

Survey and Literature Assessment on the Financial Literacy of University Students

Резюме. Фінансова культура студентів університету є темою в економічній літературі з 1980-х років. Однак її значимість по справжньому тільки за останнє десятиліття зросла. Причиною цього є з одного боку, криза 2008 року та її наслідки, а у наші дні – криза, спричинена COVID-19. Інша причина полягає в тому, що Промисловість 4.0 також впливає на розвиток фінансів. Роль державної освіти та вищої освіти набуває все більшого значення у передачі фінансових знань та навичок. Важливо також знати, наскільки ефективна фінансова освіта, для чого слугують різні опитування. У цьому дослідженні автори порівнюють результати власного опитування на таку тему з даними, знайденими в літературі. Їх основною метою було повернути увагу до важливості теми, а другорядним наміром – звернути увагу на важливість вивчення літератури.

Ключові слова: фінансова культура, студент університету, кризова ситуація, фінансова освіта

Rezümé. Az egyetemi hallgatók pénzügyi kultúrája az 1980-as évek óta téma a gazdasági szakirodalomban. Jelentősége azonban az utóbbi évtizedben nőtt meg igazán. Ennek oka egyrészt a 2008-as válság és annak tovagyűrűző hatásai, napjainkban pedig a Covid-19 okozta krízis. A másik ok, hogy az Ipar 4.0 a pénzügyek fejlődésére is hatással van. A közoktatás és a felsőoktatás szerepe egyre fontosabb a pénzügyi tudás és készségek közvetítésében. Fontos tudnunk azt is, hogy a pénzügyek oktatása mennyire hatékony. Erre szolgálnak a különböző felmérések. Ebben a tanulmányukban a szerzők egy ilyen témában készült saját felmérésük eredményeit hasonlítják össze a szakirodalomban fellelhető adatokkal. Elsődleges céljuk az volt, hogy felhívják a figyelmet a téma fontosságára, másodlagos szándékuk pedig az, hogy felhívják a figyelmet a szakirodalom tanulmányozásának fontosságára.

Kulcsszavak: pénzügyi kultúra, egyetemi hallgató, válsághelyzet, pénzügyi oktatás

Abstract. The financial culture of university students has been a research topic in the economic literature since the 1980s. However, its significance has grown during the past decade. It owes on the one hand to the 2008 crisis and its subsequent effects; recently, however, the crisis being induced by the COVID-19 pandemic has become the major reason. On the other hand, Industry 4.0 is affecting financial development, too. It is crucial that we know how effective educating finances is; a multitude of surveys satisfy this requirement. In this study the authors compare the results of their own research carried out in one such topic with data arising from the available literature. Their primary goal was to draw attention to the weight of the topic and their second objective was to highlight the importance of reviewing scientific literature.

Keywords: financial literacy, university student, crisis situation, financial education

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Introduction

Have you heard of the following concepts: factoring, swap transaction, Lombard loan, letter of credit, collection, forex? If so, can you tell me what their point is? Don't feel uncomfortable if you answered no to any of the above questions, you are not alone. You don't even have to be aware of these. But if you don't even know what to say about interest or credit, start worrying because you're more than a century behind! This is because financial culture is not a product of today. But about a hundred years ago, it was enough to know a few concepts for someone to be financially well-informed. Today, however, financial services and innovative products have appeared on the market that everyday people can no longer keep up with. This was well illustrated by the foreign currency credit crisis, which also damaged the income situation of the population and their confidence in the banking world. A particularly important question is how these effects have manifested themselves among students in higher education, as their generation will soon enter the labor market with up-to-date knowledge. This, in turn, will force them to put the acquired knowledge and skills into practice. This will allow them to make decisions that may no longer have a merit but may have serious financial consequences.

Literature Review

Financial literacy

The concept of financial literacy is becoming more and more common in today's literature. The consequences of the 2008 financial crisis have particularly increased the need to disseminate relevant and practical financial knowledge as widely as possible. The contagious disease caused by COVID-19, which would spread to a pandemic in 2020 further complicates the current situation. Prior to vaccination, the only option for protection and prevention was severe short-circuit restrictions. These, in turn, triggered a global economic downturn that had a significant negative impact not only on the financial world and the economic sphere but also on the financial relationships of individuals. Financial literacy of higher education students is of particular interest, as they will be the next generation to enter the labor market. In our work, we approach the problem from two sides: on the one hand, we use the conclusions of the financial literacy surveys of Hungarian higher education students. On the other hand, we compare the obtained results with the results of our own financial literacy research, which we conducted among students in 2019 and 2020. Our aim was to research the role that higher education plays in laying the foundations for a more secure financial future.

Let's take a brief look at international research before examining the financial literacy of university students in the three countries we examined! Initial research is credited to Danes, Hira, Chen, and Volpe. Danes and Hira (1987) assessed general financial management knowledge among college students. Their results show that men know more than women in most areas, married students perform better than unmarried, and upper grades perform better than lower grades.

Their overall finding is that students' financial literacy is low. Chen and Volpe (1998, 2002) demonstrated differences in the level of financial literacy among subgroups of students in U.S. university students. Students with no economic specialization, women under the age of 30, and little work experience were found to have the lowest level of knowledge. These students with less knowledge are more likely to make wrong decisions. The reasons for bad decisions include excessive consumerism approach (Sipos & Tóth 2005)¹, but cognitive factors play a role in it, too (Sipos & Tóth 2006)². Beal and Delpachitra (2003) showed that Australian students were not proficient in financial matters and did not have the appropriate skills. Their results show that students with higher financial literacy scores are more likely to be men, have more work experience, and have higher incomes. It has also been shown that the level of financial literacy improves as a function of work experience and income.

Financial literacy of Hungarian university students

The impact of the 2008 crisis on Hungarian university students was assessed by a survey conducted in 2013, which was conducted by means of a questionnaire of more than two thousand university students (Béres et al. 2013). One of the most important findings of the survey was that although students' financial knowledge was adequate to achieve their goals, the extent of their validity was already questionable. This is because students in economics did not perform significantly better in financial literacy than their peers in other disciplines. This fact, however, has suggested that a paradigm shift has become necessary in the teaching of financial literacy. A similarly negative picture emerged in the OECD survey of the financial literacy of the adult Hungarian population in 2015 (Pénziránytű Foundation 2015). The results that are relevant to us in this survey are as follows: more respondents with tertiary education have specific financial goals than the sample average. One of the two most important goals (i.e., buying a car) is short-term and the other (i.e., securing children's financial future) is long-term. However, their retirement years are rarely planned. The awareness of financial products is between 50 and 98 percent, but only about half that among those who use them. The younger age group is less thoughtful when making their financial decisions (a fifth of them do not consider at all), but the proportion of conscious people is higher among third-level students. However, the most negative result, in our opinion, is a decrease in the proportion of pre-planners and an increase in those following *carpe diem* perceptions compared to a previous similar survey, i.e. a decrease in financial awareness. All this happened even though the level of financial knowledge was around 90 percent. The finding three years later, which described the same low

¹ A fogyasztói döntés közgazdasági megközelítése. <https://m2.mtmt.hu/gui2/?mode=browse¶ms=publication;1983931>

² A közgazdasági értelemben vett irracionális döntések kognitív okai. <https://m2.mtmt.hu/gui2/?mode=browse¶ms=publication;1983932>

sense of responsibility in the target group, specifically focusing on young people, is fully in line with the 2015 result of the Péncziránytű Foundation (Zsótér 2018). A survey in Debrecen examining the financial culture of students specialized in disciplines within and outside the field of economics (Pintye & Kiss 2017) found that economics students performed better than their peers in other disciplines only in financial behavior. A further finding of the research is that students have the mathematical foundations to make the right decisions, but their financial knowledge shows gaps. All this also means that the financial knowledge acquired until the completion of high school studies has no measurable impact on adult financial decisions. In response to the domestic situation, a government strategy for the development of financial awareness was prepared (Government of Hungary 2017). There are five pillars to this. The first is the integration of financial literacy into public education, under the direction of the Ministry of Human Resources. The other is research and development of financial culture, which is done by the State Audit Office of Hungary. The Hungarian National Bank performs the task of financial consumer protection, the Hungarian State Treasury implements the modern treasury concept. The fifth pillar is non-governmental organizations, which organize a number of programs with state support. The latter include the already mentioned Péncziránytű Foundation. In 2020, the State Audit Office (SAO) assessed the financial culture of students studying in higher education (Béres et al. 2020). The structure of the questionnaire in this study focuses specifically on the students' goal system and their attitudes towards it. Only a fraction of respondents formulate long-term goals, most of them mention housing. However, it is important for many students to set aside to set up their personal financial safety net, but one-third of them cannot set aside regularly each month. However, retirement savings are common only in those over 25 years of age. Nearly 45 percent of students are supplemented by income from work, and another five percent are engaged in other self-employed activities, such as entrepreneurship. The most common of the financial services is a bank account. 97 percent of students have their own bank account – the rest are likely to receive their scholarships to the family bank account, as all universities now pay by bank transfer. Almost all students have a debit card, most of them use it for payment or withdrawal; for other purposes, such as bank customer identification, much less frequently, only one in three respondents. Knowledge of loans is not enough to enable students to choose the right loan scheme, most of whom have been dissatisfied with the extra costs involved and higher-than-expected interest rates. The situation is similar in the area of investment knowledge.

Financial literacy of Slovak and Austrian university students

Since in our own research we compared the financial culture of Slovak and Austrian students with those of Hungarian university students, let's see what we can know about them based on the literature. In Slovakia, a 2016 survey measured the financial literacy of business high school students (Belás et al. 2016). With

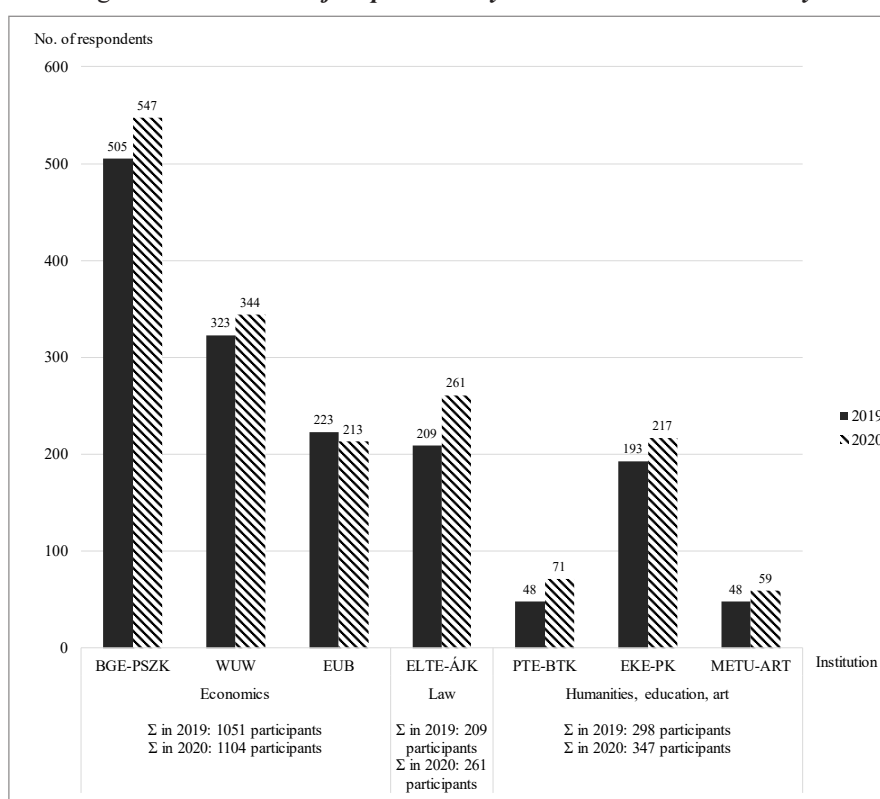
regard to consumer credit and bank and credit cards, where the rate of correct answers was over 80 per cent and their practical skills in these areas are also age-appropriate. This is a significant improvement over the 35 percent of the previous survey conducted in 2007 (Zvaríková & Majerová 2014). However, it was found to be an alarming trend that only 16 per cent of students had adequate knowledge about the role and appropriate forms of savings. That is, the approach to teaching economics in secondary schools does not fit well with the current dynamics of socio-economic development, so new approaches, forms, and methods are needed. Recent results from the above research among high school students present findings regarding the financial culture of Slovak university students studying economics (Kubak et al. 2018). One of the key findings of this survey is that first-year students coming to university from business high schools that specifically provide economic training performed worse than those coming from high school. Thus, financial literacy depends more on the level of study achieved at the university. According to even more recent results (Kozubik 2021), the part-time students working alongside their studies have a higher level of knowledge, which is probably due to their more practical experience. The results of economics students alone were similar to those of law students (Buchtová & Svoboda 2017).

Austria is a successful country among OECD countries in terms of both living standards and the satisfaction of its citizens. The financial culture of the adult population is significantly higher than the OECD average, which is mainly explained by their good performance in financial behavior. However, the financial situation of the young adult generation (15–40 years old) is unstable. A quarter of those under the age of thirty are clients of one of the debt counseling agencies, indicating that they are unable to manage their financial resources efficiently on their own in the long run. The level of financial knowledge of young adults fluctuates: over 90 percent knew what the concept of risk and return or inflation was. Practical questions such as overdrafts were only answered correctly in less than 70 percent, and those requiring mathematical skills and metrics could only be answered correctly in 49 percent (Fessler et al., 2020; Kossev, 2020). The results of the age group we examined, based on the OECD assessment, scored 13.2 points (knowledge = 5.0, behavior = 5.5, attitude = 2.7) out of a possible 21, which means a result of 62.9 percent. Compared to other age groups, it can be stated that the results of the young people are the worst, the performance of the older generations is better. Men perform better in knowledge, women perform better in behavior and attitude. Young Austrian adults show riskier and less predictive financial behavior than other age groups. They are happy to use new financial technologies, but that doesn't necessarily help them keep track of their finances. Another important finding of the aforementioned OECD research is that financial education pays off. This is because the results strongly demonstrate that there is a strong link between financial literacy education and better financial literacy and more favorable financial behavior.

Own Research

In our own research, we examined students from seven universities in three countries with a questionnaire survey. Our questionnaire was a self-edited offline (paper-based) questionnaire that included questions about financial knowledge, behavior, and attitudes in addition to respondents' demographics; and a separate set of questions assessed respondents' feelings of financial security, preferences, and student stress. The distribution of universities and students involved in the research is shown in Figure 1 and Table 1.

Figure 1 *Distribution of respondents by institution in the two surveys*



Source: authors' own elaboration

The questionnaire was interviewed twice, once in the fall of 2019 and once in the fall of 2020. The second survey was conducted due to the pandemic to examine how the epidemic situation affected students' financial culture and sense of security. The interpretation of our results is somewhat limited by the fact that our sample was not representative due to the sampling method. This is also indicated, for example, by the fact that half of the participants in the 2020 SAO survey

worked in addition to their studies, while only 22 percent of our own respondents. However, due to the high number of elements over a thousand, its normality can be assumed. Therefore, it is still suitable for drawing a few conclusions. However, due to the high number of elements over a thousand, its normality can be assumed. Therefore, it is still suitable for drawing a few conclusions.

Table 1 *List of universities participating in the survey*

Abbreviation	Name of institution	Discipline
METU-ART	Budapest Metropolitan University of Applied Sciences – Faculty of Arts and Creative Industries	art
EKE-PK	Eszterházy Károly Catholic University – Faculty of Pedagogy	pedagogy
PTE-BTK	University of Pécs – Faculty of Humanities	humanities
ELTE-ÁJK	Eötvös Loránd University – Faculty of Law	law
BGE-PSZK	Budapesti Business School – Faculty of Finance and Accountancy	economics
WUW	Vienna University of Economics and Business	
EUB	University of Economics in Bratislava	

Source: authors' own elaboration

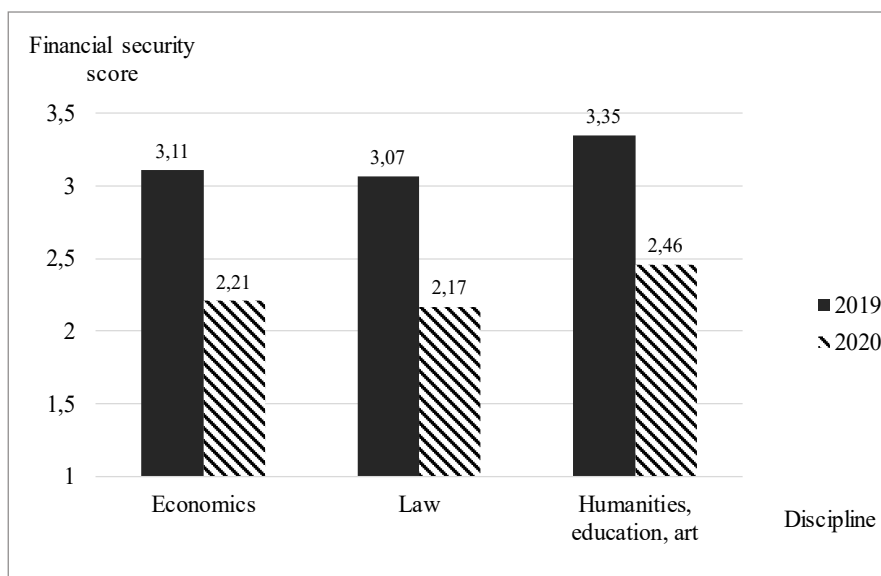
The performance of law students equals to the one of students majoring in the field of economics

Based on the results of the two surveys, our first observation was that students majoring in economics performed better than their peers in other majors. According to our own results, the specialization of the student has a role in financial literacy. This result differs from the results of Béres et al. (2013) and Pintye and Kiss (2017). The only exceptions to this trend are law students who have produced virtually the same performance as economics students. We have encountered this phenomenon in only one study so far (Buchtová & Svoboda 2017). Its authors have interpreted the result as meaning that the financial literacy of economics students is no better than that of their peers in other disciplines. Our own results, on the other hand, show that the performance of law students is also much higher than that of students majoring in humanities, pedagogy, or arts. We explained the high performance of law students primarily by their legal knowledge, as almost all financial decisions have legal consequences – this is where law students are at home. Regarding demographic variables, the effect of relationship was similar to Danes and Hira's (1987) finding that students in a marriage or a relationship performed better in financial culture than those living alone, although in our own research we were able to demonstrate this only in relation to financial behavior.

Financial security

Our other observation is that the sense of financial security of law and economics students is lower than the others, but as a result of the COVID-19, the sense of security decreased equally in all groups of students, by 0.9 percentage points. (Figure 2). In this case, the impact of the epidemic did not differ according to specialization but according to practical experience. There was a greater reduction in a sense of security among those who also worked at the university. All this can be explained by the fact that someone with a higher level of financial knowledge also sees the dangers better, therefore their sense of security is worse. The personal financial safety net is also vulnerable. Irrespective of their specialization, almost half of the students were able to save on a monthly basis – this proportion was two-thirds in the SAO's 2020 survey. As a result of the pandemic, the 50 percent previously measured by us has dropped to 40 per cent, which is a good indication that the epidemic has significantly battered material well-being.

Figure 2 *Distribution of financial security by discipline at the two survey times*



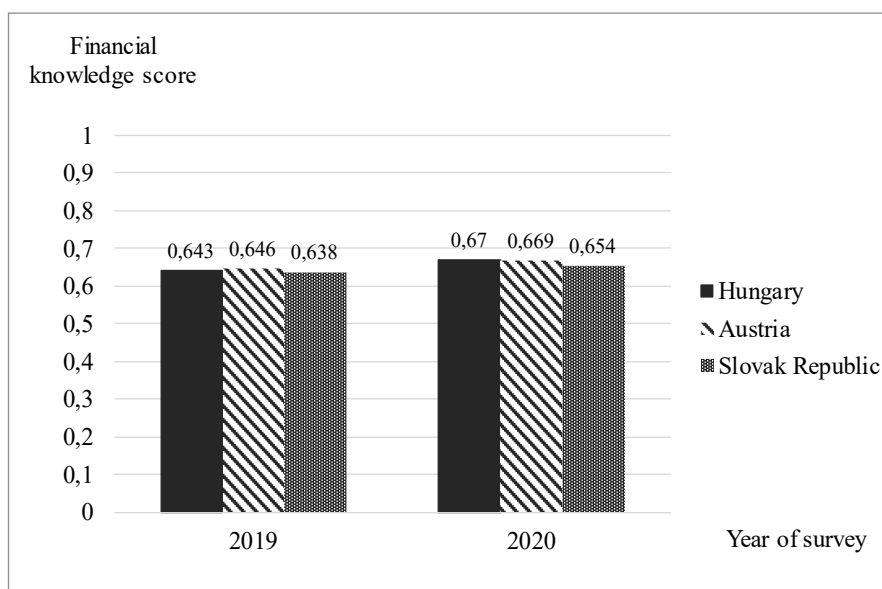
Source: authors' own elaboration

Financial knowledge–behavior–attitude

Based on the performance in the field of financial knowledge, we can say that the knowledge of economics (and law) students is higher than that of the humanities-education-art specialties. That is, there have been so many changes

compared to the results of previous surveys (Pintye & Kiss 2017) that students majoring in economics outperform their peers in other disciplines not only in financial behavior but also in knowledge. There are no significant differences in financial literacy between countries (Figure 3). This supports our observation that the results in the domestic and foreign literature are similar, regardless of country.

Figure 3 *Evolution of financial knowledge between the two surveys in the three examined countries*



Source: authors' own elaboration

Similarly to the results of Beal and Delpachitra (2003) and Kozubik (2021), we found that students who worked alongside the university had greater financial knowledge and behavioral awareness, which can probably be explained by the impact of practical life experience. The use of financial services is similar to what the SAO's 2020 survey found: almost all students have a credit card and it is mostly used for shopping. For identification, 13 percent of humanities-teacher-art students, while 30 percent of law and economics students use their card, in line with the literature (Béres et al. 2020). The level of knowledge about loans in Hungary is low. This is not the case everywhere, in Slovakia, for example, the knowledge already available to secondary school students is appropriate for their age (Belás et al., 2016). However, according to our own results, the level of knowledge related to credit should be significantly improved among Hungarian

students, similarly to the data in the literature (Béres et al. 2020). For example, not all our respondents are fully aware of the exact content and function of the Total Loan Rate Index (APR). The rate of erroneous answers was 8 percent among students majoring in economics and law, and 43 percent among students majoring in other disciplines, which is very high. “Surprises” about loans and the lack of adequate knowledge then affect other financial decisions in later life. For example, it has been shown that students studying for student loans later have 36 percent less savings for retirement purposes than the group studying on their own (Treger & Wendel, 2021). And this certainly draws attention to the importance of providing the right information.

Financial preferences

In our own research, we have discussed among the financial preferences the issues that are also discussed in the 2015 Report of Pénziránytű Foundation and the 2020 SAO Survey on the topic of student goals. In this survey, students typically identified short-term goals (buying a car, having fun), and most of the longer-term goals mentioned were laying the foundation for their children’s future and housing. Only one in four respondents has already started preparing for the retirement years as a university student. In our own research, we were primarily interested in the ability and directions of long-term planning. Therefore, only one answer, i.e., higher income featured among the short-term goals; in addition to the long-term goal for retirement years, we included better housing and the foundation of children’s financial future in our questionnaire. While the proportion of those setting short-term goals was also high in the SAO survey, based on our own results we found that the development of financial goals / preferences is primarily influenced by the respondents’ sense of financial security. Those who did not feel financially secure were thinking primarily in the short term and longing for higher incomes before the pandemic. However, the pandemic has changed preferences. The direction of change (the financial future of children became important instead of higher income) indicates that the epidemic has awakened a sense of responsibility among respondents. While the other three responses were chosen by respondents in about the same proportion (1/3: 1/3: 1/3), better housing was important to only 2 percent of them before the epidemic. As a result of the epidemic, although this option was still much less marked than the others, the frequency of housing preference increased sixfold. This, in turn, also supports our earlier observation that the effects of the epidemic have left people insecure. The risk of unemployment and loss of income due to shortages has significantly reduced income targets, but the future has become uncertain. At such times, retirement still seems very distant, as does the children’s upbringing. Therefore, in a current crisis, it does not fever almost anyone. A better home, on the other hand, could be a goal for the foreseeable future, and not as abstract bits in the memory of computer servers like money, but as a concrete, habitable, movable asset – justifying the growing need for security.

Role of tertiary education

In our own research, we examined students in higher education and did not assess the extent to which first-year students' financial knowledge is determined by their knowledge acquired in high school. We have found several indications in the literature that these do not play a significant role and instead the role of knowledge acquired in higher education in the later stages of life is decisive (Kubak et al. 2018; Pintye & Kiss 2017; Zvaríková & Majerová 2014). At the same time, there is a consensus among authors on the subject that financial education should begin as early as possible, taking advantage of the fact that relevant information can be provided in an organized way, with qualified instructors – always tailored to the age characteristics of current student (SCB 2021). The role of primary and secondary education is not negligible, as it provides the knowledge and competencies that are essential for later learning, such as mathematical knowledge or comprehension skills. Therefore, it is also an important task of higher education to monitor, for example, the results of PISA surveys (OECD 2014, 2020; OH 2019) and to make recommendations for establishing the competencies needed in higher education. In addition, higher education itself needs to transform the curriculum for its economic training. This process is already taking place today, with more and more new methods used in trainings (simulation tasks, dual trainings) and teaching through real-life examples. The paradigm shift is essential because, looking at the broader horizon, we are living in the Industrial 4.0 period today, which has an impact on the development of finances within the economy.

Summary

In our study, we compared the research results of the literature with those found in our own study. Although the sampling procedures and the methods used differed in each research and therefore there is not really a possibility for comparison, we still had the opportunity to make a number of observations due to the high number of items in our own sample. Some of the results in the literature were not synchronized with our own research, for example, we clearly found a higher level of financial culture among students majoring in economics (and law). We also found no significant differences between countries. As in the literature, almost everyone has a credit card and a third of those who use their card for identification. Another important observation is that the epidemic situation reduced the sense of financial security of all respondents to an approximately equal extent, which was accompanied by a transformation in the area of preferences as well. The main aim of our study was to draw attention to the importance of reading the literature. Many treat the literature review as an element of their upcoming study that needs to be “overcome”. Yet getting to know the studies previously written on the subject is the most effective catalyst for our own work.

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