DETERMINANTS OF FINANCIAL HABITS

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Abstract

This study concerns financial customs and intelligence of Hungarian college students. The authors focus on practical matters, viz., which the determinants of banking and related services are. The research is based on a survey of 2020, catechizing 1004 respondents attending five disparate faculties in five different Hungarian universities. Beyond conventional sociodemographic variables, we have included two blocks of questions about financial customs and knowledge. They were aggregated to deliver the indices of financial consciousness and financial intelligence.

The analysis of determinants of different personal customs was prosecuted by the classification method of CHAID decision tree. Differences among the groups of habits were principally decided by financial consciousness and not by financial intelligence. Contrary to financial consciousness, which is the key driver of group dissimilitude, financial intelligence only influenced people's customs at the third level of the decision tree.

Services in question have proven to be most peculiar to males above the age of 23 with a high level of financial consciousness, and students attending economic or law faculties, most preferably working and studying simultaneously and choosing a correspondence course instead of full-time education. Considering university students are the potential future clients of banks offering the services being analyzed, the precipitate of this study may be a useful tool to grasp the preferences and characteristics of the target group.

Keywords: *finances, consciousness, intelligence, student, decision tree, banking*

1. INTRODUCTION

Financial knowledge is essential recently thanks to expansion in capital market. Hence, for the purpose of making a consequent economic choice people need to be accoutered with well-founded economic literacy and behavior. Lamentably, present-day young people, particularly college learners became less competent in contending with their private funds [1]. In view of this, individuals will seek out outward funding capability to provide for the necessity of means in loan or with charge card [2]. Precedent investigation not simply records overall small doses of economic knowledge but discovers immense multifariousness as well in economic knowledge throughout the citizenries, intimating that financially susceptible clusters are exposed to additional hindrance. The financial crisis of 2008 undoubtedly demonstrated that political decision makers needed to elaborate effective strategies in order to diminish these problems and promote the achievement of financial literacy among young population [3]. Videlicet, economically cultured scholars are less inclined to brazen economic woes since they can handle their indebtedness more efficiently and tend to reach good decisions about cash, for example scrimping for later. The title of Stolper & Walter's [4] paper already indicates that it is necessary for financial counselling to assist individual decision making from two directions. One area is transferring financial lexical knowledge, i.e., financial literacy or financial IQ. On the other hand, it is also crucial to show and develop the necessary financial behavior, which is also communicated by scientific literature as financial behavior or financial consciousness. The latter one already resulted in an index, albeit it only concerned Australian citizens. The Financial Consciousness Index gauges the magnitude of an individual's being financially educated, if they are mindful vis-à-vis their capacity to influence their own economic upshot way up to their promptitude to take action, and the scope to which they can

partake in convoluted economic issues [5]. Deloitte assesses financial consciousness with the following pillars (Table 1):

Pillar	The framework of the pillar
Degree of financial sophistication	varying from the assortment and kinds of financial commodities owned, to the level of a person's comprehension of the effects of choices on their financial outgrowth
Degree of financial willingness	level of a person's incitement to actively take part in financial decision making
Degree of financial capability	level of a person's advertence to and comprehension of the fiscal notions
Locus of control	level of a person's views that their deeds establish their financial outgrowth

Table 1. Pillars of Financial Consciousness Index

Source: authors' own, based on D.A.E. (2018)

The questions above are sufficiently comparable with the question groups of the current research. The notion of financial consciousness in this paper means the investigation of the degree of financial sophistication. The question of financial intelligence builds up based on financial willingness and locus of control standing central in the main question of financial intelligence.

Financial literacy is an essential, nevertheless deficient determinant of accountable economic conduct. It somebody has optimistic self-image, it might also be indispensable for people to commence and continue with the intimidating course of fiscal management [6]. Urban, Schmeiser, Collins and Brown [7] assessed the influence of secondary school fiscal measure standards on the creditworthiness of young adults between the age of 18 and 21, who had freshly established their economic autonomy. The aforementioned authors identify that fiscal schooling terms are connected with less deficits and more favorable credit rating among young grown-ups, yet this overall result implies crucial inhomogeneity at the national level. They infer that properly financed instructor training might be crucial to prosperously execute fiscal teaching programs.

Numerous studies have examined the financial expertise and habits of university students, too [2, 8, 9, 10]. Credit card usage is quite often among them. As per Toraman, Kiliç & Buğan [11], charge card savvy grade of scholars varies based on sex and the facility they are attending. Additionally, it is perceived that learners that receive a charge card following a mindful perusing of charge card contract and learners that ofttimes disburse the arrears are more charge card savvy than their counterparts. Limbu [12] delineated that charge card literacy had a straightforward inverse connection with charge card misapplication. Davies [13] deduces in her research that behavior and observations of learners about financial operations without the use of cash are quite optimistic, since a multitude of benefits experienced during their usage decrease their struggling amid their day-to-day matters. Various studies analyzed the role of mobile banking among college students. Kumar, Lall and Mane [14] intimate that observed utility and observed user-friendliness, social impact and proneness to and predilection for credence are the fundamental considerations regarding the purpose in conduct pattern to take advantage of mobile banking facilities. Bhardwaj, Sinha and Pal [15] point out that nine out of ten college scholars apply electronic banking in India, while 55% utilize it frequently. Aditi [16] undertook a study amid university learners to investigate their discernment and predilection for life assurance. She delineated that adolescents favored counsels from companions, relatives and officers to browsing on the internet, regarding subsequent life assurance acquisitions. Albeit familiar with and confident in disbursing through the internet and applying electronic banking facilities, they did not favor the electronic method for purchasing life assurance. Apropos of banks, adolescences were more likely to approve a life assurance from the own bank in case they had a significant knowledge in the department.

The questionnaire survey of Grohmann [17] conducted in Bangkok undubitably revealed that a greater level of economic knowledge results in making decisions more successfully in regard to finance. Deenanath, Danes and Jang [18] demonstrated correlation among the intended and deliberate financial socialization, subjective financial literacy, and financial attitude of high school students, drawing attention to the role of family. According to their results, acquiring funds from relatives was in inverse correlation with attitude through expertise. Literacy had a positive correlation with attitude. The above mentioned authors consider the role of education and school predominant. There are detectable differences among the financial behavior in various age-groups. Economic decisions at different life periods may all influence customers and the family in the long-term. James, Boyle, Bennett and Bennett [19] pointed out that higher economic knowledge during childhood and adolescence promoted a more successful decision making, which, in turn, could result in an increased life standard subsequently. Expertise and age highly influence a person's standpoint [20]. Increased financial knowledge was in direct correlation with the measure of long-standing financial attitudes (preparation for pension, owing a pension account, and having capital outlays), and also with the short-run financial attitudes (owing a contingency fund, disbursing not more than the earnings, avoiding overdraft of credit cards).

Various researches from miscellaneous fields validate the inclusivity of estimation models founded on data retrieval procedure [21]. These studies are inclined to use decision trees for analysis and present meticulously the underlying algorithms, too. CHAID is the earliest formula of decision tree. Decision standards will be discoverable predicated on variables' chi-square values. CHAID is a forecasting method, analogously to regression test, developed by Gordon V. Kass [22]. Currently, a multitude of scientific areas use it, from health sector [23] through cartography [24] to performance management [25].

Six questions were selected for a detailed analysis in this paper (Table 2):

Questions posed in this research
1. Do you have foreign currency account?
2. Do you have debit card?
3. Do you have credit card?
4. Do you have life insurance?
5. How often do you use net banking?
6. How often do you use mobile banking?

Table 2. Questions from the questionnaire, selected for analysis

Source: authors' own

Every question analyzes the frequency of applying modern banking services, except the fourth one, which inquires about the popularity of a different financial service within the audited sample. The authors considered three hypotheses when beginning their research since the examined questions were also dividable to three groups (use of bank cards, banking, financial services). Hypotheses were the following:

- H1: customs related to use of bank cards is primarily determined by the level of financial intelligence and/or consciousness.
- H2: the application of the modern forms of banking is predominantly determined by the level of financial intelligence and/or consciousness.
- H3: the level of financial intelligence and/or consciousness features as a crucial determinant of the frequency of applying financial services.

2. MATERIALS AND METHODS

The authors used the database of a self-conducted survey from a self-made questionnaire completed by 1,004 respondents. In total, the sample consists of 606 women and 398 men – see Fig. 1. It is necessary for the correct interpretation of the figure to know that numbers in the sections are not decimal fractions but the comma serves solely as a separator of the two values. The number before the comma is the number of representatives while the value after the comma indicates the percentage ratio, e.g., interpretation of "398, 40%": 398 respondents can be found in this sector, which is 40% of the total number of respondents. The authors employ similar notation in case of each pie chart.

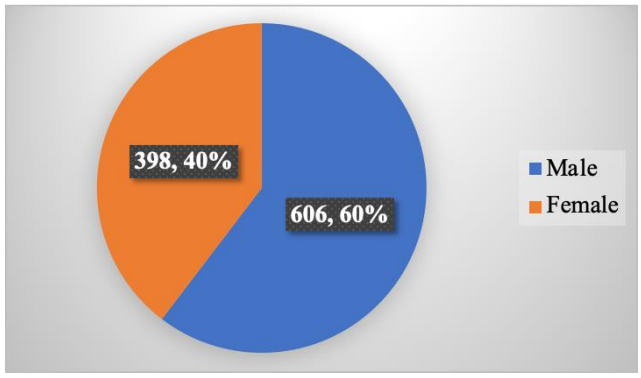

Fig. 1. Distribution of the sample based on gender

Source: authors' own

As long as this research primarily focuses on university students, this age distribution shows a positive asymmetry accordingly (1.14) since the sample mostly consists of young people (23-year-olds and down; Fig. 2).

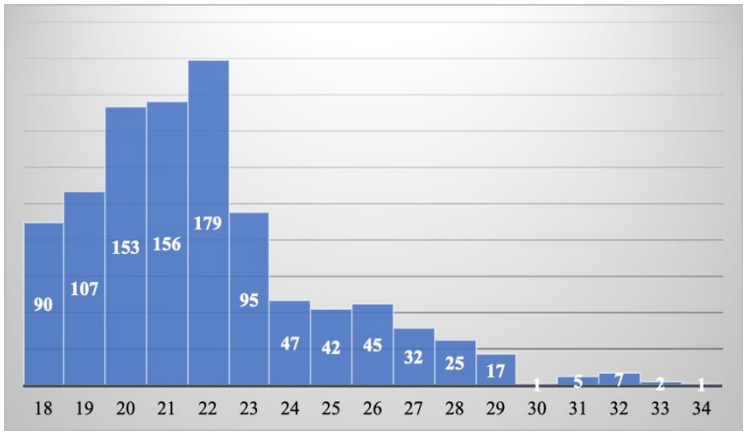

Fig. 2. Distribution of the sample based on age
(age in years on the horizontal axis, number of respondents in different age groups on the vertical axis)

Source: authors' own

As regards the distribution of representatives based on domicile, the capital and the adjacent agglomeration constitute a relatively big part (58%) out of the complete sample and the remaining 42% stand for the other towns and agglomerations and the villages (Fig. 3).

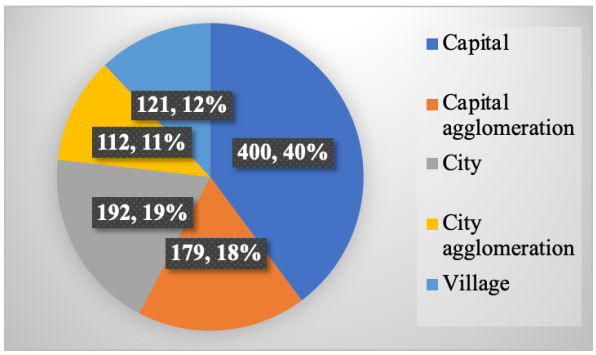

Fig. 3. Distribution of the sample based on rural or urban residence

Source: authors' own

The respondents attend in total six faculties of five different universities:

- Budapest Business School University of Applied Sciences, Faculty of Finance and Accountancy
- Eszterházy Károly University, Faculty of Pedagogy
- Eötvös Loránd University, Faculty of Law
- Eötvös Loránd University, Institute of Business Economics
- Budapest Metropolitan University of Applied Sciences, Faculty of Art and Creative Industries
- University of Pécs, Faculty of Humanities

The analysis does not focus on the six faculties but only on their majors, which, in turn, constitute three main fields of study: economics, law, art-pedagogy-philology. Fig. 4 depicts their distribution.

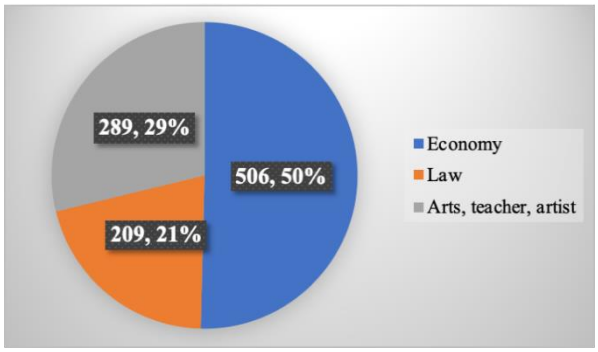

Fig. 4. Distribution of the sample based on the chosen field of study

Source: authors' own

Two groups were detectable based on the training schedule: full-time and part-time students; full-time students accounted for approximately three quarters while the latter ones represented one quarter of the sample (Fig. 5). It is to be mentioned that part-time students were only selected in the sample from economic and legal programs.

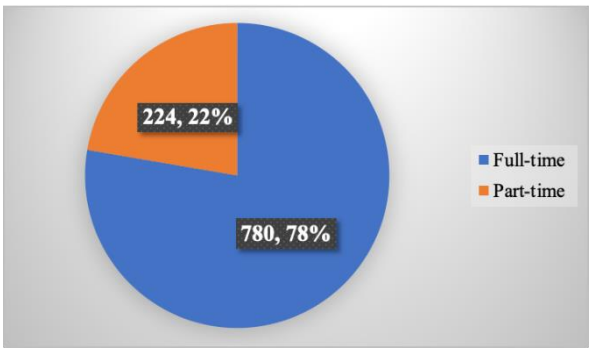

Fig. 5. Distribution of the sample based on the nature of training

Source: authors' own

It is already frequent among students that they work in addition to their studies, thereupon the questionnaire also contained questions inquiring whether the respondent only studied or held down a job as well, or what sort of job title and position they had in addition to their studies. 21% of the respondents reported having a workplace while studying and specified their exact position (Fig. 6).

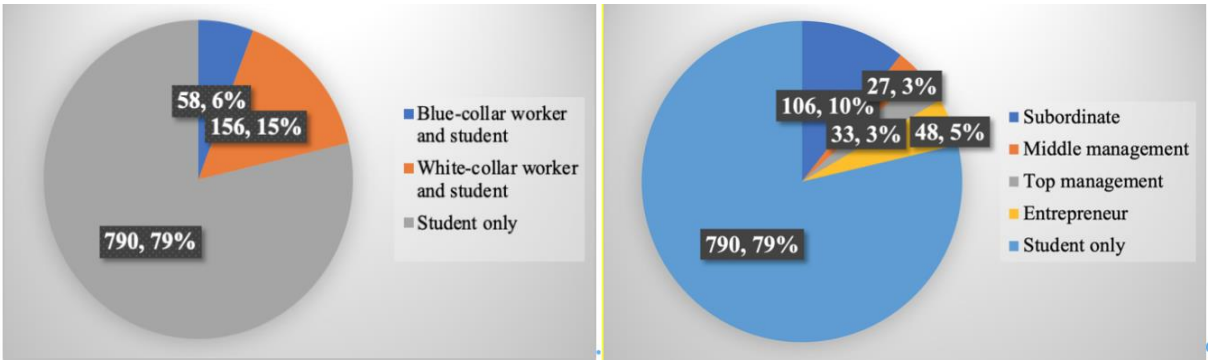

Fig. 6. Distribution of the sample based on the answers to the question
"Do you work along with your studies; if yes, what position do you have?"

Source: authors' own

The analysis was followed through with the help of decision trees being guided by sociodemographic variables and two self-made indices (financial intelligence and financial consciousness). The decision trees were composed by nominal and ordinal scale variables, employing Chi-squared Automatic Interaction Detection (CHAID) method. In line with the undivided rule applied at the time of its construction, the multiplicity of parent branches cannot be less than 50 and the one of child branches needs to be at least 25. Notwithstanding interval and metric scale variables (age, financial intelligence and financial awareness) also featured in the scrutiny, division along them showed great similarity in the formulated models, hence the authors categorized them in order to provide a better comprehension.

The authors measured the index of financial intelligence with the ratio of correct answers given to the questions in this regard, from the questionnaire – see Table 3, and the index of financial awareness was constructed predicated on the agreement/disagreement with the corresponding eleven statements – see Table 4. In case of every statement, providing the correct answer, as being an indicator of the degree of consciousness, increased the total score by one point, which, having divided by the possible maximum (11), resulted in a number between zero and one, which measured financial consciousness. The

indicators of both intelligence and awareness – as ranging from zero to one – were subsequently interpreted in percentage form; the distribution of the respondents is visible on Fig. 7.

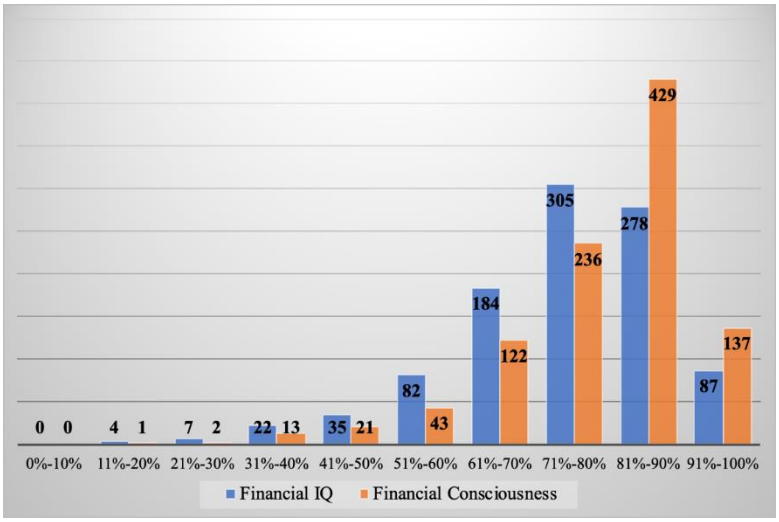

Fig. 7. Distribution of the sample based on the indices of financial intelligence and financial consciousness

Source: authors' own

The method used for creating decision trees established the groups bringing the most heterogeneous division to the fore. Speaking of quantitative variables, this means virtually a breakdown into bins. At first, the authors ran every decision tree model, then, in case of all three variables (age, financial intelligence, financial consciousness) they applied the most typically used bin boundaries for the creation of category variables, and, in turn, finalized their analysis using these category variables. The boundaries and multiplicity of the groups produced are depicted on Fig. 8, Fig. 9, and Fig. 10.

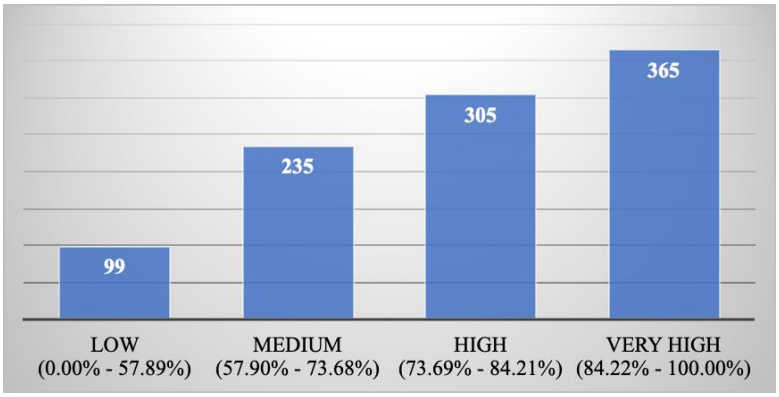

Fig. 8. Distribution of the sample based on the categories of financial intelligence (number of respondents depicted in the columns)

Source: authors' own

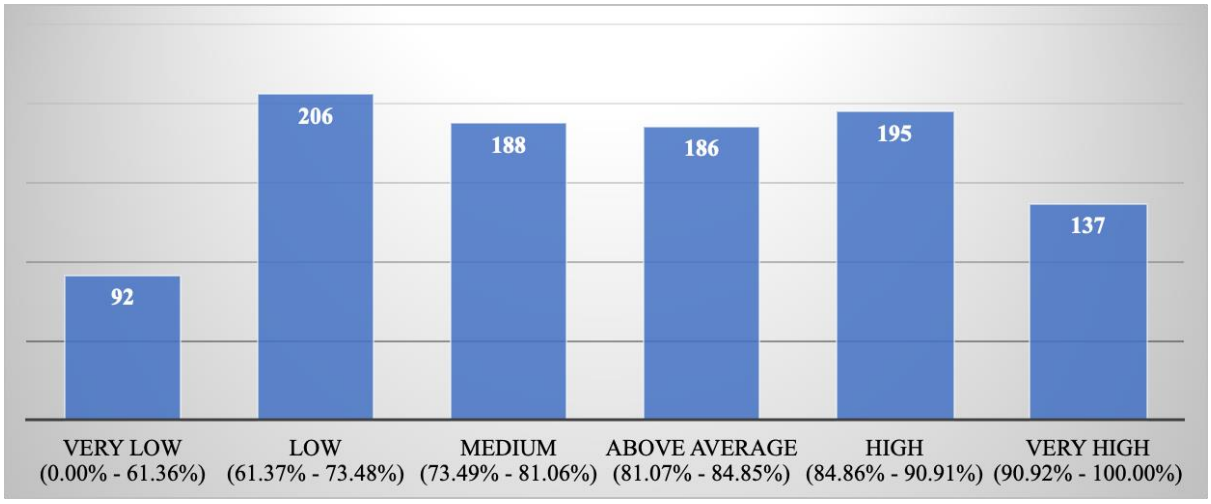

Fig. 9. Distribution of the sample based on the categories of financial awareness (number of respondents depicted in the columns)

Source: authors' own

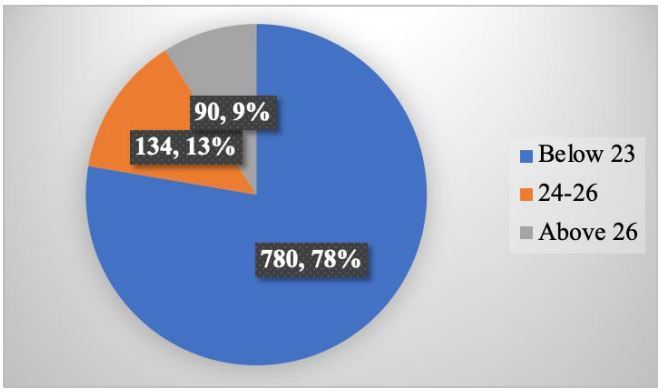

Fig. 10. Age distribution in the sample

Source: authors' own

3. RESULTS

The central question of the surveillance is that who uses the most important financial services. In total, six decision trees were drafted, which were to analyze the answers given to questions delineated in Table 2.

The explanatory variables of the decision trees are: age category, gender, nature of residence, marital status, field of study, training schedule (full-time/part-time), work beside studying and job position, and the level of financial intelligence and awareness. Certainly, the scope of variables changes from model to model which provide explanations to the individuals' answers to the given questions defined as result variables.

The authors audited as a first step what influenced whether or not an individual had a foreign exchange bank account. (parentheses will always indicate the ratio of account owners) – see Fig. 11. The first ramification can be found along financial awareness, which sunders the sample into significant groups; observing the allocation, essentially a significant positive correlation materialized, insofar as the more the financial awareness expands, the more the ratio (7.6%, 20.5%, 40.5%, 100%) of those who have foreign currency bank account will be. The group of high financial awareness (195 representatives) can be, in turn, separated into white-collar workers having a job in parallel to university studies (87.1%) and

into those who do not work or perform physical work at the same time as studying (31.7%); the first group has nearly triple the ratio of the latter one in terms of foreign exchange bank account users. This latter group sends forth extensions further on, based on the selected major: in case of philology-pedagogy-art students, there is a significantly higher ratio of foreign exchange bank account users (64.7%) than among economists and lawyers (23.1%).

In case of students with low-medium and above-average financial awareness, it is observable that part-time students have a foreign exchange bank account with a higher ratio (51.4%) than full-time students (13.5%). The 473 full-time students further ramify according to the selected major, where a similar tendency is observable to the branch of high financial awareness: 27.4% of philology-pedagogy-art students while 6.1% of economy-law students have a foreign currency account.

Therefore, higher awareness gives an overall probability of having a foreign exchange bank account with a higher chance; furthermore, it is noticeable that students who also hold down a job as individual workers (in particular, philology-pedagogy-art students) and part-time students have a higher ratio of foreign currency account usage – similarly, philology-pedagogy-art students have the highest ratio of credit card users among full-time students, too.

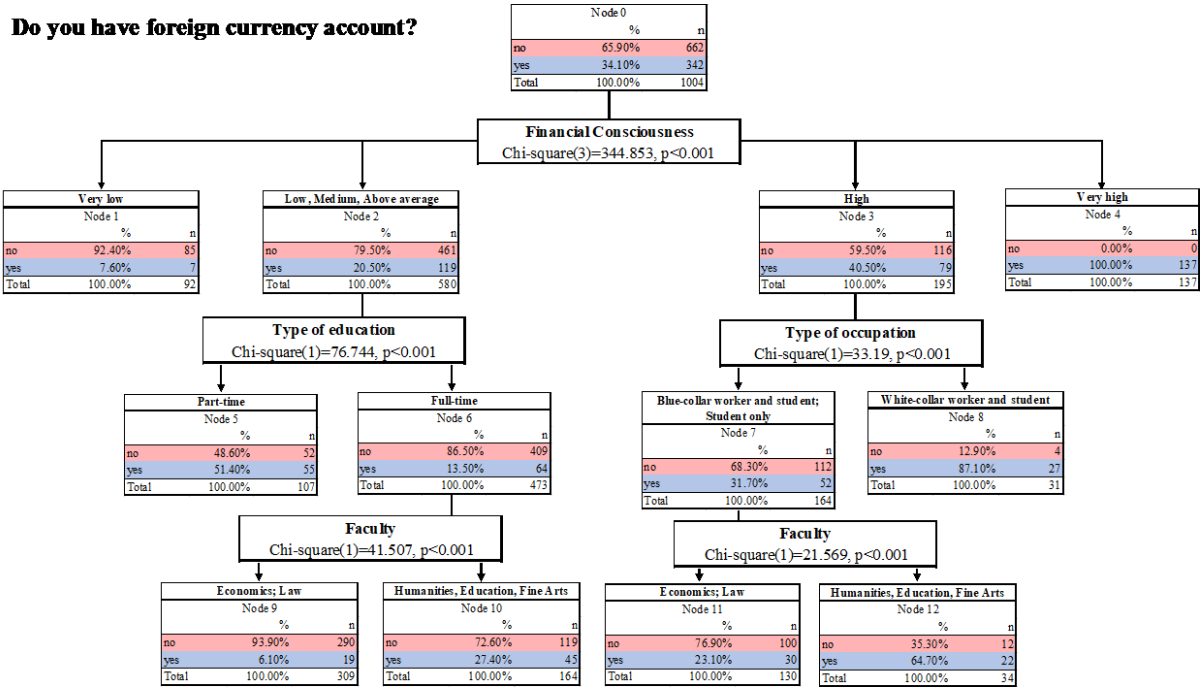

Fig. 11. Decision tree of having a foreign exchange bank account

Source: authors' own

Currently, almost everyone has a debit card, which is delineated by the sample, too, since 99.6% of the respondents stated that they had a debit card (Fig. 12). Hence, only minor deviations can be detected. The first branch of the decision tree ramifies according to the type of education: 99.9% of full-time, while "only" 98.7% of part-time students have a debit card. In respect of part-time students, there is a significant ramification whether they work or attend to family responsibilities at the same time as studying and according to which position they have. 93% of senior managers and "exclusively studying" college students have a debit card, while everyone out of the others. When it comes to full-time students, the sample can be divided into two subgroups according to age: 1.8% do not have a debit card over the age of 25 while of 23-year-olds and down have a debit card in every single case.

Hence, almost everybody has a debit card, except for 1.8 % of full-time students above 23 years of age and 7% of part-time students, senior managers, and university students without a workplace.

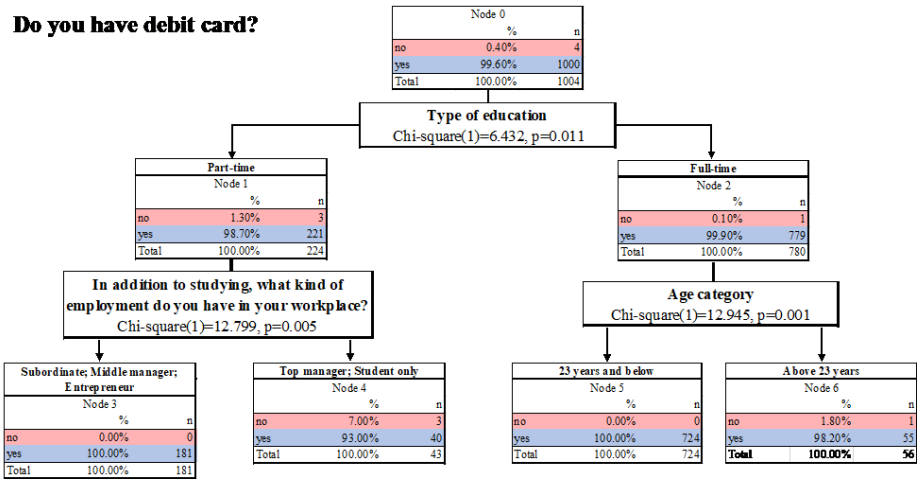

Fig. 12. Decision tree of having a debit card

Source: authors' own

Owing a credit card is not as customary anymore as debit cards, thus some of the examined demographic groups have shown much more significant discrepancies (Fig. 13). Firstly, financial awareness ramifies groups in the case of the respondents, i.e., there is a higher rate of credit card owners among respondents with higher financial consciousness (23.9%, 40.4%, 74.5%). Subdividing the 137 respondents of highest financial awareness according to the selected major, lawyers have a lower rate of credit card users (34.6%) than students from other fields of study, namely, economics, philology, pedagogy, art (83.8%). 92 respondents situated on the other end of the scale – students with lowest financial awareness – will have their ramification based on financial intelligence: 6.1% of students with low while 44.2% of students with medium, high, or exceptional financial intelligence reported having a credit card. The most populous branch (775 representatives) can be divided according to the type of employment: 36.4% of those who do not work along with theirs studies have a credit card while this ratio is 56.6% in case of respondents who both work and study. Both branches can be subdivided to two groups according to the field of study. So long as economists reported having a credit card with a higher ratio (28.6%) and lawyers reported it with a lower one (28.6%) out of the group of employees who also study, "exclusive" college students have a lower ratio of economists (29.7%) and a higher ratio of philogy-pedagogy-art students (41.8%) among credit card owners.

Generally, it turns out to be true that respondents with higher financial awareness have a higher tendency of having a credit card. It should be noted that there is an almost 10 percentage points higher ratio of credit card users (44.2%) out of the representatives from the category of lowest financial awareness than among law students with highest financial awareness (34.6%). Field of study is a further determinant. Although economic students ofttimes have a higher level of credit card usage, those respondents who do not hold down a job while studying have the lowest ratio of credit card owners.

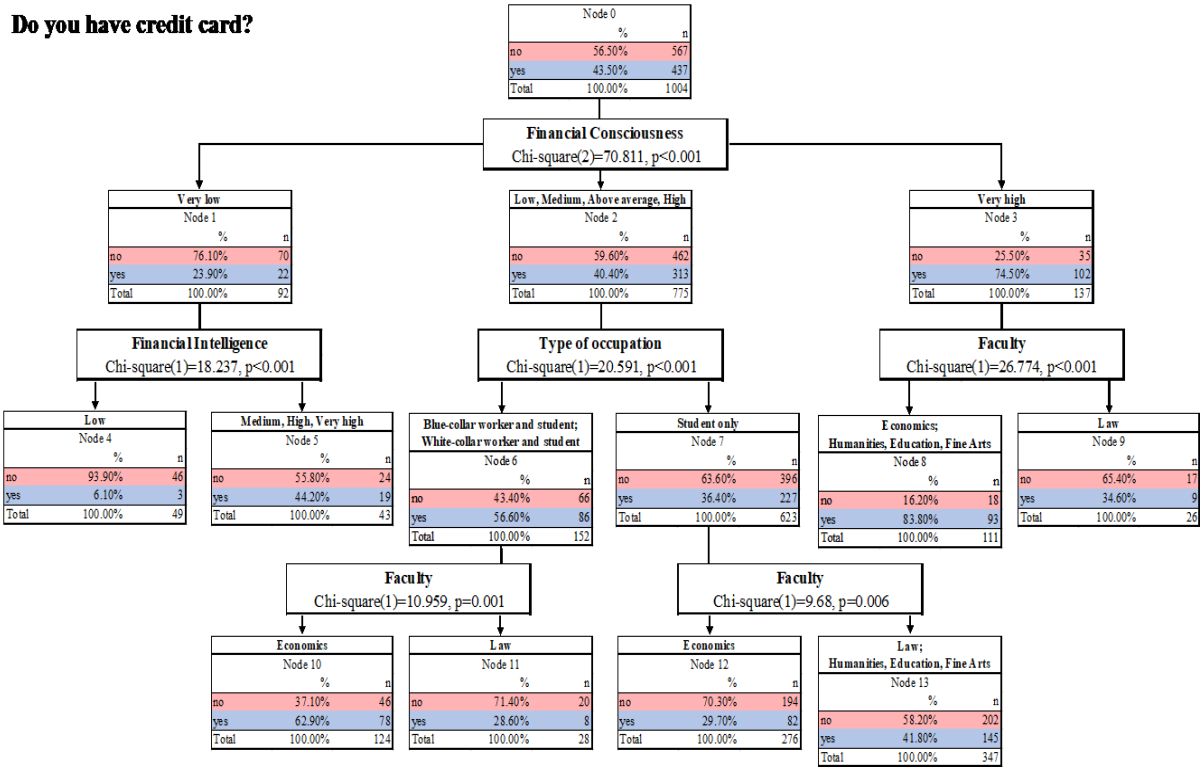

Fig. 13. Decision tree of having a credit card

Source: authors' own

Part-time students have predominantly (40.1%) life insurance, while this ratio is only 17.3% at full-time students (Fig. 14). Segmenting full-time students into groups based on financial intelligence, we may find significant correlation between individuals having life insurance, howbeit, it is especially important to emphasize that the connection is not monotonous, that is, approximately every fourth (25.1%) individual with moderate level of financial intelligence reported having life insurance. The same ratio between individuals of high and very high financial intelligence is 15.1%, while only 11.2% in the lowest category. In the groups of higher and extreme financial intelligence, the nature of residence will be the decisive ramifying factor: citizens of the capital will have life insurance with lower rate (7.5%) than inhabitants of the countryside (20.1%). In case of intermediate level of financial intelligence, a ramification is perceivable according to gender: women have life insurance with a higher ratio (37.7%) than men (15.3%).

Therefore, life insurance is usually obtained by part-time workers and women with medium level financial knowledge. Albeit it is not as typical as in the case of the two previous groups, it is also observable that individuals living in the countryside are more likely to have life insurance.

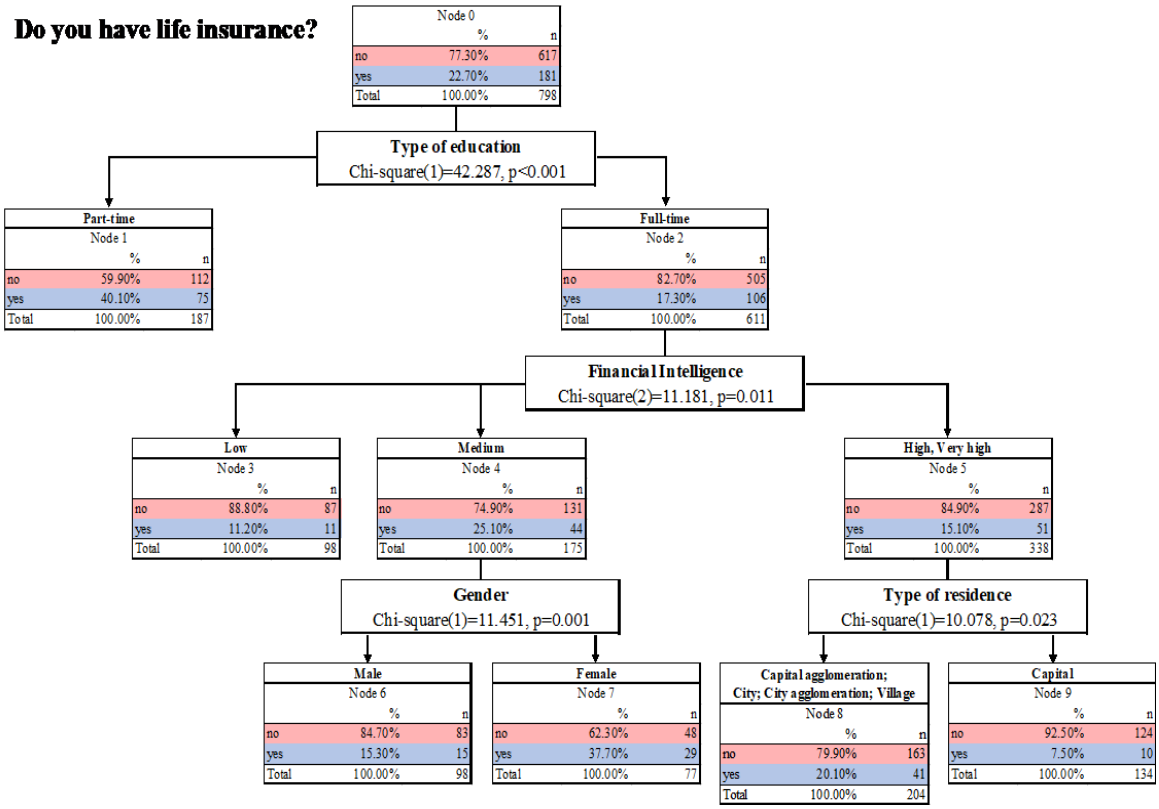

Fig. 14. Decision tree of having a life insurance

Source: authors' own

In response to the spread of the internet, the banks adapted as well, and every financial institution provides access to net banking for its customers today. Its usage frequency is 95.5% in the scrutinized population, which means an increase as compared with the 85% result measured by Németh et al. [26]. The frequency of use primarily depends on the financial consciousness: the financial awareness a person has, the more likely they use the net banking services (Fig. 15). Segments with the lowest and low-medium levels of financial consciousness are further dividable based on financial intelligence: the groups of low financial intelligence are the ones in both cases that less frequently, while the other three groups (of medium, high and very high levels) more frequently use net banking. Overall, it can be concluded that the use of net banking is independent from demographic variables, nonetheless, the higher level of financial intelligence results in higher usage frequency.

Mobile banking is an even more modern technological leader than net banking; accordingly, its penetration is also lower than the one of net banking (Fig. 16). None of the respondents reported regular usage, the most frequent answer was the occasional use. Similarly to net banking, financial consciousness will be the primary determinant factor in the frequency individuals' use of mobile banking services. Based on this, it is concludable that there is a monotonous liaison between financial consciousness and the frequency of use of mobile banking, that is to say, the more conscious somebody is in financial terms, the more frequently they use this service. Albeit there is also a relatively high ratio of mobile bank users in the event of the above-average / high / very high financial awareness, this group can be subdivided into two further parts based on financial intelligence: in case of individuals with very high financial intelligence, there is a somewhat greater ratio (94.2%) of occasional mobile banking service users than within the group of low / medium / high financial consciousness (90.6%). The latter group is further dividable based on age category: higher mobile banking usage is peculiar to people above the age of 26 than 26-year-olds and down.

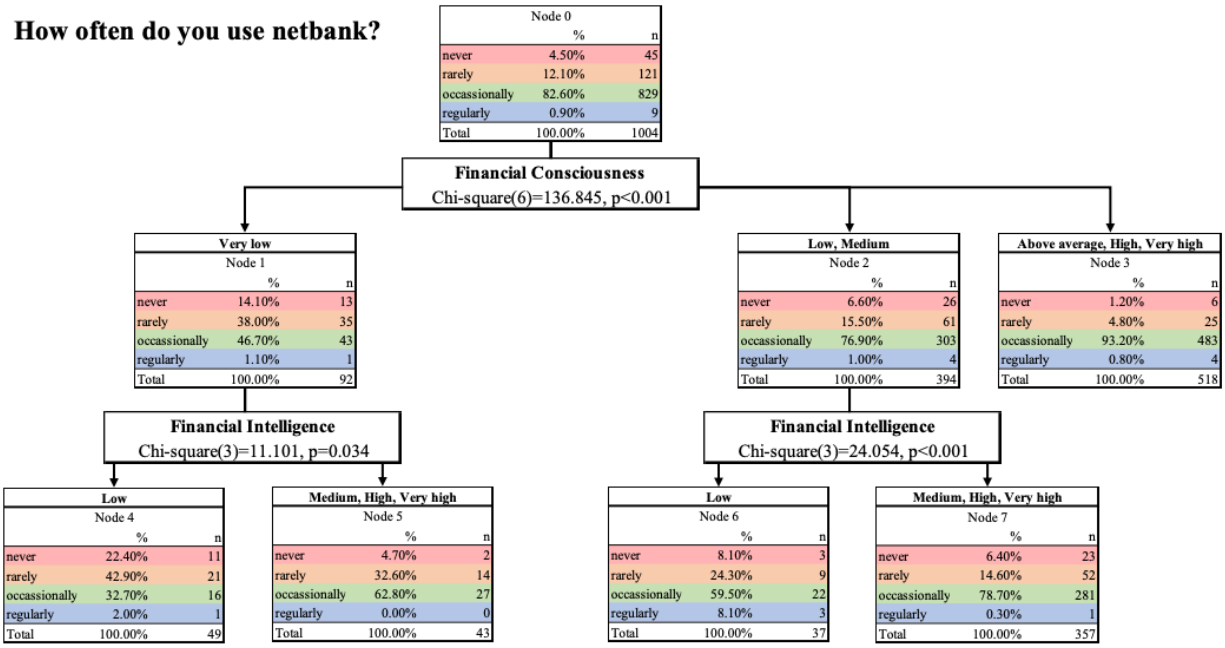

Fig. 15. Decision tree of internet banking usage

Source: authors' own

Similar tendencies can, in turn, be observed at mobile banking and net banking: the higher level of financial awareness and intelligence are also likely to entail a more common use of mobile banking. Furthermore, it must be noted that, interestingly, the older age group (above 26) is the one among students with lower levels of financial intelligence that is characterized by a more common mobile banking.

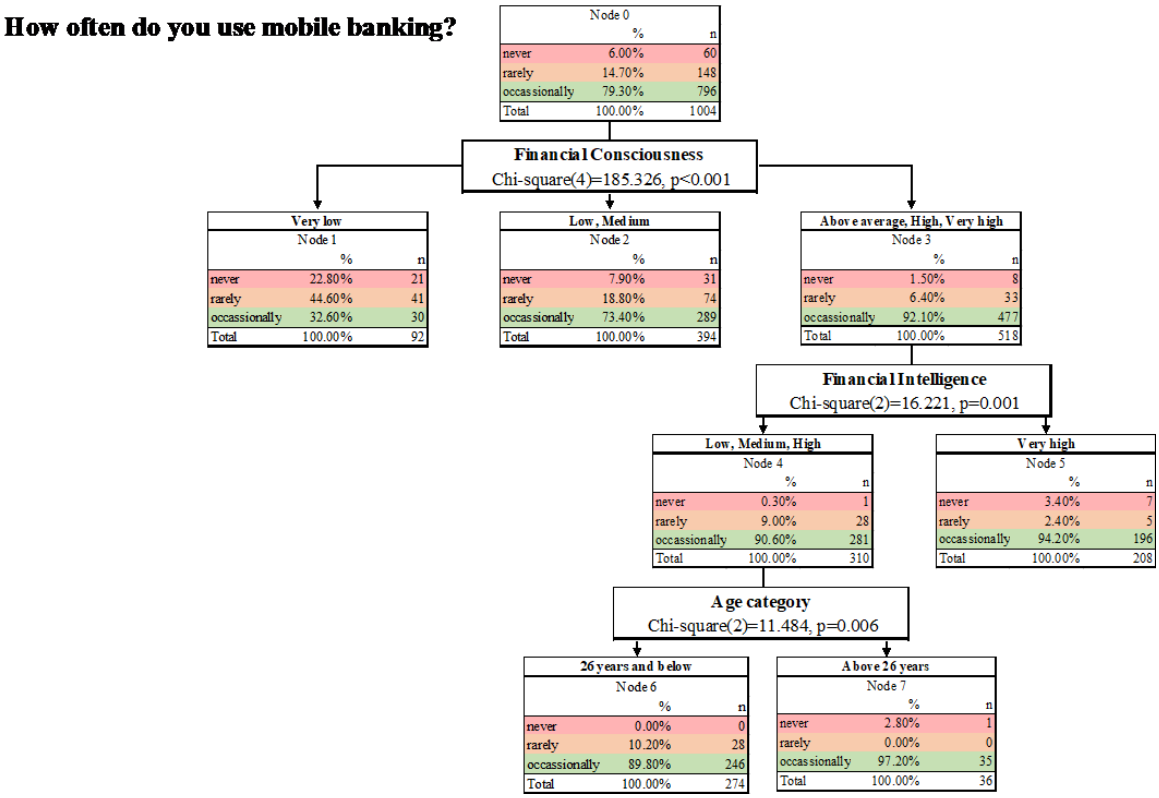

Fig. 16. Decision tree of mobile banking usage

Source: authors' own

Having overseen the decision trees, the following results were concluded in respect of the hypotheses made previously:

- H1: since almost all respondents have a debit card, discrepancies are hardly detectable based on either demographic variables or financial intelligence/consciousness. The biggest deviation between full-time and part-time students was only 0.2 percentage point. Yet, the frequency of credit card use primarily determines the level of financial consciousness of its user. Consequently, the first hypothesis was only partially established.
- H2: the employment of net banking and mobile banking services is primarily more peculiar to respondents with higher financial consciousness, in particular, among the ones with higher financial intelligence, wherefore the second hypothesis holds true.
- H3: the hypothesis has been partly verified, since foreign currency account service is, indeed, employed by respondents with higher financial consciousness, but obtaining life insurance is mainly typical to those who work beside their studies while the role of financial intelligence is only secondary.

4. DISCUSSION

The authors focused in their research on answering the questions what determinants the use of foreign exchange bank account, debit card, credit card, life insurance had and how frequently individuals applied net banking or mobile banking services. Partially analogous questions were investigated by the scientific report of Németh et al. [26], similarly among students of tertiary education. They found that financial awareness of economic students is in linear correlation with the number of semesters completed and, in addition, the level of financial culture correlates with socio-demographic variables. Such variables are, e.g., age, gender, study schedule (full-time/part-time), major (economic/miscellaneous), or if the

respondent holds down a job in addition to their studies. These variables featured in this research, too, as subdividing factors, thus strengthening the results of the 2013 report. These results, however, are interestingly antipodal to the outcome of Luksander, Béres, Huzdik & Németh [27], who pointed out that part-time students performed better in the fields of financial literacy and knowledge than their full-time counterparts. In the sample of the authors of this paper, the ratio of full-time students relatively to other training forms is 78%. The corresponding ratio according to the statistics of the academic year of 2017-18 is 71% [28], what is primarily attributable to the fact that the sample of the current research is smaller. This fact and the sampling method of this research also explain the significant deviation from the national average of both economic (12%) and law (3%) students (**Fig. *2***). Ratios featuring in this paper, however, were better geared to the headline target of the assay, since they made it possible to better compare students studying economic and miscellaneous majors.

In each case – except two instances (bank card, insurance) – the most important factor was financial awareness, viz., the higher level of financial awareness an individual has, the more probable it is that they make use of the aforementioned financial possibilities. When further ramifying the various branches, it was ofttimes observable that higher financial intelligence resulted in an increase service consumption. This means that financial awareness, namely, practical experiences play more important part in promoting correct financial decision making than theoretical knowledge. This is borne out by the university-based research of Yao and Meng [29] conducted in Chine. They discovered that college scholars from China with significant financial expertise were less predisposed to "take cash advances on their credit card". Robb [30] also came to the conclusion through analyzing university students that financial literacy was an indispensable element in the choices of university learners related to charge card. Scholars with higher marks on a scale of individual financial literacy are more inclined embark on more accountable charge card employment. Luksander, Béres, Huzdik & Németh [27] experienced however that respondents were more inclined to provide correct answer to theoretical questions (58.7 %) rather than practical ones (48.2%). The importance of financial knowledge related to credit cards is well demonstrated by the research of Albeerdy and Gharleghi [31], who point out that unless scholars are notified vis-à-vis the potential upshot of harnessing charge cards, they will apply this device without considering the level of indebtedness they might amass. It is wherefore the responsibility of university to intercede and confabulate these adolescents on the felicitous usage of charge cards and notify them about the arrears they can acquire. Mobile service providers, the best known of which is PayPal, constitute one possible form of mobile banking. Among university students catechized in this research, the ratio of mobile banking is 94%, which is almost double the ratio of the use of credit card (43.5%). Similar result is reported by Sallie Mae [32], one of the research firms managing public opinion polls. Its report was dedicated to surveying American university students. Similar result is Mobile banking: credit card ratio is 86:57. It was also observable in a variety of cases (foreign exchange bank account, credit card) during this research that part-time students and those who are working at the same time as studying (primarily intellectual work) use banking services in a greater proportion. The impact of age profiled itself the most in case mobile banking: elderly people tend to use this service the most in case of people with maximum high financial intelligence. The ratio of users of net banking and mobile banking is 94-95%. This ratio is much higher than the analogous result of Er et al. [33] surveyed among Turkish college students, namely, 63.9%. The affinity of economists and lawyers to banking services related to business life is also usually higher, however, the students from exactly these two fields of study use e.g. foreign exchange bank account and credit card facilities less frequently among full-time and "exclusive" students. Notwithstanding, the ratio of mobile banking users is much higher at Hungarian universities (94%) than amid Turkish university students (42%). In terms of gender and nature of residence, there was only detectable deviation at having life insurance: women are more likely to have one among individuals with a moderate level of financial intelligence while people from the countryside tend to have life insurance more typically out of individuals with at least high level of financial intelligence. The total ratio of having life insurance was only 22.7%, while the ratio is 47.5% in case of the Turkish university students [33].

The research of Deloitte [5, 34] carried out on Australian citizens, however, severs the sample into two halves founded on income levels, but the frequency of both credit card and insurance decreased from 2018 to 2019. Respondents identified low income, increasing cost of living, and refundable credits as

the key reasons for this. This significant deviation raises the subsequent research direction that means international comparison for the purpose of determining the preferences of the different countries.

The scope of respondents were selected only from students from higher education institutions involved in the research, thus the conclusions based on the results from the analysis also only refer to this group, viz., to full-time and part-time students of Hungarian universities. A further possibility for scrutiny is the extension of the survey to those who work as employees graduating from their tertiary education institution. Apropos the future analyses, it is worth considering that the components of financial awareness and intelligence indices, which provided the backbone and basis for this study, might be rendered obsolete, therefore, their supervision is advisable periodically.

5. CONCLUSIONS

It is an essential practical ability to comprehend how cash and loans work and how it is possible to leverage them to personal benefit. Expertise after graduation and elderliness have a link to a moderate level of expansion or a higher consciousness related to economic issues. Scholars have a smaller knowledge than their fellow members not attending school. Economic knowledge is primary for young people since they are subject to a wide range of financial instruments and facilities, where they are expected to make a choice, as long as they launch their own huge financial occurrences of their life course, viz., obtaining a workplace, bringing home their first ever emolument, engaging into an educational loan or dealing with their charge card disbursements.

Our aim was, on the one hand, to point out what characterized Hungarian university students employing the most important financial services (foreign exchange bank account, debit card, credit card, life insurance, net banking, mobile banking), and, on the other hand, to reveal to what extent their various demographic groups exploited the services provided by credit institutions and insurance companies. Hungarian tertiary education participants were in focus during the inspection, primary on the grounds that they were the ones who could be entitled to the use of new services when entering the labor market after graduation.

The results of the analysis may serve to help credit institutions and insurance companies, on the one hand, by pointing out what peculiarities their potential customers have, and, on the other hand, by revealing which markets mean possibilities for them for expansion.

Financial awareness is the variable that has the most positive impact on the use of services of previously mentioned institutions. This led to the suggestion that financial intelligence was important for a person to avail themselves of such possibilities and, additionally, that those who are closer to the labor market (work and study at the same time, part-time students) will be the users of the examined inspected services with a higher percentage. Gender and residence were only decisive case of life insurances: women and residents of the countryside were more likely to have life insurance.

Since this research is only limited to observe Hungarian higher education students, it can be extended, as a further alternative, not only to individuals in the labor market but also abroad to neighbor or miscellaneous countries, which, in turn, makes it possible to compare more populations. This may be particularly useful, on the one hand, for monetary institutions to survey how much citizens of various countries differ from each other, on the other hand, it could be demonstrated what differences exist between higher education learners and employees.

REFERENCES

1. Chinen, K & Endo, H 2012, 'Effect of attitude and background on personal financial ability: a student survey in the United State', *International Journal of Management*, vol. 29, no. 1, pp. 33-45, viewed 16 June 2020, <https://www.questia.com/library/journal/1P3-2600441601/effects-of-attitude-and-background-on-personal-financial>
2. Yahaya, R, Zainol, Z, Abidin, JHO, Abidin, Z, & Ismail, R 2019, 'The effect of financial knowledge and financial attitudes on financial behavior among university students', *International Journal of Academic Research in Business and Social Sciences*, vol. 9, no. 8, pp. 22-32, <https://doi.org/10.6007/IJARBSS/v9-i8/6205>.
3. Lusardi, A, Mitchell, OS & Curto, V 2010, 'Financial literacy among young' *The Journal of Consumer Affairs*, vol. 44, no. 2, pp. 358-380, <https://doi.org/10.3386/w15352>.
4. Stolper, OA & Walter, A 2017, 'Financial literacy, financial advice, and financial behavior' *Journal of Business Economics*, vol. 87, no. 5, pp. 581-643, <https://doi.org/10.1007/s11573-017-0853-9>.
5. Deloitte Access Economics 2018, '*Dollars and sense Compare the Market's Financial Consciousness Index*', D.A.E., Brisbane, viewed 29 May 2020, <<http://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-financial-consciousness-index-edition-2-260819.pdf>>.
6. Tang, N, Baker, A 2016, 'Self-esteem, financial knowledge and financial behavior', *Journal of Economic Psychology*, vol. 54, pp. 164-176, <https://doi.org/10.1016/j.joep.2016.04.005>. doi: (NINCS ISSUE)
7. Urban, C, Schmeiser, M, Collins, JM & Brown, A 2018, 'The effects of high school personal financial education policies on financial behavior', *Economics of Education Review*, <https://doi.org/10.1016/j.econedurev.2018.03.006>.
8. Potrich, ACG, Vieira, KM & Mendes-Da-Silva, W 2016, 'Development of a financial literacy model for university students', *Management Research Review*, vol. 39, no. 3, pp. 356-376, <https://doi.org/10.1108/mrr-06-2014-0143>. doi:
9. Çoşkun, A & Dalziel, N 2020, 'Mediation effect of financial attitude on financial knowledge and financial behavior', *International Journal of Research in Business and Social Science*, (2147- 4478), vol. 9, no. 2, pp. 1-8, <https://doi.org/10.20525/ijrbs.v9i2.647>.
10. Tavares, FO, Almeida, LG & Cunha, MN 2019, 'Financial literacy: Study of a university students sample', *International Journal of Environmental and Science Education*, vol. 14, no. 9, pp. 499-510, viewed 9 June 2020, <http://www.ijese.net/makale_indir/IJESE_2140_article_5d93ae5a42008.pdf>
11. Toraman, C, Kiliç, Y & Buğan, MF 2016,' Credit card literacy levels and credit card usage behaviors of college students', *İşletme Araştırmaları Dergisi (Jornal of Business Research – Turk)*, vol. 8, no. 4, pp. 266-276, <https://doi.org/10.20491/isarder.2016.218>.
12. Limbu, YB 2017, 'Credit card knowledge, social motivation, and credit card misuse among college students: Examining the information-motivation-behavioral skills model', *International Journal of Bank Marketing*, vol. 35, no. 5, pp. 842-856, <https://doi.org/10.1108/IJBM-04-2016-0045>.
13. Davies, AE 2017, 'To study university students' perceptions towards their cashless financial transactions', B.A. Thesis, Cardiff Metropolitan University, Cardiff, viewed 18 June 2020, <http://hdl.handle.net/10369/8654>
14. Kumar, VVR, Lall, A & Mane, T 2017, 'Extending the TAM model: Intention of management students to use mobile banking: Evidence from India', *Global Business Review*, vol. 18, no. 1, pp. 238–249, <https://doi.org/10.1177/0972150916666991>.
15. Bhardwaj, GN, Sinha, G & Pal, S 2019, 'FinTech and the younger generation', *IUP Journal of Information Technology*, vol. 15, no. 1, pp. 16-33.

16. Aditi, A 2018, 'Understanding the perceptions of Indian college students towards life insurance and their preferences on researching & purchasing the same', *International Journal of Research in Social Sciences*, vol. 8, no. 3, pp. 233-248, viewed 6 June 2020, <http://www.indianjournals.com>.
17. Grohmann, A 2018, 'Financial literacy and financial behavior: Evidence from the emerging Asian middle class', *Pacific-Basin Finance Journal*, vol. 48, pp. 129-143, <https://doi.org/10.1016/j.pacfin.2018.01.007>.
18. Deenanath, V, Danes, SM & Jang, J 2019, 'Purposive and unintentional family financial socialization, subjective financial knowledge, and financial behavior of high school students', *Journal of Financial Counseling and Planning*, vol. 30, no. 1, pp. 83-96, <https://doi.org/10.1891/1052-3073.30.1.83>.
19. James, JD, Boyle, PA, Bennett, JS & Bennett, DA 2012, 'The impact of health and financial literacy on decision making in community-based older adults', *Gerontology*, vol. 58, no. 6, pp. 531-539, <https://doi.org/10.1159/000339094>.
20. Henager, R & Cude, BJ 2016, 'Financial literacy and long- and short-term financial behavior in different age groups', *Journal of Financial Counseling and Planning*, vol. 27, no. 1, pp. 3-19, <https://doi.org/10.1891/1052-3073.27.1.3>.
21. Milanović, M & Stamenković, M 2016, 'CHAID decision tree: Methodological frame and application', *Economic Themes*, vol. 54, no. 4, pp. 563-586, <https://doi.org/10.1515/ethemes-2016-0029>.
22. Kass, GV 1980, 'An exploratory technique for investigating large quantities of categorical data', *Applied Statistics*, vol. 29, no. 2 (1980), pp. 119-127, <https://doi.org/10.2307/2986296>.
23. Atieh, MA, Pang, JK, Lian, K, Wong, S, Tawse-Smith, A, Ma, S & Duncan, WJ 2019, 'Predicting peri-implant disease: Chi-square automatic interaction detection (CHAID) decision tree analysis of risk indicators', *Journal of Periodontology*, vol. 90, no. 8, pp. 834-846, <https://doi.org/ doi:10.1002/jper.17-0501>.
24. Ozgulbas, N & Koyuncugil, AS 2009, 'Developing Road Maps for Financial Decision Making by CHAID Decision Tree: CHAID Decision Tree Application', *International Conference on Information Management and Engineering*, IEEE Computer Society, Washington DC, Kuala Lumpur, Malaysia, pp. 723-727, <https://doi.org/10.1109/icime.2009.135>.
25. Yadav, N & Sagar, M 2013, 'Performance measurement and management frameworks', *Business Process Management Journal*, vol. 19, no. 6, pp. 947-971, <https://doi.org/10.1108/bpmj-01-2013-0003>.
26. Németh, E, Béres, D, Huzdik, K, Kovács P & Sápi Á 2013, *Felmérés a felsőoktatásban tanuló fiatalok pénzügyi kultúrájáról*, t353, ÁSZ-BKF-SZTE, Budapest
27. Luksander, A, Béres, D, Huzdik, K & Németh, E 2014, 'Analysis of the Factors that Influence the Financial Literacy of Young People Studying in Higher Education', *Public Finance Quarterly*, vol. 59, no. 2, pp. 220-241, viewed 6 June 2020, <https://real.mtak.hu/39203/1/a_luksandera_2014_2.pdf>.
28. Oktatási Hivatal 2019, *Felsőoktatási Statisztikák*, O.H., viewed 6 June 2020, <https://www.oktatas.hu/felsooktatas/kozerdeku_adatok/felsooktatasi_adatok_kozzetetele/felsooktatasi_statisztikak>
29. Yao, RQ & Meng, X 2018, 'Credit card usage among college students in China', *Journal of Financial Counseling and Planning*, vol. 29, no. 2, pp. 304-315, <https://doi.org/10.1891/1052-3073.29.2.304>.
30. Robb, CA 2011, 'Financial knowledge and credit card behavior of college students', *Journal of Family and Economic Issues*, vol. 32, no. 4, pp. 690-698, <https://doi.org/10.1007/s10834-011-9259-y>.

31. Albeerdy, MI & Gharleghi, B 2015, 'Determinants of the financial literacy among college students in Malaysia', *International Journal of Business Administration*, vol. 6, no. 3, pp. 15-24, <https://doi.org/10.5430/ijba.v6n3p15>.

32. Sallie Mae 2019, Majoring in Money, How college students and other young adults manage their finances, ED594429, Sallie Mae Bank, Newark, viewed 11 May 2020, <http://www.salliemae.com/assets/about/who_we_are/Majoring-In-Money-Report-2019.pdf>.

33. Er, F, Özdemir, A, Okur, MR., Kostakoglu, SF, Temizel, F, & Sönmez, H 2017, 'Financial literacy among university students: A case study for open education students in Anadolu University, Turkey', *Literacy Information and Computer Education Journal*, vol. 8, no. 1, pp. 2544-2552, <https://doi.org/10.20533/licej.2040.2589.2017.0337>.

34. Deloitte Access Economics 2019, *Dollars and sense Compare the Market's Financial Consciousness Index 2nd edition*, D.A.E., Brisbane, viewed 18 May 2020, <http://www2.deloitte.com/au/en/pages/economics/articles/dollars-sense-financial-consciousness-index.html>.

Appendix. Components of financial indices

Financial Intelligence
1. It is worthwhile repaying residential real estate loans as early as possible.
2. Do savings cover the amount of repayment for mortgage loans combined with life insurance?
3. Real estate has no depreciation.
4. For how many days can you change your mind when purchasing in shops?
5. For how many days can you change your mind when purchasing online?
6. You can purchase with credit cards limitlessly.
7. Which income should you consider when preparing the household budget?
8. Do you think it is worth obtaining an insurance with investment purposes?
9. Considering interests is essential when comparing funding terms of different loans.
10. What influences the instalment? – the interest rate
11. Money market funds have no risk since they only invest into bank accounts and securities.
12. We can save time and money with employing a credit intermediary.
13. Private individuals need to keep supporting documents for tax assessment for 1 year.
14. There are risk-free investments too.
15. Who is recorded by credit institutions?
16. Does Annual Percentage Rate of Charge contain every cost relating to credit?
17. Credit given to private individuals is taxable income.
18. Do you know how to calculate interest?
19. Annual Percentage Rate of Charge helps you estimate the interest rate and exchange rate risks of credit.

Table 3. Components of Financial Intelligence Index

Source: authors' own

Financial Consciousness
1. Do you have a foreign exchange bank account?
2. Do you have a bank card?
3. Do you have a life insurance?
4. How often do you use internet banking services?
5. Do you use mobile banking?
6. How do you settle your invoices? – with cash (check)
7. How do you settle your invoices? – via credit transfer
8. How do you settle your invoices? – via direct debit
9. Do you occasionally prepare a budget?
10. Is it important for you to know, before obtaining a credit, what total amount will have to be repaid?
11. Do you pay your bills by the given deadline?

Table 4. Components of Financial Consciousness Index

Source: authors' own