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Financial literacy and financial vulnerability: evidence from Hungary

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The study investigates the relationship between financial literacy and financial vulnerability among disadvantaged social groups. Between 2024 and 2025, service workers at child protection services in Fejér County asked 578 clients to complete a questionnaire about their economic, social, and lifestyle situations. The study, in relation to the existing literature, highlights that previous articles on financial literacy do not sufficiently consider the impact of different social, lifestyle, and cognitive factors; moreover, there are hardly any publications that examine the relationship between financial literacy and financial vulnerability in marginalized social groups.
We examined financial literacy (knowledge, attitudes, behavior) in relation to the dimensions of financial vulnerability affecting households and individuals (vulnerable income situation, vulnerable welfare situation, and vulnerable labor market situation). The following results can be highlighted:
1. The knowledge dimension of financial literacy was only significantly related to educational attainment.
2. The irresponsible financial behavior dimension of financial literacy showed a significant relationship with labor market and financial vulnerability factors.
3. The financial pressure associated with meeting community expectations is stronger among those who are vulnerable in the labor market and in their financial situation.
4. The dimension of financial literacy related to negative attitudes toward banks was not significantly associated with any dimension of vulnerability.
Our results showed that the correlation between financial literacy and financial vulnerability requires a differentiated approach. The dimensions of the two concepts are interconnected in various ways, depending on specific social and demographic factors. Previous research has largely neglected the examination of specific disadvantaged groups, which is necessary in the future if we want to better understand the correlations between financial literacy, financial vulnerability, and social and demographic characteristics.

Keywords: financial literacy, financial vulnerability, disadvantaged social group

The literature on financial literacy primarily focuses on how to increase the financial literacy of groups consisting mainly of young people, university students, or even younger individuals in areas that affect people's finances. In this regard, the focus is essentially on education, both at home and abroad *(Nagy, 2018; Németh et al., 2020)*.

They report on the changes made to the national curriculum, the increased acquisition of knowledge, and various teaching methods, but are not optimistic about the impact on financial behavior. It seems that the increase in knowledge "rebounds off the established habits, attitudes, and social situations". *Henchoz (2016)* believes that the reason for this problem is that educational issues related to financial literacy do not adequately consider the social status of the students.

The OECD study *(Atkinson–Messy, 2012, p. 56)* also cautiously states: 'The Analysis of the correlation between behavior and knowledge suggests a positive association in every country: when knowledge increases, so does behavior. However, this does not prove causation, and much more research is needed to understand the correlation between these variables'. Different social and economic situations can lead to varying forms of socialization, which can hinder the effectiveness of information transmission. *Bárczi and Zéman (2015)* emphasize the role of financial research in shaping attitudes and behaviors related to financial literacy. According to *Weinert's (2002, cited in Rudeloff, 2019, p. 7)* definition, financial literacy can be interpreted as the interaction of knowledge, skills, and abilities, as well as motivational and emotional processes, attitudes, and self-perception expectations.

However, this 'domain combination' and its content differ significantly among families living in different social and economic circumstances, as *Huston (2010)* pointed out more than ten years ago. The literature in most cases does not report on research that discusses how and to what extent the financial behavior of the examined group has changed as a result of the training *(Németh et al., 2016)*. *Zentai and Molnárné-Kovács (2024)* also draw attention to the problem of ignoring vulnerable and socially excluded groups in research and training on financial education.

In our opinion, the lack of dynamic analysis and the absence of studies on disadvantaged groups significantly weaken the weight of the conclusions drawn from the literature.

In our study, we adopted a different approach. Instead of focusing on education and the transmission of information, or its absence, we focused on the correlation between financial literacy and financial vulnerability. According to our approach to financial vulnerability, it can be understood in terms of several different dimensions (e.g., employment, income, social situation, local conditions, etc.). The study presents the correlation between the vulnerability dimensions examined and financial literacy.

1. Introduction

Previously, the concept and measurement of financial literacy were not well understood in the literature *(Huston, 2010)*. However, today, the most essential factors in defining the concept are generally considered to be financial knowledge, financial behavior, and attitudes related to finance and financial institutions *(Atkinson–Messy, 2012; Bryce–Jyoti 2010)*.

However, there is very little agreement within the individual categories. Evidence of this can be found in the differing concepts presented in the introductory studies of various Financial Literacy Handbooks *(Aprea, 2016; Cude, 2022; Lanciano, 2025)*.

Which knowledge is the most important, which behavior indicates a higher level of financial literacy, and which attitudes characterize a positive or negative attitude towards financial processes or institutions? Furthermore, do attitudes influence financial behavior, or do financial behaviors influence attitudes? These are not easy questions to answer. This problem is particularly acute in international comparative studies. This is the case for different historical and cultural societies, and even within a society, as *Németh et al. (2017)* and others *(Di Salvatore et al., 2017)* have found, different levels of financial literacy and financial behavior can be attributed to various factors, and often, knowledge and behavior are not even related. There is little evidence of a causal correlation between financial literacy and financial behavior *(Atkinson–Messy, 2012; Adhikari 2024)*.

2. Literature review

Rudeloff (2019) makes a difference between the formal and informal sources of financial information. Formal sources include information provided by official educational and financial institutions. In contrast, informal sources include information from family, friends, and other external entities beyond the educational and financial institutional systems.

The question is whether formal or informal channels are more effective in shaping financial literacy. *Aydemir and Ersan (2025)* suggest that the latter has a more significant impact, as they note that while numerous studies demonstrate a correlation between formal education and financial behavior, causality cannot be established. In their latest study, *Németh et al. (2025, p. 474)* clearly state that "socio-demographic factors, such as age, income, residence type, and employment status, fundamentally determine the individuals' financial decision-making".

This indirectly suggests that the behavioral and attitudinal dimensions of the financial literacy category are predominantly influenced by an individual's social status and environment, rather than by knowledge acquired through formal educational institutions. Lusardi, who is perhaps the most frequently cited researcher on the topic, emphasized in one of his studies *(Lusardi et al., 2010, p. 358)* that "financial literacy was strongly related to sociodemographic characteristics and family financial sophistication". Several other researchers share this view. For example, *Adhiraki (2024)* considers the combination of various demographic factors and personal characteristics to be significant, while *Végső et al. (2018)* note the correlation between bank distrust and age, as well as the correlation between disadvantaged employment and the use of cash. *Jorgensen and Savla (2010)* highlighted the financial culture of parents and its impact on young people in their study.

Similarly, *Kulcsár and Kovácsné-Henye's (2011)* study of the financial literacy of secondary school students also highly valued the socialization effect of parents in this area. Similarly, *Hergár et al. (2024)* emphasized the role of socio-demographic factors in shaping financial literacy. *Bitca et al. (2021)* confirm from another perspective the correlation between financial knowledge and financial behavior, which is transmitted indirectly through the training process. Their study of a sample of young people with a predominantly economic background in their BSc revealed the significant influence of psychological traits on financial decision-making. The correlation between the knowledge acquired during financial education and attitudes, or rather the lack of clarity surrounding them, certainly supports the starting point of our research, namely that the specific situation, lifestyle, and personal characteristics of disadvantaged social groups are more

important than their involvement in financial education for understanding their financial literacy and behavior.

The financial vulnerability category also encompasses multiple dimensions. *Biju and Tantia (2025)*, for example, consider the financial vulnerability category to be interpretable at the individual, household, and country levels when the balance of income and expenditure is disrupted for some reason. The recovery period – primarily examined at the individual or household level – depends on the severity of the unfavorable circumstances and the utilization of the available resources.

3. Data sample

The population of the empirical data collection consisted of 18-year-olds and older clients from the family support and child protection service centers in Sárbogárd, Enying, and Székesfehérvár, Fejér County, who were contacted between September 1, 2024, and January 31, 2025. The clients of the family support centers were individuals or families from the relevant municipalities (Cece, Sárbogárd, Enying, Székesfehérvár, Sárosd, Sárkeresztúr) who were experiencing difficulties in social, mental, financial, or life management areas and needed support, counseling, and assistance.

These people were collectively referred to as clients of the social care system during the research. The sample subjects belonged to the following categories: people experiencing financial difficulties, unemployed or underemployed individuals, families living in difficult circumstances with children, elderly people, people living alone, people with addictions, people with mental health issues, members of marginalized groups, victims of domestic violence, and people in crises. The specialists of the family support center completed the standard questionnaire. Out of the 600 completed questionnaires, 574 were included in the analysis database after data cleaning. The sample does not represent the people who turned to the Family Support Service in the given municipality, only those who did so between the specified dates. Table 1 presents the key social and demographic characteristics.

Table 1

The demographic composition of the respondents

Variables	Frequency	Percent
Gender		
Male	189	33.2
Female	381	66.8
Total	570	100.0
Level of education (class attained)		
Fewer than 8 classes	74	12.9
8 primary classes	273	47.6
9–11 classes	102	17.8
12 classes	113	19.7
More than 12 classes	11	1.9
Total	573	100.0
Marital status		
Single male/female	120	20.9
Married, cohabiting	304	53.0
Divorced	79	13.8
Widow	71	12.4
Total	574	100.0

Source: own calculation.

The fact that two-thirds of the respondents were women suggests that they may be more vulnerable in the categories listed, or that this may be due to the cultural norm of women being responsible for financial, social, and mental support within the family, or that women are more likely to ask for assistance.

We measured educational attainment using the number of completed school years. The majority of respondents had a maximum of eight years of schooling, which reinforces the disadvantaged position of the group under review. We combined marital status into two categories: married/cohabiting and single (never married, divorced, and widowed). 47% of respondents live alone, while 53% live in a relationship (married or cohabiting).

The average age is 43 years, with a standard deviation of 15.5. The youngest respondent was 18 years old, and the oldest was 86. Based on the distribution of age, three age groups were created: individuals under 40, those between 40 and 60, and those over 60. 47% of respondents are under 40 years old, and 17% are over 60 years old.

3.1 Create indicators

The correlation between financial literacy and financial vulnerability is revealed in several steps. As both concepts are multidimensional, the first step was to define an indicator system for each concept. In our research, the financial literacy indicators are knowledge of financial concepts, financial management, attitudes towards savings, and negative attitudes towards banks. Financial literacy was assessed using the knowledge index and the three extracted components.

3.1.1 Knowledge index

We created a knowledge index based on the understanding of the following two financial terms. 'What does gross income mean?' and 'What does health insurance contribution mean?'. The correct answer to both questions is 0 (zero) points; the incorrect answer or the “do not know” answer is one point.

These two questions together form the Knowledge index (see Table 2).

Table 2

Knowledge index

Score	Frequency	Percent
0	268	46.7
1	148	25.8
2	158	27.5
Total	574	100.0

Source: own calculation.

3.1.2 Financial literacy and attitudes

The principal component analysis of the opinions presented in Table 3 resulted in three main components. The total variance explained was 70.37%, with a KMO value of 0.736 and a significance level of p = 0.000 (Appendix Table A1). These components clearly represent attitudes towards banks (commonly referred to as financial attitudes), irresponsible financial behavior (commonly referred to in the literature as financial management), and the community's respect for money. The struggle for community recognition, or “thumos” as *Fukuyama (1992)* analyzes it, is one of the fundamental motives that expresses the desire to belong to a reference group. For part of the social group studied, the source of community recognition is the acquisition of the desired money. This factor lies between the concepts of financial attitude and financial behavior, and its essence is the overvaluation of money in terms of social performance. The central role of money as a

representation of belonging to a community can, in many cases, be a source of irresponsible financial behavior.

Table 3

The main components of financial literacy

Attitude questions	Negative attitude toward banks	Community respect is money	Irresponsible financial management
	factor		
It is not advisable to have the salary deposited directly into the bank, as they deduct a significant amount when you withdraw it.	0.854		
It would be better if they paid you the full salary in cash and did not deposit it into a bank account.	0.844		
It is impossible to understand what the bank is saying if you ask them something.	0.646		
It is essential to keep up with others, even if you have to find a way to afford it.		0.855	
When a person has money, their friends tend to value them more.		0.646	
If I like something, I will keep trying until I make a purchase.		0.630	0.564
If someone comes into some money, they should try their luck with the lottery or on the slot machines.			0.839
Often, people need to borrow money from those who ask for much more in return.			0.668

Source: own calculation, own research.

3.1.3 Vulnerability and attitudes

We examined the concept of vulnerability using three indicators: social, financial, and labor market conditions vulnerability. In the dimension of social vulnerability, we considered social assistance and support. Financial vulnerability was assessed through questions related to difficulties in making purchases and paying bills. Labor market conditions vulnerability was measured using questions about job security, working conditions, and the regularity of salary payments.

Principal component analysis yielded three factors that adequately represent the dimensions of social, financial, and labor market vulnerability (Table 4). Varimax rotation was applied in the analysis, total variance explained: 73%, KMO = 0.695, p = 0.000 (see Appendix Table A2).

Table 4

The main components of the dimensions of vulnerability

Items	Labor market vulnerability	Vulnerability of financial conditions	Vulnerability of social conditions
	factor		
Gets paid daily or weekly	0.902		
Gets paid with cash	0.865		
Has no work agreement	0.837		
Does not know how much he/she will get (payment)	0.682		
They often borrow money.		0.896	
They are frequently unable to buy the necessary food or pay the bills.		0.894	
They often receive social aid within the family.			0.875
Extraordinary social aid exists in the family.			0.847

Source: own calculation.

4. Methods and results

We examined the relations between the knowledge index and the identified factors with one-way analysis of variance (ANOVA), and the correlation between financial literacy and the vulnerability factors. In addition, we analyzed the effects of gender, marital status, age, and educational attainment on the knowledge index, financial literacy, and the vulnerability indicators. To this end, we applied Chi-square tests, correlation analysis, independent samples t-tests, and ANOVA.

4.1. The results – revealing the relationship with the knowledge index variable

We examined the relationship between financial knowledge and the factor variables using one-way analysis of variance (ANOVA).

Our analysis revealed a significant association between financial knowledge and negative attitudes toward banks (see Appendix Table A4). Specifically, individuals with lower levels of financial knowledge tend to hold more negative perceptions of banking institutions. A similar pattern was observed between

knowledge and financial behavior: lower financial knowledge was linked to more irresponsible financial practices and a higher conformity pressure due to community respect.

However, we caution against making strong causal inferences about the influence of financial knowledge. While knowledge does not appear to affect vulnerability related to labor market conditions, a lack of understanding of financial concepts increases the likelihood of vulnerability in both material and social dimensions. It is important to note that this correlation may be bidirectional.

To explore the relationship between knowledge and age, we conducted a one-way ANOVA, which showed that older individuals exhibit significantly greater familiarity with financial concepts than younger respondents (Table 5) (ANOVA $p = 0.024$, for detailed results see Appendix Table A5). This finding is particularly noteworthy, as subsequent analyses indicate that younger individuals from disadvantaged social backgrounds are especially vulnerable to irresponsible financial behavior.

Table 5

Mean age by knowledge

Knowledge	Mean of age	Standard deviation
Educated	44.78	15.169
Middle	42.36	15.054
Lack of knowledge	40.62	16.260
Total	43.01	15.522

Source: own calculation.

We also examined the effects of gender, marital status, and educational attainment on financial knowledge using chi-square tests. The results indicated that neither gender nor marital status had a significant effect on financial knowledge. As expected, however, educational attainment was found to have a strong and statistically significant association with financial knowledge. (Table 6).

Table 6

The relationship between school qualifications and the knowledge index

School qualification	Statistical indicators	With knowledge	Middle knowledge	Lack of knowledge	Total number of cases
Less than 8 classes	Count	14	28	32	74
	Std. residual	**–3.5**	**2.0**	**2.6**	
8 classes	Count	128	73	72	273
	Std. residual	0.1	.3	–0.4	
9–11 classes	Count	58	18	26	102
	Std. residual	**1.5**	**–1.6**	–0.4	
12 classes	Count	63	24	26	113
	Std. residual	1.4	–1.0	–0.9	
More than 12 classes	Count	4	5	2	11
	Std. residual	–0.5	1.3	–0.6	

Note: Chi square test significant, p = 0,000.
Source: own calculation.

4.2 Results – correlations between the principal components of financial literacy and vulnerability

To examine the relationship between financial literacy and vulnerability, we calculated the Pearson correlation coefficients between the principal components of financial literacy and the identified vulnerability dimensions (social, financial, and labor market). This analysis enabled us to evaluate the strength and direction of the relationships between individuals' financial knowledge and their exposure to various forms of vulnerability.

The perceived pressure to conform within the community is stronger among those who are vulnerable in the labor market ($r = 0.189$, $p < 0.001$) and in their financial situation ($r = 0.205$, $p < 0.001$). Irresponsible financial management and vulnerability show a different picture from the previous one. The factor of irresponsible financial management is not significantly correlated with the labor market situation. Still, it shows a significant correlation with financial vulnerability ($r = 0.506$, $p < 0.000$) and vulnerability related to the social situation ($r = 0.171$, $p < 0.002$).

Our results also indicate that the different forms of vulnerability examined – namely, working, social, and financial – are not significantly associated with individuals' attitudes toward banks (see the correlation matrix in the Appendix Table A3).

4.3 Relations between demographic variables, financial literacy, and vulnerability factors

4.3.1 Gender and the main factors

We analyzed gender differences across the main components using independent samples t-tests. (Table 7).

Table 7

The difference between the factor averages by gender
Independent samples test

Factor	t-test for equality of means	
	t	Sig. (2-tailed)
Negative attitude towards the bank	0.558	0.557
Community respect is money	–1.152	0.250
Irresponsible financial management	0.840	0.401
Vulnerable labor market conditions factor	4.591	**0.000**
Vulnerable financial conditions factor	–1.911	0.057
Vulnerable social conditions factor	0.438	0.662

Source: own calculation.

We found a statistically significant difference between male and female group of vulnerable labor market conditions ($p = 0.000$), with men being more vulnerable in this regard than women. This difference is likely attributable to their differing positions in the labor market. Among disadvantaged groups, men are more likely to experience harmful discrimination – such as that related to low levels of education – as well as the combined effects of marital status and other socioeconomic factors.

We also examined the difference between the marital status groups average of the main components (see Table 8), using an independent samples t-test. A significant association was found between financial vulnerability and marital status: individuals who are married or in a civil partnership appear to be more financially vulnerable than those living alone ($p = 0.045$). On the other hand, although the significance is very weak, married couples (or those in a civil partnership) are less likely to be characterized by irresponsible financial management ($p = 0.077$).

This may be due to the increased financial responsibilities associated with family life, as adults in family households often support multiple dependents.

Table 8

The difference between the factor averages by marital status
Independent samples test

Factor	t-test for equality of means	
	t	Sig. (2-tailed)
Negative attitude towards the bank	0.614	0.540
Community respect is money	–0.073	0.942
Irresponsible financial management	–1.773	0.077
Vulnerable labor market conditions	–0.139	0.890
Vulnerable financial conditions factor	–2.009	**0.045**
Vulnerable social conditions	–0.100	0.920

Source: own calculation.

4.3.2 Impact of age category

We examined the impact of age category to the main factors using one-way analysis of variance (ANOVA). The results indicate that age has a statistically significant effect on all examined aspects, except for the financial and social dimensions of vulnerability.

The mean values of each factor by age group are presented in Table 9. In this table, negative values indicate lower levels of vulnerability, while positive values reflect increased vulnerability. The detailed results of the ANOVA are provided in Appendix Table A6.

In terms of irresponsible financial management, individuals over 60 are in a better position. In contrast, the desire to please others and irresponsible financial behavior are more prevalent among younger and middle-aged groups ($p = 0.035$ and $p = 0.026$, respectively). The situation is similar in the case of financial pressure related to meeting community expectations. This motivation is stronger among younger people than among older people ($p = 0.031$).

Negative attitudes toward banks are more common among the older generation ($p = 0.000$ and $p = 0.004$). Younger individuals (under 40) and those aged 40–60 are more vulnerable to labor market conditions compared to those over 60, which is unsurprising ($p = 0.023$ and $p = 0.014$). Additionally, younger individuals (under 40) exhibit greater vulnerability in social circumstances than those aged 40–60 ($p = 0.069$).

Table 9

The difference between the factor averages by age categories

Factor	Age	Mean
Negative attitude towards banks	Below 40	–0.133196
	Between 40–60	0.014844
	Over 60	0.543282
Community respect is money	Below 40	0.121056
	Between 40–60	–0.097989
	Over 60	–0.260099
Irresponsible financial management	Below 40	0.037987
	Between 40–60	0.069973
	Over 60	–0.361938
Vulnerable labor market conditions factor	Below 40	0.020708
	Between 40–60	0.071925
	Over 60	–0.275547
Vulnerable financial condition factor	Below 40	0.057013
	Between 40–60	–0.033352
	Over 60	–0.124317
Vulnerable social condition factor	Below 40	0.111791
	Between 40–60	–0.102092
	Over 60	–0.142864

Source: own calculation.

4.3.3 Relationship between educational attainment and the principal components factors

We analyzed the relationship between educational attainment and the factors using one-way analysis of variance (ANOVA). Overall, there is a significant association between education level and labor market conditions, social status, attitudes, and financial behavior. Our study specifically examines whether this general trend holds within a disadvantaged group. The data presented in Table 10 suggest that this is not always the case. A negative value of the average indicates a worse situation.

The results of the post hoc tests following the ANOVA are provided in Appendix Table A7.

Educational attainment is associated with all examined factors, with the exception of financial vulnerability and the Irresponsible financial management factor. With respect to vulnerable labor market conditions, individuals with maximum eight years of education exhibit lower levels of vulnerability compared to those with 9–11 years of education. This finding is likely influenced by age, as the average age of respondents was 43, whereas individuals who had not completed primary school were significantly older, with a mean age of 48.

The Vulnerability in Social condition is higher in the under educated group than the group in 12 classes or more ($p = 0.002$ and $p = 0.014$). The negative attitude towards bank is strongest in the undereducated group ($p = 0.000$.

Table 10

Mean of the components by education categories

Factor	Education categories	Mean
Negative attitude towards banks	Max 8 classes primary	0.253061
	9–11 classes	–0.421798
	12 classes or more	–0.291377
Community respect is money	Max 8 classes primary	0.003373
	9–11 classes	–0.204062
	12 classes or more	0.163631
Irresponsible financial management	Max 8 classes primary	–0.021305
	9–11 classes	–0.115672
	12 classes or more	0.152153
Vulnerable labor market conditions	Max 8 classes primary	–0.067562
	9–11 classes	0.186748
	12 classes or more	0.029305
Vulnerable financial conditions	Max 8 classes primary	0.040937
	9–11 classes	–0.180478
	12 classes or more	0.034700
Vulnerable social condition	Max 8 classes primary	0.074224
	9–11 classes	0.063726
	12 classes or more	–0.277494

Source: own calculation.

Nonetheless, non-significant associations are also of interest, as in the present case, where the proposition is not supported that demographic and social variables – such as educational attainment – are strongly related to financial literacy and financial vulnerability.

As the data show, irresponsible financial management and negative attitudes towards banks (dimensions of financial literacy) become less prevalent among disadvantaged populations as their level of education increases. The same applies to social vulnerability, but not to vulnerability related to labor market conditions. In this respect, those with the lowest level of education are in the most favorable position, presumably due to their absence from the labor market a consequence of their higher average age.

The phenomena of financial literacy and financial vulnerability among disadvantaged groups are highly complex. Traditionally influential variables display different and multifaceted patterns of behavior in these contexts. It is

therefore worth prioritizing the analysis of financial literacy and financial vulnerability within disadvantaged groups.

5. Conclusion

Our analysis differs from the existing literature in two ways. First, our research focused on financial literacy within a disadvantaged social group. Participants in our survey were exclusively clients of social and family support centers in a clearly defined region of Hungary. These individuals, due to their circumstances, had voluntarily sought assistance from these services.

Second, our approach did not emphasize education – or, more specifically, the transmission of information or its absence – but rather the relationship between financial literacy and financial vulnerability. In line with the views of *Biju and Tantia (2025)*, we understand financial vulnerability as comprising multiple interconnected dimensions (e.g., employment, income, social status, local conditions, etc.).

By analyzing financial literacy (knowledge, attitudes, and behavior) in relation to the dimensions of financial vulnerability affecting households and individuals (economic vulnerability, welfare vulnerability, and labor market vulnerability), the following results can be highlighted:

1. The knowledge dimension of financial literacy was significantly related only to educational attainment.
2. The irresponsible financial behavior dimension of financial literacy showed significant associations with labor market and financial vulnerability factors.
3. The financial pressure associated with meeting community expectations is stronger among those who are vulnerable in the labor market and in their financial situation.
4. The dimension of financial literacy concerning negative attitudes toward banks was not significantly related to any dimension of vulnerability.

Our results indicate that the relationship between financial literacy and financial vulnerability requires a new approach. The two concepts are linked in different ways depending on specific social and demographic factors. Previous research has largely neglected the study of specifically disadvantaged groups. However, future research should examine these groups more closely to gain a deeper understanding of the interconnections between financial literacy, financial vulnerability, and social and demographic characteristics.

Appendix

Table A1

The main components of financial literacy total variance explained

Component	Initial eigenvalues			Rotation sums of squared loadings		
	total	% of variance	cumulative %	total	% of variance	cumulative %
1	2.951	36.884	36.884	1.908	23.847	23.847
2	1.747	21.833	58.717	1.889	23.612	47.460
3	932	11.650	70.368	1.833	22.908	70.368
4	659	8.231	78.599			
5	586	7.323	85.922			
6	392	4.900	90.823			
7	382	4.771	95.593			
8	353	4.407	100.000			

Extraction method: principal component analysis.

Table A2

Results of the principal component analysis of vulnerability total variance explained

Component	Initial eigenvalues			Rotation sums of squared loadings		
	total	% of variance	cumulative %	total	% of variance	cumulative %
1	2.741	34.265	34.265	2.730	34.128	34.128
2	2.097	26.209	60.474	1.652	20.655	54.783
3	1.082	13.520	73.994	1.537	19.211	73.994
4	647	8.082	82.076			
5	481	6.008	88.084			
6	391	4.885	92.970			
7	354	4.423	97.393			
8	209	2.607	100.000			

Extraction method: principal component analysis.

Table A3

Correlations between the factors

Factor	Correlation summary (r, p, N)	Labor market vulnerability	Vulnerability of financial conditions	Vulnerability of social conditions
Negative attitude toward banks	Pearson correlation	0.044	0.049	–0.099
	Sig. (2-tailed)	0.434	0.378	0.076
	N	324	324	324
Community respect is money	Pearson correlation	0.189**	0.205**	–0.068
	Sig. (2-tailed)	0.001	0.000	0.225
	N	324	324	324
Irresponsible financial management	Pearson correlation	0.011	0.506**	0.171**
	Sig. (2-tailed)	0.845	0.000	0.002
	N	324	324	324

** Correlation is significant at the 0.01 level (2-tailed).

Table A4

Knowledge index and the factors
One-way ANOVA
Descriptives

Factor	Knowledge index	Mean	Standard deviation
Vulnerable labor market	Educated	–0.0176	0.9873
	Middle	0.0347	1.0562
	Lack of knowledge	–0.0063	0.9696
Vulnerable financial conditions	Educated	–0.2694	0.9740
	Middle	0.0943	0.9462
	Lack of knowledge	0.3220	0.9839
Vulnerable social conditions	Educated	–0.2461	0.8633
	Middle	0.1439	1.0136
	Lack of knowledge	0.2386	1.0990
Irresponsible financial management	Educated	–0.4170	0.7623
	Middle	0.2634	1.0094
	Lack of knowledge	0.5068	1.0637
Community respect is money	Educated	–0.2438	0.9605
	Middle	0.2277	0.9080
	Lack of knowledge	0.2183	1.0673
Negative attitude towards banks	Educated	–0.1571	1.1403
	Middle	0.0720	0.8703
	Lack of knowledge	0.2197	0.7812

Results of the ANOVA post hoc tests

Factor	Knowledge index		Mean difference (I–J)	Sig.
	I	J		
Vulnerable labor market conditions	Educated	Middle	–0.0523	0.627
		Lack of knowledge	–0.0113	0.915
	Middle	Educated	0.0523	0.627
		Lack of knowledge	0.0410	0.729
	Lack of knowledge	Educated	0.0113	0.915
		Middle	–0.0410	0.729
Vulnerable financial conditions	Educated	Middle	–0.3637*	**0.001**
		Lack of knowledge	–0.5914*	**0.000**
	Middle	Educated	0.3637*	**0.001**
		Lack of knowledge	–0.2277*	**0.047**
	Lack of knowledge	Educated	0.5914*	**0.000**
		Middle	0.2277*	**0.047**
Vulnarable social conditions	Educated	Middle	–0.3900*	**0.001**
		Lack of knowledge	–0.4847*	**0.000**
	Middle	Educated	0.3900*	**0.001**
		Lack of knowledge	–0.0947	0.831
	Lack of knowledge	Educated	0.4847*	**0.000**
		Middle	0.0947	0.831
Irresponsable financial management	Educated	Middle	–0.6804*	**0.000**
		Lack of knowledge	–0.9239*	**0.000**
	Middle	Educated	0.6804*	**0.000**
		Lack of knowledge	–0.2435	0.320
	Lack of knowledge	Educated	0.9239*	**0.000**
		Middle	0.2435	0.320
Community respect is money	Educated	Middle	–0.4714*	**0.000**
		Lack of knowledge	–0.4620*	**0.000**
	Middle	Educated	0.4714*	**0.000**
		Lack of knowledge	0.0094	0.949
	Lack of knowledge	Educated	0.4620*	**0.000**
		Middle	–0.0094	0.949
Negative attitude towards banks	Educated	Middle	–0.2290	0.207
		Lack of knowledge	–0.3768	**0.007**
	Middle	Educated	0.2290	0.207
		Lack of knowledge	–0.1477	0.554
	Lack of knowledge	Educated	0.3768*	**0.007**
		Middle	0.1477	0.554

* The mean difference is significant at the 0.05 level.

Table A5

Knowledge index and the age
Results of the ANOVA post hoc tests

I	J	Mean difference (I–J)	Sig.
With knowledge	Moderately lack of knowledge	2.42	0.127
	Lack of knowledge	4.154*	**0.008**
Moderately lack of knowledge	With knowledge	–2.42	0.127
	Lack of knowledge	1.734	0.328
Lack of knowledge	With knowledge	–4.154*	**0.008**
	Moderately lack of knowledge	–1.734	0.328

*. The mean difference is significant at the 0.05 level.

Table A6

The Post Hoc test of the factor averages by age
Results of the ANOVA post hoc tests

Dependent variable	Age categories		Mean difference (I–J)	Sig.
	I	J		
Irresponsible financial management	Below 40	Between 40–60	–0.03198668	0.990
		Over 60	0.39992450*	**0.035**
	Between 40–60	Below 40	0.03198668	0.990
		Over 60	0.43191117*	**0.026**
	Over 60	Below 40	–0.39992450*	**0.035**
		Between 40–60	–0.43191117*	**0.026**
Community respect is money	Below 40	Between 40–60	0.21904520	0.062
		Over 60	0.38115534*	**0.031**
	Between 40–60	Below 40	–0.21904520	0.062
		Over 60	0.16211014	0.377
	Over 60	Below 40	–0.38115534*	**0.031**
		Between 40–60	–0.16211014	0.377
Negative attitude towards banks	Below 40	Between 40–60	–0.14804073	0.201
		Over 60	–0.67647817*	**0.000**
	Between 40–60	Below 40	0.14804073	0.201
		Over 60	–0.52843745*	**0.004**
	Over 60	Below 40	0.67647817*	**0.000**
		Between 40–60	0.52843745*	**0.004**
Vulnerable labor market conditions factor	Below 40	Between 40–60	–0.05121678	0.941
		Over 60	0.29625511*	**0.023**
	Between 40–60	Below 40	0.05121678	0.941
		Over 60	0.34747189*	**0.014**
	Over 60	Below 40	–0.29625511*	**0.023**
		Between 40–60	–0.34747189*	**0.014**
Vulnerable financial conditions factor	Below 40	Between 40–60	0.09036536	0.347
		Over 60	0.18133003	0.197
	Between 40–60	Below 40	–0.09036536	0.347
		Over 60	0.09096467	0.533
	Over 60	Below 40	–0.18133003	0.197
		Between 40–60	–0.09096467	0.533
Vulnerable social conditions factor	Below 40	Between 40–60	0.21388291	0.069
		Over 60	0.25465518	0.192
	Between 40–60	Below 40	–0.21388291	0.069
		Over 60	0.04077227	0.988
	Over 60	Below 40	–0.25465518	0.192
		Between 40–60	–0.04077227	0.988

* The mean difference is significant at the 0.05 level.
Source: own calculation.

Table A7

Relationship between educational attainment and the principal components factors
Post hoc test
Multiple comparisons

Dependent variable	Compared educational attainment categories		Mean difference (I–J)	Sig.
Vulnerable labor market conditions factor	Max 8 classes	9–11 classes	–0.25431049*	**0.029**
		12 classes or more	–0.09686735	0.386
	9–11 classes	Max 8 classes primary	0.25431049*	**0.029**
		12 classes or more	0.15744314	0.260
	12 classes or more	Max 8 classes primary	0.09686735	0.386
		9–11 classes	–0.15744314	0.260
Vulnerable financial conditions factor	Max 8 classes	9–11 classes	0.22141462	0.057
		12 classes or more	0.00623659	0.955
	9–11 classes	Max 8 classes primary	–0.22141462	0.057
		12 classes or more	–0.21517803	0.124
	12 classes or more	Max 8 classes primary	–0.00623659	0.955
		9–11 classes	0.21517803	0.124
Vulnerable social conditions factor	Max 8 classes	9–11 classes	0.01049816	0.928
		12 classes or more	0.35171792*	**0.002**
	9–11 classes	Max 8 classes primary	–0.01049816	0.928
		12 classes or more	0.34121976*	**0.014**
	12 classes or more	Max 8 classes primary	–0.35171792*	**0.002**
		9–11 classes	–0.34121976*	**0.014**
Negative attitude toward banks	Max 8 classes	9–11 classes	0.67485824*	**0.000**
		12 classes or more	0.54443780*	**0.000**
	9–11 classes	Max 8 classes primary	–0.67485824*	**0.000**
		12 classes or more	–0.13042044	0.419
	12 classes or more	Max 8 classes primary	–0.54443780*	**0.000**
		9–11 classes	0.13042044	0.419
Community respect is money	Max 8 classes	9–11 classes	0.20743494	0.146
		12 classes or more	–0.16025860	0.232
	9–11 classes	Max 8 classes primary	–0.20743494	0.146
		12 classes or more	–0.36769354*	**0.029**
	12 classes or more	Max 8 classes primary	0.16025860	0.232
		9–11 classes	0.36769354*	**0.029**
Irresponsible financial management	Max 8 classes	9–11 classes	0.09436742	0.509
		12 classes or more	–0.17345811	0.197
	9–11 classes	Max 8 classes primary	–0.09436742	0.509
		12 classes or more	–0.26782553	0.112
	12 classes or more	Max 8 classes primary	0.17345811	0.197
		9–11 classes	0.26782553	0.112

* The mean difference is significant at the 0.05 level.

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