the key words.

As for specifics, of the key word analysis, the financial concepts included the following variety: finance (finan*, LV), money (naud*, LV), income (ienākum*, LV), profit (peļņ*, LV), investment (invest*, ieguld*, LV) and resources (līdzek*, LV).

The information concepts covered the concepts of knowledge (zināšan*, LV) and information (informācij*, LV), whereas the concepts of stability included the notions of future (nākotn*, LV), security (drošīb*) and risk (risk*, LV).

To determine the context of occurrence of the key words, the key word concordances were analyzed in a key word link map, provided in Figure 1.



Figure 1. Lexical connections within the key words and with other words (source: authors' contribution)

Considering the focus of the research on investment and financial resources, more detailed connection maps were created for the concepts of investment and finance (see Figures 2–3, respectively).



Figure 2. Connections of the concept of investment (source: authors' contribution)

The connections of Figure 2 could be summarized as follows: the participants of the study would make an investment if they had more free money and more information about investment in order to obtain independence and secure their future.

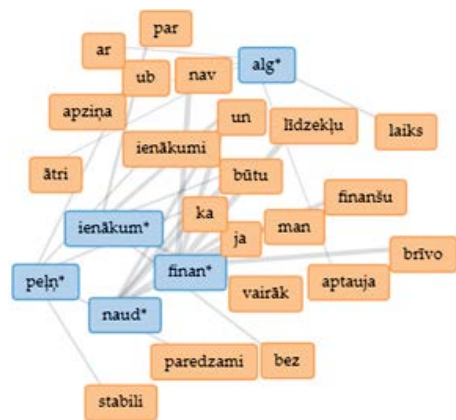


Figure 3. Connections of the concept of finance (source: authors' contribution)

The connections of Figure 3 could be summarized as follows: (1) the participants of the study need stable and predictable profits and income, free financial resources, more financial resources and more time; (2) the participants of the study do not have sufficient financial resources.

Thus, there are both limitations and needs for information and financial resources that constrain the investment behavior of the research participants. In fact, this conclusion was further supported by the outcomes of the textual arc, created for the key words. The arc clearly showed that the central words that permeated the entire key word context included the following tokens; “būtu” (“would”, ENG), “ja” (“if”, ENG), “un” (“and”, ENG), and “vairāk” (“more”, ENG). The close proximity of the words “būtu”, “ja”, and “un” to the word “vairāk” in the textual arc suggests that the participants thought that they did not have financial resources, information and knowledge, which is why financial resources, information and knowledge acquired the associations with the concepts of “insufficiency”, “limitations”, and “needs”.

Overall, the open-ended answers could be summarized as follows. The participants are interested in being able to make investments to secure stable and secure future for themselves. Yet, they lack financial resources, knowledge and information, and on occasion time, to engage in investment behavior.

Conclusions

The present article is the insight into the pilot study within the framework of comprehensive analysis of the Latvian citizens' knowledge about investments as well as their behaviour and attitude towards them.

Comparing the respondents' perception of investment questions' complexity to the perception of the experts, one can conclude that there is a high divergence in opinions, therefore confirming stated hypothesis. It is often the case that the difficult questions, in expert opinion, are quite simple by the respondents, and vice versa, easy questions are perceived as difficult, by the respondents. It is worth noticing that the average perception of questions' difficulty does not differ substantially among expert and respondent groups: 3.29 vs. 3.57 respectively. Possibly, this might be explained by high degree of self-confidence of the respondents.

Self-assessment results indicate that general knowledge on investment products and services is quite low as only 8% of the respondents evaluated their knowledge as good or very good. Interestingly, the lowest self-assessment score was earned by the bonds and savings topics. These scores were way below than the score within the cryptocurrency, commodities and stocks areas.

Analysis results of the obstacles to start investing did not come unexpected. Both, content analysis of the open question and a closed question collecting the opinion of a particular barrier significance showed the same result. Lack of time, knowledge and financial resources

are the major ones delaying personal investments. Insufficient financial resources tend to be the major obstacle, followed by the lack of understanding, while time availability though still a significant, but less important than the former two. Obviously, all of the mentioned barriers should be acknowledged by the policy makers and have to be diligently and systematically addressed and the solutions have to be proposed.

The research definitely will be continued using the full sample data (authors expect to collect 700 responses). The potential research directions are: 1) testing the impact of socio-demographic characteristics of respondents on the level of knowledge about investments, 2) testing the differences in knowledge, attitude and behaviour towards investments between different groups of respondents, 3) based on the knowledge part, creating the profile of financially literate Latvian citizen in the field of investments.

Disclosure statement

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References

- Ansari, Y., Albarrak, M. S., Sherfudeen, N., & Aman, A. (2023). Examining the relationship between financial literacy and demographic factors and the overconfidence of Saudi investors. *Finance Research Letters*, 52, 103582. <https://doi.org/10.1016/j.frl.2022.103582>
- Athota, V. S., Pereira, V., Hasan, Z., Vaz, D., Laker, B., & Repas, D. (2023). Overcoming financial planners' cognitive biases through digitalization: A qualitative study. *Journal of Business Research*, 154, 113291. <https://doi.org/10.1016/j.jbusres.2022.08.055>
- Bhutta, N., Blair, J., & Dettling, L. (in press). The smart money is in cash? Financial literacy and liquid savings among U.S. families. *Journal of Accounting and Public Policy*. <https://doi.org/10.1016/j.jaccpubpol.2022.107000>
- Brounen, D., Koedijk, K. G., & Pownall, R. A. J. (2016). Household financial planning and savings behavior. *Journal of International Money and Finance*, 69, 95–107. <https://doi.org/10.1016/j.jimonfin.2016.06.011>
- Cai, J. Y., Wimer, C., Berger, L., & Maury, M. (2023). Intra-year employment instability and economic well-being among urban households: Mitigating effects of the social safety net. *Children and Youth Services Review*, 148, 106855. <https://doi.org/10.1016/j.childyouth.2023.106855>
- Changwony, F. K., Campbell, K., & Tabner, I. T. (2021). Savings goals and wealth allocation in household financial portfolios. *Journal of Banking & Finance*, 124, 106028. <https://doi.org/10.1016/j.jbankfin.2020.106028>
- Choung, Y., Chatterjee, S., & Pak, T.-Y. (2022). Depression and financial planning horizon. *Journal of Behavioral and Experimental Economics*, 98, 101877. <https://doi.org/10.1016/j.socrec.2022.101877>
- Ciemleja, G., Lace, N., & Titko, J. (2014). Financial literacy as a prerequisite for citizens' economic security: Development of a measurement instrument. *Journal of Security and Sustainability Issues*, 4(1), 29–40.
- European Commission. (2019). *EU initiative for financial inclusion: Presentation*. https://neighbourhood-enlargement.ec.europa.eu/eu-initiative-financial-inclusion-presentation_en
- Financial and Capital Market Commission. (2019). *Latvijas iedzīvotāju finansu pratība*. <https://www.finansupratiba.lv/wp-content/uploads/2020/01/Zinojums-Finansu-pratiba-2019-F.pdf>
- Finance Latvia. (2023). *No banku klientiem janvārī izkrāpj vienu miljonu eiro, bistamākie aizvien telefonkrāpnieki*. <https://www.financelatvia.eu/news/no-banku-klientiem-janvari-izkrapi-vienu-miljonu-eiro-bistamakie-aizvien-telefonkrapnieki/>
- Gignac, G. E., Gerrans, P., & Andersen, C. B. (2023). Financial literacy mediates the effect between verbal intelligence and financial anxiety. *Personality and Individual Differences*, 203, 112025. <https://doi.org/10.1016/j.paid.2022.112025>
- Hermansson, C., Jonsson, S., & Liu, L. (2022). The medium is the message: Learning channels, financial literacy, and stock market participation. *International Review of Financial Analysis*, 79, 101996. <https://doi.org/10.1016/j.irfa.2021.101996>
- Klapper, L., Lusardi, A., & Van Oudheusden, P. (2015). *Financial literacy around the world*. World Bank.
- Latvijas Banka. (2022). *Latvijas Banka will be the responsible institution in the field of financial literacy*. <https://www.bank.lv/en/component/content/article/596-news-and-events/press-releases/12782-latvijas-banka-will-be-the-responsible-institution-in-the-field-of-financial-literacy>
- Lin, C.-A., & Bates, T. C. (2022). Smart people know how the economy works: Cognitive ability, economic knowledge and financial literacy. *Intelligence*, 93, 101667. <https://doi.org/10.1016/j.intell.2022.101667>
- Madeira, C., & Margaretic, P. (2022). The impact of financial literacy on the quality of self-reported financial information. *Journal of Behavioral and Experimental Finance*, 34, 100660. <https://doi.org/10.1016/j.jbef.2022.100660>
- Mihalčová, B., Csikósová, A., & Antošová, M. (2014). Financial literacy—the urgent need today. *Procedia-Social and Behavioral Sciences*, 109, 317–321. <https://doi.org/10.1016/j.sbspro.2013.12.464>
- Organisation for Economic Co-operation and Development. (2020). *OECD/INFE 2020 international survey of adult financial literacy*. <https://www.oecd.org/financial/education/oecd-infe-2020-international-survey-of-adult-financial-literacy.pdf>
- Sekita, S., Kakkar, V., & Ogaki, M. (2022). Wealth, financial literacy and behavioral biases in Japan: The effects of various types of financial literacy. *Journal of the Japanese and International Economies*, 64, 101190. <https://doi.org/10.1016/j.jjie.2021.101190>
- Stubbs, T., Kring, W., Laskaridis, C., Kentikelenis, A., & Gallagher, K. (2021). Whatever it takes? The global financial safety net, Covid-19, and developing countries. *World Development*, 137, 105171. <https://doi.org/10.1016/j.worlddev.2020.105171>
- Titko, J., Lace, N., & Polajeva, T. (2015a). Financial issues perceived by youth: Preliminary survey for financial literacy evaluation in the Baltics. *Oeconomia Copernicana*, 6(10), 71–98. <https://doi.org/10.12775/OeC.2015.004>

- Titko, J., Ciemleja, G., & Lace, N. (2015b). Financial literacy of Latvian citizens: Preliminary survey results. *Procedia – Social and Behavioral Sciences* 213, 12–17.
<https://doi.org/10.1016/j.sbspro.2015.11.396>
- Trading Economics. (2022). *Latvia GDP per capita*. <https://trading-economics.com/country-list/gdp-per-capita?continent=europe>
- Vieira, K. M., Rosenblum, T. O. A., & Matheis, T. K. (2022). And tomorrow, how will it be? Developing a financial preparation for retirement scale (FPRS). *Journal of Behavioral and Experimental Finance*, 35, 100709.
<https://doi.org/10.1016/j.jbef.2022.100709>
- Zhou, Y., Yang, M., & Gan, X. (in press). Education and financial literacy: Evidence from compulsory schooling law in China. *Quarterly Review of Economics and Finance*.
<https://doi.org/10.1016/j.qref.2022.09.006>