

CREDIT-RELATED KNOWLEDGE AND BEHAVIOUR OF UNIVERSITY STUDENTS IN THREE EUROPEAN COUNTRIES

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Abstract - In our study we analyse the knowledge and behaviour of Hungarian, Slovakian and Austrian university students related to loans. On the one hand we were curious if those students who have repayable loans know more than those who do not. Our second question was directed at whether the COVID-19 pandemic caused a change in the knowledge and behaviour of the students. According to our results, financial literacy is primarily determined by the students' specialty at the university. But there is some detectable change in everyone.

Keywords - Financial Literacy, Loans, Pandemics, University Students

I. INTRODUCTION

2020 has become the year of the coronavirus-pandemic. Until the arrival of inoculation shots, the only way to combat the epidemic was the strict restriction of interpersonal contact. As a result of lockdown measures several sectors of the economy had to be halted, including education and tourism. The financial situation of masses of people has significantly deteriorated. As a result of these events we repeated one of our 2019 surveys in which we examined the financial literacy of Hungarian, Slovakian and Austrian university students. The present study introduces a portion of this research, the knowledge and behavior related to loans and credit.

II. LITERATURE REVIEW

The lack of financial literacy not only causes individual and family tragedies but also economic crises [1]. In 2008 millions of consumers realized in horror that their finances would need to be managed. Even though most of the problems caused by the crisis have been successfully solved, the lack of financial literacy has been an ongoing difficulty for more than a millennium [2]–[3]. The 2020 coronavirus-pandemic provided a new reason to further research the subject and to emphasize its practical importance. As a result of the pandemic several sectors of the economy along with education and other areas of life were forced to a practically complete shutdown for a prolonged time, which led to an inevitable economic crisis.

In today's world the ability to manage personal finances is becoming increasingly important [4]. People must make long-term decisions related to the education of their children and their own retirement. They also must make short-term decisions, for instance where to go on vacation and whether to use a loan to buy a car. To make these decisions correctly it is essential to have at least basic knowledge of financial concepts like interest and inflation [5].

Regional differences are well illustrated by a survey of the World Bank [6]. In the present study we only examine the results of European countries. But to showcase regional differences, here in the literature review we briefly introduce the results of two different regions. One of them is the site of the conference, South-Asia, the other is the region of the authors, Europe.

South-Asia has a rather heterogeneous financial culture. For example, Nepal and Bangladesh have no national financial strategy at all, banks and the stock exchange organize the education of financial knowledge, which is therefore not conducted in public education [7]. In Sri Lanka only the rural population is educated [8]. Regarding Iran studies have primarily been conducted about the financial consciousness of investors [9], and we could not find literature about Afghanistan or the Maldives. The largest country in the region is India, the second most populous country of the world. Here a separate Financial Stability and Development Council (FSDC) has been established. The national strategy of financial education has also been developed [10]. Civic organizations participate to a considerable extent in the dissemination of financial knowledge [11].

Europe's financial literacy result is one and a half times higher than Asia's score. Of course, there are inequalities here as well, but a trend can be observed, in the countries where financial literacy is higher, social inequalities are smaller. Furthermore, financial literacy as well as the level and success of education are proportional to GDP [12]. After 2010 the Hungarian government realized the importance of the role of the state, thus in 2014 financial education became part of the National Curriculum and in 2017 the financial literacy national strategy was completed [13]. This is not a regional characteristic. India, for instance, similarly to Hungary has also developed a national strategy. Population with sufficient financial literacy as a percentage of the entire population in 2015 was 28% in India and 54% in Hungary. The

difference was even greater in financial knowledge (India 24%, Hungary 69%). When it comes to proper financial attitude: India 43%, Hungary 53%. At the same time the percentage of those living from one day to the next: India 65%, Hungary 40%. In the CEOWORLD-ranking measuring education [14] Hungary is 24th, India is 33rd. These results also support the correlation between education and financial literacy.

III. METHODOLOGY

In a summary, the above facts motivated our above-described research, which studied the financial literacy, financial attitude of university students and their relationship to finances. We performed the study at 5 Hungarian and 2 foreign universities. University students from a total of 3 countries participated in the study: besides the Hungarian universities, the students of a Slovakian and an Austrian economics university. The first survey was conducted in 2019. At that time nobody imagined that a pandemic would make the subject even more relevant. Thus, we carefully examined the advantages and disadvantages of using online and offline questionnaires, and eventually decided to develop an anonym offline questionnaire [15]–[16]. Our expectation proved to be correct, since the time and energy devoted to the proper determination of the methodology was well worth it: the response rate turned out to be 92%, which exceeded the usual 20-40 % response rate that is considered to be a success in the case of online questionnaires [17]–[20].

We used our personal connections for sampling: we asked our acquaintances who study at the affected universities to have their fellow-students fill-in the questionnaires. They collected the ready questionnaires and returned them to us. We recorded the collected data in MS-Excel, then we imported them into IBM SPSS Statistics after cleaning and coding the database, and we used this software to perform the statistical analyses. From among our results here we only discuss the subject range of knowledge and attitude related to loans.

Initially, we formulated the following hypotheses:

H1: Those students who have repayable loans know more about loans and they perform better in practice in this area.

H2: Economics students have broader and deeper knowledge related to loans than those who study in other fields.

H3: The financial literacy of university student grew because of the virus situation since they faced greater than average financial challenges.

We examined these hypotheses on the sample. Our goal was primarily to create the foundations for further research and examine its possibilities.

IV. RESULTS

In the first survey a total of 1,549 respondents filled in the questionnaire, while in 2020 the number was 1,712. The distribution of genders was similar in both surveys: 43% female and 57% male. From among the demographic variables, we examined the place of residence distribution of the respondents and their age distribution, I also classified the respondents according to aspects such as their specialty of study and if they work while they study or not. Almost 14% of the respondents had repayable loans at the time of filling in the questionnaire. Our questionnaire contained a total of 12 questions related to loans. In accordance with our research questions, we compared the results of those who carry loans with those who do not (Fig. 1). Based on the received responses it can be stated that those students who carry repayable loans do not know more and do not perform better in practice. Moreover, they responded worse to the questions related to mortgages than those students who have no outstanding loans at all.

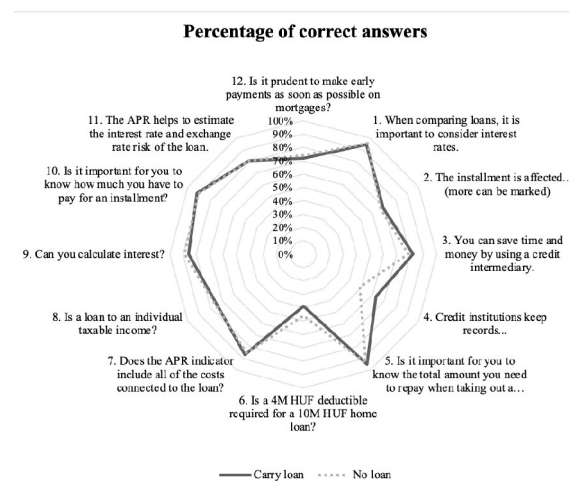


Fig. 1 Percentage of those who correctly answered each question, among students who carry loans and those who do not

The two groups showed the greatest difference in knowledge related to credit ratings. In this case those who have loans responded better. However, I found the other difference to the benefit of those who do not have loans. More among them knew how to calculate interest and they are more aware that the term of the loan influences the amount of the monthly instalments of the loan. But even among them only 56% knew the correct answer, which is a rather dire result. Those who do not have loans also perform nearly 10% better in the 2 questions: how much own contribution is needed to receive a mortgage, is it worthwhile to make early payments as soon as possible on mortgages. After this we examined what characteristics are connected to the described differences. Based on the responses given to each question we produced a decision tree map. Since the responses that can be given to the questions are nominal variables, during

the analysis we used CHAID modelling in every case. During the preparation of each decision tree map the following explanatory variables were potentially entered into the model as branch points:

- Do you carry a loan?
- Survey year
- Age
- Gender
- Specialty
- Country
- Town/City
- Quality of family status
- Full or part time studies
- Occupation – Employment

During the responsible taking of a loan the question of how much the monthly payment will be is unavoidable, since the ability to pay for this mainly depends on income. The 2008 crisis was a classic example of this. Mortgages were cancelled in a domino effect and the change in the HUF amount of Swiss Franc loans sent families to the brink of actual bankruptcy. The similarly important question related to paying back loans is how much total amount will be paid back by the end of the term of the loan. Meaning that we must be aware of the interest on the loan. These are such well-known facts that even those who do not have a loan know about them.

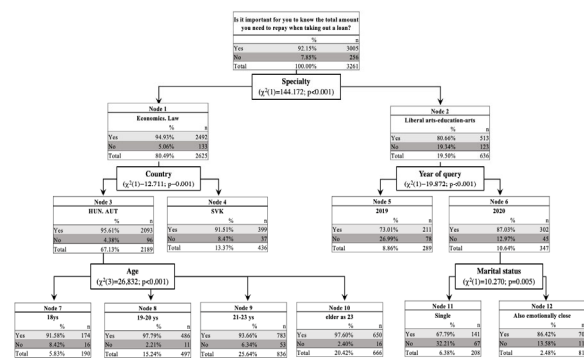


Fig. 2 Decision tree map of the answers given to the question: Is it important to know how much in total you will have to repay, at the time of taking a loan?

Among all the respondents 92.15% consider it important to know how much in total they will have to repay, at the time of taking a loan (Fig. 2). Similarly to the previous question, the complete sample is divided according to study specialty. 94.93% of the economics and law students (Node 1) and only 80.66% of the liberal arts-education-arts students (Node 2) consider it important to know how much in total they will have to repay, at the time of taking a loan. The latter answer is somewhat concerning about the responsible loan taking of non-economics students.

In the case of economics students (Node 1), we found a significant difference according to country as a characteristic. Since in Austria and Slovakia we only asked economics students in both years, we compared them with only the economics students in the

Hungarian sample. In Slovakia (Node 4) somewhat less (91.51%), in Hungary and Austria (Node 3) somewhat more (95.61%) consider it important to know how much in total they will have to repay, at the time of taking a loan. The 2,189 Austrian and Hungarian students can be further divided according to age. Those who are the youngest (18 years old – Node 7) answered ‘yes’ to the question in the lowest proportion (91.58%), although they comprise only 8% within the sample of economics students. They were followed by those aged 21-23 (93.66%), then those aged 19-20 (97.97 %) and the oldest students (over age 23: 97.60%) almost in the same proportion. Meaning that this question is the most important to those who completed higher education. This may also support that completing secondary school and stepping over the „threshold” of age 18 does not imply financial maturity. This only develops around age 23. In the case of economics students (Node 1), we found a significant difference according to country as a characteristic. Since in Austria and Slovakia we only asked economics students in both years, we compared them with only the economics students in the Hungarian sample. In Slovakia (Node 4) somewhat less (91.51%), in Hungary and Austria (Node 3) somewhat more (95.61%) consider it important to know how much in total they will have to repay, at the time of taking a loan. The 2,189 Austrian and Hungarian students can be further divided according to age. Those who are the youngest (18 years old – Node 7) answered ‘yes’ to the question in the lowest proportion (91.58%), although they comprise only 8% within the sample of economics students. They were followed by those aged 21-23 (93.66%), then those aged 19-20 (97.97 %) and the oldest students (over age 23: 97.60%) almost in the same proportion. Meaning that this question is the most important to those who completed higher education. This may also support that completing secondary school and stepping over the „threshold” of age 18 does not imply financial maturity. This only develops around age 23.

The other question related to repaying a loan: Is it important to know how much the monthly payment will be on the loan (Fig. 3)? There were different proportions of ‘yes’ answers to this question in 2019 (Node 1) and in 2020 (Node 2). Before the virus situation 86.77% of the respondents, while after the pandemic 93.75% answered ‘yes’. In 2019 there were 2 groups based on full time/part time studies: for full time students (Node 3) knowing the monthly payment before taking the loan was important in a higher proportion (88.48%). Among part time students (Node 4) only about 81% responded in this way. Full time students could be divided according to specialty, while part time student depending on if they carry a loan or not. Among full time students the economics students (Node 7), and among part time students who have loans (Node 10) responded ‘yes’ in a 10% higher proportion to this question.

In 2020 (Node 2) the first branch-off is according to specialty of study. Among economics students (Node 5) more (94.95%) considered it important to know how much the monthly payment will be on the loan than the students in other specialties (Node 6 – 89.05%). Among economics students and the Hungarian and Austrian students (Node 11) knowing the monthly payments is more important (96.01%) than to Slovakian students (Node 12 – 89.20%).

For the calculation of the monthly payments as well as the total amount to be repaid one must be aware of interest calculation as a mathematical formula. An overwhelming majority of the respondent students (86.66%) – based on their own admission – know how to calculate interest. In the case of this question at the first step the sample branches off according to specialty of study. Economics students answered that they can calculate interest in a significantly higher proportion (nearly 20% higher). Particularly the Hungarians (Node 3), where 99% can calculate interest, in contrast with the around 90% proportion of Austrian and Slovakian students (Node 4).

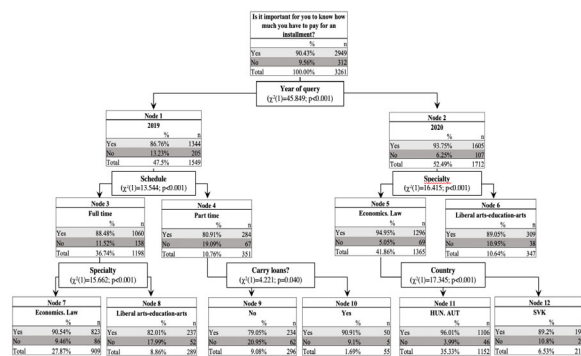


Fig. 3 Decision tree map of the answers given to the question: Is it important to know how much the monthly payment will be on the loan?

Thus, in this question they form a joint group with law students and liberal arts-education-arts students (Node 2), among whom full time/part time studies is the first branch-off. Among full time students (Node 5) nearly three quarters (73.82%), while among part time students (Node 6) only a bit over half (59.30%) responded 'yes' to the question.

Surprisingly, among those who do not have loans more knew that early payments on mortgages may imply such ancillary costs as a result of which a higher amount must be paid back than if the payment comes at the end of the loan term. Thus, we examined the factors that affect the respondents at the question 'Is it prudent to make early payments as soon as possible on mortgages' (Fig. 4). In this case 71% of the respondents answered correctly, meaning with 'no'. The first branch-off was along the line of specialty: while in the case of economics students (Node 1) 3 of 4 respondents answered correctly (74.13%), the students of other specialties (Node 2) only 58.02% answered correctly. From the latter node there are no

further branch-offs, but the group of economics students can be further divided according to the type of employment. 3 quarters of those who are only studying and those who work as subordinates besides their studies (Node 3) (75.61%), and 2 thirds of businessman and upper management employees (Node 4) answered correctly. The group of those who are only studying and those who work as subordinates besides their studies can be further divided based on if they carry loans or not: 2 thirds of those who carry loans (Node 6), and 77% of those who do not carry loans (Node 5) were aware of the correct solutions. In the knowledge of the correct solution regarding early payments on mortgages, the most important characteristic of the examined variables is the specialty of study: economics students performed 16% better than the others. At the same time, it appears that practical experience and whether the respondents carry loans or not is neutral in the answers to this question.

Finally, we compared the performance of economic students with the students of other specialties. This was mainly done because the previous results had all suggested that those who carry repayable loans do not have

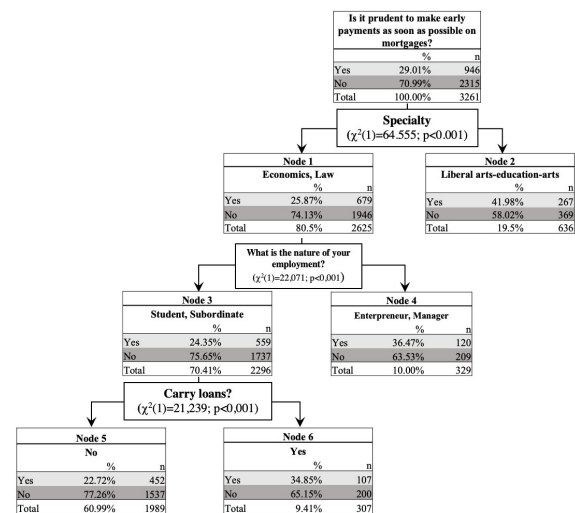


Fig. 4 Decision tree map of the answers given to the question: Is it prudent to make early payments as soon as possible on mortgages?

significantly better knowledge. However, the comparison between economic students and students of other specialties clearly indicates that economics studies imply a higher level of knowledge (Fig. 5). From among the practical knowledge the difference is primarily in the ability to calculate interest. For the calculation of the monthly payments as well as the total amount to be repaid one must be aware of interest calculation as a mathematical formula. An overwhelming majority of the respondent students (86.66%) – based on their own admission – know how to calculate interest. In the case of this question at the first step the sample branches off according to

specialty of study. Economics students answered that they can calculate interest in a significantly higher proportion – nearly 20% higher (Fig. 6).

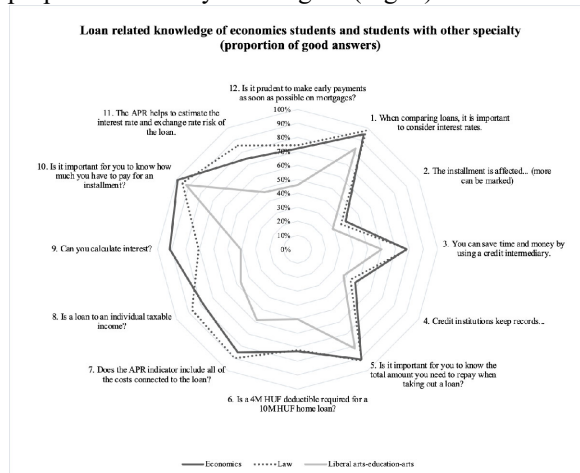


Fig. 5 Loan related knowledge of economics students and students with other specialty

Particularly the Hungarians (Node 3), where 99% can calculate interest. In contrast with the around 90% proportion of Austrian and Slovakian students (Node 4). Thus, in this question they form a joint group with law students and liberal arts-education-arts students (Node 2), among whom full time/part time studies is the first branch-off. Among full time students (Node 5) nearly three quarters (73.82%), while among part time students (Node 6) only a bit over half (59.30%) responded ‘yes’ to the question.

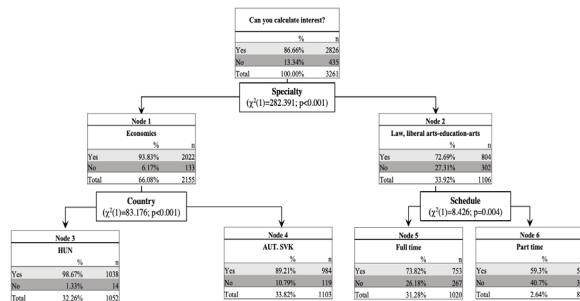


Fig. 6 Decision tree map portion of the question: Can you calculate interest?

We analysed the question related to the Annual Percentage Rate (APR) indicator. To the question if the APR indicator includes all of the costs connected to the loan, the majority of respondents (83.84%) answered ‘yes’ (Fig. 7). The most marked – thus the first – difference was found according to specialty of study: economics and law students (Node 1) answered the question with ‘yes’ in a significantly higher proportion, almost 30% higher than liberal arts-education-arts students (Node 2). From among economics and law students, part time students (Node 4) answered correctly in a higher proportion (92.91%), while only 87.66% of full-time students (Node 3) answered correctly. In the case of full-time student, the condition of a further branch-off is carrying a loan.

Of those who carry a loan (Node 6), approximately 93% answered ‘yes’ to the question, in contrast with 86.86% of those who do not carry a loan (Node 5).

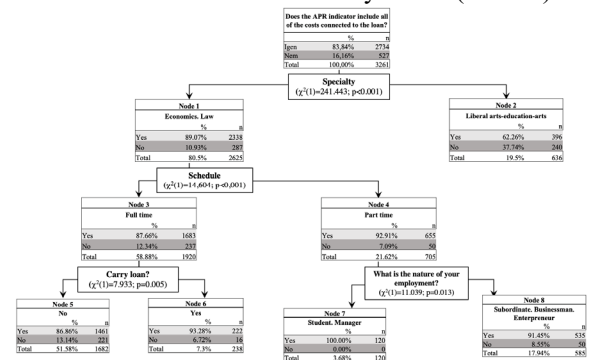


Fig. 7 Decision tree map portion of the question: Does the APR indicator include all of the costs connected to the loan?

Finally, we compared the results from before COVID-19 with the responses given after the first wave of the epidemic (Fig. 8). You can also see in the Figure 8 that the 3rd respondent group, the liberal arts-teacher-arts student are far less aware of knowledge related to loans, their correct response rate is just 50%. Furthermore, it is well visible that the knowledge of students related to loans is on a higher level in both groups at the 2nd survey, compared to the result of the previous year. Even though, it would seem obvious, and this result could be explained by the effect of the pandemic, we need to know that because of the multicollinearities in the components of financial knowledge, the correlation cannot be proven to easily. Although, based on my analysis correlation was proven significant ($p < 0.05$), the existence of the correlation does not show the direction of the cause and effect between the two variables. For the examination of this a Granger-test should be applied, but that only provides assessable results in the case of longer time series, which is currently not available yet.

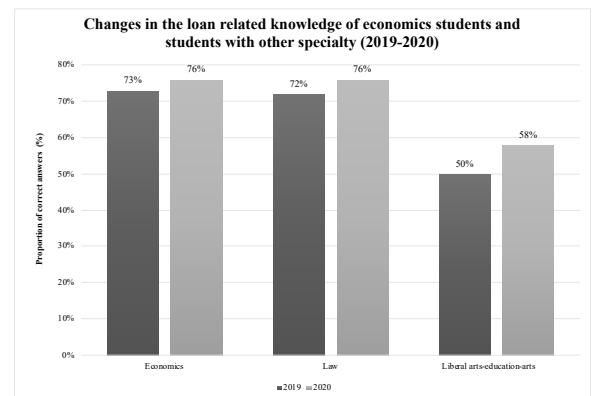


Fig. 8 Changes in the loan related knowledge of economics students and students with other specialty

V. CONCLUSION

Based on our results, we can state that credit-related knowledge is not primarily not influenced by the fact whether a person has a repayable loan. It is a much

more significant aspect if the person attends an economic or noneconomic programme at university. This conclusion disproves our 1st hypothesis. But we could clearly prove our 2nd hypothesis, meaning the role economics specialty in higher financial literacy. Furthermore, we managed to detect the knowledge level moving jointly with the surveyed year. However, the correlation of causation must be proven statistically with examinations, so the role of COVID-19 can be clearly stated in the increase knowledge level. Therefore, we have partially proven our 3rd hypothesis. The coronavirus-pandemic caused a global economic and financial crisis. The financial situation of families and individuals significant worsened worldwide. In a situation like this proper financial literacy is essential to make the right financial decisions. In this study we examined a small section of the subject range. We hope that our work will assist in placing the big picture's mosaic pieces together properly

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