

## FINANCIAL LITERACY OF STUDENTS IN BUSINESS AND ECONOMICS HIGHER EDUCATION

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**Abstract:** *Alongside the numerous negative effects of the 2008 economic crisis, we can emphasize perhaps one positive aspect: one consequence of the crisis has been that attention has been paid to the low level of financial literacy among the population and the importance of financial education. Research into financial literacy has given priority to young people, because in order to be able to avoid a crisis similar to the lows of 2008, the next generation must at least have a high level of financial literacy. Therefore, this study focuses on an analysis of the financial literacy of young people. In our primary research we wanted to describe the financial literacy of Hungarian university students of economics and business, and to show any difference in this area compared to “average” young people not receiving this type of education. We also looked at how economic and financial knowledge acquired in high school influences the financial literacy of students. In our research questionnaire we focused on the three components of financial literacy developed by the OECD in 2010: financial knowledge, financial behaviours, and attitudes to and preferences regarding financial matters. Our results show that the financial knowledge of those involved in economic and business education is at about the same level as the financial knowledge of “average” young people; however, financial and economic education in high school has a positive effect on students’ financial literacy. In our analysis of financial behaviour, we came to the conclusion that the factors influencing economics and business students’ choice of a bank are almost identical to those of “average” young people. In addition, similarities were discovered in borrowing, as well as in the willingness to finance everyday consumer goods through loans. However, in terms of the selection of savings provision and financial products, economics and business students are characterized by more conscious behaviour compared to their “average” counterparts. Furthermore, it was found that the financial attitude of all the tested students as well as of “average” young people is above the average, but this is not manifest in their behaviour regarding savings, so any measures taken in the future to improve the financial literacy of the general public should focus in particular on this component.*

**Keywords:** youth financial literacy; financial knowledge; financial behaviour; financial attitudes and preferences

**JEL classification:** A20; D12; D14

### 1. Introduction

Hungary has not escaped the unfolding 2008 international financial crisis, which has had numerous negative impacts on the country's economy and society. The most significant factor behind the crisis was the huge amount of innovation in the financial sector (ÁSZ, 2014a), which led to products appearing in the financial markets which were more complex, and required more in-depth knowledge. However, a significant part of the population of Hungary was not in possession of the essential financial and economic knowledge required for the conscious use of these complex products. This resulted in an

acceptance of a higher risk than corresponded to the real capability to bear loans, and consequently, over-indebtedness (Csiszárík-Kocsir, 2013). The crisis, however, has one positive effect: all over the world attention has been drawn to the deficiencies in the financial literacy of the population (Hornýák, 2013) and this has contributed to a realization that for the sake of the creation of each country's wellbeing and financial security it is essential to reduce those macroeconomic risks that arise from citizens undertaking financial decisions which are not well-founded (ÁSZ, 2014a). Recognizing, therefore, that the low level of financial literacy of the population could be detrimental to the stability of the economy, financial literacy and its development needs have increasingly come to the fore all over the world, including in Hungary (ÁSZ, 2013).

## **2. Financial Literacy**

According to Béres (2013), if we want to take steps to develop the financial literacy of the population, it is essential that financial culture itself be defined, since if there is no specific picture of what we want to develop, any efforts made in this direction are useless. To date, research in the field of financial literacy is always determined by the purpose of the research, the target group and the research focus of the issue, and this decides what is meant by the concept of financial literacy. Examining existing research studies Hung et al. (2009) collected nine kinds of approach to financial literacy.

The OECD's International Network on Financial Education (INFE) defined financial culture as follows: "Financial literacy is a combination of awareness, knowledge, skill, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial wellbeing" (Atkinson and Messy, 2012:14). In accordance with this definition, Atkinson and Messy (2012) split financial literacy into three distinct components: financial knowledge, financial behaviour and financial attitudes and preferences. In our research we follow this threefold division.

Financial knowledge include, inter alia, knowledge of financial products and services and knowledge of financial terms (inflation, yield etc.), and these contribute significantly to prudent financial behaviour (Atkinson and Messy, 2012; Husz and Szántó, 2011). According to Atkinson and Messy (2012), financial behaviour is perhaps the most important element of financial literacy, as it determines the individual's financial well-being. The individual elements of positive financial behaviour – such as savings, which is a crucial element of the creation of financial security and the reduction on credit dependency – increase financial well-being. One of the bases of conscious financial behaviour is the acquisition of information about financial products before purchasing them, because if the individual seeks to make conscious financial decisions, he or she will study the market, and is more likely to choose a product that best meets his or her needs, and is less likely to become a victim of fraud or deceit. Financial behaviour, however, has negative elements, too, such as reckless borrowing, which has a negative impact on an individual's financial well-being in the long run (Atkinson and Messy, 2012). Attitudes and preferences are also an important part of financial culture (Atkinson and Messy, 2012).

The relationship between the three areas of financial literacy is well described by Nagy and Tóth (2012), who argue that people begin to acquire finance-related knowledge in childhood, with the help of common family purchases, and pocket money management. This is the kind of learning process during which young people associate with different attitudes to money, which then greatly affect money management habits.

Many research results support the idea that the level of financial literacy is low not only internationally, but also domestically. Among these surveys it is important to note those conducted by the Hungarian National Bank in 2006 (MNB, 2006), by the OECD in 2010 (Atkinson and Messy, 2012), and the research coordinated by the National Audit Office in 2013 (ÁSZ, 2013).

Given the growing financial importance of younger age groups, an increasing priority is

given to them in financial literacy research, since in order to be able to avoid similar economic lows to the 2008 crisis in the future, this generation, at least, must have a high level of financial awareness (Hornýák, 2011). Regarding finance, today's youth are uninformed since their knowledge of the operation of the economy and finance is acquired from the surrounding environment – which itself does not have a high level of financial literacy – through social learning, thus, they acquire a false image of the market economy (Kovács, 2013).

The theme has become particularly topical in Central and Eastern European countries, since after the creation of market economy structures following political transition – and the changing value system which evolved as a result – young people are expected to have different attitudes, different financial awareness and different financial habits from those typical of their parents (Kovács et al., 2013). For this reason, many countries treat the development of financial literacy among young people as a matter of national strategy (ÁSZ, 2014b).

### **3. Data and Methodology**

In the framework of our primary research we examined the financial literacy of economics and business students at the University of Debrecen, Faculty of Economics and Business (UD FEB), which we compared with the results of earlier research studies into the financial literacy of young people mentioned in the previous section.

A factor in our choice of target group is that young people involved in higher education are already typically facing financial decisions which will define their lives for a long time, such as a student loan application or even choosing a bank.

The empirical data was collected on 16 February 2016 at UD FEB by means of printed questionnaires. Finally 118 valid questionnaires could be analysed. The sample included 47 students from the BA in commerce and marketing program, 20 from the BSc in agribusiness and rural development engineering program, 17 from the BA in tourism and catering program, 15 from the BA in business administration and management program, 6 from the logistics management master's program, 6 from the BA in international business program, 3 from the management and leadership master's program, 2 from the commerce and marketing vocational training program, one from the business development master's program, and one from the BSc in sports management program. The sample does not reflect the distribution of the faculty's students among majors and thus cannot be considered representative.

The students filling in the questionnaires were aged between the ages of 19 and 27. 47% of respondents live in county towns, 37% in other towns, and 14% live in villages. 31% of respondents had attended training in economic and financial subjects in high school.

Our main research question was whether the special economic and financial knowledge – hopefully – acquired day by day in the framework of the higher education system would emerge as an observable difference compared to the level of financial literacy of “average” young people not participating in such courses. Our hypothesis is that the economics and business students have a higher level of financial literacy in all three dimensions than “average” young people (H1). In addition, we also investigated whether economic and financial knowledge previously acquired in high school constitute an advantage compared to those who had not previously had such knowledge. Our hypothesis is that economic and financial knowledge gained in high school has a positive influence on the students' financial literacy, in all three dimensions (H2).

The preparation of the questions was mainly based on the surveys published by the National Bank of Hungary (MNB, 2006), the OECD (Messy and Atkinson, 2012), and the National Audit Office (ÁSZ, 2013). During the examination of the three elements of financial literacy, in addition to the descriptive statistical methods we used univariate and multivariate analysis methods (one-sample and paired samples t-tests, binomial tests).

We examined the relationship between the elements of financial literacy and the economic and financial knowledge gained in high school with the help of independent samples t-tests and by using crosstab analysis.

#### **4. Results**

In describing the research results we focus on the three components of financial literacy presented earlier.

##### **4.1. Financial Knowledge**

Students' financial knowledge was measured using seven questions, including four questions relating to concepts occurring in everyday life, and which are essential to make informed financial decisions, i.e. they test students' theoretical knowledge, while the remaining questions investigated the students' level of financial knowledge through three practical examples.

During the preparation of the practical questions we tried to ensure that they would be easy to answer given the students' appropriate sense of reality. These questions measured the students' ability to calculate inflation and yield, as well as their awareness on how to open a bank account. This was done by using closed questions (2, 3, and 4 possible answers given), thus assisting a response without the need for more serious calculations. Overall, we can say that the students' knowledge of these subjects is good, since a considerable proportion of them gave the correct answer to these questions (inflation: 84%, yield calculation: 91%, opening a bank account: 84%). The result achieved in the question testing the calculation of yields must be highlighted, as it shows a significant positive difference from the national average since this was the task that caused the most trouble for the respondents to the OECD 2010 survey (Atkinson and Messy 2012) (less than two-thirds of those surveyed could correctly answer the question). With the theoretical questions about financial terms, those related to knowledge of the Annual Percentage Rate (APR) and Unified Deposit Rate Index (UDRI) showed the lowest rate of correct responses (51% and 40%, respectively). A slightly higher – but overall still low – proportion of students (72%) were able to correctly answer theoretical questions related to debit cards. The theoretical issues which received the most correct responses (87%) concerned the concept of inflation. It is, however, a matter for concern, that 13% of students participating in the economics and business education believed that inflation is an “exchange coefficient between the forint and the euro exchange rate”, or is “foreign currency expressed in the domestic currency price”.

The number and proportion of correct answers to the specific questions, and one-sample t-test statistics measuring their significant difference from a chance answer are shown in Table 1. The table shows that for all questions significantly more people answered them well than if they had chosen their answers by chance. The distribution of answers to questions related to opening of an account and to debit card, given that these answers are two bivalent variables were examined with a binomial test. The results for these questions (opening a bank account:  $p < 0.001$ ; debit card:  $p < 0.001$ ) show that significantly more people answered the questions well than implied by statistical probability.

**Table 1:** Characteristics of the answers to questions designed to reveal financial knowledge

Knowledge tested	Number of those responding correctly (individuals)	Proportion of those responding correctly (%)	Expected value	t value
Inflation (Practical)	99	84	0.33	-3.450***
Calculation of yields	107	91	0.33	-9.525***
Opening a bank account	99	84	-	-
APR	60	51	0.25	5.226**
UDRI	47	40	0.25	7.771**
Inflation (Theoretical)	103	87	0.25	-6.588**
Debit card	85	72	-	-

Source: Authors' own analysis, n=118

Note: \*\* significant at 1%, \*\*\* significant at 1%

Following this, we examined the difference between real and perceived financial knowledge. Students' perceived financial knowledge was measured by a seven-point Likert scale, which produced a total score easily comparable to the seven questions testing real knowledge. Students' average perceived financial knowledge was 4.43 (SD=1.008), while the average of the correctly answered questions testing actual knowledge was 5.13 (SD=1.291). On the basis of the paired samples t-test results, we can state that students' real financial knowledge was significantly ( $p < 0.001$ ) higher than their perceived knowledge, i.e. a significant number of them undervalued their own financial knowledge.

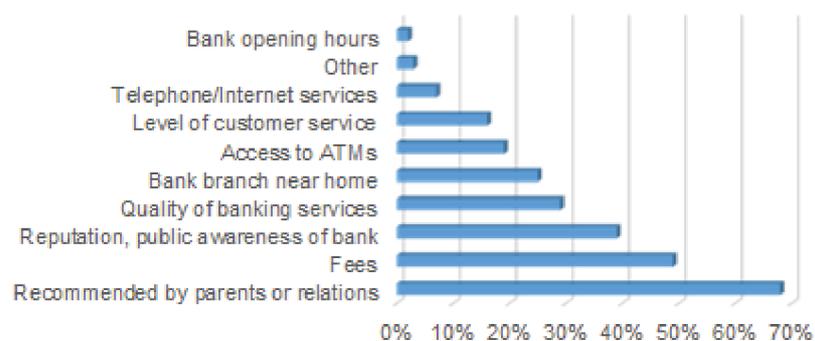
We also investigated whether there is a connection between the level of financial knowledge and the fact that students have acquired financial and economic knowledge in high school. Based on the results of the independent samples t-test, we can say that high school students who had participated in economics education had a significantly ( $p = 0.025$ ) higher level of financial knowledge than those who had not taken part in such training. This is contrary to the results of research coordinated by the National Audit Office in 2013 (ÁSZ, 2013).

#### 4.2. Financial Behaviour

The financial behaviour of young people in the study was tested using 12 questions. First we analysed the factors that influence students' choice of bank; before the research we asked whether they had a bank account at all, and when they were personally connected to the financial sector. 100% of respondents had a bank account. Of these, 13 (11%) were already in some relationship with a financial institution during their primary school years (i.e. up to 14 years of age), 67 (57%) opened their accounts during the high school years (14-18), while 38 (32%) opened a bank account during university years.

About two thirds (68%) of students with current accounts chose the bank that their parents or relatives recommended to them, while the second most important aspect (49%) that affects opening an account was the fees imposed by the bank. In third place was the bank's reputation and the public's awareness of it, at 39%. In comparison with "average" young people no great differences can be observed in terms of the most influential factor, since in the 2006 MNB survey, most respondents (64%) also nominated their parents' recommendation as the most important factor affecting their choice (MNB, 2006). There were differences, however, in the subsequent factors, since the second and third most

important aspect was the quality of services and the level of banking in the case of those surveyed in 2006. Factors influencing the choice of a bank among economics and business students are illustrated in Figure 1.



**Figure 1:** Factors influencing choice of bank (% of respondents)

Source: Authors' own research, n=118

The analysis of financial behaviour continued with an analysis of savings behaviour. Respondents were asked if they have any savings, and those with savings were asked to indicate what form they kept their savings in, while with those who had no savings we wanted to know what lay behind this.

The replies showed that 61% of respondents have savings. This ratio is much more favourable than the results of the survey conducted by the OECD in 2010 (48%) (Atkinson and Messy, 2012), so this area of economics and business students' behaviour can be described as much more conscious. 43% of students with savings kept them at home, while 35% kept them in a current account, and 4% entrusted them to their family, so these students are passive savers. A minority of the students surveyed showed conscious behaviour: 26% of them deposited money in a savings account, and 6% bought investment products. These students can be termed active savers.

Most of the students (87%) who are not able to save reported that their current income does not allow this kind of activity. Several of them (26%) said that they spent too much on trivial things or, because of a party, or travel (15%) they cannot put anything aside.

While we were studying students' saving behaviour we also examined the relationship between the economic and financial knowledge acquired in high school and saving provision, using a crosstab. The Pearson's chi-square value was 0.650 ( $p=0.420$ ), suggesting that there is no relationship between the two variables.

The behaviour of students with loans was measured by two questions. First, we asked whether they have a loan and, if so, what type. 16 students (14%) have some form of loan, and all of these students use it to finance their studies. When asked whether in the future they would take out a loan to cover their daily expenses, only 5 (4%) answered in the affirmative, suggesting positive behaviour. This is slightly lower than the national average, as during the 2010 research, 14% of respondents said that they have recourse to credit, if their income does not cover their expenditure (Atkinson and Messy, 2012).

For the third component of financial behaviour, we examined the participants' behaviour in terms of the extent to which they found out about financial products before selecting them. The students' responses revealed that this behaviour is not universal, as only 39% of them try to consider carefully before making a choice. However, compared to the national average, their behaviour can still be considered more aware, since in 2010, only 5% of respondents said that they look around the market before selecting a financial product (Atkinson and Messy, 2012).

#### 4.3. Financial Attitudes and Preferences

Students' financial attitudes were measured using three scaled statements ("In general, I live for today", "It is better to spend money than to set it aside for the long-term", "Money is there to be spent."). The respondents were asked to indicate on a Likert scale ranging from one to seven how much they agree with these statements indicating negative attitudes and preferences. The resulting values were coded as -3, -2, -1, 0, +1, +2, +3, so that the original value of 1 on the scale is assigned a value of +3, while 7 was assigned a value of -3. After summarising the values we created a composite index of financial attitudes (Financial Attitude Index, referred to as FAI). The FAI can feature a value ranging from -9 to +9 (since we combined the points values of the three questions), where +9 indicates an absolute positive attitude to money and savings, while -9 indicates students' total indifference to savings.

The average FAI among the surveyed students was 2.07 (SD=3.399), from which it can be concluded that the students are more characterized by a positive financial attitude than a negative one.

During the FAI analysis, we examined whether there is a relationship between the index values and financial-economic knowledge gained in high school. With an independent samples t-test we concluded that no significant difference can be detected between the FAI averages ( $p=0.933$ ) of those students who received financial and economic education in high school and those who did not, both groups being characterized by a positive financial attitude.

Compared to the national average there was no significant difference in this area, since one of the main findings of the OECD's 2010 survey (Atkinson and Messy, 2012) was that Hungarian households' financial attitudes was above the average (in fact, the highest) of the 14 countries surveyed.

## **5. Conclusions**

The results of the examination of the financial literacy of economics and business students broadly confirm earlier investigations into the field of financial literacy, the main findings of which are that the financial literacy of young people, despite numerous developments, continues to show shortcomings.

As regards the financial knowledge of the economics and business students in the sample, we can say that the vast majority of them are in possession of the necessary mathematical knowledge for everyday financial decisions; some of the theoretical issues, however, present problems for them. In contrast to the results of previous research, financial and economic knowledge gained in a high school environment has a positive impact on the financial literacy of students in the sample. The students' financial knowledge did not show a significant difference compared to the national average, but the economics students typically undervalue their knowledge.

Similar to the results of previous research, the description of financial behaviour has shown that when young people select a bank their parents' and relatives' recommendation is decisive. The provision of credit, as well as the purchase of daily consumer goods on credit also indicated no significant difference compared with previous results; both the behaviour of economics and business students and that of "average" young people shows consciousness. Examination of the provision of savings and the acquisition of information prior to the purchase of financial products indicate that the students have more positive behaviours compared to "average" young people. There was no correlation between the provision of savings and the financial-economic knowledge gained in high school.

The attitudes of students in the sample regarding financial matters is positive, and above average, as can also be seen in the nation as a whole on the basis of the results of the OECD survey (Atkinson and Messy, 2012). However, this positive attitude is not reflected in the saving behaviour of respondents, neither in earlier research, nor in the current study. Furthermore, the economic knowledge gained in high school did not improve the financial

attitudes of young people in the sample.

Our research has shown that the financial literacy of economics and business students – except in the dimension of financial behaviour – cannot be considered to be at a higher level than among “average” young people, so the first hypothesis (H1) is rejected. In addition, economic-financial knowledge gained in high school only has a positive influence on one aspect of financial literacy, so the second hypothesis (H2) can be rejected as well. On this basis we can conclude that the financial and economic education of young people is worth starting even at university level, but in any case it would be advisable to teach it during the elementary school years, as occurs in the world’s developed countries, such as the USA (Hornyák, 2013).

## References

- ÁSZ (2013) „Felmérés a felsőoktatásban tanuló fiatalok pénzügyi kultúrájáról”, Kutatási jelentés, [online], Állami Számvevőszék, Available: <https://www.asz.hu/storage/files/files/Szakmai%20kutat%C3%A1s/2013/t353.pdf?download=true> [25 Jan 2016]
- ÁSZ (2014a) „Az Állami Számvevőszék szerepe a pénzügyi kultúra fejlesztésében”, Projektfüzet, [online], Állami Számvevőszék, Available: <https://www.asz.hu/storage/files/files/Szakmai%20kutat%C3%A1s/2014/t366.pdf?download=true> [15 Feb 2016]
- ÁSZ (2014b) „Nemzetstratégiai kérdés a fiatalok (köz)pénzügyi tudatosságának erősítése”, [online], ÁSZ Hírportál, Available: <http://www.aszhirportal.hu/hu/hirek/-nemzetstrategiai-kerdes-a-fiatalok-koz-penzugy-tudatossaganak-erositese> [23 Sep 2014]
- Atkinson, A. and Messy, F. (2012) „Measuring Financial Literacy: Results of the OECD/International Network on Financial Education (INFE) Pilot Study”, OECD Working Papers on Finance, Insurance and Privat Pensions, No. 15, [online], OECD Publishing, Available: <http://www.oecd-ilibrary.org/docserver/download/5k9csfs90fr4.pdf?expires=1458415189&id=id&acname=quest&checksum=3C4B5263A4DE919756579BCD023E0CA3> [24 Mar 2014]
- Béres, D. (2013) „A pénzügyi kultúra – Mi is ez valójában?” [online], Pénzügyi Szemle Online, Available: <http://www.penzugyiszemle.hu/vitaforum/a-penzugyi-kultura-mi-is-ez-valojaban> [21 Mar 2014]
- Csiszárík-Kocsir, Á. (2013) „Huszoneves fiatalok pénzügyi alapfogalom ismerete egy kérdőíves kutatás eredményeinek tükrében”, Research study, [online], Óbudai Egyetem, Keleti Károly Gazdasági Kar, Budapest, Available: [http://kgk.sze.hu/images/dokumentumok/VEABtanulmányok/csiszarik\\_kocsir\\_agnes.pdf](http://kgk.sze.hu/images/dokumentumok/VEABtanulmányok/csiszarik_kocsir_agnes.pdf) [22 Mar 2014]
- Hornyák, A. (2011) „A fiatalok, mint potenciális banki ügyfelek”, [online], XII. Rodosz Conference, Cluj-Napoca, Available: <https://www.yumpu.com/hu/document/view/36952185/a-fiatalok-mint-potencialis-banki-a-1-4-gyfelek-rodosz> [12 Mar 2014]
- Hornyák, A. (2013) „Pénzügyi kultúra és gazdasági oktatás. Ez lehet a megoldás?” *Educatio*, Vol. 22, No.1, pp. 89-95.
- Hung, A., Parker, A.M. and Yoong, J.K. (2009) „Defining and Measuring Financial Literacy”, [online], RAND Labor and Population, Available: [https://www.rand.org/content/dam/rand/pubs/working\\_papers/2009/RAND\\_WR708.pdf](https://www.rand.org/content/dam/rand/pubs/working_papers/2009/RAND_WR708.pdf) [25 Apr 2014]
- Husz, I. and Szántó, Z. (2011) „Mi a pénzügyi kultúra?” In: Czakó, Á., Husz, I. and Szántó, Z. (ed.) *Meddig nyújtózkodjunk? A magyar vállalkozások pénzügyi kultúrájának változása a válság időszakában*, BCE Innovációs Központ Nonprofit Kft., Budapest, pp. 7-12.
- Kovács, I.É., Mihály, N., Mészáros, A. and Madarász, I. (2013) „A pénzzel kapcsolatos attitűd és különböző demográfiai változók kapcsolatának vizsgálata magyar egyetemi

hallgatók mintáján”, *Közgazdász Fórum*, Vol. 16, No. 1, pp. 37-58.

Kovácsné, H.L. (2013) „Online generáció” versus pénzügyi kultúra”, In: Karlovitz, J.T. (ed.) *Társadalomtudományi gondolatok a harmadik évezred elején*, International Research Institute s.r.o., Komárno, pp. 61-69.

MNB (2006) „A 14-17, illetve a 18-30 évesek pénzügyi kultúrájának felmérése: Kvantitatív kutatási jelentés”, [online], Magyar Nemzeti Bank, Budapest, Available: <http://www.mnb.hu/letoltes/mnb-penzugyi-kultura-quantitativ.pdf> [15 Jun 2014]

Nagy, P. and Tóth, Zs. (2012) „Értelem és érzelem”. A lakossági ügyfelek gazdasági magatartása és a bankokkal kapcsolatos attitűdjei”, *Hitelintézeti Szemle*, Vol. 11, Special issue, pp. 13-14.