Examination of financial literacy and consciousness among Hungarian tertiary education students

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ABSTRACT

Thousands of lives changed permanently after the financial crisis of 2008. Insufficient awareness consequently led to the financial ruin of whole families. Hence, the importance of financial education has been confirmed. University students entering the labour market after graduation are crucial as they must take autonomous decisions regarding their financial affairs. Since several years have passed since the last comprehensive appraisal of Hungarian tertiary students, updating of knowledge has become advisable so as to involve new services in the research. I have therefore chosen to assess financial knowledge and financial awareness amid Hungarian university students. The resulting expected practicability is multipurpose: it could promote the design and development of financial education methods and improve the bank sector through enhancing the introduction of such constructions and services that would adapt to the demands of college students.

The objective of my research was to determine whether teaching financial knowledge resulted in higher financial intelligence and financial consciousness, viz., how much practical benefit financial education had. Questionnaire survey was applied for achieving this target; the questions in paper form were delivered to the potential respondents using the snowball sampling method. My starting hypothesis was that financial knowledge and consciousness of economics students were higher vis-à-vis students from other programmes. Results of my research verified my assumption, even broadening previous knowledge, as students of legal training exhibited similar performance to students of economic programmes. The results also demonstrated that financial consciousness of university students working at the same time as studying was higher than of their counterparts out of work. This represents the importance of the effects of practical experience.

Inferences deducible from the results are, as yet, of only limited use. Precondition of general applicability is rerunning the research with a larger sample and extending it to college students of other countries.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

figure page

CHAPTER 1

INTRODUCTION

'Since the mid-1990s, an increasing number of public and private sector organisations have begun helping Americans enhance their financial preparedness for life events', wrote Vitt et al. (2001, p. xi). In the world today, the ability to manage personal finances is becoming ever more important. People must plan long-term retirement investments and education for children. We must also agree on short-stay savings and holiday loans, a down payment for a home, a car loan, and other large-scale products. Several economic decisions require basic information about financial principles, such as interest rates and inflation (Chen and Volpe, 1998). Many people, however, lack this kind of knowledge. The extent of this shortcoming has been systematically investigated. There is growing evidence of better economic results for those with higher financial literacy as well as better financial decision-making (Lusardi and Mitchell, 2014).

With rising educational costs, there is an escalating number of students being obliged to select financially demanding alternatives to tackle their tuition. This issue has been ongoing for a time, as Lions examined this area in the first decade of the new millennium in Midwest Colleges of Australian Universities (Lions, 2007; 2008). He described more alternative ways to solve this question, like educational loans, private borrowing, home equity financing, and even credit card debt. This choice depends partly on the financial knowledge and awareness based on previously acquired learning experiences and skills, and also on behavioural patterns learned in family and in wider social environment. Similarly, Serido et al. (2015) found that the ways in which financial education and literacy influence financial attitude and behaviour in the social area of finances would seem worth being remembered when studying how university students made the sorts of financial decisions that affected their future.

The term financial literacy is often used as a synonym for economic or financial education. Such systems, though, are simply conceptually different since financial literacy is broader than financial knowledge. Financial literacy is more than simply knowledge (Potrich, Vieira and Mendes-Da-Silva, 2016). Vitt et al. (2001, p. 2) described it as the ability of a person to understand, interpret, control, and communicate financial issues. The sections include life skills and financial intellectual skills; thus, it also includes practical use of expertise (Kezar and Yang, 2010). In other words, knowledge is a focal point of financial education, while financial literacy involves, in addition to knowledge, individual behaviour and financial attitudes (OECD, 2012). It is prudent to initiate the education of financial knowledge as soon as possible; nevertheless, based on domestic research results (Pintye and Kiss, 2017, p. 198), 'the financial and economic education of young people is worth starting even at university level, but in any case it would be advisable to teach it during the elementary school years, as occurs in the world's developed countries'. It is substantial for the establishment of the compulsory study material to know the level of students' financial knowledge and the extent of their practical expertise.

University students will enter the labour market after graduation. They will be responsible for managing their own finances. Hence, they are the ideal recipients of financial education and flawless participants for research. The target of the research is to assess whether financial knowledge of economic university students differs from the one of students attending various other majors. The research also concerns the answer to the question of what factors determine or influence the theoretic or practical knowledge of students on this field. The practical benefit and rationale of this research is that teaching financial knowledge may become more personalised by exploiting its results, thus better serving the needs of college students.

1.1. ACADEMIC BACKGROUND

1.1.1. Research topic, aims and rationale

This research aims to examine the degree of financial literacy and education amid college students studying economic and noneconomic majors. Both foreign (Willis, 2011; 2013) and national (Németh, 2015) experts have raised serious doubts about the Hungarian and international education of financial lore, too. Nonetheless, gauging and elaborating financial literacy have been increasingly accentuated over the past years (Csorba, 2020). It is, indeed, attestable that specific measures, norms, and attitudes of individuals, added to their rapprochement with cultural peculiarities of society and community diverge in accordance with the accretion of intelligence, i.e., financial literacy (Williamson, 2000). The current research desires to contribute to the constitution of an explicit data base or the development of such financial curricula and teaching methods that assist in the aforementioned personalised education.

1.1.2. Key academic ideas

This chapter accentuates how the proposed research relates to previous ones and uses literature sources to identify the key academic ideas about the topic. Over the past few years, economic knowledge has been given due weight from different stages, particularly regarding policy makers. Determinant factors of financial decisions may be compartmentalised into two categories: financial knowledge and attitudes, and demographic characteristics (Norvilitis et al., 2006). According to literature data, demographic traits (e.g., job situation and gender) correlate with financial intelligence, consciousness, attitude, and behaviour of students (Borden et al., 2007). Professional status can sway financial decisions (Xiao, Sorhaindo and Garman, 2006). Chen and Volpe (1998) observed that work experiences of students might enhance their pecuniary knowledge. Gender differences of financial literacy are examined by Harrington and Smith (2017), too, but they focus more on the effects of personal financial education. It is considered even if some authors propose a completely different approach for tackling the problem. By way of illustration, study of Willis (2008)

refutes the necessity of financial schooling already in its title (Against Financial Literacy Education). It suggests instead the completion of a reliable expert network that is accessible to all. Notwithstanding, in line with the summary so far, most authors support the development of financial education.

1.2. RESEARCH GAP

Although a considerable body of research is available, there are still some research gaps in the corresponding literature. The optional financial literacy assessment of PISA in 2012 was conducted in a total of 18 countries and economies but Hungary did not feature among them. Available domestic studies either conducted a research using a sample from a single university (Németh et al., 2013) or scrutinised a different fundamental question (Pintye and Kiss, 2016, 2017). A further study analysed only actually enrolled college students (Csiszárik-Kocsir, Varga and Fodor, 2016, Csiszárik-Kocsir and Garai-Fodor 2018). Studies focussing solely on one factor out of the complex system – i.e. credit card usage, gender, or location – is an additional drawback. This gap is finally filled by the present study, which introduces the results of a questionnaire survey conducted at several Hungarian universities. Within this framework I am focussing in my research on financial literacy and activities not only among freshly enrolled students but also among a wide range of university participants attending various academic years.

Evidence was sought for dissimilarities between students learning economics and those studying other majors, in a scientific area that had previously been underexplored in the literature, scilicet, financial literacy and awareness of Hungarian university scholars. Among students in tertiary education, the research of Németh et al. (2013) was one of those that investigated the target system and income situation of students by means of the indicators produced by the researchers. The scrutiny was conducted based on demographic characteristics, the nature of training, and the number of semesters spent in training, while economic students being compared with students of other fields. New financial services, also entering Hungary since then, and the dissemination of their use mean significant changes in the lives of college students. Primarily the broadening of credit card use and

options relating to online payment, and also the emergence of online payment facilities represented a major change vis-à-vis the previous years. The domestic enlargement of the market of the most modern (Fintech) financial services has started, e.g. Revolut or TransferWise. The abovementioned financial services have already been available abroad for a longer period; wherefore, there are a few related results, e.g. the scrutiny of Lions (2008). Their main benefit is universal accessibility and flexible operation; their disadvantage is that deposits in such form are not guaranteed by the National Deposit Insurance Fund of Hungary. Out of the most recent researches, the study of Rafinda and Gal (2020) partly derives from Hungarian authors; notwithstanding, it aimed at Indonesian college students. They have resolved to demonstrate a significant difference between financial literacy of economic and noneconomic students. The assessment of financial knowledge and consciousness of domestic university students is thereupon already topical, inasmuch as previous Hungarian surveys either observe several years (Németh et al., 2013), focus on sub-topics (Pintye and Kiss, 2016; 2017), or did not survey Hungarian students (Rafinda and Gal, 2020). Neither national, nor foreign examinations extend to whether there is causal relationship between financial behaviour and studies pursued in an economic field; rather, every author focusses on the establishment of any correlation. This is the research gap I decided to examine. The correlation to demographic characteristics highlights positive effects associated with course completion, in accordance with the results of Gerrans and Heaney (2016). This will hopefully provide insights about the way in which university students reconcile multiple influences when managing their personal finances.

1.3. RESEARCH QUESTION, HYPOTHESIS AND OBJECTIVES

This paper attempts to answer the following research question: To what extent does economic field of study chosen influence financial literacy, activities and attitudes of Hungarian university students? Activity is defined in this study as the use of conventional and new financial products and methods. Having reviewed the literature on this topic, my hypothesis could be concluded

as follows: Hungarian tertiary education students of economics performed better in terms of financial knowledge and consciousness than their counterparts attending different study programmes.

The following objectives have been defined to guide the course of this research:

1. To conduct a questionnaire-based analysis from multiple viewpoints by catechising tertiary education students attending different faculties of a few Hungarian universities and, in addition, to delineate the prevailing situation in 2019.

2. To explore, as far as possible, correspondence and disparity between students at colleges or faculties of economic and noneconomic fields.

3. To examine the level of knowledge and activities related to financial matters, based on demographic variables (i.e., age, gender, place of residence, and marital status) and by means of classification according to institution and major.

CHAPTER 2

LITERATURE REVIEW

The literature of this field of study dates back to the 1960s (Bakken, 1966). A broad range of scientific literature about financial knowledge has been available since 2000. The Standard & Poor's Ratings Services Global Financial Literacy Survey is one of the latest aggregate data sources about financial literacy obtained. Such information is provided in a broad range of countries (Klapper, Lusardi and Oudheusden, 2015). It has been more important since the 2008 financial crisis than before. The survey analysed international financial knowledge and attitudes. North America, Western Europe, and Australia have the highest literacy level. The EU is divided with more literacy in the north and less in the south. One of the basic intercultural studies on the human factor is from Hofstede, Hofstede and Minkov (2010). In a number of studies, these intercultural differences in finance are analysed (Agarwal et al., 2015; Agarwalla et al., 2015; Grohmann, Kouwenberg and Menkhoff, 2015; Mimura et al., 2015; Jorgensen et al., 2016; Yao and Meng, 2018; Nicolini, 2019; Nicolini and Haupt 2019). As Danes and Hira also described (1987), financial literacy rates vary considerably in terms of such characteristics as gender, job, income, age, culture, and personal experience. The average gender gap in financial literacy is five percentage points according to Klapper, Lusardi, and Oudheusden (2015). Financial literacy rates initially increase but subsequently diminish with age (viz., elderly people are less financially educated than middle-aged adults). People can understand financial concepts better when they face them in their everyday lives. This has been verified by Lusardi, Mitchell, and Curto (2010), who agreed that some of the literacy variables, at least partly, seemed to have been influenced by today's adult experiences. Financial literacy skills are important to people who use payments, savings, loans, and other financial products. However, without an account, these skills are even lower among adults. Financial literacy has a large influence and is also significantly enhanced by educational achievement, which is strongly linked to mathematical skills, age and income.

Financial literacy in higher education is also a regular subject of publications. Several years preceding the latest financial crisis, Danes and Hira (1987) explored gaps in the level of college students' money management expertise. Sex, marital status, and age of students were found to be important to explain differences in knowledge in several areas. Chen and Volpe (1998) explored students' personal financial literacy, too. Their results show that around 53% of questions are answered correctly and no average rating for any area is above 65%. Non-business graduates, women, low-class students, people under the age of 30 with little work experience have lower skill rates. They tend to make wrong choices. It has been concluded that university students are not aware of personal finance and have limited capacity to take informed decisions. Many other variables are related to the financial literacy of a person. These factors include socio-demographic variables that have to do with education, age or income. Poynton, Lapan and Marcotte (2015) examined the financial plans of college students succeeding their secondary education as an obstacle to decision making and progress in education and employment. The new generation of young experts need to have detailed knowledge before they successfully start. There can be a variety of financial attitudes that some young adults learn in order to plan and invest responsibly, while others spend carelessly without considering the consequences. Students who spend more than they can afford will become burdened by unmanageable debt with poor credit scores and, in turn, will be discourage from making critical financial decisions later in life. (Jorgensen et al., 2016) Expenditure overruns are associated with lower academic quality and higher graduation rates (Shaffer, 2014). It can, however, lead to significant negative impacts on other areas of life, such as psychological, physical, and social well-being (Berger et al., 2015).

Specific variables are used for measuring financial literacy (Behrman et al., 2012). Childhood experience contributes to financial socialisation. Parents and their education, schools, and workplace are the main channels that have the greatest impact on financial knowledge (Shim et al., 2009). Mimura et al. (2015) provide parents with personal finance textbooks to teach financial skills to their children, as those young adults that have acquired personal financial data from their parents gain

greater financial experience with higher financial practice scores. In a survey study, Grohmann, Kouwenberg, and Menkhoff (2015) investigated the origins of childhood financial literacy. They show two channels through which childhood experiences explain the degree of financial literacy for adults: parental financial socialisation and the schooling channel. Both family and education have positive impact on adulthood financial literacy. Shim et al. (2009) find that parental teaching has a stronger impact on first-year students' financial knowledge than on high school financial education and early experience with money. Jorgensen and Savla (2010), as later Masuo and Cheang (2017), found that parents played a key role in the financial socialisation of their children. Another finding came from Albeerdy and Gharleghi (2015). Their findings show that training has the greatest influence on students' financial knowledge. School education in economics seems to be a clear choice to increase financial literacy and found good financial behaviour. Difference between education and financial education is delineated by Vitt et al. (2001, p. xiii):

General education determines occupation and income, which, in turn, influence place of residence, social contacts, consumer choices, and activities. Financial literacy education shapes the life course in other, extended ways by enhancing access to investment income, asset accumulation, and asset protection.

Grohmann, Kouwenberg and Menkhoff (2015) admitted that education (in the form of school economy and quality education) had indirect effects on financial literacy by increasing numeracy, which was a fundamental competency supporting financial literacy. In addition, financial literacy and school-related factors directly affect financial actions as well. This implies that family and schooling factors function through complementary channels.

Urban et al. (2018) and Frisancho (2019) also prefer school education. They analysed the overall financial management practices of college students through a multistate research project. Their findings suggest that some university students are financially at risk and therefore, on-campus financial education is still required. They recommend that college campuses may want to include

personal financial or financial lifestyle courses as a requirement for general education. The course would include the basics of financial management that every new college student needs to know. An early good example is the NatWest (Banking) Group case from 1994. It set up a charitable fund to make a major contribution to the society in which it operated. One of its first ventures consisted of exploring financial literacy and examining how a secondary school curriculum might be tailored to the educational programme (Schagen and Lines, 1996). In the early 2000s, 38 US countries acknowledged the need for financial literacy throughout their classroom and integrated their state education programmes into their financial requirements. Batty, Collins and Odders-White (2015) argued in their study that basic financial education also exerted influence in elementary schools. In addition, personal finance is a requirement for high school graduations in US countries. The financial education course designed for high schools helps improve general financial literacy, but adult courses are created for solving actual financial problems (Walstad, Rebeck and MacDonald, 2010).

We really need to be financially capable in order to increase financial security. Despite basic financial skills and understanding, citizens will not be adequately educated or prepared to manage their financial benefits for the future. Unfortunately, people with poor financial capacity will face serious problems, poor budgeting, high debt rates, high levels of stress, and anxiety. (Adams, Meyers and Beidas, 2016). Beal and Delpachitra (2003) have been investigating financial literacy among Australian university students. The principal reason for their work was the high visibility of signs of insufficient personal financial literacy, inter alia growing levels of debt with the overuse of credit cards, using personal loans for consumption, and psycho-physical symptoms, the latter one being also mentioned by Berger et al. (2015), and Adams, Meyers and Beidas (2016). In the United Kingdom at the beginning of the 1990s, many, including Mannion (1992), warned of dramatic increases in the level of personal debt as well. Beal and Delpacitra (2003) examined a large cross-section of students in a regional Australian university that received significant external student registration. The scope of targeted students consisted of freshmen in the faculty of business and other faculties or disciplines. The research showed that financial literacy was not very high, and it was unquestionable that students

studying business even in the first year of their studies had scored better than the average of other students.

Ramudzuli and Muzindutsi (2015) analysed financial risk management practices of South African university students. Their results indicated that some university students faced financial instability. This risk decreased in correlation with the extent of financial knowledge and additionally, demographic variables, viz., gender, religion and monthly expenditure correlated with financial risk tolerance. Therefore, university monetary training courses were in need in the following period, too. They suggested that college campuses might intend to involve specific financial courses as a requirement for education in general. According to numerous writers, teaching basic financial skills is already necessary in secondary school (Belás et al., 2016; Amagir et al., 2017; Brühl, 2019). In countries where fifteen-year-old students performed very well under the 2012 OECD Programme of International Student Assessment (PISA) math test, overall comprehension of financial concepts is likely to be high, according to Klapper, Lusardi and Oudheusden (2015). PISA is a global assessment performed in every three years, measuring the skills and knowledge of fifteen-year-olds in mathematics, reading, and science. The first optional financial literacy assessment, developed by experts, such as stakeholders, regulators, and bank experts, was launched in 2012 by PISA. It was the first major international study to assess financial literacy of young people. The best result was achieved by students from Shanghai (Lusardi, 2015). Csiszárik-Kocsir and Garai-Fodor (2018) conducted a research in Hungarian universities, analysing the significance of teaching financial knowledge. The students participating in the survey considered this as an option to gain preparation and expertise for founding their future life. Segmenting their sample on a residence basis, the researchers experienced a significant deviation on the field of preferences. Studying financial fundamentals means primarily consciousness and possibility for urban students, but prosperity and reasonable returns are also among their key expectations, as opposed to students living in the countryside.

Although early literature has established the relation between years of education and financial literacy (Luzardi and Mitchell, 2007), little attention has been given to the effects of the quality and content of education on financial literacy. The personality, competence, and expertise of the teacher are not, however, auxiliary variables. Deng et al. (2017) study this field of research. Their study found that financial literacy of teachers and the efficiency of education were correlated. They also found that there was no significant difference between elementary and secondary school financial teachers with various educational experience in the conveyed factual knowledge or the quality of education.

Looking at the trend in the use of credit cards by Chinese college students, Yao and Meng (2018) concluded that China's full financial reliance on parents had had a significant impact on students' financial behaviour and that only a small number of students earned their money. 57% of U.S. university students have and use one or more credit cards (SallieMae, 2019). Although the number of students in 2019 was the same as in 2016, the average balance for credit cards in the 2019 programme was $100 higher than in 2016. Debit cards are more popular than credit cards, namely, 85 percent of students choose this payment method. The most common monetary form is still cash, followed by debit cards and mobile payments. Also, Robb (2007) investigated credit card usage among American college students. He found a few relevant variables, viz., race, gender, marital status, and financial autonomy. The role of students' gender as a factor of variability is also emphasised by Bocchialini and Roncini (2015). Another common financial product is insurance, as per the feedback of most students. (Danes and Hira ,1987).

Financial literacy assessment approach is relatively common. One of the simplest methods is the „Big Three" (Lusardi, 2019). It contains three simple questions like a rapid test. Two main test types exist for deeper examination: the questionnaire and the performance test. The latter examines the correct response rate (Chen and Volpe, 1998; Danes and Hira, 1987). Cross-country and global researches also use questionnaires and/or statistics (SallieMae, 2019; Klapper, Lusardi and Oudheusden, 2015). Only points of view can be different: Agarwalla et al. (2015) examined financial

knowledge, financial attitudes, and financial behaviour dimensions, while Grohmann and Klühs and Menkhoff (2018) analysed how financial literacy enhanced financial inclusion.

CHAPTER 3

RESEARCH METHODS

3.1 RESEARCH STRATEGY

Vis-à-vis every criterion, exploratory and attitudinal research ought to be distinguished (Stebbins, 2001; Gajar, 1983). In case of experimental research, there is a limited knowledge on the subject; therefore, our main goal is to gather basic information for a better comprehension. When administering attitudinal research, specific questions are ofttimes raised. My research is of the latter type, as I have specific interest and composed questions with simple answers.

The methods of research can be a quantitative survey, a qualitative interview, a case study, or an action-oriented research (Cameron and Price, 2009). Case studies deeply analyse a specific situation and focus on one or a few cases. Action-oriented research can be harnessed for studying the effects of a change in an organization. Gauging current literacy and activity levels among Hungarian college students was endeavoured; thus, neither a case study nor an action-oriented research was an option. Qualitative interviews are for a small group of respondents, but a relatively large sample of data necessitated. Consequently, the current research shall be performed by means of an attitudinal quantitative survey.

Quantitative explorations prefer computational, mathematical, and statistical tools to derive results. They locate cause and effect relationships. Since the quantitative research of this study is a survey, the collected information may be examined rapidly in contrast with various investigation strategies. It also offers sound and repeatable information. Qualitative research applies small sample bulk as it collects all-inclusive information. This takes up a great deal of time and diminishes the number of people being concerned.

Of course, quantitative research also mounts crucial limits. Considering there are not any tête-à-tête connections with respondents in this approach, the researcher cannot appraise the

trustworthiness or verity of each result. Therefore, it shall be assumed that all answers are true. There is a restricted chance to test the answers from the research. To avoid this drawback, a pilot trial was arranged, which was truly useful in finalising the questionnaire.

3.2 POPULATION, SAMPLE AND SAMPLING; METHODS OF COLLECTING DATA

Reckoning the benefits and drawbacks of online and offline questionnaires and keeping the distortion effect minimal, an offline questionnaire (Gunter et al., 2002, Zhang et al., 2017) was devised. The response rate was 92%. It was far beyond the usual rate of 20-40% of online questionnaires (Ilieva, Baron, and Healey, 2002).

The objective was to create a self-administered questionnaire (Lavrakas, 2008). I was assisted in distributing, re-collecting, and returning the questionnaires by his fellow students. As questionnaire replies had arrived, they were imported to a Microsoft Excel workbook, thereafter, to SPSS. Solely closed questions (Peterson, 2000) were used in the questionnaire except for the question regarding age. The first, demographic part (Shusha, 2017) consisted of ordinary questions; thus, all available answers could be specified in close questions. The second part about financial habits, literacy, and activities also exclusively consisted of closed questions. Likert-scales of 3, 4, and 5 points (Asún, Rdz-Navarro, and Alvarado, 2015), yes-no questions, and multiple-choice questions (Saunders, Lewis, and Thornhill, 2015) were applied.

The reason for various Likert scales is the structure of the questionnaire. There are different blocks in it. By all means, there is only one type of Likert scale withinside a block, but the blocks differ in terms of the key area concerned. By way of example, 3-point Likert scale was used for education (elementary, high, tertiary), 4-point scale for frequency (never, sometimes, frequently, always) and 5-point one for the regular agree-disagree questions (1 – ‘totally disagree’, 5 – ‘totally agree’). Several aspects of the selected research topic were intended to be analysed; thus, a few different questions were composed for all key areas to be able to aggregate the measures during the analysis.

3.3 METHODS OF ANALYSING DATA

Using the questions of financial habits, activity, and literacy, preparing indices of these concepts shall be attempted. These indices will be the basis for the first analysis (McDonald, 2014; Fowler, 2009): contrasting different demographic groups through mean comparison methods (t-test, ANOVA, Mann-Whitney, Kruskal-Wallis), depending on the number of groups and the normality of the data. Post Hoc tests (using Bonferroni adjustment) were run in case of comparison between more than two groups to reveal if group-pairs differed significantly from each other (Ury and Wiggins, 1974). Levene's test was used for testing the homoscedasticity assumption when using the parametric tests.

The validity of the grouping of variables was be tested by Cronbach's alpha (Bonett and Wright, 2014). Having succeeded in creating indices, different clusters of respondents were about to be formed based on their financial habits, literacy, and activity, using Hierarchical Clustering. As there are ordinal scales regarding, inter alia, dwelling or marital status, in the questionnaire, Spearman's correlation shall be calculated between them and the indices. As age and the indices are measured on scale, it is worth analysing their relationship by Pearson's correlation coefficient if normality is assumed (McDonald, 2014; Hauke and Kossowski, 2011).

In case of nominal variables, I needed to test their relationship by chi-square test and measure it by Cramér's V (Cramer and Howitt, 2004), and demonstrate them in crosstabs. Effects of demographic and quality variables were analysed altogether in a General Linear Model (GLM – ANCOVA), described by Baltagi (2008) and was investigated if there was any significant interaction among them. Moreover, financial literacy and activity were necessary to be compared through correlation and pair samples tests.

Inasmuch as the demonstration of the correlation did not involve any causal link (Sassower, 2017), some additional testing necessitated to show causality. Albeit Simon's method submitted by Blalock (1961) may have been useful in establishing causality, it requires a large sample and is further conditional on that the relevant variables do not disturb the cause and effect relationships at all. The

other popular causality test, the Granger test (Granger, 1969) is only applicable for the examination of time series. It was, after all, necessary to develop a technique which permits an analysis as to whether the selected certain economic field of study and the corresponding financial knowledge truly are reasons for a more mindful financial behaviour. The Causal Decision Tree method (Li et al., 2017) is appropriate for this method, which is not only suitable for classification but also for prediction (Song and Lu, 2015). Algorithms used for creating decision trees are recursive types, i.e., they separate sample to groups where attributes of the two groups differ the most. Recursion may be realised at several levels, until elements pertaining to the node run out or become homogenous, or the attributes run out (Quinlan, 1987; Kamiński, Jakubczyk and Szufel, 2017). The method is capable of demonstrating the reason for differences between certain groups. 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 number 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 categorised them in order to provide a better comprehension.

3.4 DATA QUALITY ISSUES IN THE RESEARCH

There are numerous quality and validity issues to be met during a survey research (Leeuw, Hox, and Dillman, 2012). The ultimate form of the questionnaire was terminated with pilot test. Considering the extent of the sample, it was considered an important first step to fill in the initial version of the questionnaire with twenty-five respondents. Questions raised for participants of the pilot test were chosen based on the scientific research of Saunders, Lewis, and Thornhill (2015) and

Dillman, Smyth, and Christian (2014). As per the referenced studies, we have found the following questions to be asked during the pilot test:

- administration (time needed to fill in the questionnaire, the intelligibility of the questions)
- organisation of questionnaire (relevance, necessity, and transparency of questions)
- content (clarity of questions and whether questions are measuring what we have intended)

Some of the respondents noted that two questions were referring to confidential information, they did not want to share. As they were not important regarding our research, we added them to other question/eliminated them (Have you got a car? and Have you got any funding debt?)

It was further examined whether questions were regarded unambiguous (it turned out eventually that no one had had doubts about clarity) and if there was any question that had created a ground for objection. Filling out of the pilot questionnaires preceded the establishment of the final form of the questions. Based on the responses, I revised impugnable questions for disambiguation. I split some questions into separate ones while others were amended into subquestions. Irredeemable questions were rejected. The restructured questionnaire complies with the criteria of validity.

A reliable dimension, if used under the same circumstances, will tend to result in a similar outcome, in short consistency of measurement. This condition relates to internal consistency, which interprets how different variables may measure the same characteristics (Bollen, 1984). It is an indispensable condition of creating those indices that are to be measured; the rate of success can be measured by Cronbach's alpha.

3.5. DATA ACCESS

By gathering all completed questionnaires, only the answers themselves returned; yet, without the name of the respondents since the survey was performed unanimously. Since the author

had objection to acquiring sensitive information, confidentiality was no longer a matter of reconciliation. The data collection method was online questionnaire; the objectives are summarised below (TABLE I).

TABLE I DATA ANALYSIS METHODS

Objective	**Method of data analysis**
Explore the distribution of the sample regarding demographic variables	Descriptive statistics
Create indices of financial literacy and activity	Reliability tests, Factor analysis, Mean calculation
Explore the distribution and description of indices of financial literacy and activity	Descriptive statistics, normality tests
Test if financial literacy and activity of economic students from Hungarian tertiary education institutions is higher than those of other university students.	Inferential statistics (mean comparisons)
Describe similarities and differences between students attending economic and noneconomic higher education	Inferential statistics (mean comparisons)
Explore the level of financial literacy and the activity level related to financial matters, based on demographic variables through grouping by institution and major.	Inferential statistics (mean comparisons of independent samples), Correlation
Compare the financial literacy and activity	Inferential statistics (mean comparisons of paired samples), Correlation
Build a model of financial literacy and activity based on determinants like demographic variables	General Linear Model (ANCOVA)

The respondents attend six faculties in total, from five different universities:

1. Budapest Business School University of Applied Sciences, Faculty of Finance and Accountancy (hereinafter BGE-PSZK)
2. Eszterházy Károly University, Faculty of Pedagogy (hereinafter EK-PK)
3. Eötvös Loránd University, Faculty of Law (hereinafter ELTE-ÁJK)
4. Eötvös Loránd University, Institute of Business Economics (hereinafter ELTE-GTI)

5. Budapest Metropolitan University of Applied Sciences, Faculty of Art and Creative Industries (hereinafter METU-ART)
6. University of Pécs, Faculty of Humanities (hereinafter PTE-BTK)

Considering solely one duly completed questionnaire reply was received from ELTE-GTI, this faculty was excluded from the scrutiny; consequently, the examination covered students from five faculties in total. The analysis did not focus on the six faculties but only on their programmes, constituting in turn three fields of study: economics, law, art-pedagogy-philology.

3.6 RESEARCH ETHICS

Ethics in research has a high priority. The ethical basis of medical research (Leeuw, Hox and Dillmann, 2012) is fully applicable to all research situations. (Leavy, 2017). Scientists confront a wide range of rules of conduct: they are obliged to abide by professional, local, and national rules when catechising human participants, they ofttimes oversee students, also perform teaching tasks, and must publish a number of articles, just to name a few. Here are five suggestions Science Directorate of APA provides, among other things, the following five suggestions to assist scientists in keeping away from ethical dilemmas (Smith, 2013):

1. Handle intellectual property rights honestly
2. Be aware of the variety of roles
3. Follow express agreement standards
4. Respect secrecy and concealment
5. Put ethics resources to good use

In summary, researchers should bear in mind three principles: personal respect for all participants, beneficence, and justice. Voluntary participants need to ascertain the unanimous utilisation of their data, so as they shall never be retraced in the future. (Adams, Khan, and Raeside, 2014). The core principle of research ethics is: Nemo censetur ignorare legem. I planned my research from this perspective. When building up the questionnaire, there has been considerable emphasis on

avoiding the inclusion of overly personal questions. For this reason, questions regarding the social origin and financial position of respondents do not feature in the survey. Scientific ethics comprise every respect of ethics for financial experts or social experts, as an instance, with reference to reciprocities between scientists and their managers, colleagues, or assistants. Undoubtedly, scientists may want to realise and comply with adequate rules of ethics in the abovementioned fields. I also alluded to this problem in the introduction of my questionnaire.

CHAPTER 4

RESULTS

The two most important concepts of my thesis are financial intelligence and financial awareness. I measured these two factors with the combination of multiple questions; thereafter, I determined the values of the indexes based on the responses to the questions. In both cases there was a correct and an incorrect response to the questions that served as components; the incorrect response was 0 points in the scoring, while the correct answer was valued at 1. I used 31 questions for measuring financial intelligence and 18 for financial awareness, then, in order to receive the two indices, I determined the percentage value on the achieved score from the maximum achievable 31 and 18. The percentage form is justified by the more easily comparable standard value. The questions that served as the components of the 2 indexes and the correct responses to them can be found in Appendix (TABLE XLIII and TABLE XLIV). During the selection of the questions, I endeavoured to make every one of them up to date in order that I might have a more realistic picture of the financial knowledge and consciousness of the respondents. But beyond that, I also kept an eye on the query to be as wide-ranging as possible.

It was revealed that among respondents the achieved financial awareness percentage was generally higher than the achieved financial intelligence score, which is demonstrated by the distribution of the 2 indices – see FIGURE 1. In consideration of the relatively high number of components, in the following I treated both indices as continuous quantitative variables, and in their case, I applied the methods corresponding to this.

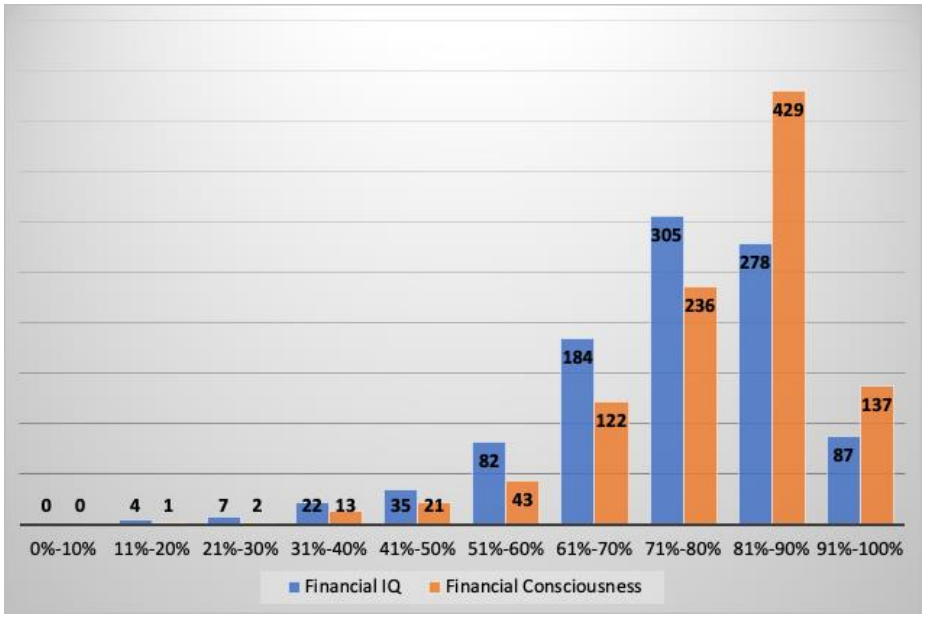

FIGURE 1 DISTRIBUTION OF FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS IN THE SAMPLE

In my thesis I examined from multiple aspects how the level of financial intelligence and financial awareness was distributed among various demographic groups. I compared the groups and strove to measure if there was a correlation between belonging to a group and the level of financial intelligence and awareness. Since the respondent target group were university students, mostly the younger age-group filled in the questionnaire, within which the age distribution of men and women was nearly identical – see Figure 2.

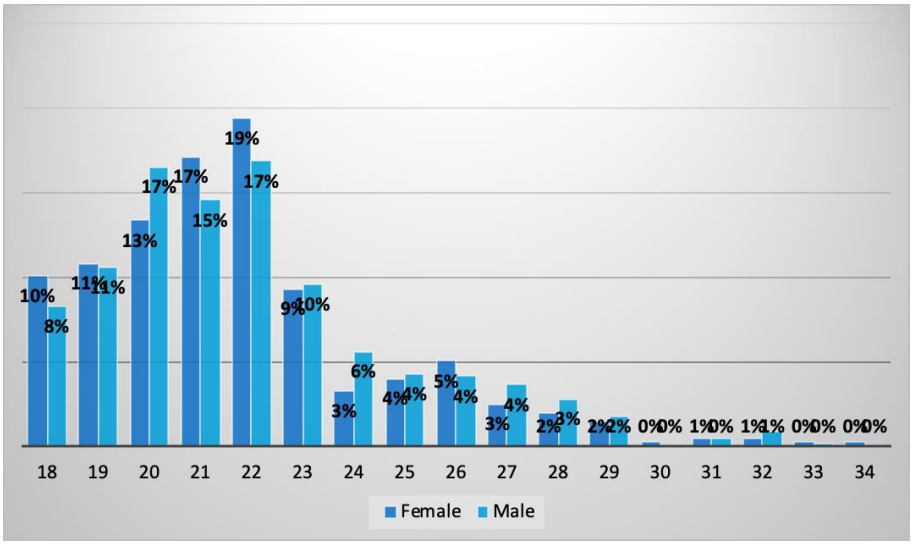

FIGURE 2 DISTRIBUTION OF GENDERS BY AGE

For the purpose of the broadest possible mapping, I also catechised how much respondents were satisfied with their private life and how close their relationships were with their partners. The distributions are depicted in FIGURE 3 and FIGURE 4.

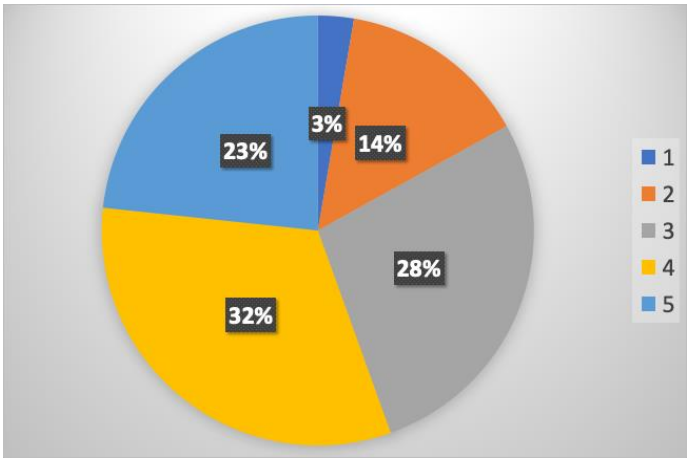

FIGURE 3 DISTRIBUTION OF SATISFACTION WITH PRIVATE LIFE IN THE SAMPLE

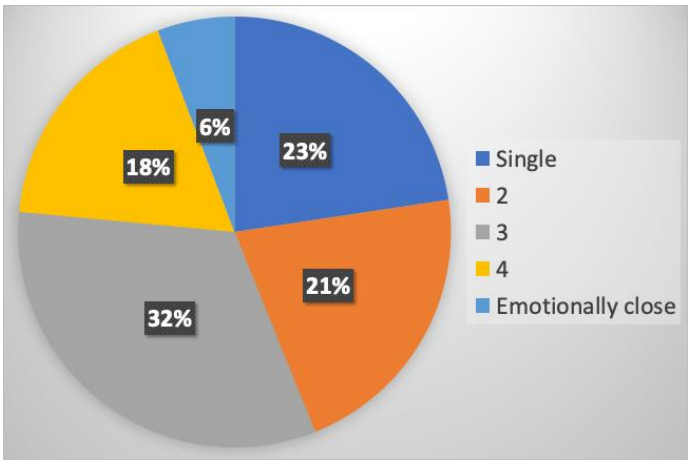

FIGURE 4 DISTRIBUTION OF THE STRENGTH OF COUPLE RELATIONSHIP IN THE SAMPLE

I compared the two financial indices based on the strength of their correlation with such characteristics as age, life satisfaction and strength of couple relationships. Since age is continuous scale while the other 2 variables are ordinal scale, in the case of age, I used linear correlation coefficient while in the case of the latter two, I used rank correlation coefficient. I concluded that financial intelligence ($r=0.197$, $p<0.001$) and financial awareness ($r=0.169$, $p<0.001$) – even if rather slightly but, indeed – increase with advancing age. From among the other two variables related to the relationship of couples, only the level of private life satisfaction showed a weak positive correlation with financial awareness ($rho=0.071$, $p<0.001$). On that basis it can be stated that the indices I have measured show no or rather weak correlation with strength and quality of relationships between couples – see TABLE II.

TABLE II CORRELATION OF AGE, SATISFACTION WITH PRIVATE LIFE AND STRENGTH OF COUPLE RELATIONSHIP WITH FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS

			Financial IQ		Financial Consciousness	
Variable	**Measure**	**N**	**Correlation**	**Sig**	**Correlation**	**Sig**
Age	Pearson	1004	0.197	<0.001	0.169	<0.001
Private life satisfaction	Spearman	1004	-0.005	0.884	0.071	0.025
Strength of couple relationship	Spearman	1004	-0.007	0.822	0.049	0.123

From among the 1,004 students in the sample, there were 398 women and 606 men; their distribution is delineated in FIGURE 5.

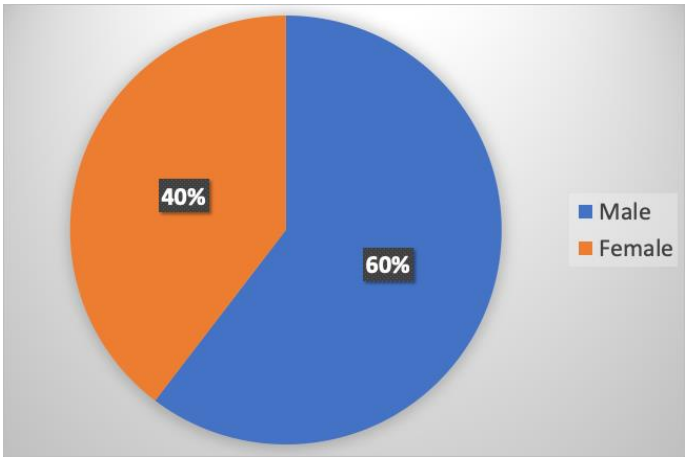

FIGURE 5 DISTRIBUTION OF GENDERS IN THE SAMPLE

In the case of both indices, I found a significant divergence between genders: men had a 5.4 % higher financial intelligence and a 3.0 % higher financial awareness – see TABLE III, FIGURE 6 and FIGURE 7

TABLE III COMPARISON OF FINANCIAL INTELLIGENCE AND CONSCIOUSNESS BY GENDER

					Levene' test	**t-test***
	Gender	**N**	**Mean**	**Std. Dev.**	**F / Sig.**	**t(df) / Sig.**
Financial IQ	Male	606	0.7692	0.1301	29.473	5.365 (693.575)
	Female	398	0.7154	0.1701	<0.001	<0.001
Financial Consciousness	Male	606	0.7926	0.1038	27.719	3.710 (679.528)
	Female	398	0.7623	0.1394	<0.001	<0.001

It is visible based on the scatter figures that in the case of men and women the maximum and the upper quartile of both indices are equal, the difference between the averages originates from the

fact that among women there are more individuals with lower financial intelligence and financial awareness.

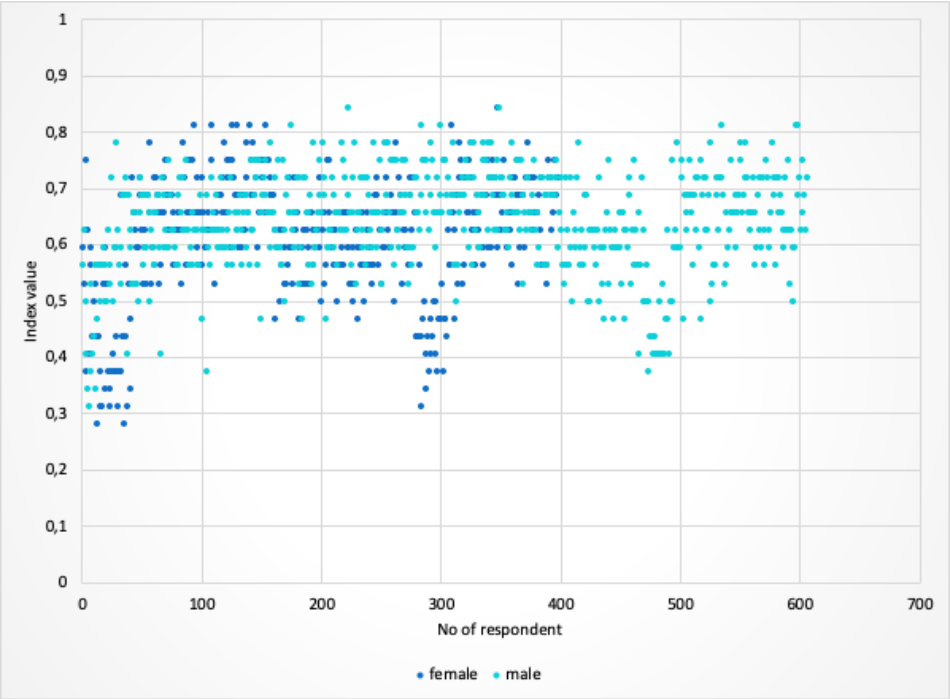

FIGURE 6 DISTRIBUTION OF FINANCIAL INTELLIGENCE BY GENDER

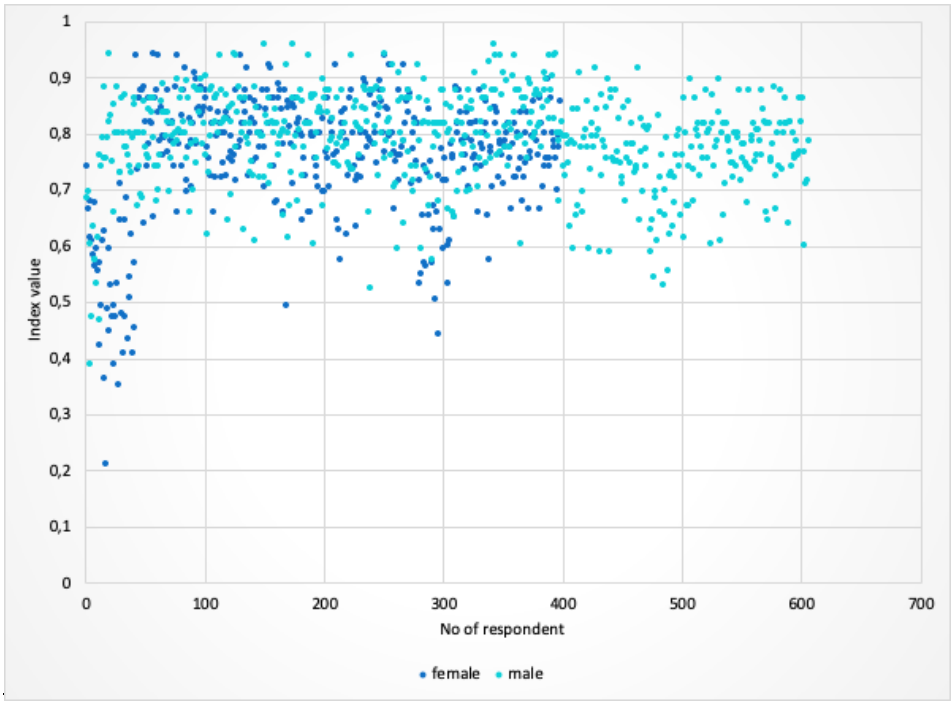

FIGURE 7 DISTRIBUTION OF FINANCIAL CONSCIOUSNESS BY GENDER

From the aspect of the type of settlement, I distinguished 5 categories; their distribution is presented in FIGURE 8. Since over 100 respondents are in all 5 categories, I assumed normality and examined the correlations between group averages by parametrical tests.

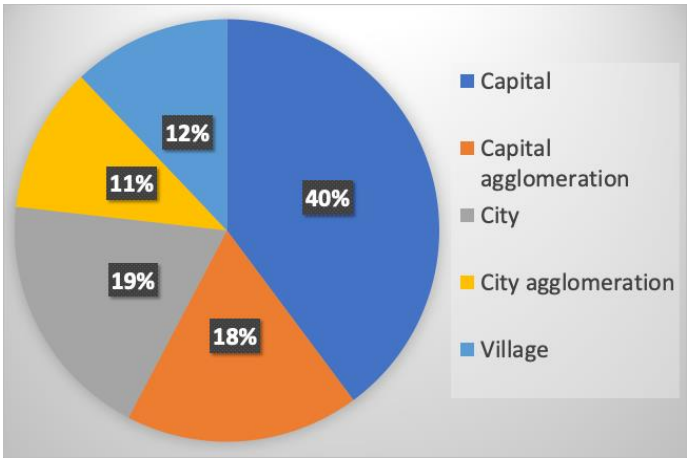

FIGURE 8 DISTRIBUTION OF THE TYPE OF SETTLEMENT IN THE SAMPLE

According to the type of settlement, significant divergences can also be shown in the case of both indices, which primarily means a higher value in Budapest and its agglomeration – see TABLE IV and TABLE VI. As regards financial intelligence, it is clearly higher in Budapest and its agglomeration than in the countryside, which was confirmed by the results of post hoc tests as well – see FIGURE 9 and TABLE V.

TABLE IV DIFFERENCES IN FINANCIAL INTELLIGENCE BY TYPE OF SETTLEMENT AND COMPARATIVE STATISTICS THEREOF

Settlement	**N**	**Mean**	**Std. Deviation**
Capital	400	0.7659	0.1287
Capital agglomeration	179	0.7739	0.1131
City	192	0.7286	0.1718
City agglomeration	112	0.7204	0.1703
Village	121	0.7060	0.1840
Total	1004	0.7479	0.1495
Levene's test			
F	**df1**	**df2**	**Sig.**
9.776	4	999	<0.001
Welch's d-test			
F	**df1**	**df2**	**Sig.**
6.358	4	352.62	<0.001

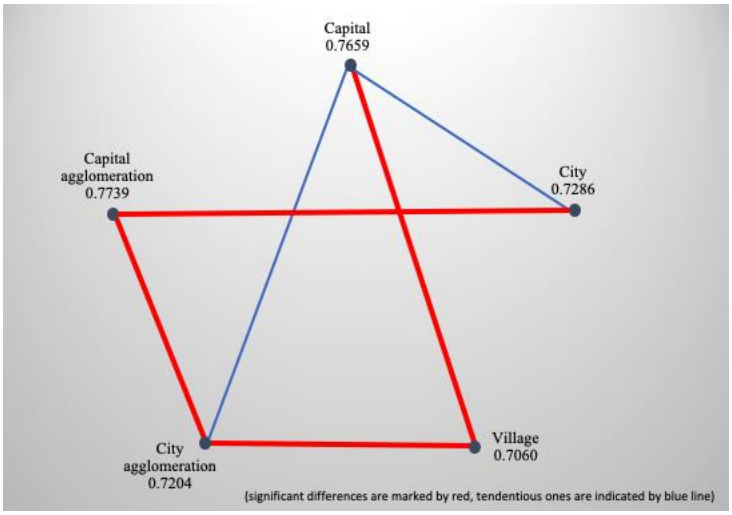

FIGURE 9 DIFFERENCES IN FINANCIAL INTELLIGENCE ACCORDING TO THE TYPE OF SETTLEMENT

Based on the post hoc tests, it can be argued that financial intelligence values of Budapest and its agglomeration, which indeed have the highest averages, are significantly higher than those of other towns.

TABLE V POST HOC TEST RESULTS OF FINANCIAL INTELLIGENCE BY TYPE OF SETTLEMENT

Settlement (I)	Settlement (J)	Mean Difference (I-J)	Std. Error	Sig.
Capital	Capital agglomeration	-0.008	0.011	0.944
Capital	City	0.037	0.014	0.061
Capital	City agglomeration	0.046	0.017	0.071
Capital	Village	0.060	0.018	0.009
Capital agglomeration	City	0.045	0.015	0.023
Capital agglomeration	City agglomeration	0.053	0.018	0.030
Capital agglomeration	Village	0.068	0.019	0.003
City	City agglomeration	0.008	0.020	0.994
City	Village	0.023	0.021	0.813
City agglomeration	Village	0.014	0.023	0.971

In the event of financial awareness, the picture is more complex since Budapest and its agglomeration have significantly higher average but other towns and their agglomeration are not far behind either – see TABLE VI. This was also proven by the post hoc tests since only Budapest differed from the averages of other towns – see FIGURE 10 and TABLE VII.

TABLE VI DIFFERENCES IN FINANCIAL CONSCIOUSNESS BY THE TYPE OF RESIDENCE AND COMPARABLE STATISTICS THEREOF

Settlement	N	Mean	Std. Deviation
Capital	400	0.8008	0.0984
Capital agglomeration	179	0.7852	0.0983
City	192	0.7588	0.1395
City agglomeration	112	0.7735	0.1344
Village	121	0.7482	0.1516
Total	1004	0.7806	0.1200

Levene's test			
F	**df1**	**df2**	**Sig.**
11.815	4	999	<0.001

Welch's d-test			
F	**df1**	**df2**	**Sig.**
6.162	4	348.364	<0.001

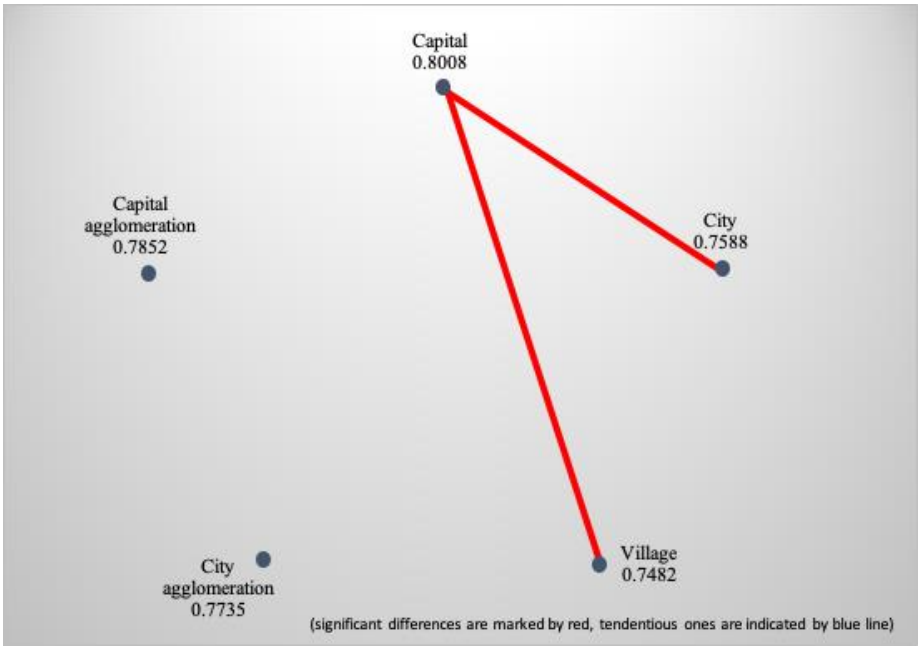

FIGURE 10 DIFFERENCES IN FINANCIAL CONSCIOUSNESS BY THE TYPE OF RESIDENCE

TABLE VII POST HOC TEST RESULTS OF FINANCIAL CONSCIOUSNESS BY THE TYPE OF SETTLEMENT

Settlement (I)	Settlement (J)	Mean Difference (I-J)	Std. Error	Sig.
Capital	Capital agglomeration	0.016	0.009	0.396
Capital	City	0.042	0.011	0.002
Capital	City agglomeration	0.027	0.014	0.269
Capital	Village	0.053	0.015	0.004
Capital agglomeration	City	0.026	0.012	0.217
Capital agglomeration	City agglomeration	0.012	0.015	0.931

Capital agglomeration	Village	0.037	0.016	0.129
City	City agglomeration	-0.015	0.016	0.896
City	Village	0.011	0.017	0.971
City agglomeration	Village	0.025	0.019	0.661

The questionnaire survey extended to a total of 6 faculties of 5 universities, the response rate in some faculties was very low. Since not a single student from ELTE-GTI sent back the questionnaire, I disregarded the faculty amid further analyses. The distribution of respondents according to faculties is shown in FIGURE 11.

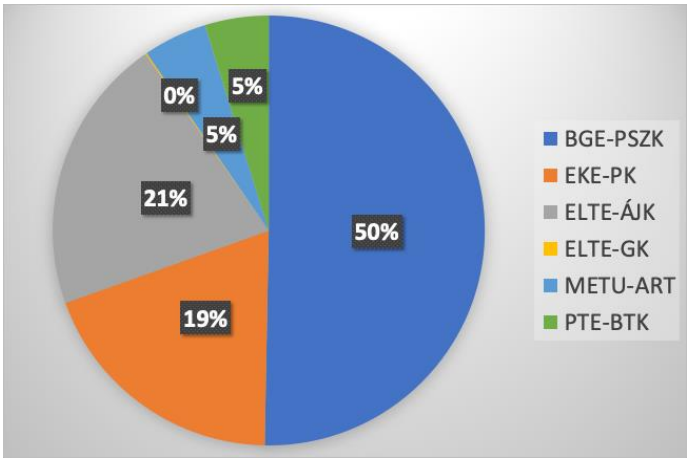

FIGURE 11 DISTRIBUTION OF FACULTY IN THE SAMPLE

When it came to the decision if I should apply a parametrical or non-parametrical test during the analyses, I made the decision based on the results of the normality test. If the sample element number of a group reaches 100, predicated on the Central Limit Theorem (CLT), the sample can be presumed normal. In these cases performing a normality test is unnecessary. However, in regard to analysis according to faculties, I could not do the same (see TABLE VIII). In the case of financial intelligence, in the two groups with lower element numbers, normality cannot be presumed. However, financial awareness presumably follows a normal distribution in every group; thus, as a result of the absence of homogeneous variances, I applied Welch's t-test to examine the equality of averages. Speaking of both financial intelligence and financial awareness, I found a significant divergence between the group averages – see TABLE VIII.

TABLE VIII COMPARISON OF FINANCIAL INTELLIGENCE AND CONSCIOUSNESS ACROSS DIFFERENT UNIVERSITIES

		Kolmogorov-Smirnov			
	Faculty	**Statistic**	**df**	**Sig.**	**Median**
Financial IQ	BGE-PSZK	0.133	505	<0.001	0.789
	EKE-PK	0.126	193	<0.001	0.684
	ELTE-ÁJK	0.140	209	<0.001	0.842
	METU-ART	0.194	48	<0.001	0.474
	PTE-BTK	0.129	48	0.044	0.368
	Total	NA	1003	NA	0.789
	Kruskal-Wallis H	**df**	**Asymp. Sig.**		
	340.95	4	<0.001		
		Kolmogorov-Smirnov			
	Faculty	**Statistic**	**df**	**Sig.**	**Mean**
Financial Consciousness	BGE-PSZK	0.144	505	<0.001	0.8128
	EKE-PK	0.108	193	<0.001	0.7805
	ELTE-ÁJK	0.156	209	<0.001	0.8025
	METU-ART	0.118	48	0.090	0.6528
	PTE-BTK	0.061	48	0.200	0.4771
	Total	NA	1003	NA	0.7807
	Levene'test	**F**	**df1**	**df2**	**Sig.**
		4.711	4	998	0.001
	Welch D-test	**F**	**df1**	**df2**	**Sig.**
		113.818	4	171.63	<0.001

From the aspect of financial intelligence practically every university faculty significantly differs from the others, even from other faculties of the same university. But there is no significant divergence between the averages of ELTE-ÁJK and BGE-PSZK or METU-ART and PTE-BTK – see FIGURE 12 and TABLE IX. Thus, it can be concluded that the financial intelligence of ELTE-ÁJK and BGE-PSZK students is the highest, followed by EKE-PK students, while METU-ART and PTE-BTK students have the lowest.

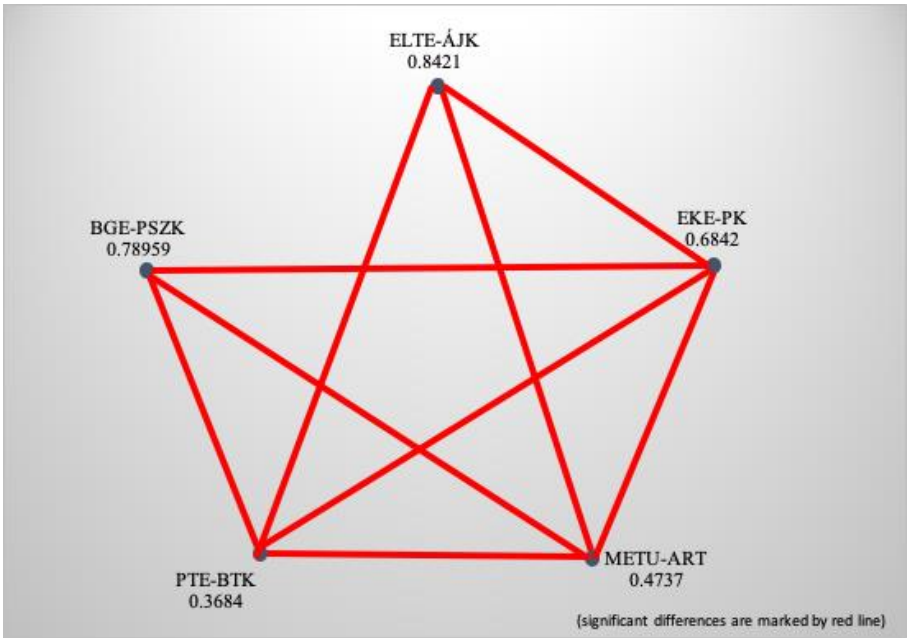

FIGURE 12 DIFFERENCES IN FINANCIAL INTELLIGENCE ACROSS FACULTIES

TABLE IX POST HOC TEST RESULTS OF FINANCIAL INTELLIGENCE BY FINANCIAL INTELLIGENCE

University (I)	University (J)	Test Statistic	Std. Error	Std. Test Statistic	Adj. Sig.
PTE-BTK	METU-ART	7.615	58.686	0.130	>0.999
PTE-BTK	EKE-PK	289.653	46.371	6.246	<0.001
PTE-BTK	BGE-PSZK	521.086	43.425	12.000	<0.001
PTE-BTK	ELTE-ÁJK	544.827	46.016	11.840	<0.001
METU-ART	EKE-PK	282.038	46.371	6.082	<0.001
METU-ART	BGE-PSZK	513.471	43.425	11.824	<0.001
METU-ART	ELTE-ÁJK	537.212	46.016	11.674	<0.001
EKE-PK	BGE-PSZK	231.433	24.330	9.512	<0.001
EKE-PK	ELTE-ÁJK	-255.174	28.701	-8.891	<0.001
BGE-PSZK	ELTE-ÁJK	-23.741	23.647	-1.004	>0.999

From the aspect of financial awareness, practically every group significantly diverges from the others. An exception to this is ELTE-ÁJK, which, as the second in line, does not significantly diverge from either the first (BGE-PSZK) or the third (EKE-PK) – see FIGURE 13 and TABLE X.

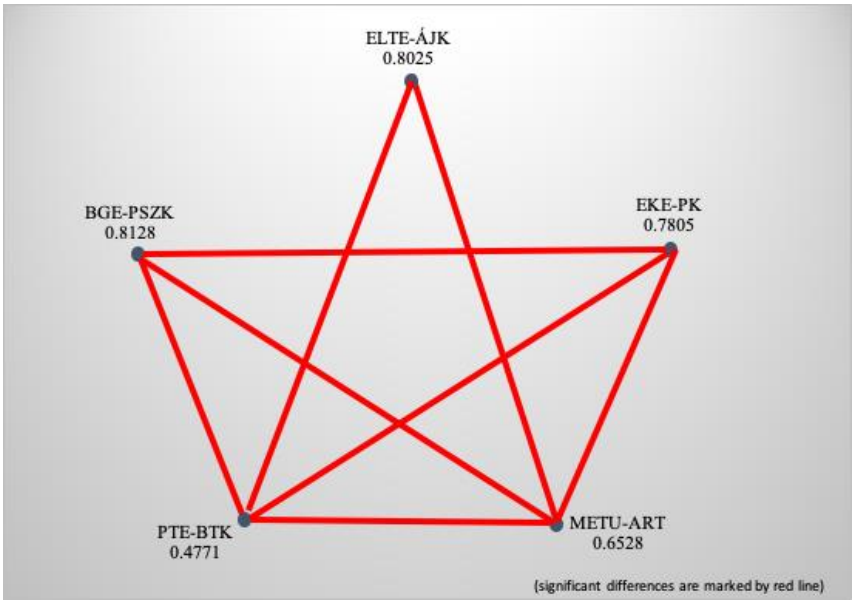

FIGURE 13 DIFFERENCES IN FINANCIAL CONSCIOUSNESS ACROSS FACULTIES

TABLE X POST HOC TEST RESULTS OF FINANCIAL CONSCIOUSNESS BY FACULTY

(I) As long as you study in tertiary education, in which faculty of which university are you pursuing your studies?	(J) As long as you study in tertiary education, in which faculty of which university are you pursuing your studies?	Mean Difference (I-J)	Std. Error	Sig.
BGE-PSZK	EKE-PK	0.032	0.008	0.001
BGE-PSZK	ELTE-ÁJK	0.010	0.007	0.589
BGE-PSZK	METU-ART	0.160	0.015	<0.001
BGE-PSZK	PTE-BTK	0.336	0.018	<0.001
EKE-PK	ELTE-ÁJK	-0.022	0.009	0.129
EKE-PK	METU-ART	0.128	0.017	<0.001
EKE-PK	PTE-BTK	0.303	0.019	<0.001
ELTE-ÁJK	METU-ART	0.150	0.016	<0.001
ELTE-ÁJK	PTE-BTK	0.325	0.018	<0.001
METU-ART	PTE-BTK	0.176	0.023	<0.001

Since students of certain faculties showed relatively similar result, I combined them; accordingly, I reached 3 groups: groups of students from economics, law and liberal arts. Their distribution in the sample is shown in a specialty group. The proportion of these compared to the full sample is shown in FIGURE 14.

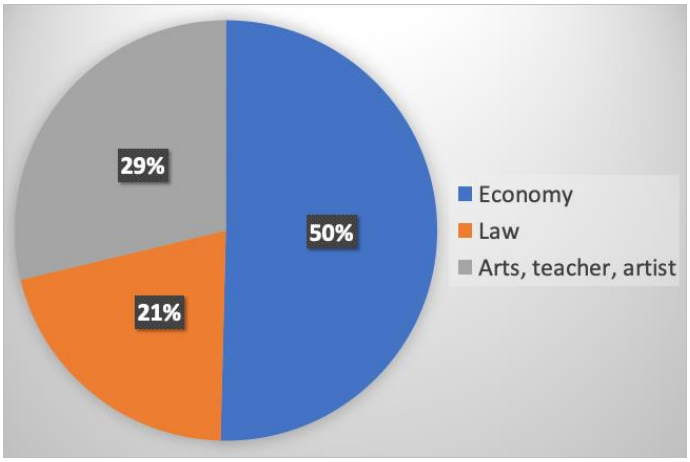

FIGURE 14 DISTRIBUTION OF FIELDS OF STUDY IN THE SAMPLE

Since the element number of all 3 groups was well over 100, I applied parametrical tests for their comparison. In cases of both financial intelligence and financial awareness, I found a significant divergence between the 3 groups – see TABLE XI.

TABLE XI COMPARISON OF FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS BY FIELD OF STUDY

		N	**Mean**	**Std. Deviation**
Financial IQ	Economy	506	0.7978	0.1055
	Law	209	0.8079	0.1046
	Art, Teacher, Artist	289	0.6172	0.1622
	Total	**1004**	**0.7479**	**0.1495**
	Levene's test			
	F	**df1**	**df2**	**Sig.**
	40.931	2	1001	<0.001
	Welch's d-test			
	F	**df1**	**df2**	**Sig.**
	158.644	2	481.903	<0.001
		N	**Mean**	**Std. Deviation**
Financial Consciousness	Economy	506	0.8125	0.0897
	Law	209	0.8025	0.0841
	Art, Teacher, Artist	289	0.7089	0.1539
	Total	**1004**	**0.7806**	**0.1200**
	Levene's test			
	F	**df1**	**df2**	**Sig.**
	69.634	2	1001	<0.001
	Welch's d-test			
	F	**df1**	**df2**	**Sig.**
	55.236	2	484.709	<0.001

In the comparison of the 3 groups, it is apparent that the highest intelligence belongs to economist and law students in a virtual draw; they are followed by the group of liberal arts students by a nearly 20 % margin – see FIGURE 15. In the event of financial intelligence, the trend is very similar, with the difference that liberal arts students are only 10 % behind economist and law students – see Figure 16.

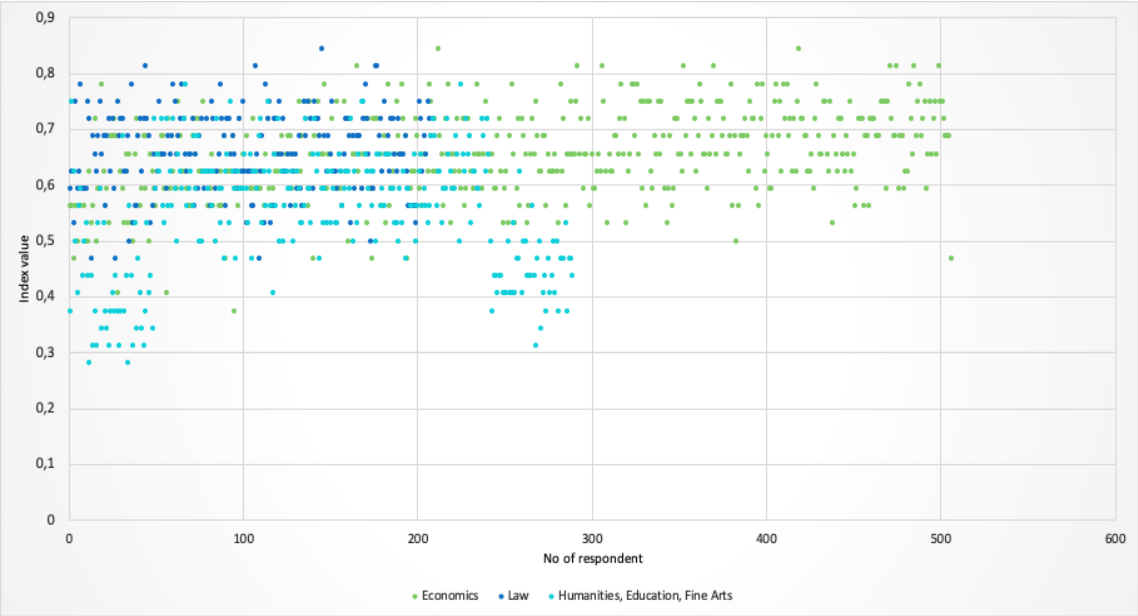

FIGURE 15 DISTRIBUTION OF FINANCIAL INTELLIGENCE ACROSS FIELDS OF STUDY

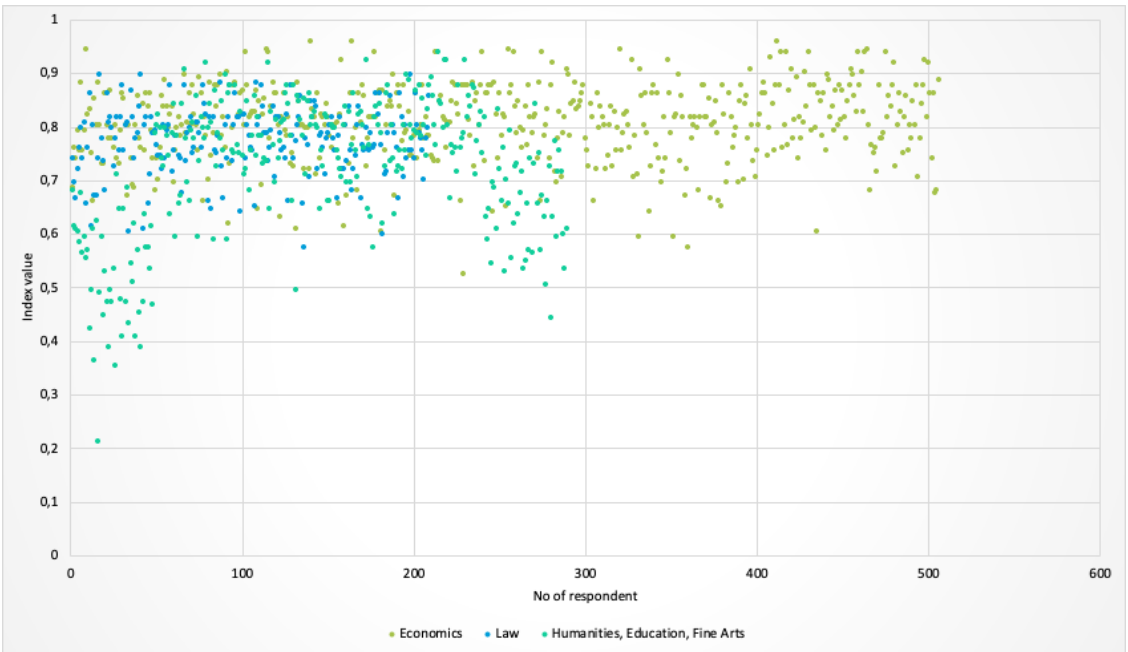

FIGURE 16 DEVELOPMENT OF FINANCIAL CONSCIOUSNESS ACROSS FIELDS OF STUDY

The above outlined differences are confirmed by post hoc tests, which means it is apparent that there is only a significant divergence in the cases of both financial intelligence and financial awareness between liberal arts students and students of the other faculties – see TABLE XII, FIGURE 17 and FIGURE 18

TABLE XII POST HOC TEST RESULTS OF COMPARISON OF FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS BY FIELDS OF STUDY

Variable	Faculty (I)	Faculty (J)	Mean Difference (I-J)	Std. Error	Sig.
Financial IQ	Economy	Law	-0.010	0.009	0.474
	Economy	Art, Teacher, Artist	0.181	0.011	<0.001
	Law	Art, Teacher, Artist	0.191	0.012	<0.001
Financial Consciousness	Economy	Law	0.010	0.007	0.329
	Economy	Art, Teacher, Artist	0.104	0.010	<0.001
	Law	Art, Teacher, Artist	0.094	0.011	<0.001

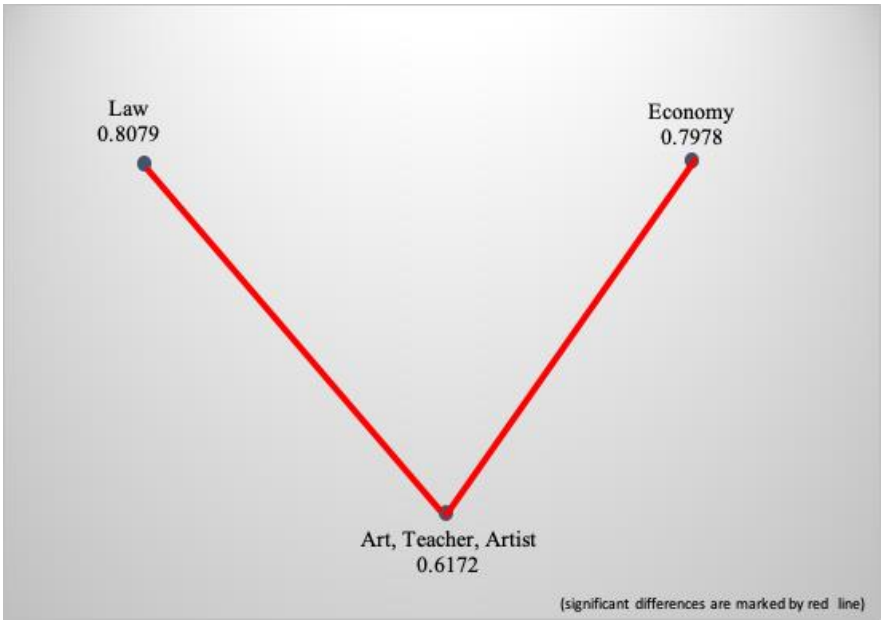

FIGURE 17 DIFFERENCES IN FINANCIAL INTELLIGENCE BY FIELD OF STUDY

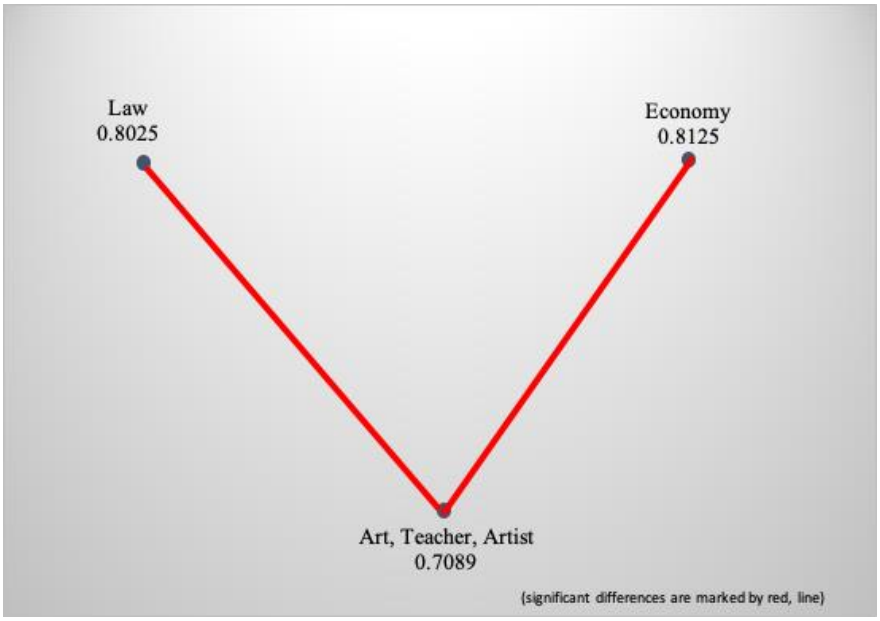

FIGURE 18 DIFFERENCES IN FINANCIAL CONSCIOUSNESS BY FIELD OF STUDY

While comparing the most important components of financial intelligence, the same trends are visible that were shown by the comparison of the averages. Nowadays, practically everyone has a bankcard, so there are no significant divergences between the 3 specialties ($|^2(2) = 1.338$, $p=0.512$). Economics students have the highest proportion of owning a credit card, followed by the students of the other two groups ($|^2(2) = 7.675$, $p=0.022$). However, in the case of foreign currency accounts ($|^2(2) = 26.348$, $p<0.001$), life insurance ($|^2(2) = 2.316$, $p=0.314$) and Revolut/Transferwise knowledge ($|^2(2)=3.599$, $p=0.165$), law students are the last on the list, liberal arts students are second, although the divergence related to foreign currency accounts is the only one that is significant (see FIGURE 19).

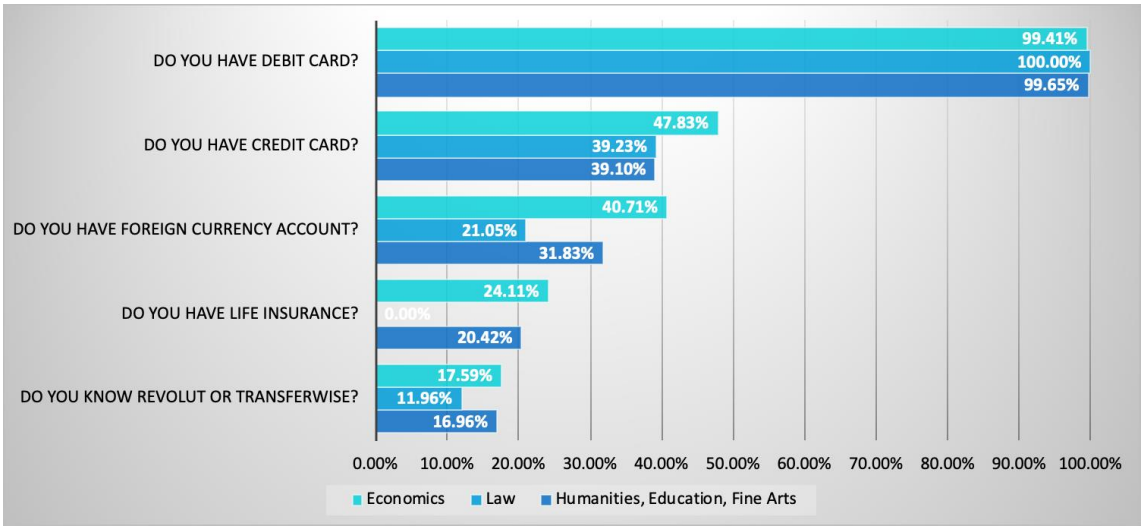

FIGURE 19 RATIO OF FINANCIAL SERVICES ACROSS FIELDS OF STUDY

Use of mobile banking ($\chi2(4) = 51.213$, $p<0.001$) and internet banking ($\chi2(4) = 68.743$, $p<0.001$) services are similarly common among university students studying economics and law; however, those majoring in humanities, education, and arts use these services less frequently, see FIGURE 20 and FIGURE 21.

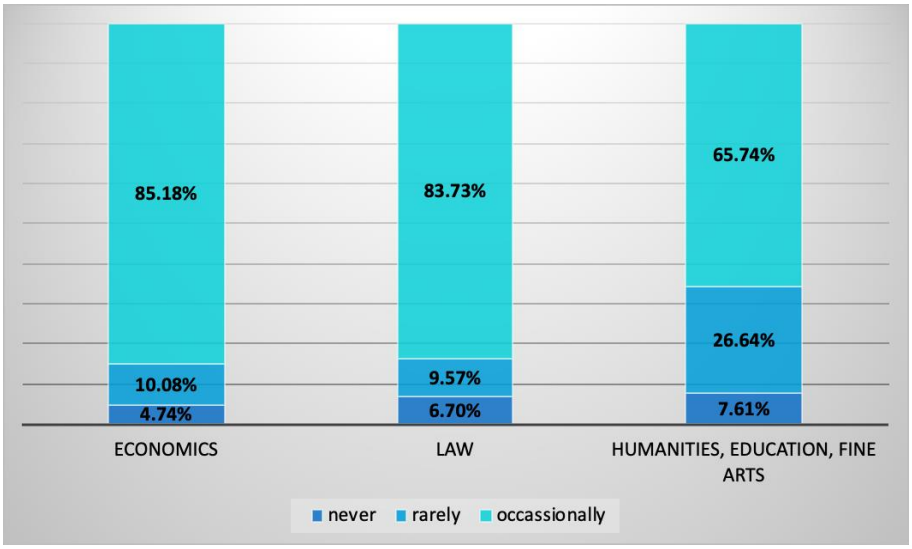

FIGURE 20 FREQUENCY OF USE OF MOBILE BANKING ACCORDING TO THE FIELD OF STUDY

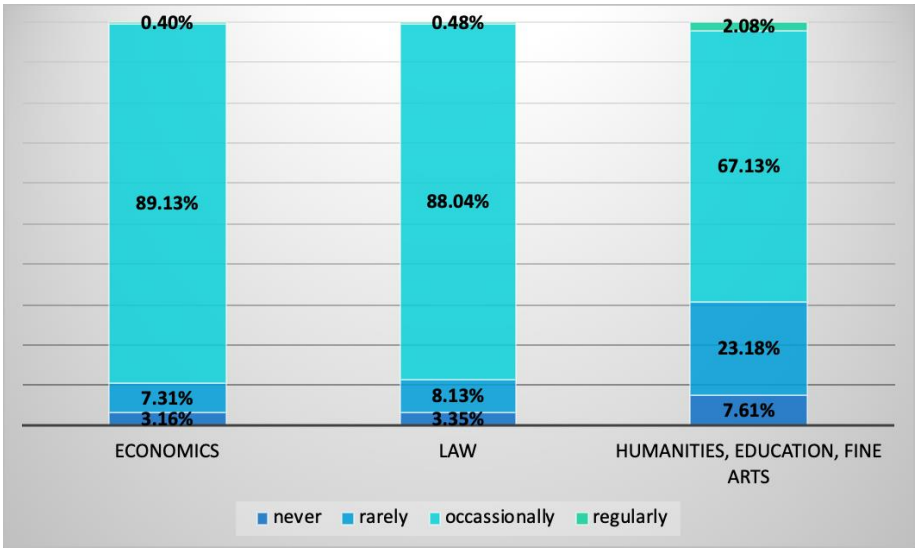

FIGURE 21 FREQUENCY OF USING NETBANK BY FIELD OF STUDY

In the area of online shopping, there is no significant difference in frequency among these three groups, they use these opportunities with almost equal frequency ($\chi 2(4) = 0.889$, $p=0.926$), see FIGURE 22.

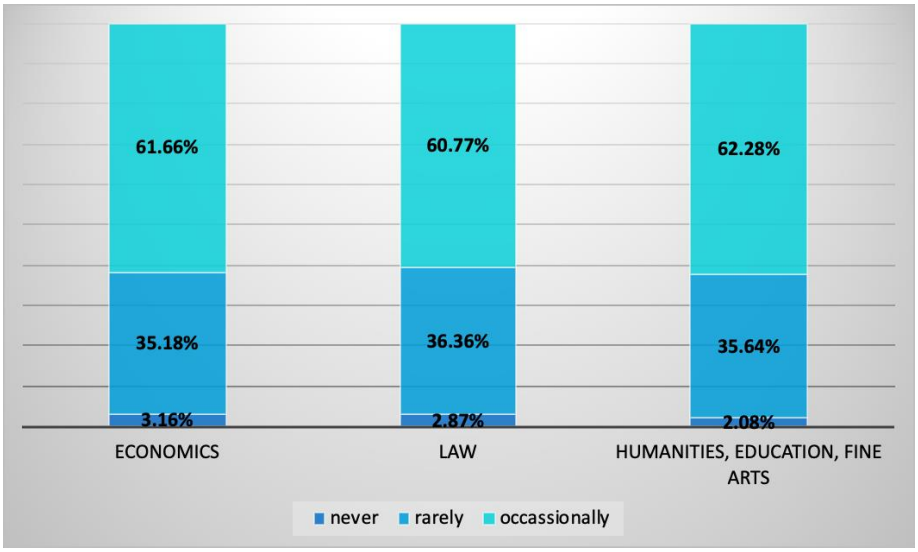

FIGURE 22 FREQUENCY OF ONLINE SHOPPING ACROSS FIELD OF STUDY

A total of 224 part-time and 780 full-time students were included in the sample according to curriculum, see FIGURE 23.

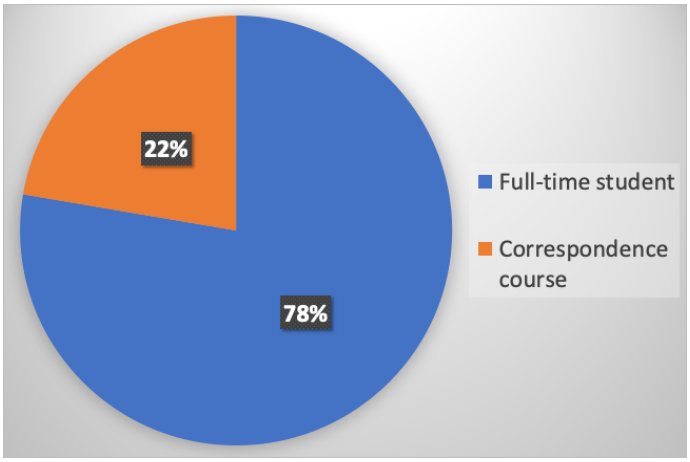

FIGURE 23 BREAKDOWN OF TRAINING SCHEDULE IN THE SAMPLE

The distribution of training schedule in my sample well approximates the Hungarian ratios. Even though neither night school, nor correspondence students feature in the sample, their share is barely 2% in the entire population either (see FIGURE 24 and FIGURE 25). To determine the national ratios, I used the online statistics published by the Education Office (Oktatási Hivatal, 2017).

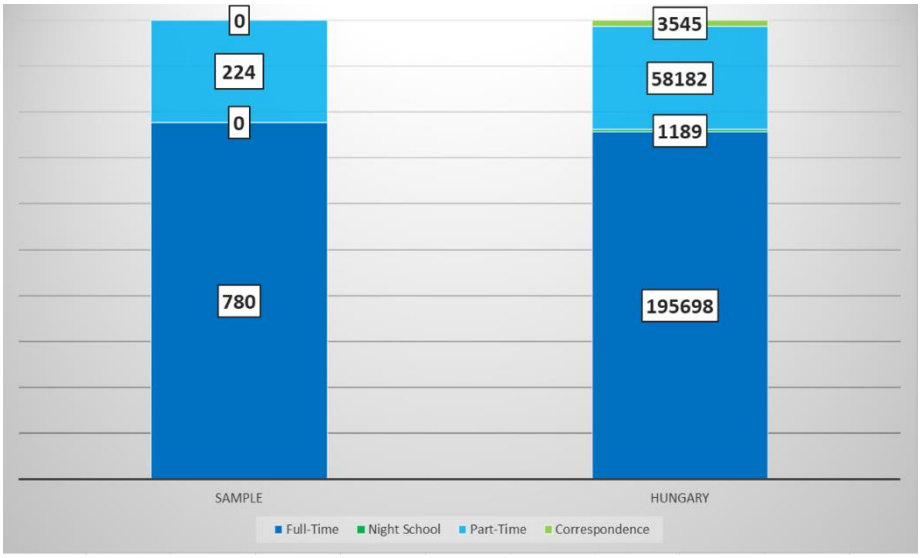

FIGURE 24 DISTRIBUTION OF MODE OF STUDY IN THE SAMPLE AND IN HUNGARY (IN HEAD COUNT)

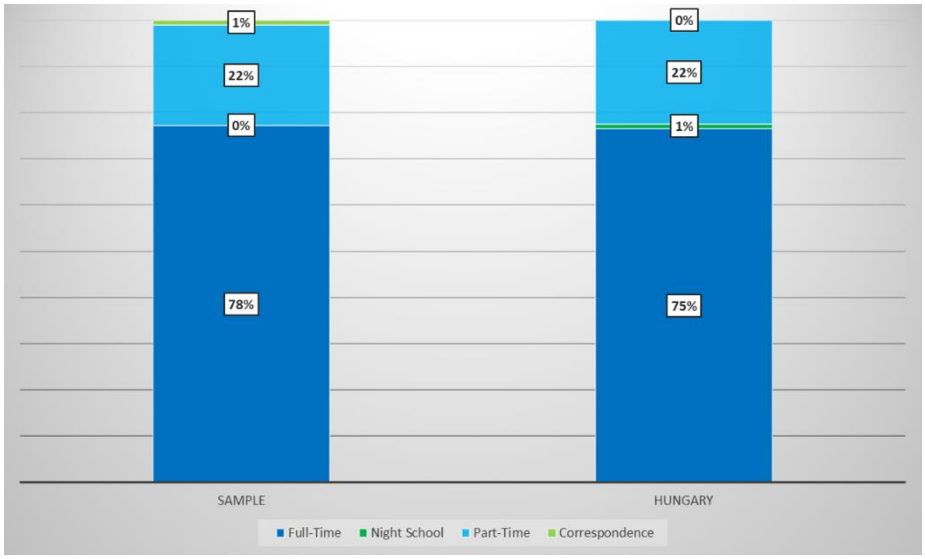

FIGURE 25 BREAKDOWN BY MODE OF STUDY IN THE SAMPLE AND IN HUNGARY (IN PERCENTAGE).

Considering the sample size of both groups exceeds 100, normality was assumed. Thereupon I examined with independent samples t-test which groups have higher financial intelligence and consciousness. Based on the result of the test, I feel able to conclude that both financial intelligence and financial consciousness of part-time students are higher than of full-time students – see TABLE XIII.

TABLE XIII COMPARISON OF FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS CONCERNING THE TRAINING SCHEDULE (*TEST STATISTICS WERE CHOSEN DEPENDING ON THE RESULTS OF LEVENE'S TESTS.)

					Levene's test	t-test*
	Course type	**N**	**Mean**	**Std. Dev.**	**F / Sig.**	**t(df) / Sig.**
Financial IQ	Full time	780	0.7285	0.1560	36.248	-10.121 (578.645)
	Part time	224	0.8156	0.0979	<0.001	<0.001
Financial Consciousness	Full time	780	0.7667	0.1240	21.464	-8.347 (493.093)
	Part time	224	0.8289	0.0896	<0.001	<0.001

Scrutinising the boxplot diagrams, it is concludable that every situational measure takes a higher value in case of part-time students in contrast with full-time students – see FIGURE 26 and FIGURE 27.

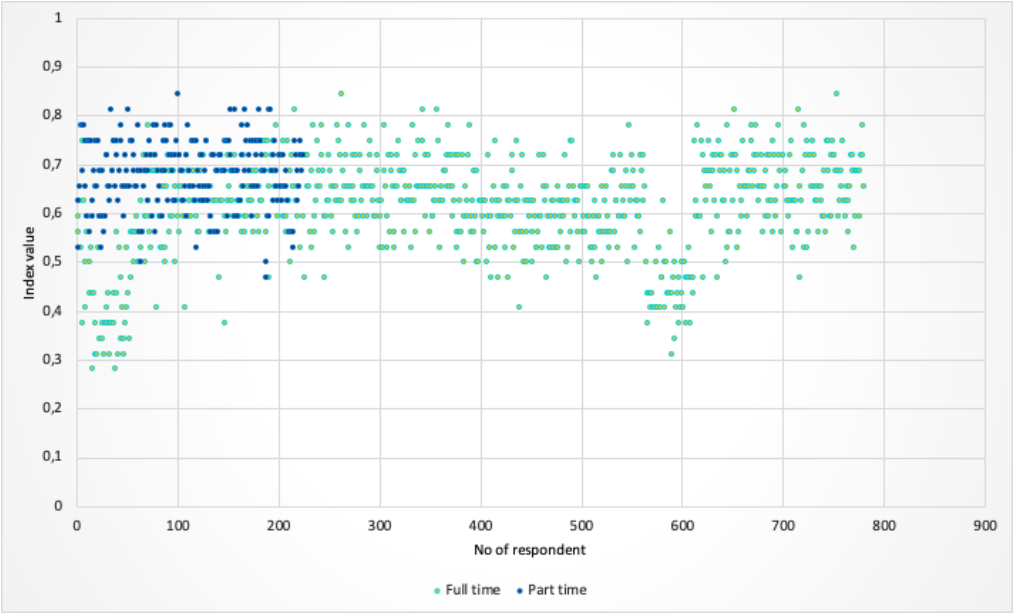

FIGURE 26 DEVELOPMENT OF FINANCIAL INTELLIGENCE BASED ON TRAINING SCHEDULE

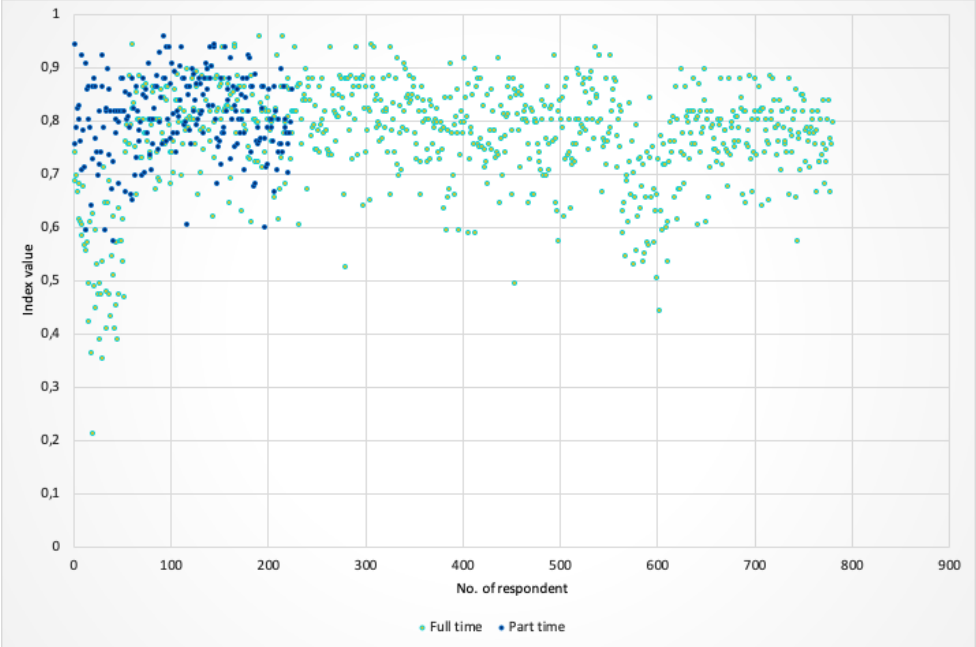

FIGURE 27 EVOLUTION OF FINANCIAL CONSCIOUSNESS DEPENDING ON TRAINING SCHEDULE

Furthermore, I also scrutinised what differences there were per study programme and mode of study. There was no need for normality hypothesis testing in the case of full-time students as normal distribution of the two indices could be assumed due to the sample size; notwithstanding, part-time students necessitated the application of the test. Founded on the results obtained, normality can also be assumed here. In the case of full-time students, no normality test was needed because of the sample size inasmuch as the normal distribution of the two indicators could be assumed due to the sample size; however, in the case of part-time students, it was necessary to carry out the tests. Based on the achieved results, normality can be assumed here as well, see TABLE XIV.

TABLE XIV NORMALITY HYPOTHESIS TESTING PER INDIVIDUAL MAJOR AMONG PART-TIME STUDENTS

		Kolmogorov-Smirnov		
Scale	**Faculty**	**Statistic**	**df**	**Sig.**
Financial Intelligence	Economics	0.133	187	<0.001
	Law	0.129	37	0.126
Financial Consciousness	Economics	0.118	187	<0.001
	Law	0.133	37	0.095

In the light of the results, it appears that differences in terms of financial intelligence between part-time and full-time students are rather limited. I concluded that financial intelligence index of students in the fields of humanities, pedagogy, and arts was significantly lower than of economics and law students – see TABLE XV and TABLE XVI. As regards financial consciousness, it is already visible that part-time students among both economic and law students have higher levels than full-time students. As is the case with full-time students, there is no significant difference between financial consciousness of economic and law students either – see FIGURE 28 and FIGURE 29.

TABLE XV COMPARISON OF FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS PER INDIVIDUAL MAJOR AMID FULL-TIME STUDENTS

Scale	Faculty	N	Mean	Std. Dev.	Std. Error	Levene's test F, df1, df2, Sig	Welch test F, df1, df2, Sig
Financial Intelligence	Economics	319	0.785	0.109	0.006	30.355	140
	Law	172	0.810	0.105	0.008	2	2
	Humanities, Education, Fine Arts	289	0.617	0.162	0.010	777	451.447
	Total	780	0.728	0.156	0.006	<0.001	<0.001
Financial Consciousness	Economics	319	0.801	0.087	0.005	60.000	43.342
	Law	172	0.800	0.085	0.006	2	2
	Humanities, Education, Fine Arts	289	0.709	0.154	0.009	777	447.724
	Total	780	0.767	0.124	0.004	<0.001	<0.001

TABLE XVI COMPARISON OF FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS PER INDIVIDUAL MAJOR AMONG FULL-TIME STUDENTS

Scale	(I) Faculty	(J) Faculty	Mean Difference (I-J)	Std. Error	Sig.
Financial Intelligence	Economics	Law	-0.0251	0.0100	0.0340
	Economics	Humanities, Education, Fine Arts	0.1680	0.0113	<0.001
	Law	Humanities, Education, Fine Arts	0.1931	0.0124	<0.001
Financial Consciousness	Economics	Law	0.0015	0.0081	0.9810
	Economics	Humanities, Education, Fine Arts	0.0923	0.0103	<0.001
	Law	Humanities, Education, Fine Arts	0.0908	0.0111	<0.001

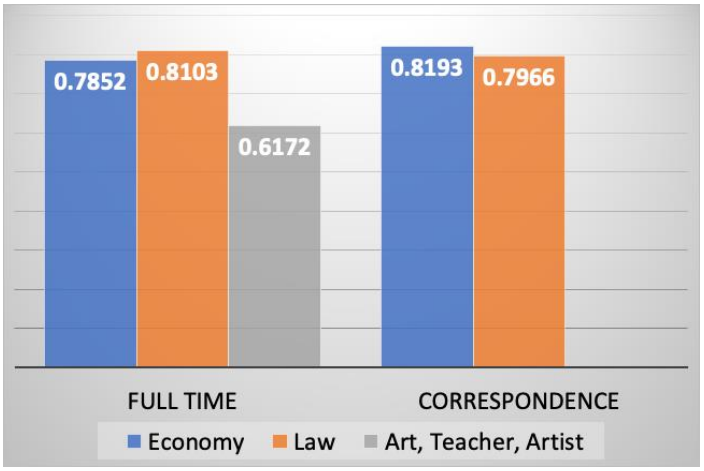

FIGURE 28 DISSIMILARITIES IN FINANCIAL INTELLIGENCE ACCORDING TO THE FIELD OF STUDY

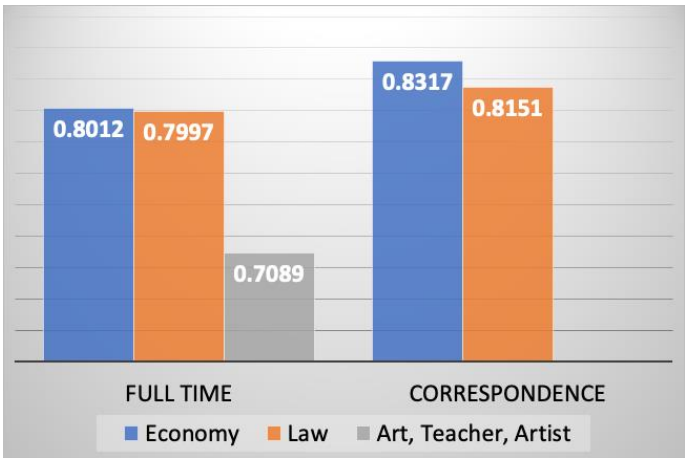

FIGURE 29 DIFFERENCES IN FINANCIAL CONSCIOUSNESS IN DIFFERENT TRAINING SCHEDULES, ACCORDING TO FIELDS OF STUDY

TABLE XVII COMPARISON OF FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS BY MAJOR FIELD OF STUDY AMONG PART-TIME STUDENTS

						Levene test	t-test
Scale	**Faculty**	**N**	**Mean**	**Std. Dev.**	**Std. Error Mean**	**F, Sig**	**t(df), sig**
Financial Intelligence	Economics	187	0.819	0.097	0.007	0.518	1.291 (222)
	Law	37	0.797	0.104	0.017	0.473	0.198
Financial Consciousness	Economics	187	0.832	0.091	0.007	1.488	1.027 (222)
	Law	37	0.815	0.082	0.013	0.224	0.305

I have differentiated three occupational categories of university students in my questionnaire: the ones without a job, students performing physical work in addition to their studies and those performing intellectual work simultaneously with their studies. The majority of respondents (nearly

80%) do not have a job along with their university studies while white-collar workers outnumber blue-collar workers in the rest of the respondents – see FIGURE 30.

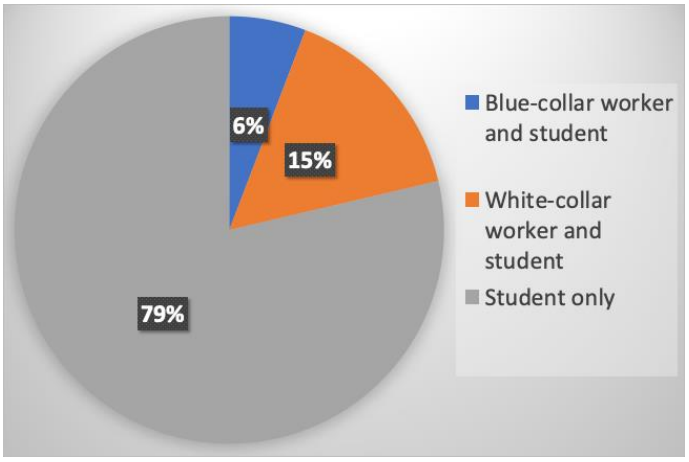

FIGURE 30 BREAKDOWN OF OCCUPATIONS IN THE SAMPLE

Since the number of college students performing physical work is less than 100, I checked the applicability of parametric tests with normality test. Results are delineated in TABLE XVIII.

TABLE XVIII NORMALITY HYPOTHESIS TESTING OF FINANCIAL INTELLIGENCE AND CONSCIOUSNESS BASED ON OCCUPATION

		Kolmogorov-Smirnov		
Variable	**Occupation**	**Statistic**	**df**	**Sig.**
Financial IQ	Blue collar job with student status	0.108	58	0.088
	White collar job with student status	0.138	156	<0.001
	Student	0.134	790	<0.001
Financial Consciousness	Blue collar job with student status	0.132	58	0.013
	White collar job with student status	0.115	156	<0.001
	Student	0.167	790	<0.001

It can be established based on the test results that there is a significant difference in the level of financial intelligence for any given category. Those who do not have a job next to their tertiary studies are characterised by a lesser financial intelligence than those who perform physical or intellectual work, too – see TABLE XIX.

TABLE XIX DEVELOPMENT OF FINANCIAL INTELLIGENCE ACROSS OCCUPATIONS

Occupation category	N	Mean	Std. Deviation
Blue collar job and student	58	0.8067	0.0968
White collar job and student	156	0.8185	0.0997
Student	790	0.7296	0.1556
Total	**1004**	**0.7479**	**0.1495**
Levene's test			
	F	**df1**	**df2**	**Sig.**
	16.61	2	1001	<0.001
Welch's d-test			
	F	**df1**	**df2**	**Sig.**
	47.973	2	154.489	<0.001

According to the results of post hoc tests, significant difference exclusively exists between those who only have student status and the other 2 groups, but there is no significant difference between physical and intellectual workers. Results are shown in FIGURE 31. and TABLE XX.

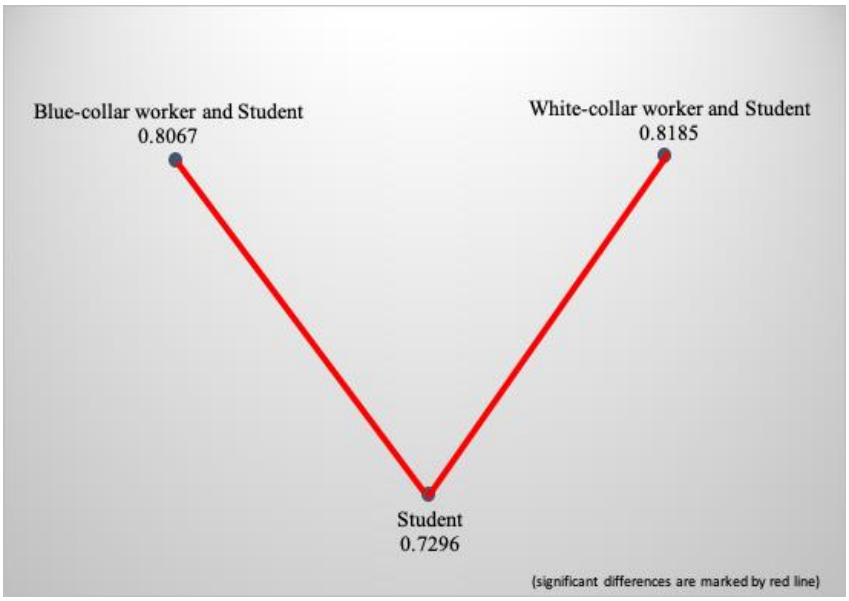

FIGURE 31 DEVELOPMENT OF FINANCIAL INTELLIGENCE IN JOB LOTS

TABLE XX POST HOC TESTS OF THE AVERAGES FINANCIAL INTELLIGENCE BY OCCUPATION

(I) What is your occupation?	(J) What is your occupation?	Mean Difference (I-J)	Std. Error	Sig.
Physical worker and university student	Intellectual worker and university student	-0.012	0.015	0.713

Physical worker and university student	University student	0.077	0.014	<0.001
University student	Intellectual worker and university student	-0.089	0.010	<0.001

Examining financial consciousness, I reached similar results as I did in the case of financial intelligence, scilicet, individuals who were simply enrolled showed lesser financial consciousness than those who already entered the workforce in addition to their studies, see TABLE XXI.

TABLE XXI DEVELOPMENT OF FINANCIAL CONSCIOUSNESS BY OCCUPATION

Occupation category	**N**	**Median**
Blue collar job and student	58	0.8409
White collar job and student	156	0.8333
Student	790	0.8030
Total	**1004**	**0.8182**
Kruskal-Wallis Test		
Chi-Squared		50.700
Degree Of Freedom		2
Asymp. Sig.(2-sided test)		<0.001

Having scrutinised the mean difference per pair, I observed that there was a significant difference between financial consciousness of university students with and without a job – see FIGURE 32 and TABLE XXII.

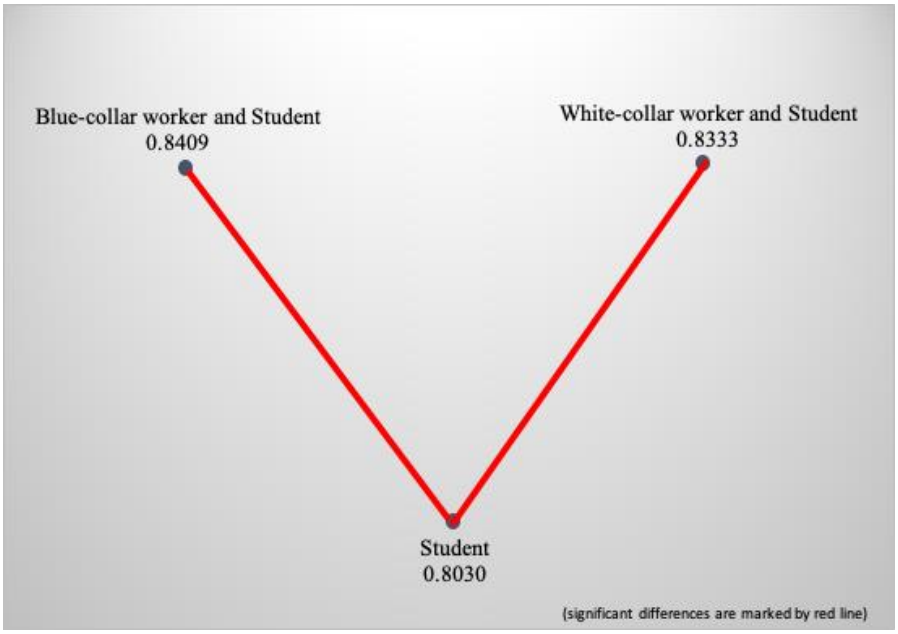

FIGURE 32 DEVELOPMENT OF FINANCIAL CONSCIOUSNESS BY OCCUPATION

TABLE XXII POST HOC TESTS OF AVERAGES OF FINANCIAL CONSCIOUSNESS BY OCCUPATION

Occupation (I)	Occupation (J)	Median Difference (I-J)	Std. Error	Sig.
Blue-collar worker and student	White-collar worker and student	0.0076	0.013	0.502
	Student	0.0379	0.012	<0.001
White-collar worker and student	Student	0.0303	0.008	<0.001

I also raised the question concerning what position individuals with both student status and employment relationship had in their workplace. I named four further categories other than only students: employees, middle managers, senior managers and entrepreneurs – see their distribution in FIGURE 33.

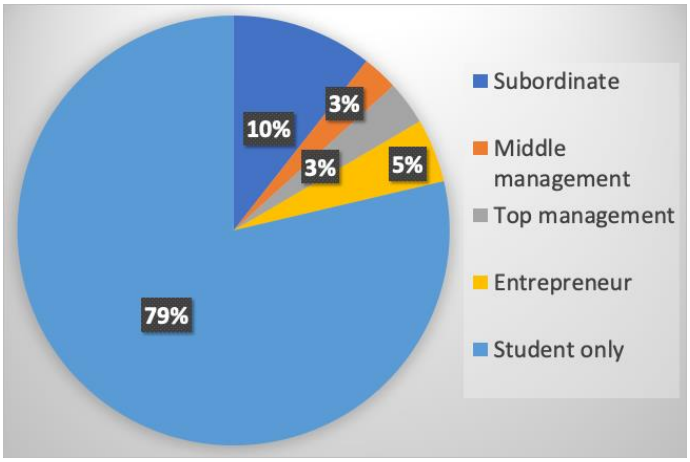

FIGURE 33 DISTRIBUTION OF THE SAMPLE BASED ON POSITION

Seeing as I had to work with groups of sample size under 100, I examined even in this case whether the sample complies with the condition of normality. There was such a group in case of both indices for which normality could not be assumed. Hence, I performed the comparison of averages with nonparametric tests – see TABLE XXIII.

TABLE XXIII NORMALITY TESTS OF FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS BY POSITION

		Kolmogorov-Smirnov		
		Statistic	**df**	**Sig.**
Financial IQ	Subordinate	0.207	106	<0.001
	Middle management	0.214	27	0.003
	Top management	0.173	33	0.013
	Entrepreneur	0.137	48	0.024
	Student only	0.134	790	<0.001
Financial Consciousness	Subordinate	0.101	106	0.010
	Middle management	0.161	27	0.070
	Top management	0.139	33	0.105
	Entrepreneur	0.137	48	0.025
	Student only	0.167	790	<0.001

With regard to financial intelligence and consciousness, I found significant difference according to position, i.e., I had measured the highest financial intelligence at employees. The means of the other position categories is somewhat similar. I only obtained the lowest result in the case of student with solely student status. Respecting financial consciousness, groups of employees, middle

managers and top managers have similar medians, while groups of employees and 'only students' are characterised by lower financial consciousness – see TABLE XXIV.

TABLE XXIV COMPARISON OF MEDIANS OF FINANCIAL INTELLIGENCE AND FINANCIAL CONSCIOUSNESS

		Median	
Position	**N**	**Financial IQ**	**Financial Consciousness**
Subordinate	106	0.8421	0.8485
Middle management	27	0.7895	0.8485
Top management	33	0.7895	0.8485
Entrepreneur	48	0.7895	0.8182
Student only	790	0.7368	0.8030
Total	**1004**	**0.7895**	**0.8182**
Kruskal-Wallis Test			
Chi-Squared		56.846	58.954
Degree Of Freedom		4	4
Asymp. Sig.(2-sided test)		<0.001	<0.001

Amid comparing financial intelligence per pair, I only found significant difference between scholars with solely student status and employees, while the group of students without pursuing a job only had a tendentious difference from the other three employment categories – see TABLE XXV and FIGURE 34., which meant that significant difference could have supposedly been verified here as well in the case of a larger sample size.

TABLE XXV POST HOC TESTS OF THE AVERAGES OF FINANCIAL INTELLIGENCE BY POSITION (WITH BONFERRONI CORRECTION)

Sample 1-Sample 2	**Test Statistic**	**Std. Error**	**Std. Test Statistic**	**Sig.**	**Adj. Sig.**
Student only – Entrepreneur	119.525	42.783	2.794	0.005	0.052
Student only – T op management	142.57	51.134	2.788	0.005	0.053
Student only – Middle management	146.994	56.325	2.61	0.009	0.091
Student only – Subordinate	193.922	29.769	6.514	<0.001	<0.001
Entrepreneur – Top management	23.045	65.08	0.354	0.723	>0.999
Entrepreneur – Middle management	27.469	69.233	0.397	0.692	>0.999
Entrepreneur – Subordinate	74.396	50.069	1.486	0.137	>0.999
Top management – Middle management	4.424	74.683	0.059	0.953	>0.999
Top management – Subordinate	51.352	57.369	0.895	0.371	>0.999
Middle management – Subordinate	46.928	62.04	0.756	0.449	>0.999

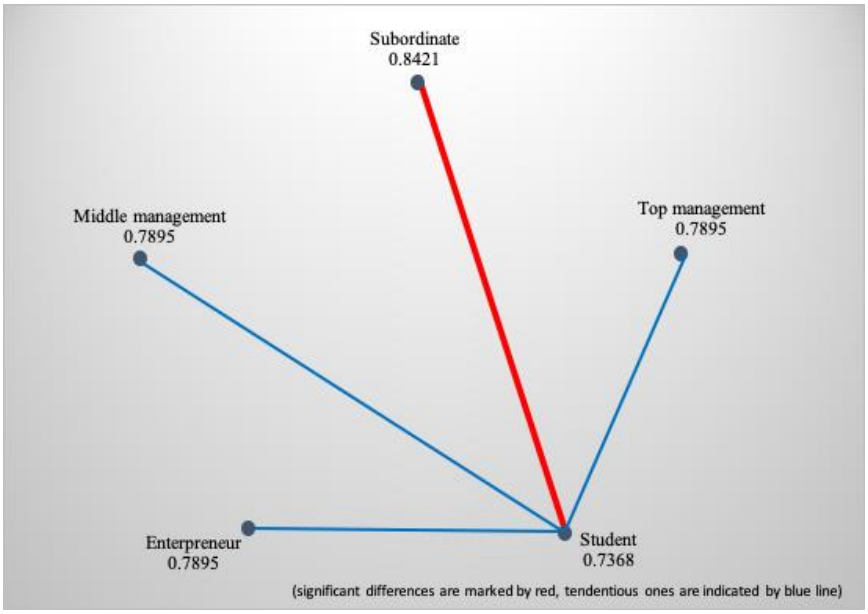

FIGURE 34 DEVELOPMENT OF FINANCIAL INTELLIGENCE BY POSITION

I arrived at similar results touching financial consciousness, with the difference that several previously tendentious differences are already significant here. Scholars with only student status have less financial consciousness than employees, middle, and top managers – see TABLE XXVI and FIGURE 35.

TABLE XXVI POST HOC TESTS OF AVERAGES OF FINANCIAL CONSCIOUSNESS BASED ON POSITION

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.
Student only – Entrepreneur	50.393	42.992	1.172	0.241	>0.999
Student only – Subordinate	177.741	29.915	5.942	0.000	<0.001
Student only – Top management	189.857	51.384	3.695	0.000	0.002
Student only – Middle management	227.705	56.600	4.023	0.000	0.001
Entrepreneur – Subordinate	127.349	50.314	2.531	0.011	0.114
Entrepreneur – Top management	139.464	65.398	2.133	0.033	0.330
Entrepreneur – Middle management	177.313	69.571	2.549	0.011	0.108
Subordinate – Top management	-12.115	57.650	-0.210	0.834	>0.999
Subordinate – Middle management	-49.964	62.343	-0.801	0.423	>0.999
Top management – Middle management	37.848	75.048	0.504	0.614	>0.999

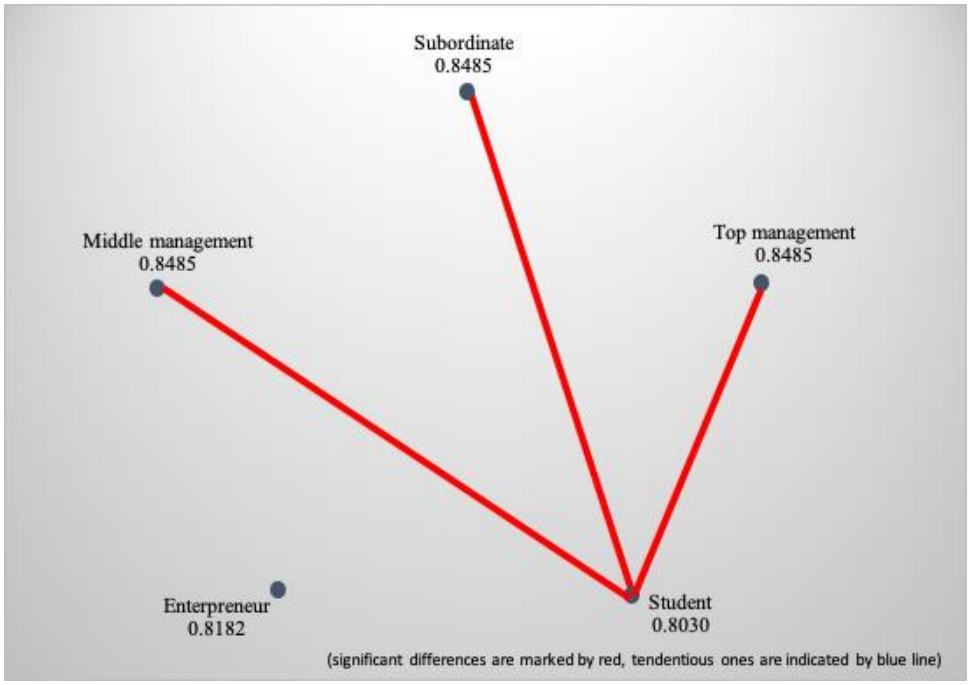

FIGURE 35 DEVELOPMENT OF FINANCIAL CONSCIOUSNESS ACCORDING TO POSITION

I grouped respondents into categories with the assistance of the indices of financial intelligence and consciousness, by means of cluster analysis (Ward method). The outcome has been a relatively monotonous cluster creation; nevertheless, one out of the two indices typically dominates the other in the middle two sections. The first cluster comprised such respondents that had both their financial intelligence and their consciousness below the average. Those belonging to this cluster were given the name 'cold fish' because they were the ones who knew and used financial system services the least. I classified those who had higher financial intelligence but lower consciousness to the second cluster, and vice versa, individuals with lower financial intelligence but higher level of consciousness to the third cluster. Finally, cluster no. 4 contains people with high levels of both financial intelligence and financial consciousness. I called them competent users. Details are demonstrated in FIGURE 36.

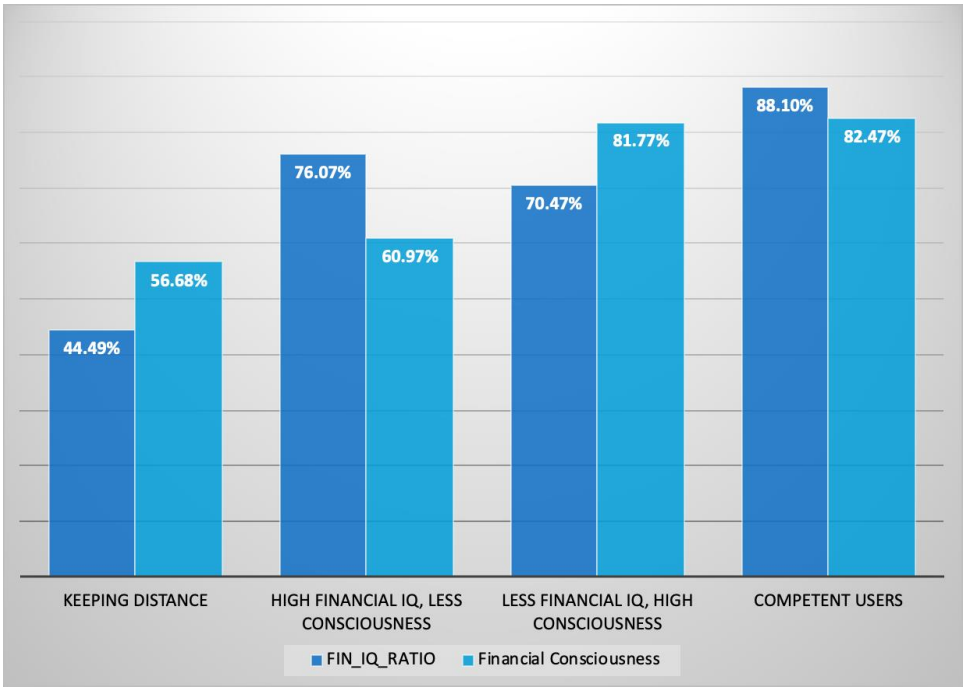

FIGURE 36 RELATIVE VALUES OF FINANCIAL INTELLIGENCE AND CONSCIOUSNESS IN THE FOUR CLUSTERS

Having analysed the differences per cluster, both cluster creating criteria, i.e., both financial intelligence ($F(3,1000) = 1139.964$, $p<0.001$) and financial consciousness ($F(3,1000) = 422.699$, $p<0.001$) differed significantly in the four clusters. The effect size was also relatively high, 77.4% in case of financial intelligence, while 55.9% in case of financial consciousness.

Examining the cluster classification of students from various universities, the picture that emerges is very similar to the one being concluded from previous tests, too. Differences are significant; thus, the ratio of clusters is different in miscellaneous faculties ($|^2(12) = 828.432$, $p<0.001$). The ratio of competent users is the highest among students of the Faculty of Law at Eötvös Loránd University and the Faculty of Finance and Accountancy at Budapest Business School. Only every eighth student was included in the competent cluster from the Faculty of Humanities at Eszterházy Károly University; they are predominantly characterised by a low level of financial intelligence and high consciousness. The ratio of aloof individuals in case of the Faculty of Arts and Creative Industries at Budapest Metropolitan University of Applied Sciences is around 90%. In addition, in the cases of

students of METU-ART and PTE-BTK, there is a 90% proportion of reserved students – see FIGURE 37 and TABLE XXVII.

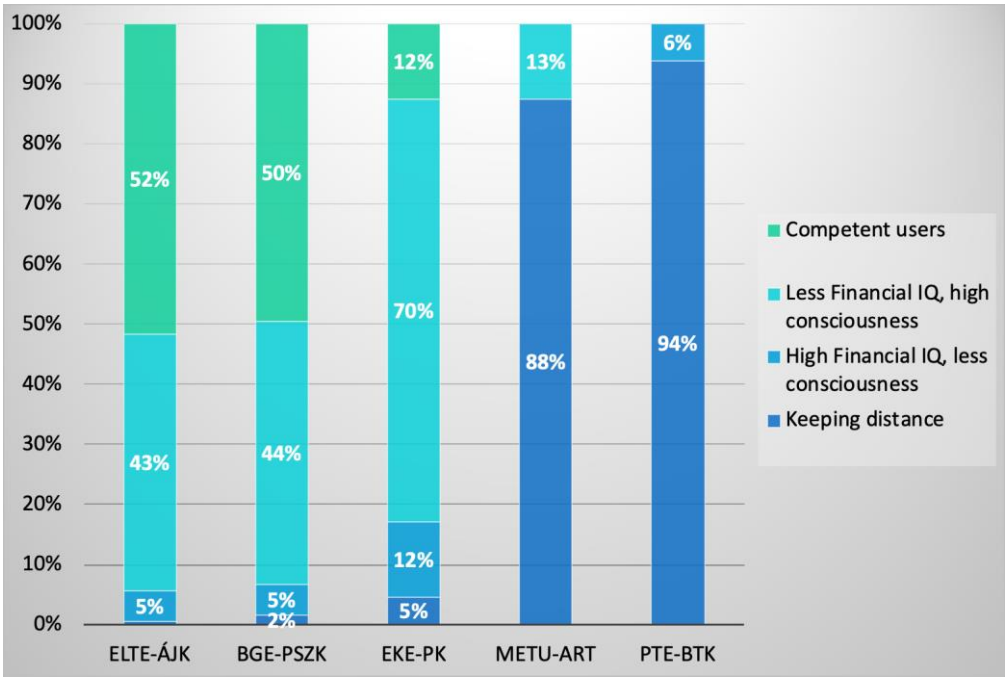

FIGURE 37 DISTRIBUTION OF THE FOUR CLUSTERS AMONG STUDENTS OF DIFFERENT FACULTIES

TABLE XXVII DISTRIBUTION OF THE FOUR CLUSTERS AMONG STUDENTS OF VARIOUS FACULTIES

Cluster	ELTE-ÁJK	BGE-PSZK	EKE-PK	METU-ART	PTE-BTK	Total
Keeping distance	1	8	9	42	45	105
High Financial IQ, less consciousness	11	26	24	0	3	64
Less Financial IQ, high consciousness	89	221	136	6	0	452
Competent users	108	250	24	0	0	382
Total	**209**	**505**	**193**	**48**	**48**	**1003**

As was observable a short time ago, there are no truly irrefutable differences according to gender currently either. Cluster distribution at miscellaneous faculties is similar in case of both women and men; that is, cluster classification of students of different faculties significantly – and similarly – differs in case of both genders (women: $\chi^2(12)=365.701$, $p<0.001$, men: $\chi^2(12)=471.935$, $p<0.001$) – see FIGURE 38, FIGURE 39, TABLE XXVIII and

TABLE XXIX.

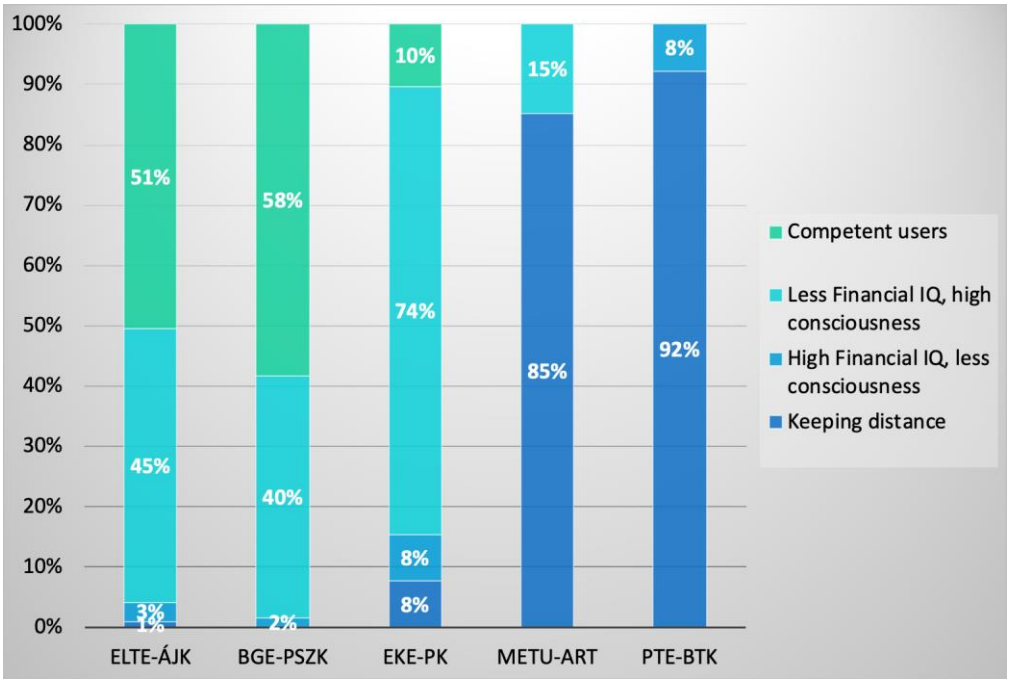

FIGURE 38 DISTRIBUTION OF THE FOUR CLUSTERS AMONG FEMALE STUDENTS OF THE VARIOUS FACULTIES

TABLE XXVIII DISTRIBUTION OF THE FOUR CLUSTERS AMONG FEMALE STUDENTS OF DIFFERENT FACULTIES

Cluster	ELTE-ÁJK	BGE-PSZK	EKE-PK	METU-ART	PTE-BTK	Total
Keeping distance	1	0	9	23	36	69
High Financial IQ, less consciousness	3	2	9	0	3	17
Less Financial IQ, high consciousness	43	48	87	4	0	182
Competent users	48	70	12	0	0	130
Total	**95**	**120**	**117**	**27**	**39**	**398**

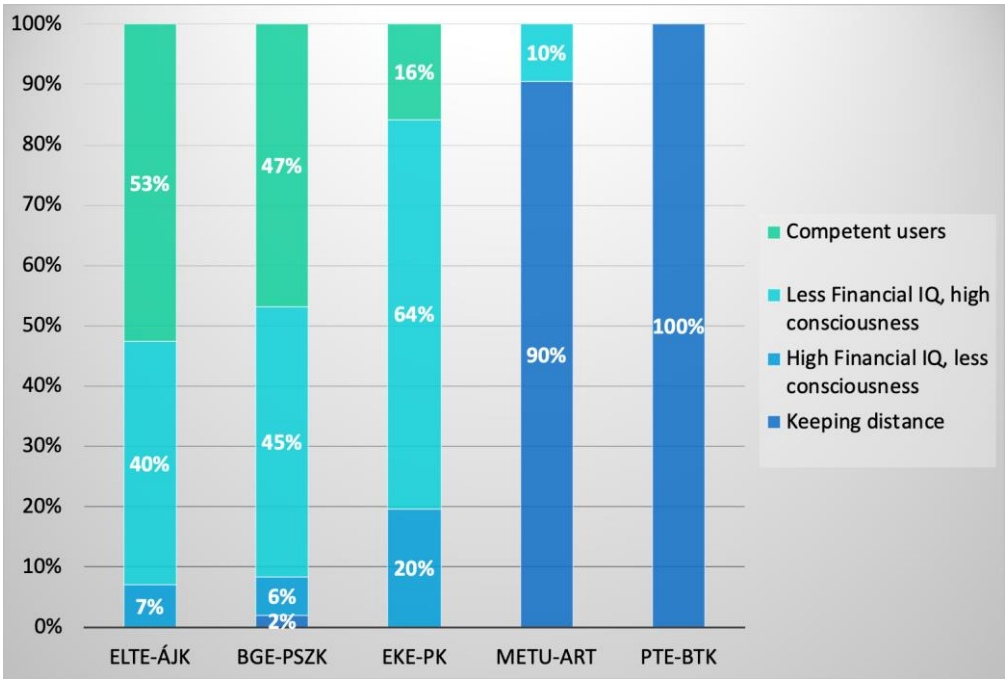

FIGURE 39 DISTRIBUTION OF THE FOUR CLUSTERS AMONG MALE STUDENTS OF DIFFERENT FACULTIES

TABLE XXIX DISTRIBUTION OF THE FOUR CLUSTERS AMONG MALE STUDENTS OF CERTAIN FACULTIES

Cluster	ELTE-ÁJK	BGE-PSZK	EKE-PK	METU-ART	PTE-BTK	Total
Keeping distance	0	8	0	19	9	36
High Financial IQ, less consciousness	8	24	15	0	0	47
Less Financial IQ, high consciousness	46	173	49	2	0	270
Competent users	60	180	12	0	0	252
Total	**114**	**385**	**76**	**21**	**9**	**605**

When purely focussing on genders, it turns out to be a significant difference that the ratio of competent users is greater and the ratio of distant individuals is smaller ($|^2(3) = 38.374$, $p<0.001$) among men than among women – see FIGURE 40 and TABLE XXX.

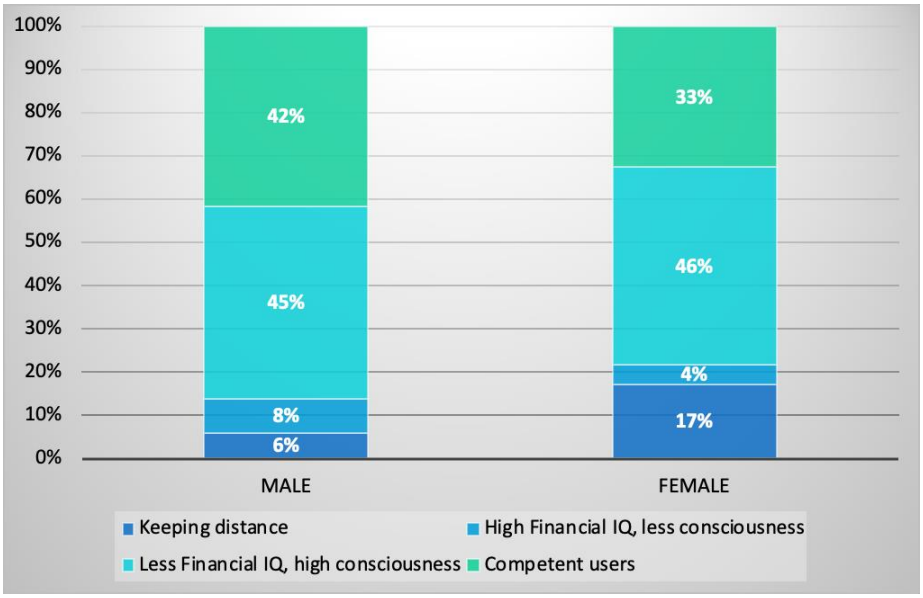

FIGURE 40 DISTRIBUTION OF THE FOUR CLUSTERS AMONG FEMALE AND MALE STUDENTS.

TABLE XXX DISTRIBUTION OF THE FOUR CLUSTERS AMID FEMALE AND MALE STUDENTS

Cluster	Male	Female	Total
Keeping distance	37	69	106
High Financial IQ, less consciousness	47	17	64
Less Financial IQ, high consciousness	270	182	452
Competent users	252	130	382
Total	**606**	**398**	**1004**

In terms of type of settlement, a significant difference can be established as regards belonging to certain clusters; the more the size of a settlement diminishes, the more the ratio of competent users decreases and similarly, the ratio of aloof individuals increases (2(12)=28.251, p=0.005) – see FIGURE 41 and TABLE XXXI.

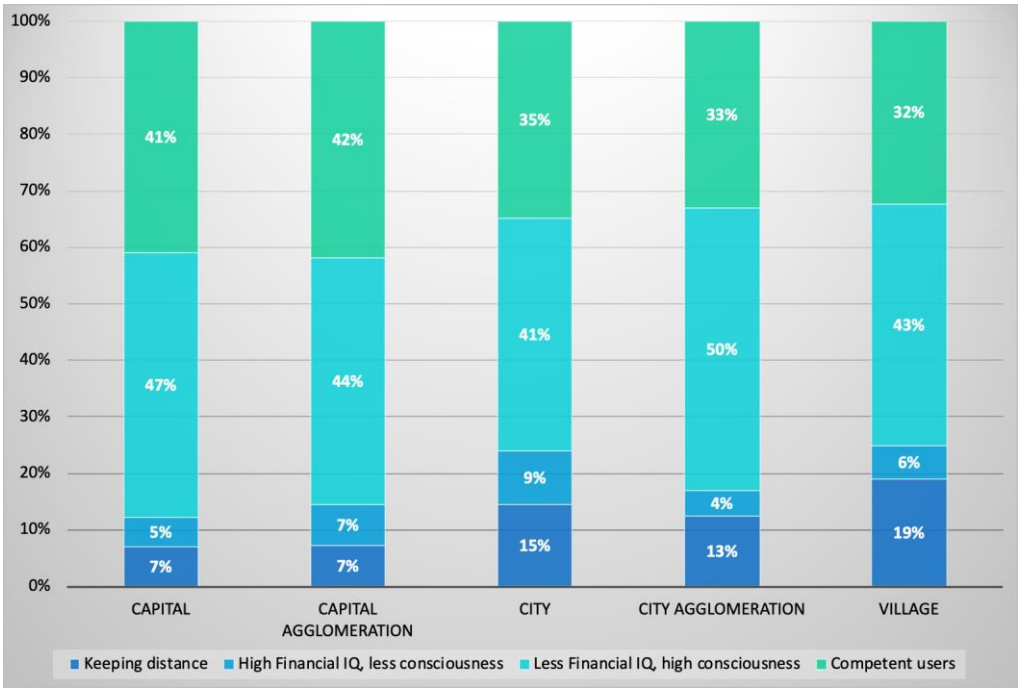

FIGURE 41 DISTRIBUTION OF THE FOUR CLUSTERS ACCORDING TO TYPE OF SETTLEMENT

TABLE XXXI DISTRIBUTION OF THE FOUR CLUSTES ACROSS TYPES OF RESIDENCE

Cluster	Capital	Capital agglomeration	City	City agglomeration	Village	Total
Keeping distance	28	13	28	14	23	106
High Financial IQ, less Consciousness	21	13	18	5	7	64
Less Financial IQ, high Consciousness	187	78	79	56	52	452
Competent users	164	75	67	37	39	382
Total	**400**	**179**	**192**	**112**	**121**	**1004**

Examining cluster categorization by employment category, I found significant divergences ($\chi 2(6) = 67.628$, $p<0.001$). The rate of individuals who refrained from answering was highest in the case of those being enrolled in higher education without a workplace, and this group also numbers the fewest competent users. Among students undertaking physical and intellectual work in addition to their studies, the rate of competent users was 20-30% higher than those who only studied, see FIGURE 42 and TABLE XXXII.

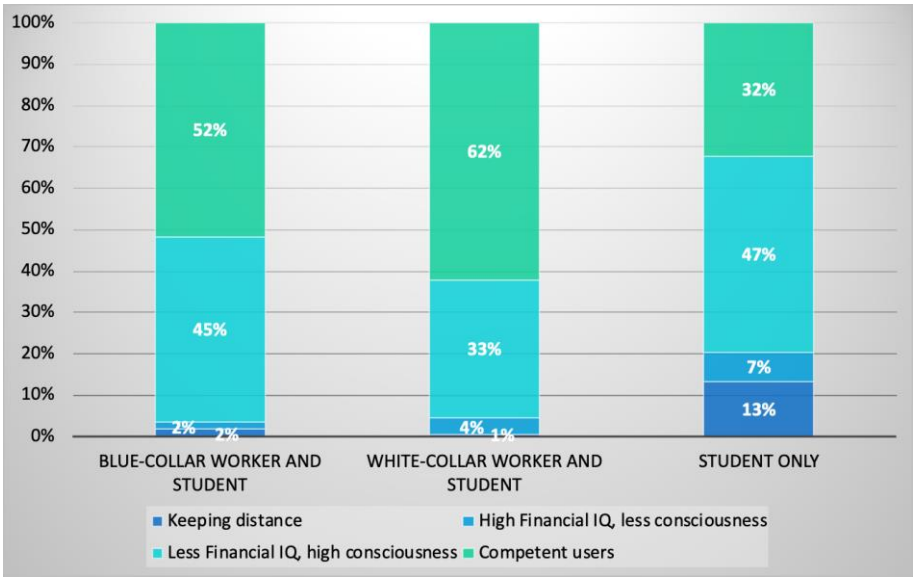

FIGURE 42 DISTRIBUTION OF THE FOUR CLUSTERS BY OCCUPATION

TABLE XXXII BREAKDOWN OF THE FOUR CLUSTERS BY OCCUPATION

Cluster	Blue-collar worker and student	White-collar worker and student	Student only	Total
Keeping distance	1	1	104	106
High Financial IQ, less consciousness	1	6	57	64
Less Financial IQ, high consciousness	26	52	374	452
Competent users	30	97	255	382
Total	**58**	**156**	**790**	**1004**

There is a significant divergence according to age in the four surveyed clusters, which I examined via nonparametric test (TABLE XXXIV) due to the lack of normality (see TABLE XXXIII).

TABLE XXXIII NORMALITY TEST OF AGE IN THE FOUR CLUSTERS

	Kolmogorov-Smirnov		
Financial_Cluster	Statistic	df	Sig.
Keeping distance	0.153	106	<0.001
High Financial IQ, less consciousness	0.209	64	<0.001
Less Financial IQ, high consciousness	0.182	452	<0.001
Competent users	0.16	382	<0.001

df = degree of freedom, Sig = significance

TABLE XXXIV COMPARISON OF AGE IN THE FOUR CLUSTERS

Financial Cluster	N	Median
Keeping distance (a)	106	20

High Financial IQ, less consciousness (bd)	64	21
Less Financial IQ, high consciousness (c)	452	21
Competent users (d)	382	22
Total	**1004**	**21**
Kruskal-Wallis Test		
Chi-Squared		45.384
Degree of Freedom		3
Asymp. Sig. (2-sided test)		<0.001

When comparing the average age of the people in the four clusters by pairs, a significant difference was found between the median age of those who refrained from answering (as the group with the lowest median age) and the median age of all the other clusters; furthermore, significant difference was detectable between the median age of competent users and the lower financial intelligence – higher consciousness cluster, see TABLE XXXV and FIGURE 43.

TABLE XXXV POST HOC TESTS OF THE COMPARISON OF AGE ACROSS THE FOUR CLUSTERS

Sample 1 – Sample 2	**Test Statistic**	**Std. Error**	**Sig.**	**Adj. Sig.**
Keeping distance-High Financial IQ, less consciousness	-138.284	45.533	0.002	0.014
Keeping distance-Less Financial IQ, high consciousness	-147.093	31.041	<0.001	<0.001
Keeping distance-Competent users	-210.155	31.577	<0.001	<0.001
High Financial IQ, less consciousness-Less Financial IQ, high consciousness	-8.808	38.416	0.819	>0.999
High Financial IQ, less consciousness-Competent users	-71.871	38.850	0.064	0.386
Less Financial IQ, high consciousness-Competent users	-63.062	19.991	0.002	0.010

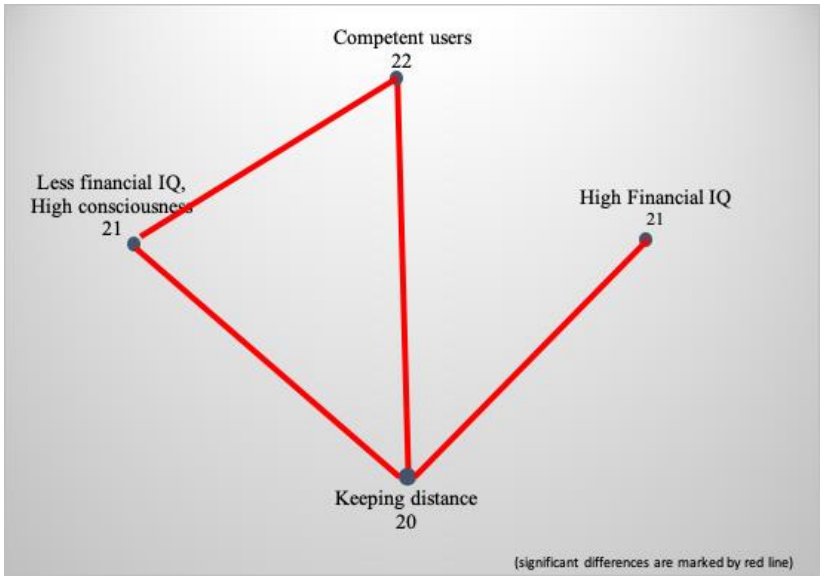

FIGURE 43 COMPARISON OF AGE IN THE FOUR CLUSTERS

Having successfully determined a correlation between majoring in economics and the level of financial consciousness, the subsequent step was the examination of cause and effect. For further analysis I used algorithms employed in decision trees and examined the following questions (TABLE XXXVI)

TABLE XXXVI QUESTIONS FROM THE QUESTIONNAIRE, SELECTED FOR DECISION TREE ANALYSIS

Questions posed in this research
1. Have you got a debit card?
2. Have you got a credit card?
3. Have you got a life insurance?
4. How often do you use netbank?
5. How often do you use mobile banking?

Of course, in this case the decision tree I employed is not a real decision tree as in my questionnaire I inquired about the existence of certain factors and behavioural patterns. On the other hand, it is still somewhat of a decision to request a debit card for a bank account, to buy life insurance, or even to use mobile banking for transactions. This is the reason I chose to use this type of algorithm as it is effective in determining the criteria with which respondents can be divided into smaller groups.

Since it is a precondition of registration for students in Hungarian tertiary education to have a bank account, where scholarships are transferrable and from where tuition fees are payable to the

university account held with the Hungarian State Treasury, every student owns one, which is always accompanied by a debit card. Hence, it was first examined what kind of classification attribute was predominant among debit card owners.

Do you have a debit card?

99,6% of respondents answered this question with yes (TABLE XXXVII), which means that only four people said that they did not have a debit card. The first group division was based on the study

TABLE XXXVII THE DISTRIBUTION OF ANSWERS GIVEN TO THE QUESTTION "DO YOU HAVE A DEBIT CARD?" BASED ON DEMOGRAPHIC VARIABLES

			Yes		No				
		Total	N	Ratio	N	Ratio	χ^2	df.	Sig.
Complete sample		**004**	4	0,40%	1000	99,6%			
What is your study schedule?	correspondence	224	3	1,30%	221	98,7%	6,432	1	0,011
What is your employment position outside of studies?	junior employee; mid management; entrepreneur	181	0	0,00%	181	100%	12,799	1	0,005
	Upper management; student only	43	3	7,00%	40	93,0%			
What is your study schedule?	Full-time	780	1	0,10%	779	99,9%	6,432	1	0,011
Age category	23 and under	724	0	0,00%	724	100%	12,945	1	0,001
	Above 23	56	1	1,80%	55	98,2%			

df = degree of freedom, Sig = significance

schedule at university and it was determined that there is a slightly higher number of correspondence students who do not have a debit card ($\chi^2(1)=6,432$; p=0,011). Among the correspondence students there are two significantly distinct subgroups based on employment position outside of studies: Those who were classified as junior employees, middle management and entrepreneurs all had debit cards

while amongst upper management and student only occupations there were three cases where the person did not own a debit card ($|^2(1)=12,799$; p=0,005). Among the full-time students there were two distinct categories: those who were 23 or under all had debit cards while in the group of above 23 there was one person who did not have a debit card ($|^2(1)=12,945$; p=0,001). Although all three categories are based on significant findings it is important to note that because of the nature of the trial in the case of low theoretical abundance – which is relevant now – the reliability of the trial is lessened.

Do you have a credit card?

Approximately half of the respondents said they had a credit card (56,5% no and 43,5% yes – TABLE XXXVIII), and the first group division was based on the level of financial awareness ($|2(2)=70,811$; p<0,001).

TABLE XXXVIII THE DISTRIBUTION OF ANSWERS GIVEN TO THE QUESTTION "DO YOU HAVE A CREDIT CARD?" BASED ON DEMOGRAPHIC VARIABLES, FINANCIAL AWARENESS AND FINANCIAL INTELLIGENCE

			No		Yes				
		Total	**N**	**Ratio**	**N**	**Ration**	**$|^2$**	**df.**	**Sig.**
Complete sample		**1004**	567	56%	437	43,5%			
Financial awareness	very low	92	70	76%	22	23,9%	70,811	2	<0,001
Financial intelligence (very low financial awareness)	low	49	46	93,9%	3	6,1%			
	average, high, very high	43	24	55,8%	19	44,2%	18,237	1	<0,001
Financial awareness	low, average, above average, high	775	462	59,6%	313	40,4%	70,811	2	<0,001
Work position	blue collar labour and student; white collar labour and student	152	66	43,4%	86	56,60%	20,591	1	<0,001
University major	economics	124	46	37,1%	78	62,9%	10,959	1	0,001
	law	28	20	71,4%	8	28,6%			
Work position	student only	623	396	63,6%	227	36,4%	20,591	1	<0,001
	economics	276	194	70,3%	82	29,7%	9,680	1	0,006

University major	law; liberal arts, pedagogics, arts	347	202	58,20%	145	41,80%			
Financial awareness	very high	137	35	25,50%	102	74,5%	70,811	2	<0,001
University major	economics; liberal arts, pedagogics, arts	111	18	16,20%	93	83,8%	26,774	1	<0,001
	law	26	17	65,40%	9	34,6%			

df = degree of freedom, Sig = significance

The higher financial awareness one had the higher the probability that they had a credit card. The method of examination distinguished three groups: those with very low financial awareness (23,9%); low, average, above average and high financial awareness (40,4%) and very high financial awareness (74,5%). The 92 people in the very low financial awareness group can be further divided into two groups based on their financial intelligence ($|^2(1)=18,237$; $p<0,001$) 6.1% of those with low financial intelligence and 44,2% of those with low, average, above average and high financial awareness had a credit card. The 775 people with low, average, above average and high financial intelligence can be split into two groups based on their employment position ($|^2(1)=20,591$; $p<0,001$): 56,6% of students who also worked outside of studying stated that they had a credit card while only 36,4% of those who were students only said they owned one. In the groups of those who work outside of studying there is a significant difference between economics students and law students ($|^2(1)=10,959$; $p=0,001$): the number of credit card owners amongst law students was 62,9% while only 28,6% of economics students had credit cards. In the only student group, I found the greatest difference between university majors ($|^2(1)=9,680$; $p=0,006$): 29,7% of economics students had a credit card in contrast with 41,8% of law, liberal arts, pedagogics and art students. The 137 respondents with very high financial awareness were also be divided into two groups based on their university majors ($|^2(1)=26,774$; $p<0,001$): 34,6% of law students and 83,8% of economics, liberal arts, pedagogics and art students said they owned a credit card.

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 members 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.

Do you have life insurance? (TABLE XXXIX)

TABLE XXXIX THE DISTRIBUTION OF ANSWERS GIVEN TO THE QUESTTION "DO YOU HAVE LIFE INSURANCE?" BASED ON DEMOGRAPHIC VARIABLES AND FINANCIAL INTELLIGENCE

			Yes		No				
		Total	**N**	**Ratio**	**N**	**Ratio**	χ^2	**df.**	**Sig.**
Complete Sample		**798**	617	77,3%	181	22,7%			
What is your study schedule??	correspondence	187	112	59,9%	75	40,1%	42,287	1	<0,001
	full-time	611	505	82,7%	106	17,3%			
Financial intelligence (full-time students)	low	98	87	88,8%	11	11,2%	11,181	2	0,011
	average	175	131	74,9%	44	25,1%			
Gender (Average financial IQ)	male	98	83	84,7%	15	15,3%	11,451	1	0,001
	female	77	48	62,3%	29	37,7%			
Financial intelligence (full-time students)	high, very high	338	287	84,9%	51	15,1%	11,181	2	0,011
Place of residence (high, very high financial IQ)	village, city, city agglomeration, capital city agglomeration	204	163	79,9%	41	20,1%	10,078	1	0,023
	Capital city	134	124	92,5%	10	7,5%			

df = degree of freedom, Sig = significance

Based on the answers given to this question (22,7% of respondents have life insurance) respondents were divided into two groups ($|^2(1)=42,287$; $p<0,001$): correspondence students (40,1%) and full-time students (17,3). The 611 respondents in the latter group were further divided based on financial intelligence ($|^2(2)=11,181$; $p=0,011$): 11,2% of those with low financial intelligence, 25,1% of those with average financial intelligence, and 15,1% of those with high or very high financial intelligence had life insurance. The 175 respondents in the average financial intelligence group can be further divided based on their gender ($|^2(1)=11,451$; $p=0,001$): a little over a third of women (37.7%) and only a sixth of men respondents had life insurance. There was a significant difference in the group of high and very high financial intelligence ($|^2(1)=10,078$; $p=0,023$) between those who lived in the capital (7,5%) and those who lived in other settlements (20,1%).

In case of intermediate level of financial intelligence, a difference 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 so 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.

Finally, I examined two bank services that could be considered modern, that is, the use of internet banking and mobile payment services. 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 scrutinised population, which means an increase as compared with the 85% result measured by Németh et al. (2013).

How often do you use the netbank service?

In terms of netbank usage the only significant difference that I found was in relation to financial intelligence and financial awareness (TABLE XL-). The first grouping was based on financial awareness ($|^2(6)=136,845$; $p<0,001$): the higher someone's financial awareness was, the higher the chances were that they used the netbank service. Based on this I distinguished three groups (from which the first two can be further divided based on levels of financial intelligence): very low

($|^2$(3)=11,101; p=0,034); low, average ($|^2$(6)=24,054; p<0,001) and above average financial awareness groups. In the case of the first two groups those who had higher levels of financial intelligence were also more likely to use netbank services

TABLE XL THE DISTRIBUTION OF ANSWERS GIVEN TO THE QUESTTION "HOW OFTEN DO YOU USE NETBANK" BASED ON FINANCIAL AWARENESS AND FINANCIAL INTELLIGENCE

			Never		Rarely		Regularly		Always				
		Total	**N**	**Ratio**	**N**	**Ratio**	**N**	**Ratio**	**N**	**Ratio**	**$|^2$**	**df.**	**Sig.**
Complete sample		**1004**	45	4,5%	121	12,1%	829	82,6%	9	0,90%			
Financial awareness	Very low	92	13	14,1 %	35	38,0%	43	46,7%	1	1,1%	136,84	6	<0,001
Financial intelligence (very low financial awareness)	low	49	11	22,4 %	21	42,9%	16	32,7%	1	2,0%			
	average, high, very high	43	2	4,7%	14	32,6%	27	62,8%	0	0,0%	11,10	3	0,034
Financial awareness	low, average	394	26	6,6%	61	15,5%	303	76,9%	4	1,0%	136,84	6	<0,001
Financial intelligence (low, average financial awareness	low	37	3	8,1%	9	24,3%	22	59,5%	3	8,1%			
	average, high, very high	357	23	6,4%	52	14,6%	281	78,7%	1	0,3%	24,05	3	<0,001
Financial awareness	Above average, very high	518	6	1,2%	25	4,8%	483	93,2%	4	0,8%	136,84	6	<0,001

df = degree of freedom, Sig = significance

The frequency of use primarily depends on financial consciousness: the more financial awareness individuals, the more likely they use the net banking services (TABLE XLI).

TABLE XLI THE DISTRIBUTION OF ANSWERS GIVEN TO THE QUESTTION "HOW OFTEN DO YOU USE NETBANK" BASED ON FINANCIAL AWARENESS AND FINANCIAL INTELLIGENCE

			Never		Rarely		Regularly		Always				
		Total	N	Ratio	N	Ratio	N	Ratio	N	Ratio	χ^2	df.	Sig.
Complete sample		**1004**	45	4,5%	121	12,1%	829	82,6%	9	0,90%			
Financial awareness	Very low	92	13	14,1%	35	38,0%	43	46,7%	1	1,10%	136,84	6	<0,001
Financial intelligence (very low financial awareness)	low	49	11	22,4%	21	42,9%	16	32,7%	1	2,00%			
	average, high, very high	43	2	4,7%	14	32,6%	27	62,8%	0	0,00%	11,10	3	0,034
Financial awareness	low, average	394	26	6,6%	61	15,5%	303	76,9%	4	1,0%	136,84	6	<0,001
Financial intelligence (low, average financial awareness	low	37	3	8,1%	9	24,3%	22	59,5%	3	8,1%			
	average, high, very high	357	23	6,4%	52	14,6%	281	78,7%	1	0,3%	24,05	3	<0,001
Financial awareness	Above average, very high	518	6	1,2%	25	4,8%	483	93,2%	4	0,8%	136,84	6	<0,001

df = degree of freedom, Sig = significance

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. Interestingly among individuals with lower levels of financial intelligence, elder students are characterised by more frequent mobile banking activity (TABLE XLII).

TABLE XLII THE DISTRIBUTION OF ANSWERS GIVEN TO THE QUESTTION "DO YOU USE MOBILE BANKING" BASED ON DEMOGRAPHIC VARIABLES, FINANCIAL AWARENESS AND FINANCIAL INTELLIGENCE

			Never		Rarely		Regularly				
		Total	**N**	**Ratio**	**N**	**Ratio**	**N**	**Ratio**	**χ^2**	**df.**	**Sig.**
Complete sample		**1004**	60	6,0%	148	14,7%	796	79,3%			
Financial awareness	very low	92	21	22,8%	41	44,6%	30	32,6%	185,32	4	<0,001
	low, average	394	31	7,9%	74	18,8%	289	73,4%			
	above average, high, very high	518	8	1,5%	33	6,4%	477	92,1%			
Financial intelligence (above average, high, very high financial awareness	low, average, high	310	1	0,3%	28	9,0%	281	90,6%	16,22	2	0,001
Age category	26 and under	274	0	0,0%	28	10,2%	246	89,8%	11,48	2	0,006
	Above 26	36	1	2,8%	0	0,0%	35	97,2%			
Financial intelligence (above average, high, very high financial awareness)					5	2,40%	196	94,2%	16,22	2	0,001
	very high	208	7	3,4%							

df = degree of freedom, Sig = significance

The use of mobile banking in the first grouping is determined by financial awareness ($\chi^2(4)=185,326$; $p<0,001$): the higher someone's financial awareness, the more frequently they are likely to use mobile banking. Those with above average, high and very high financial awareness can be further divided based on their financial intelligence ($\chi^2(2)=16,221$; $p<0,001$): the higher the financial

intelligence the more frequent the use of mobile banking. The low, average, and high financial intelligence group show a significant difference when further grouped based on age($|^2$(2)=11,484; p=0,006): those of above 26 years are more frequent users of mobile banking services then the 26 and under group.

To summarise the examined financial behaviours, I made the following observations: The largest number of credit card owners can be found among those with high financial awareness. In the average financial awareness groups, among those who work outside of studying, economics students are the most likely to own a credit card, while in the student only group, law, liberal arts, pedagogics and arts students had a higher rate of credit card ownership. Correspondence students were more likely to have life insurance as do full time students who had a higher level of financial intelligence. Women and those who lived outside of the capital were also more likely to have insurance. The use of netbank services can be attributed to two factors: financial awareness and financial intelligence. In both cases there was a positive correlation meaning that the higher the value for one or both was, the higher the frequency of netbank usage. The use of mobile banking is also correlated with financial awareness and financial intelligence, and the correlation is even higher if the person is under 26 years of age.

This study has made it apparent that several demographic factors influence whether someone has a debit card, credit card, life insurance and whether they use netbank and mobile bank services. My personal takeaway from this study is that the most important factors affecting financial behaviour are financial awareness and financial intelligence. Both factors positively affected most of the examined habits and behaviours. The higher someone's financial intelligence and awareness the more likely and the more frequently they are to use the services I have examined.

CHAPTER 5

DISCUSSION

My research examined the financial intelligence and financial consciousness of Hungarian university students. I began with the assumption that university students majoring in economics would, due to their more expansive financial knowledge, show more financially conscious behaviour. With my research I was able to determine a significant link between the knowledge of students studying economics, and their financial behaviour. I found the same sort of correlation in the case of law students as well, that is, the first part of my hypothesis was proven correct. However, based on the decision trees, there is no direct causal relationship between the study of economics and financial behaviour. That is, the second part of the hypothesis was not supported by the results.

According to the abovementioned scrutinies of Pintye and Kiss (2016) aiming at Hungarian students, 'the students' financial knowledge did not show a significant difference compared to the national average'. Their study has established that 'the financial literacy of economics and business students – except in the dimension of financial behaviour – is not at a higher level than among "average" young people.' Thus, their results differ from those of the present research, whereby economic (and law) students have significantly higher financial intelligence and consciousness than scholars of other majors. However, my results are congruent with the conclusions of newer research (Rafinda and Gal, 2020).

When examining financial intelligence and financial consciousness, respondents showed 10% higher results in the latter: the level of knowledge was generally 70-80% whilst in the area of behaviour, most of them showed 80-90% consciousness. The financial intelligence of students majoring in economics exceeded that of other students by 20 percentage points. In regard to financial consciousness, other students are behind students of an economic field by half that rate, 10 percentage points. Only law students are an exception; they showed similar results vis-à-vis both

financial intelligence and financial consciousness compared with their counterparts in an economic programme. On the one hand reason for this is that high educational requirements in law school are present in economic and financial education as well. This means that law students, although with a slightly different focus, also gain extensive financial information which they can use in practice.

Even though I was able to determine a significant correlation between pursuing economic studies and the level of financial intelligence and consciousness, based on further research, I was unable to ascertain direct causation between financial knowledge and the rate of behavioural consciousness. The foremost determining factors as regards the level of financial intelligence are demographic in nature (age, gender, place of residence). And financial consciousness is mainly determined by whether students are employed in the workforce and enrolled in a collage simultaneously.

From among the various banking and financial services, present research focusses on the use of credit cards. Currently, this is increasingly common among students enrolled in higher education. However, the seemingly unlimited spending opportunity can be especially risky. A study conducted by Lyons (2008) cautions about this risk. According to Alexander and Mader (2011) 'Credit card companies aggressively marketed to college students, an untapped target market prior to the early 1990s'. The negative effects of expanding the market soon became apparent, manifesting, among other things, in exceeding the bank overdraft limit and the consequent psychological symptoms (Czyz et al., 2013). This means that researching the financial intelligence and consciousness of university students is especially important.

The results of the study add nuance to the image provided by the literature. Filling in the research gap also plays an important role in determining causation between financial behaviour and demographic variables, such as age, gender and place of residence; however, majoring in economics or other fields at university does not have a direct causal role in determining financial behaviour.

Among demographics variables, the role of age is not flabbergasting since life experience usually increases with age and is an important factor in gaining practical financial skills.

The fact that Hungarian university students were the participants of the survey somewhat limits the general utilization of the results. Different answers are characteristic of different countries. For example, 73,8% of Turkish university students have credit cards, 53.5% have insurance and 49% use mobile payment system (Er et al., 2017). There are also demographic differences between the two populations: 97% of Turkish respondents live in cities, while in our own sample only 88% are urban residents. A further limiting factor is that there was a high percentage of economics and law students among those we had surveyed. The reason for the high rate of economics students (50%) was that the study focussed on students studying in economic programmes. The 20% participation of law students stemmed from the fact that the person carrying out the study had a personal relationship with several students majoring in law and they were pleased to be of help with answering the surveys.

As the ratios in the present research diverge from the ratios characteristic of higher education in general (oktatas.hu., 2017), a full-spectrum survey of all domestic universities would significantly improve the relevance of the results. Another interesting question to research may be whether there are differences between financial knowledge and the behaviour of domestic and foreign university students. Repeating the study every so often may also yield important information. By analysing the results, the causal relationship in between may be more clearly examined, as the Granger test can also be applied throughout the timeline.

CHAPTER 6

CONCLUSION

There is a strong correlation between the financial knowledge and the conscious financial behaviour of Hungarian university students. The students of two higher education majors (economics and law) show greater financial intelligence and financial consciousness when being compared with students majoring in different subjects. But is there a causal relationship between a university major and the consciousness of financial behaviour? Even though the assumption seems logical, the causal examination says otherwise. It seems that certain demographic factors are much more important, such as age, gender and place of residence when determining financial behaviour. The relevance of examining the matter is not new. In a 1988 article, Chen and Volpe called attention to the fact that without basic financial knowledge people were unable to correctly make even the simplest private economic decisions. My present research examines what characteristic attributes of the individual determine specific types of financial behaviour and decision-making. This is not a complete study seeing it only examines a partial area, that is, it is focussed on Hungarian university students. The reason for the chosen demographic is that higher education is the final point in time where people can be taught relevant financial skills in an organised manner, in a group setting or even individually. After a person has entered the job market, it is largely no longer possible. However, many older and newer studies alike caution that the financial skills of students enrolled in higher education are lacking, Beal and Delpachitra (2003) initiated a study into the matter almost two decades ago. In Hungary, the financial burdens borne by students of higher education have increased significantly (Bíró, 2019).

Thus, it is important that higher education students receive the appropriate financial education to enable them to make sound financial decisions, as these will also be determining factors as regards their future. My results support the opinion mentioned in the introduction of Pintye and Kiss (2017), which details the necessity of providing students in higher education with economic

training. By better understanding the factors influencing students' financial decisions, more efficient and individualised training programs can be tailored to their needs. Another area of use of the gathered information may be the implementation of safe financial engineering instruments for this age group. Commercial banks may also utilise the gathered data to create FEIs, services customised for this demographic. It is important to note that these students will be employed within five to six years at the latest. It is in the best interest of all actors that they do not cause another financial and credit crisis as this would affect the whole of society.

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APPENDIX

QUESTIONNAIRE

1	How old are you?					
2	Sex	male	female			
3	Address	capital city	agglomeration of capital city	city	agglomeration of city	village
4	Family status	1 single	2	3	4	5. emotionally close relationship
5	How satisfied are you with your private life?	1. fully satisfied	2	3	4	5. fully satisfied
6	Education (if you are still studying, please indicate what studies you currently study)	basic level	secondary level	advanced or higher level		
7	If you study in higher education, at which faculty do you study?					
8	Which study mode are you taking your course in?	full-time	part-time			
9	What is your job? (multiple answers can be given)	blue-collar job	white-collar job			
10	What is the nature of your employment relationship?	subordinate/junior	middle manager	senior manager	self-employed	
11	Have you got a bank account?	yes	no			
12	Have you got a foreign currency account?	yes	no			
13	Have you got a debit card?	yes	no			

14	Have you got a credit card?	yes	no			
15	If you have, how often do you use it?	never	sometimes	often	when I can use it	
16	If you have a vehicle, have you got CASCO insurance?	yes	no	I do not have a vehicle		
17	Have you got life insurance?	yes	no			
18	Do you know Revolut or Transferwise services?	yes	no			
19	If you do, how often do you use their services?	never	rarely	occasionally	regularly	
20	Is your income (salary, scholarship, etc.) transferred to a bank account?	yes	no	partly		
21	How often do you use the netbank service?	never	rarely	regularly	always	
22	Do you use mobile banking?	never	rarely	regularly	always	
23	How often do you shop online?	never	rarely	regularly	always	
24	How do you pay your bills (multiple answers can be provided)	by cash (cheque)	by transfer	by direct debit		
25	Do you create a budget?	not at all	just in mind	in writing, schematically	in writing, in detail	
26	Do you think it is important to take out life insurance?	yes	no			
27	Do you consider it important to have CASCO insurance if you have a vehicle?	yes	no			
28	It is worth prepaying your real estate loan as soon as possible	yes	no			
29	In the case of a mortgage combined with life insurance, do the savings cover the amount to be paid?	no	occasionally	always		

30	Bank statements should … be checked	never	rarely	occasionally	every month	
31	I am aware of transactions of my bank account	1 not at all	2	3	4	5 fully
32	Do you think it is worth buying a stock for investment purposes?	yes	no			
33	Do you know what to do, if you buy a defective product by your debit/credit card?	yes	no			
34	The real estate has no depreciation	true	not true			
35	How important is a good credit rating regarding a country?	1 not at all	2	3	4	5. indispensable
36	How many days do you have to change your mind after shopping in a store?	There is no compulsory repurchase	7 days	14 days	30 days	
37	How many days do you have to change your mind after online shopping?	There is no compulsory repurchase	7 days	14 days	30 days	
38	You can buy an unlimited amount by credit card	yes	no			
39	What income should be calculated when making the budget?	net	no matter	gross		
40	Do you think it is worth taking out insurance for investment purposes?	yes	no			
41	When you compare loans, it is important to consider interests.	yes	no			
42	… affects the instalments. (multiple answers can be provided)	Residence	Repayment term	Age	Interest rate	Benchmark
43	Money market funds have no risk because our money is only invested in bank accounts and securities	true	not true			

44	It is important in life to have appropriate goals	yes	no			
45	Do you know what financial resources your creditor has?	yes	no			
46	You can save time and money by using a credit intermediary	true	not true			
47	Do you think it is worth buying a bond for investment purposes?	yes	no			
48	Private persons must keep the documents required for tax inspection for 1 year	true	not true			
49	The contribution of families is important when a financial advisor creates a budget	yes	no			
50	There are investments without risks	true	not true			
51	Do you use your credit card for bank identification?	yes	no			
52	Credit institutions keep record on…	no one	only the person, who requests it	each client	everyone	
53	Do you think it is important to have accident insurance?	yes	no			
54	If you have credit, do you know your creditor's policy for default?	yes	no	I do not have credit		
55	Is it important for you to know the total amount you need to repay when taking out a loan?	yes	no			
56	Do you think that a deductible of 4 million HUF is required to take out a real estate loan of 10 million HUF?	always	in case of low income	no		

57	Do you think it is important to buy government securities for investment purpose?	yes	no			
58	Is it important to know your life goals?	yes	no			
59	Does the total Annual Percentage Rate (APR) include all costs associated with the loan?	yes	no			
60	Part of the pension contribution will be paid to our registered account with the voluntary pension fund	true	not true			
61	Do you know what is covered by compulsory vehicle liability insurance?	yes	no			
62	Do you pay your bills on time?	never	rarely	generally	regularly	always
63	How much interest do you usually pay if you arrange your debt repayments of your credit card within 30 days?	none	preferential rate of interest	interest rate determined by the bank	I do not have debit card	
64	Do you think it is worth buying a business share for investment purposes?	yes	no			
65	It is needed to educate financial knowledge in secondary school	yes	no			
66	Is a consolidation (debt arranging) loan a mortgage?	yes	no			
67	A loan to a private person is taxable income	true	not true			
68	Do you know how to calculate interest?	yes	no			

69	Is it important for you to know how much you have to pay as instalment?	yes	no			
70	Is it important for you to have comprehensive private health insurance?	yes	no			
71	APR helps estimate the interest and exchange rate risk of the loan	true	not true			

TABLE XLIII COMPONENTS OF FINANCIAL INTELLIGENCE INDEX AND CORRECT ANSWERS THEREOF

Financial IQ

Question	Correct answer
Do you know Revolut or Transferwise services?	Yes
It is worth prepaying your real estate loan as soon as possible	No
In the case of a mortgage combined with life insurance, do the savings cover the amount to be paid?	No
Do you know what to do if you buy a defective product by your debit/credit card?	Yes
The real estate has no depreciation	No
How many days do you have to change your mind after shopping in a store?	No*
How many days do you have to change your mind after online shopping? (14)	Yes
You can buy an unlimited amount by credit card	No
What income should be calculated when making the budget? (Gross)	Yes
Do you think it is worth taking out insurance for investment purposes?	No
When you compare loans, it is important to consider interests.	Yes
Residence (… affects the instalments.)	No
Repayment term (… affects the instalments.)	Yes
Age (… affects the instalments.)	No
Interest rate (… affects the instalments.)	Yes
Benchmark (… affects the instalments.)	Yes
Money market funds have no risk because our money is only invested in bank accounts and securities	No
You can save time and money by using a credit intermediary	Yes
Private persons must keep the documents required for tax inspection for 1 year.	No
There are investments without risks.	No
(Credit institutions keep records on…) each client	Yes
Do you think that a deductible of 4 million HUF is required to take out a real estate loan of 10 million HUF?	Yes
Does the total Annual Percentage Rate (APR) include all costs associated with the loan?	Yes
Part of the pension contribution will be paid to our registered account with the voluntary pension fund.	Yes
Do you know what is covered by compulsory vehicle liability insurance?	Yes
How much interest do you usually pay if you arrange your debt repayments of your credit card within 30 days? (bank defined minimal interest)	Yes
It is needed to educate financial knowledge in secondary school.	Yes
Is a consolidation (debt arranging) loan a mortgage?	Yes
A loan to a private person is taxable income.	No
Do you know how to calculate interest?	Yes
APR helps estimate the interest and exchange rate risk of the loan.	No

*No = There is no compulsory repurchese

TABLE XLIV COMPONENTS OF FINANCIAL CONSCIOUSNESS INDEX AND CORRECT ANSWERS THEREOF

Financial Consciousness

Question	Correct answer
Have you got a bank account?	Yes
Have you got a foreign currency account?	Yes
Have you got a debit card?	Yes
If you have a vehicle, have you got CASCO insurance?	Yes
Have you got life insurance?	No
How often do you use the netbank service?	Yes**
Do you use mobile banking?	Yes
(How do you pay your bills?) By cash (cheque).	No
By transfer (How do you pay your bills?)	Yes
By direct debit (How do you pay your bills?)	Yes
Do you create a budget?	Yes
every month (Bank statements should… be checked)	Yes
I am aware of transactions of my bank account	Yes
It is important in life to have appropriate goals	Yes
Is it important for you to know the total amount you need to repay when taking out a loan?	Yes
Is it important to know your life goals?	Yes
Do you pay your bills on time?	Yes
Is it important for you to know how much you have to pay as instalment?	Yes

** Yes = “often” and “when I can use it” answers