Financial literacy and its development prospects: insights from Hungarian and international literature

Péter Zentai – Judit Molnárné Kovács

ABSTRACT: To attain financial well-being, enhancing financial literacy is crucial; however, the definition of financial literacy is inconsistent both in Hungarian and international literature. In Hungary, the distinction between individual and the societal levels is not clear either. Accordingly, we conducted a literature review, during which our method involved collecting meta-studies in English containing the term "financial literacy" and selectively reviewing the research presented in them based on relevance. In Hungarian, we examined which terms have become common equivalents for "financial literacy" and analysed the related literature along these lines. In the theoretical model created in our study, we conceptualize financial literacy in a new way, and to capture the individual level, we recommend the introduction of a new Hungarian term. With regards to Hungarian results, high knowledge is combined with low levels of financial behaviour, so we recommend that decision-makers use behavioural economic tools instead of traditional financial education, which have a more direct impact on people's everyday financial behaviour and operate more widely in those layers of society where traditional financial education have proven to be ineffective.
KEYWORDS: financial literacy, financial education, nudge, financial well-being
JEL-CODES: A13, D03, D91, G41, I22
DOI: https://doi.org/10.35551/PFQ_2024_4_2

Introduction

Possessing everyday financial skills and abilities is as essential for success in today's complex world as literacy became after the spread of printing (Anthes, 2004). The financial crisis of 2008 opened a new era of attention to financial literacy, which was further exacerbated by the economic difficulties brought about by the COVID epidemic and the war between Russia and Ukraine. These events clearly demonstrated the need for continuous adaptation in the field of finance. In addition to basic knowledge, the ability to apply this knowledge in everyday practice and a responsible attitude towards finance are of paramount importance, which can lead

to financial well-being and financial security in everyday life (Hung et al., 2009). The state and financial institutions have a responsibility to raise the financial literacy of citizens through financial education and interventions that directly influence financial behaviour.

The first step in developing financial literacy is to define what we mean by this term. It is not straightforward because there is no uniformly accepted definition in either international or Hungarian literature. One of the main reasons is that different definitions capture different aspects of financial literacy. In the Hungarian context, in many cases different words are used synonymously when talking about financial literacy. The aim of our study is to support Hungarian researchers in better understanding the topic by reviewing the Hungarian and international literature and to provide further guidance by means of a theoretical model of financial literacy and a definition of financial literacy by the authors. The second part of our study reviews different financial education programmes and their effectiveness in international comparison and in Hungary.

Definition of financial literacy in the international literature

The definition of financial literacy in the international literature is very diverse. The term was first used in 1997 by the Jump$tart Coalition for Personal Financial Literacy (Stolper and Walter, 2017), a US-based non-profit organisation that aims to "develop a strategic plan for improving the quality and extent of curriculum modules for personal finance education in the nation's schools" (Jump$tart website). Hung et al. (2009) conducted a major literature review on the subject and have concluded on a definition, which is also in line with the OECD (Organisation for Economic Co-operation and Development) definition. "Financial Literacy: knowledge of basic economic and financial concepts, as well as the ability to use that knowledge and other financial skills to manage financial resources effectively for a lifetime of financial well-being. " (Hung et al., 2009, p. 12).

Over time, the interpretation has been extended to include several new forms. According to Hung et al. (2009), *perceived knowledge* also influences financial behaviour, independently of actual knowledge. Parker et al. (2008) focus *on financial confidence*, which they find to predict retirement saving and investment behaviour. Lown (2011) pointed to the importance of *self-efficacy* in financial behaviour and developed the Financial Self-Efficacy Scale (FSES) as a measure of financial behaviour. Financial self-efficacy measures how well an individual feels able to manage their finances and make appropriate financial decisions. According to Lown (2011), financial self-efficacy reflects the extent to which an individual trusts their ability to manage their financial situation and handle financial challenges, such as budgeting, managing savings or financing unexpected expenses.

In a comprehensive survey of 71 studies, Huston (2010) found that 72% of studies did not define financial literacy at all. She observed that research on financial literacy focused on three areas: knowledge about money, purchasing power and

accounting concepts related to personal finance (1); intertemporal decisions about money: borrowing on the one hand and investing on the other, i.e. saving resources now for future use (2); and protecting resources through insurance products or other risk management techniques (3). Based on this, Huston (2010) proposed a very short definition of financial literacy, as the essence of the concept is to reflect both understanding and use: "Financial literacy could be defined as measuring how well an individual can understand and use personal finance-related information" (Huston, 2010, p. 306).

The authors of this article propose the following definition: financial literacy is the acquisition and practical application of financial knowledge, with financial self-efficacy as a key element, as it helps individuals make informed and successful financial decisions. In our study, we explain why financial self-efficacy is of particular importance in defining financial literacy.

Differentiating financial literacy from related concepts

Financial literacy must be separated from numeracy and intelligence. Although people with better cognitive skills often have higher financial literacy (Christelis et al., 2010; Stolper and Walter, 2017), this does not mean that there is a complete overlap between the two. There are other dimensions of financial literacy (Lusardi et al., 2010). Individuals with higher IQ develop more complex financial portfolios, manage risk better, and make more effective financial decisions, even after controlling for factors such as wealth, income, and age (Grinblatt et al., 2011).

Financial literacy is associated with several sociodemographic factors such as age, gender, education, family background, and income. The studies cited often examine these factors in isolation, thus failing to reveal possible correlations between them. Regarding *age*, research has shown that the youngest (18-24 years) and oldest (over 60 years) groups have the lowest financial literacy (Xiao et al., 2015; Finke et al., 2011). This is because young people have not yet accumulated enough experience, and older people are not able to sufficiently use their experience due to cognitive decline. *Gender* differences also play a role: men on average have higher financial knowledge than women (Agnew and Harrison 2015; Hung et al., 2009; Lusardi et al., 2010), which is associated with lower financial well-being for women (Fonseca, 2012). *Education* also plays an important role: those with higher education tend to make riskier but more profitable financial decisions in the long run, such as investing in equities (Calvet et al). In terms of *family background*, financial literacy is associated with parental education (Grohmann et al., 2015; Lusardi et al., 2010). *Higher income earners* manage their credit better, e.g. repaying their credit card debts on time and refinancing their mortgages when more favourable terms are available (Lusardi and Tufano, 2015). In relation to income, the question arises whether higher financial literacy leads to better financial decisions or vice versa. Bucher-Koenen and Lusardi (2011) find that people with a higher level of financial literacy are more aware of the importance of saving for retirement and therefore have a higher proportion of such

accounts. However, the opposite is also true: opening a retirement savings account and the planning that goes with it increases people's financial literacy.

Hungarian characteristics of the use of the term financial literacy

Hungarian literature also emphasises the complexity of financial literacy and the fact that there is no single definition. Most approaches include the collection, use and organisation of financial information and personal decision-making based on it (Kovács et al., 2014).

Based on the review by Hergár et al. (2024), most research in Hungary focuses on the role of financial literacy in different social groups, with a special emphasis on financial awareness, financial decisions, and the factors influencing them. Based on this study, the research can be grouped into several broad categories. First, studies that focus on financial literacy and awareness. These studies focused on the financial knowledge and skills of individuals and households. Sági et al. (2020) studied household financial literacy, while Botos et al. (2012) examined the conservative financial behaviour and risk minimisation strategies of households in the Central Great Plain region, highlighting that many are unable to make informed decisions due to gaps in their financial literacy. Zsótér et al. (2017) examine changes in the financial behaviour of the Hungarian population based on the OECD's 2010 and 2015 Hungarian Financial Literacy Surveys, finding that by 2015 the population was characterised by fewer financial problems and a higher propensity to spend, but lower financial awareness.

Another group of studies focused on the financial literacy of students. These studies focus on the financial knowledge, skills, and awareness of students in secondary and higher education. Kovács et al. (2021) found that students in secondary school have superficial and limited financial literacy, mostly drawn from the family environment. The level of financial literacy improves with age and experience, especially in the labour market and credit issues. Huzdik et al. (2014) studied the financial literacy and risk-taking propensity of students in higher education and concluded that financial literacy is not always associated with high risk-taking propensity. Kálmán et al. (2021) used a two-phase offline questionnaire survey to investigate the impact of the pandemic on the financial security of students in higher education in economics. The first wave of the Covid-19 epidemic took place between the two data collections, which provided an opportunity to model the crisis. Their main finding was that the year of the survey had a significant impact on all dimensions of financial literacy, i.e. the crisis caused by the epidemic was reflected in the students' responses.

Research has also been conducted on the relationship between the financial situation and skills of enterprises. Győri (2018) described the financial vulnerability of small and medium-sized enterprises, while Czeglédi et al. (2016) explored the shortcomings of entrepreneurship education in Hungarian higher education.

The study of the social dimensions of financial literacy provides the next focus (Hergár et al., 2024). In many cases, the factors under study could be labelled as

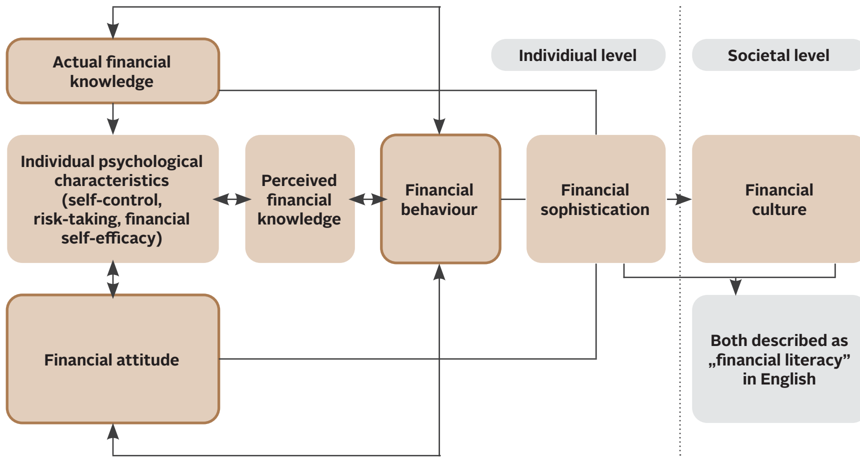
psychological, for example in the description of financial personality types (Németh et al., 2016) or financial vulnerability (Németh et al., 2020), which is significantly influenced not only by low income but also by lack of control over spending habits, difficulty in delaying desires and hoping for luck. Hegedűs and Lentner (2024) investigated the relationship between Hofstedean cultural dimensions and financial literacy, finding that a significant proportion of the Hungarian population has a collectivist approach (e.g., they make financial decisions with the involvement of others or take the interests of the wider community into account when making financial decisions). Béres and Huzdik (2012) investigated the macroeconomic context of financial literacy, emphasizing the role of financial knowledge, proficiency and skills in economic decision-making.

Young people and financial digitalisation represent the next main theme. Pintér et al. (2021) investigated the impact of digitalisation and fintech on young people's financial decisions, highlighting the role of technology in shaping financial literacy. Overall, the research covers different segments of financial literacy, from personal financial awareness to the financial challenges of businesses and cultural factors.

In Hungarian-language publications, finding an appropriate equivalent for the original English term "financial literacy" presents a challenge. The English word "financial literacy" is derived from the Latin literatus, which means literate, educated, a person who can read and write, who knows the letters (Latin: littera = letter). In Hungarian, several terms have been used, mostly synonymously: pénzügyi műveltség (financial literacy), pénzügyi kultúra (financial culture), pénzügyi tudatosság (financial awareness), pénzügyi tájékozottság (financial understanding). In his review of the Hungarian use of the term, Csorba (2020) points out that there is an overlap between financial culture and financial literacy, but it is important to distinguish between the two. *Financial culture*, like the concept of general culture, refers to the values, beliefs and norms of a society, in this case in relation to finance. *Financial literacy*, on the other hand, is the set of knowledge, attitudes (and behaviours) that individuals have about finance. While the authors agree with the use of "pénzügyi kultúra" (financial culture) for the societal level, they propose the use of a new term: "pénzügyi kulturáltság" (financial sophistication) for individual level. The Hungarian word "kulturáltság" is derived from the adjective "kulturált", meaning "cultured" or "civilized". In English, both of these terms are described by financial literacy.

Based on the above, we have developed our theoretical model of financial literacy (Figure 1), which extends the three-component approach (knowledge, attitude, behaviour) to include individual psychological characteristics, self-control, risk-taking, financial self-efficacy, and perceived financial knowledge. These psychological factors play a role in determining behaviour and thus affect financial literacy. The figure highlights the mutual interactions between the individual components and illustrates how individual and societal levels manifest within the concept of financial literacy.

Figure 1 The theoretical model of financial literacy:



Source: Own editing. The model was developed based on the works of Csorba (2020, p. 78) and Hung et al. (2009, p. 12).

Financial education programmes and their effectiveness in an international context

A financial training program is defined as any initiative aimed at improving individuals' financial literacy through the provision of information. This can be done through formal education, training courses, formalised training, but also through the planned transfer of information, using a strategy of sharing information "here and now". The goal of these programmes is to help and motivate people to make changes in their financial behaviour, for example, to make well-considered financial decisions (Amagir et al., 2017).

Financial education, as defined by the OECD, is about "equipping people with financial knowledge and skills to help them make informed and sound decisions about their finances is key to supporting their financial well-being". (OECD, 2024).

A much-debated topic in the international literature is the effectiveness of financial education. In one of the most comprehensive meta-analyses on the topic, Fernandes et al. (2014) find, based on 201 studies published in 168 journals, that interventions to increase financial literacy explain only 0.1 percent of the variance in financial behaviour in the long run, and even less for low-income individuals. The 201 studies included financial education in secondary schools, advice for adults, seminars, various adult education courses, and some forms of information transfer such as newsletters and exhibitions. Like other training programmes, the impact of financial education diminishes over time, and in the long run (already 20 months after the intervention) even the impact of very substantial training courses lasting several hours becomes insignificant. They find that financial training has a higher impact

on financial knowledge than on actual financial behaviour. Their study concludes that a "just in time" strategy (as is common in the industry) is more effective, where individuals receive financial education when faced with a real decision rather than in theoretical situations. In their view, decision-makers act most effectively when the right combination of financial education, choice architecture, and regulation is used. Regarding the design of financial education Hadar et al. (2013). suggested that more emphasis should be placed on skills such as planning, proactivity, and risk-taking

The policy-maker is in a difficult situation regarding financial education, both in terms of how to make financial education more effective in general and how to reach people who do not want to participate voluntarily. This problem is particularly pronounced for people from lower income groups, who are most in need of such training, yet are least likely to participate in such training of their own volition (Kuhnen and Miu, 2015). A major problem is that borrowing decisions are more difficult to influence than those about saving. Savings issues are faced by people in the higher income brackets to a larger extent, since they are the ones who have more savings to decide on. Borrowing, on the other hand, can be faced by all social classes, and even more often by those on lower incomes (Gatherhood and Weber, 2017; Moore, 2003). At the societal level it is a major problem that borrowing-related behaviour is rather difficult to shape through traditional financial education tools.

Meta-analysis by Kaiser and Menkhoff (2017) suggests that financial education plays an important role in the development of financial literacy, although its impact is modest (effect size 0.26). Furthermore, they find a positive association with financial behaviour (effect size 0.09), but the effectiveness of training depends significantly on the target group, and especially for low-income study subjects the effect is low. Moreover, the success of training also depends on the financial behaviour targeted: borrowing behaviour is more difficult to influence with traditional financial education than saving behaviour. More intensive financial education is more effective if people are reached at a "teachable moment", in a concrete decision situation.

Nudge

When evaluating the role of financial education, it should be taken into account that reducing the number of options or simplifying choices may be a more effective solution to some problems than increasing financial awareness (Lusardi and Mitchell, 2014). The concept of "choice architecture" introduced by Thaler and Sunstein (2010) emphasises that designing the decision environment for consumers, i.e. structuring the available options and information appropriately, can help them make financial decisions that are more beneficial to them. This is particularly important when financial decisions are too complex or difficult to understand.

Various nudge architecture tools, such as defaults, offer a particular opportunity to shape financial literacy. Default nudge tools can help improve people's financial literacy in situations such as automatic pension savings schemes, which ensure that individuals save even if they are not actively choosing. In addition, for credit card

users, a default setting where the entire account is automatically settled instead of the minimum amount can help reduce interest charges and increase financial stability. This way people can avoid high-interest debts, which are often a long-term financial burden. Automatic investment schemes can also be effective. People tend to delay making investment decisions, especially if they are less financially literate. Default automatic investment programmes can ensure that people keep increasing their savings, even if they do not make informed decisions on a regular basis.

Another nudge tool is smart defaults, which differs from the normal default in that it dynamically adapts to the individual's characteristics or circumstances. It considers the user's personal data such as age, income, risk tolerance or financial goals. For example, in the case of retirement funds, it means defaulting to an investment portfolio that is tailored to a specific age and risk tolerance, and automatically switching to a more conservative strategy as retirement approaches. These are settings that consider individual differences and preferences, thereby helping people to make more personalised decisions, which increases efficiency and the quality of decision-making processes (Goldstein et al., 2008).

Another key tool is smart disclosures, which differ from other nudge tools in that they focus on the accessibility and transparency of information. In smart disclosures, financial information is provided in a way that is easy to understand and useful for users, considering their decision context. The aim of smart information is to help users better understand the characteristics of financial products and services so that they can make informed choices. For example, financial service providers' online platforms can present the costs and risks of different products graphically, allowing customers to quickly compare alternatives. The next level is when this is done in a way that can be easily processed by a computer, which can further assist the decision maker (Fernandes et al., 2014). Today, artificial intelligence provides an even more prominent opportunity to exploit these possibilities.

For emotional and habitual behaviours, however, information transmission tools are less effective (Lynch and Wood, 2006). Verplanken and Wood (2006) found that transition periods are the most appropriate for changing habitual behaviours, which is also true for financial behaviour. For example, at the beginning of the year, people are more inclined to form new habits because of their New Year's resolutions and start making financial plans, tracking their finances more closely. A new job, a major pay rise, may encourage people to rethink their saving habits as well.

Hungarian perspectives on training programs

In 2016, the State Audit Office of Hungary (SAO) examined initiatives to improve financial literacy in Hungary. Their main finding was that financial education is too homogeneous, with the focus almost entirely on the education of students. They found the courses short and the structure of the courses to be problematic. Typically, there is a lack of feedback, which could help to continuously develop and improve the methods and structure of training. They conclude that in Hungary, financial

education reaches only a negligible share of the low-income and unemployed social strata most in need (Németh et al., 2016). In a repeat study in 2020, Németh et al. found that the number and participants of financial literacy training courses increased significantly between 2016 and 2020, especially among young people, although school-age people remain overrepresented. The duration of training courses has increased, and an increasing number of multi-day programmes are available for adults, with the main aim of developing individual financial awareness and savings skills. However, the content of the programmes does not always consider the social and financial situation of the target groups, and investment and entrepreneurship skills remain under-emphasised. The importance of training for financially vulnerable groups is a major improvement, but quality assurance of training is still a weakness and measurement of effectiveness also needs to be improved (Németh et al., 2020).

All the findings listed in the above research report are noteworthy, but the authors of this article find the overrepresentation of young people in financial education very problematic. While recognising the importance of educating people in financial education at an early age, when they are students, to develop attitudes (such as through the PÉNZ7 programme, which reaches around 250,000 students a year), the authors have reservations about the over-emphasis on young people. One of the key features of financial education is the "just-in-time" delivery of knowledge. For adults, the most effective method is to provide financial training when they are about to make a financial decision. It is evident that students are faced with limited financial decisions and find it difficult to grasp the weight of those decisions. The effectiveness of lessons functioning with hypothetical situations, fall short of the weight of the real financial decisions and dilemmas they will face in adulthood. In many cases, the education of students also focuses mainly on improving knowledge and, to some extent, attitudes, but has little impact on behaviour, where the Hungarian population scores worst of the three elements of financial literacy in international surveys.

Results of surveys regarding Hungarian financial literacy

In Hungary, in line with OECD guidelines, financial literacy of the population is measured regularly in three dimensions: financial knowledge, attitudes and behaviour. OECD's International Network for Financial Education (INFE) carried out its first comprehensive data collection in 2010 with its dedicated measurement tool (Toolkit for Measuring Financial Literacy and Financial Inclusion), which has been repeated several times. Hungary took part of each of these assessments: 2010, 2015, 2018, and the most recent report based on data collected in 2022 and published in 2023. Thirty-nine countries participated in this latest survey, 20 of which are OECD members, with a total of nearly 70,000 people aged between 18 and 79.

In the latest survey, Hungary scored highly in financial literacy, coming fourth out of 39 countries surveyed, in areas such as inflation, simple and compound interest

and financial diversification. In contrast, there were significant gaps in financial behaviour, with Hungary finishing second to last in the survey, ahead of Yemen, with 20 points out of a maximum 45. Thus, Hungary ranked 26th out of 39 countries in terms of overall financial literacy.

The low score on financial behaviour is due to several factors. Only a quarter of respondents regularly track their spending, well below the OECD average of 63.2%. In addition, few have income-expenditure management plans, and tracking household budgets is a rare practice. The proportion of active savers is also low, with only 47.4 percent saving compared to the OECD average of 70.9 percent. The survey also found that Hungarians are less likely to compare different financial service providers or seek help from experts when making financial decisions. Setting long-term financial goals is also lacking: only 36.8 percent of Hungarian respondents set such goals, compared to the OECD average of 50 percent. However, the Hungarian population scores well in paying bills on time at a relatively high level (74.1 percent), close to the OECD average of 83 percent. On the positive side, 90 percent of the population did not take out a loan in the past year to cover their living costs, which is above the OECD average of 81 percent.

One of the key findings of the report is that the benefits of financial knowledge are not matched by appropriate behaviour. According to the Pénziránytű Foundation, while the financial literacy of the Hungarian population has improved, the practical application of financial knowledge, motivation and planning skills for financial decisions need to be improved (Pénziránytű, 2023, online press release). This is not a new finding, as the 2010 OECD survey already showed a similar pattern (Jakovác and Németh, 2017). Table 1 shows that Hungarian results exhibit a stable pattern: in terms of financial knowledge, we almost always rank among the top performers, while in financial behaviour, we rank at the very bottom. As a result, the overall Hungarian financial literacy falls within the middle or lower third.

Table 1: Hungarian results compared to other countries in the OECD INFE International Financial Literacy Survey, with the distribution of each sub-component

	2010		2015		2018		2023	
	ranking	decile	ranking	decile	ranking	decile	ranking	decile
Financial know-ledge	14.jan	1	14/30	5	26.szept	4	4/39	2
Financial attitude	14.ápr	3	30.márc	2	26.márc	2	17/39	5
Financial behaviour	13/14	10	29/30	10	23/26	9	36/39	10
Financial literacy	14.ápr	3	22/30	8	14/26	6	23/39	6

Source: own editing based on OECD INFE publications.

The contrast between knowledge and behaviour is an important message for policy makers, as measures to improve financial behaviour are needed rather than further expanding financial education, which is the focus of most financial education programmes at present. Our previous research (Zentai and Kovács, 2024) has highlighted the importance of financial self-efficacy in developing financial literacy. Results show that increasing financial self-efficacy is crucial as it is directly related to the success of individuals' financial decisions. We further show that financial self-efficacy is not only directly related to financial behaviour, but also mediates the relationship of other psychological factors, namely the relationship of self-control, financial attitude and financial knowledge with financial behaviour. A perceived sense of competence in dealing with finances, i.e. financial self-efficacy, is therefore essential in guiding financial behaviour. In addition to the nudge toolkit (Thaler and Sunstein, 2010), behavioural planning techniques, such as implementation intentions (Gollwitzer, 1993), can be effective methods to increase financial self-efficacy.

Summary

In our current research, we presented the concept of financial literacy, drawing on both international and Hungarian literature. We circumnavigated the difficulty of using the term in the Hungarian literature (Csorba, 2020) and proposed to introduce a new Hungarian term, which differentiates between financial literacy on individual and societal level. Based on the international and Hungarian models, the authors also created their own theoretical model of financial literacy.

We have reviewed the relevant literature to clarify what is included in the concept of financial literacy and what the related concepts are. The factors associated with financial literacy were summarised: sociodemographic factors such as age (young and old people have the lowest levels of financial literacy), gender (higher for men than women) and education, where more educated people have higher levels of financial literacy.

The main conclusion and recommendation of our literature review is that the current approach to financial education, which is largely focused on students, needs to be extended to the adult population, especially the vulnerable and socially excluded. For these groups, targeted support is of particular importance, as their financial vulnerability is particularly high, and, in turn, their lack of financial literacy exacerbates their life situation. Bárczi and Zéman (2015) point out that studies on financial literacy are often limited to financial knowledge, while ignoring behavioural and attitudinal factors that also have a significant impact on financial well-being and vulnerability.

Our second suggestion is that the focus of the education should be enriched with factors beyond knowledge that are related to behaviour. OECD research shows that while the adult Hungarian population has a high level of financial knowledge, this is not reflected in good financial behaviour. This shows that knowledge alone is not sufficient to make the right financial decisions, but that behaviour needs to be shaped as well. Increasing financial self-efficacy, i.e. the belief in one's financial

decision-making abilities, seems to be a particularly important goal to develop, as financial self-efficacy plays a key role in the context of good financial behaviour (Zentai and Kovács, 2024).

Finally, regarding the long-term lower effectiveness of traditional financial education programs (Fernandes et al., 2014), we proposed that, in addition to conscious learning, the broader use of the "nudge" toolkit (default settings, smart defaults, and smart disclosures) should be considered for shaping behaviour. This approach enables guiding individuals toward more effective financial decisions at the right moment during a specific financial decision-making situation.

References

1. Agnew, S., Harrison, N. (2015): Financial literacy and student attitudes to debt: a cross national study examining the influence of gender on personal finance concepts. *Journal of Retail Consumer Service*. (25) doi: 10.1016/j.jretconser.2015.04.006
2. Amagir, A., Groot, W., Maassenvandenbrink, H., Wilschut, A. (2017): A review of financial-literacy education programs for children and adolescents. *Citizenship, Social and Economic education* (17) https://doi.org/10.1177/2047173417719555
3. Anthes, W. (2004): Financial illiteracy in America: a perfect storm, a perfect opportunity. *Journal of Financial Service Professionals*, 58(6)
4. Béres, D., Huzdik, K. (2012): A pénzügyi kultúra megjelenése makrogazdasági szinten. *Pénzügyi Szemle,* 57(3), 322–336.
5. Botos, K., Botos, J., Béres, D., Csernák, J., Németh, E. (2012): Pénzügyi kultúra és kockázatvállalás a közép-alföldi háztartásokban. *Pénzügyi Szemle*, 57(3), 291–309.
6. Bucher-Koenen, T., Lusardi, A: (2011). Financial literacy and retirement planning in Germany. *Journal of Pension Economics and Finance*. doi:10.1017/S147474721500311
7. Calvet, L.E., Campbell, J.Y., Sodini, P. (2007): Down or out: assessing the welfare costs of household investment mistakes. *Journal of Political Economy,* 115(5) https://doi.org/10.1086/524204
8. Christelis, D., Jappelli, T., Padula, M. (2010): Cognitive abilities and portfolio choice. *European Economic Review*. 54(1) doi: 10.1016/j.euroecorev.2009.04.001
9. Czeglédi, C., Marosné Kuna, Zs., Kollár, P., Miskolciné Mikáczó, A., Varga, E., Zéman, Z. (2016): A vállalkozói ismeretek oktatásának helyzete a magyar felsőoktatásban. *Polgári Szemle*, 12(1–3), 208–228.
10. Csorba, L. (2020): Pénzügyi kultúra és pénzügyi műveltség, a pénzügyi magatartás meghatározó tényezői. *Pénzügyi Szemle*. 65(1) https://doi.org/10.35551/psz_2020_1_6
11. Fernandes, D., Lynch, J., Netemeyer, R. (2014): Financial literacy, financial education, and downstream financial behaviors. *Management Science*. 10.1287/mnsc.2013.1849.

12. Finke, M. S., Howe, J. S., Huston, S. J. (2011): Old age and the decline in financial literacy *Forthcoming in Management Science*, http://dx.doi.org/10.2139/ssrn.1948627
13. Fonseca, R., Mullen, K.J., Zamarro G., Zissimopoulos, J. (2012): What explains the gender gap in financial literacy? *Journal of Consumer Affairs*, 46(1) http://dx.doi.org/10.1111/j.1745-6606.2011.01221.x
14. Gathergood, J., Weber, J. (2017): Financial literacy, present bias and alternative mortgage products. *Journal of Banking and Finance*, 78, 58-83. https://doi.org/10.1016/j.jbankfin.2017.01.022
15. Goldstein, D. G., Johnson, E.J., Herrmann, A., Heitmann, M. (2008): Nudge your customers toward better choices. *Harvard Business Review*, 86(12)
16. Gollwitzer, P. M. (1993): Goal Achievement: The Role of Intentions. *European Review of Social Psychology*, 4(1), 141–185. https://doi.org/10.1080/14792779343000059
17. Grinblatt, M., Keloharju, M., Linnainmaa, J. (2011): IQ and Stock Market Participation. *The Journal of Finance*. 66. 2121 - 2164. 10.1111/j.1540-6261.2011.01701.x.
18. Grohmann, A., Kouwenberg, R., Menkhoff, L. (2015): Childhood roots of financial literacy. *Journal of Economic Psychology*. 51:114,133. doi: 10.1016/j.joep.2015.09.002
19. Győri, Á. (2018): Kis- és középvállalkozások pénzügyi sérülékenysége. *Közgazdasági Szemle*, 65(3), 240–258. https://doi.org/10.18414/KSZ.2018.3.240
20. Hadar, L., Sood, S., Fox, C.R. (2013): Subjective knowledge in consumer financial decisions. *Journal of Marketing Research*. 50(3) 303-316. https://doi.org/10.1509/jmr.10.0518
21. Hegedűs, Sz., Lentner, C. (2024): Examining financial literacy and the financial aspects of Hofstede's four-factor culture model in Hungary. *Revista Mexicana De Economía Y Finanzas Nueva Época*, 19(1), 1–20, e963. https://doi.org/10.21919/remef.v19i1.963
22. Hergár, E., Kovács, L., Németh, E. (2024): A pénzügyi kultúra helyzete és fejlődése Magyarországon. *Hitelintézeti Szemle*, 23(1), 5–28.
23. Hung, A., Parker, A.M., Yoong, J. (2009): Defining and measuring financial literacy. *RAND Corporation*. Retrieved from http://dx.doi.org/10.2139/ssrn.1498674
24. Huston, S. J. (2010): Measuring financial literacy. *Journal of Consumer Affairs*, 44(2), 296,316. doi:10.1111/j.1745-6606.2010.01170
25. Huzdik, K., Béres, D., Németh, E. (2014): Pénzügyi kultúra versus kockázatvállalás empirikus vizsgálata a felsőoktatásban tanulóknál. *Pénzügyi Szemle*, 59(4), 476–488.
26. Jakovác K., Németh E. (2017): A pénzügyi kultúra fejlesztésének nemzeti stratégiái: Tapasztalatok és tanulságok. *Pro Publico Bono–Public Administration*, 5(1), 196-211.
27. Jump$tart Coalition for Personal Financial Literacy. Online: https://www.jumpstart.org/who-we-are/about/history/
28. Kaiser, T., Menkhoff, L. (2017): Does financial education impact financial literacy and financial behavior, and if so, when? *The World Bank Economic Review*, 31(3) https://doi.org/10.1093/wber/lhx018
29. Kálmán, B., Bárczi, J., Zéman, Z. (2021): A Covid–19 első hullámának hatása a gazdasági felsőoktatásban tanuló hallgatók pénzügyi biztonságára. *Pénzügyi Szemle*, 66(3), 368–389. https://doi.org/10.35551/PSZ_2021_3_3

30. Kovács, P., Kuruczleki, É., Rácz, T. A., Lipták, L. (2021): A magyar középiskolások pénzügyi kultúrájának vizsgálata az elmúlt 10 évben Econventio-teszt alapján. *Pénzügyi Szemle*, 66(2), 179–198. https://doi.org/10.35551/PSZ_2021_2_1
31. Kovács, P., Révész, B., Ország, G. (2014): A pénzügyi kultúra és attitűd mérése. *Marketing megújulás: Marketing Oktatók Klubja 20. Konferenciája előadásai* (pp. 439-447). http://acta.bibl.u-szeged.hu/57388/
32. Kuhnen, C. M., Miu, A. C. (2015): Socioeconomic status and learning from financial information (Working Paper No. 21214). *National Bureau of Economic Research*. https://doi.org/10.3386/w21214
33. Lown, J. (2011): Development and validation of a financial self-efficacy scale. *Journal of Financial Counseling and Planning*, 22. https://doi.org/10.1037/t69132-000
34. Lusardi, A., Mitchell, O. S. (2014): 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
35. Lusardi A., Tufano P. (2015): Debt literacy, financial experiences, and overindebtedness. *Journal of Pension Economics and Finance*, 14(4) doi:10.1017/S1474747215000232
36. Lusardi, A., Mitchell, O., Curto V. (2010): Financial literacy among the young. *Journal of Consumer Affairs*, 44(2). doi:10.1111/j.1745-6606.2010.01173
37. Lynch, J.G., Wood, W. (2006): Special issue editor's statement: Helping consumers help themselves. *Journal of Public Policy and Marketing*, 25 https://doi.org/10.1509/jppm.25.1.1
38. Moore, D. (2003): Survey of financial literacy in washington state: knowledge, behavior, attitudes, and experiences. *Technical Report* 03-39. http://www.dfi.wa.gov/news/finlitsurvey.pdf
39. Németh, E., Béres, D., Huzdik, K., Zsótér, B. (2016).:Pénzügyi személyiségtípusok Magyarországon – kutatási módszerek és primer eredmények. *Hitelintézeti Szemle*, 15(2), 153–172. https://hitelintezetiszemle.mnb.hu/letoltes/nemetherzsebet-beres-daniel-huzdik-katalin-zsoter-boglarka.pdf
40. Németh, E., Zsótér, B., Béres, D. (2020): A pénzügyi sérülékenység jellemzői a magyar lakosság körében az OECD 2018-as adatainak tükrében. *Pénzügyi szemle* https://doi.org/10.35551/psz_2020_2_8
41. Németh, E., Jakovác, K., Mészáros, A., Kollár, P., Várpalotai, V. (2016): Pénzügyi kultúra fejlesztési programok felmérése. *Állami Számvevőszék*. ISBN 978-615-5222-12-2.
42. Németh, E., Vargha, B., Beke, A., Tordai, H., Domokos, K. (2020): Pénzügyi Kultúra fejlesztési programok felmérése – összehasonlító elemzés 2016–2020. *Állami Számvevőszék.* EL-3032-001/2020.
43. OECD (2024): OECD International Network on Financial Education. Online: https://www.oecd.org/financial/education/oecd-international-network-on-financial-education.htm
44. OECD (2024). https://www.oecd.org/en/topics/financial-education.html
45. Parker, A.M., Yoong, J., Bruine de Bruin, W., Willis, R. (2008): (Over)confidence and economic behavior. *Paper presented at the Conference on Understanding Economic Decision-Making*. Jackson, WY.

46. Pénziránytű (2023): A magyarok pénzügyi tudása a nemzetközi élbolyban van, ám meg kell tanulnunk a gyakorlatban is alkalmazni az ismereteket. Sajtóközlemény. Online: https://penziranytu.hu/magyarok-penzugyi-tudasa-nemzetkozi-elbolyban-van-am-meg-kell-tanulnunk-gyakorlatban-alkalmazni-az
47. Pintér, É., Bagó, P., Berényi, L., Molnár, L., Deutsch, N., Pintér, T. (2021): How do digitalization and the Fintech phenomenon affect financial decision-making in the younger generation? *Acta Polytechnica Hungarica*, 18(11), 191–208. https://doi.org/10.12700/APH.18.11.2021.11.11
48. Sági, J., Vasa, L., Lentner, C. (2020). Innovative solutions in the development of households' financial awareness: A Hungarian example. *Economics Sociology*, 13(3), 27–46. https://doi.org/10.14254/2071-789X.2020/13-3/2
49. Stolper, O.A., Walter, A. (2017): Financial literacy, financial advice, and financial behavior. *Journal of Business Economics*, 87(5), https://doi.org/10.1007/s11573-017-0853-9
50. Thaler, R. H., Sunstein, C. R. (2010): Nudge: Improving decisions about health, wealth, and happiness. Yale University Press.
51. Verplanken, B., Wood, W. (2006): Interventions to break and create consumer habits. *Journal of Public Policy and Marketing*, 25(Spring) https://doi.org/10.1509/jppm.25.1.90
52. Xiao, J. J., Chen, C., Sun, L. (2015): Age differences in consumer financial capability. *International Journal of Consumer Studies*, 39, https://doi.org/10.1111/ijcs.12205
53. Zentai, P., Kovács, J. (2024): A pénzügyi énhatékonyság szerepe a pénzügyi viselkedés alakításában. Elbírálás alatt, beküldve a Magyar Pszichológiai Szemlébe
54. Zsótér, B., Németh, E., Luksander, A. (2017): A társadalmi-gazdasági környezet változásának hatása a pénzügyi kultúrára. *Pénzügyi Szemle*, 62(2), 251–266.