Ministry of Education and Science of Ukraine
Sumy State University
Academic and Research Institute
of Business, Economics and Management
Financial Literacy Center

ASPECTS OF FINANCIAL LITERACY

Proceedings
of the International Scientific and Practical
Conference
March 22-23, 2021

Sumy
Sumy State University
2021

Aspects of Financial Literacy
Collection of Studies

Editors: Yuliia Serpeninova, Zsolt Pál, Larysa Hrytsenko

Publisher: **Sumy State University**, Academic and Research Institute of Business, Economics and Management

Published in cooperation with:

FINTELLIGENCE
FINANCIAL LITERACY CENTER

This collection of studies is published digitally and is available free of charge.

Sumy, 2021.
ISBN 978-966-657-887-0

330.3:005(063)
S62

Approved by the Academic Council of Sumy State University
(protocol № 4, 21 October 2021)

S62 Aspects of Financial Literacy: Proceedings of the International Scientific and Practical Conference, Sumy / edited by Yuliia Serpeninova, Zsolt Pál, Larysa Hrytsenko. – Sumy : Sumy State University, 2021. – 417 p.

Proceedings of the International Scientific and Practical Conference "Aspects of Financial Literacy " are devoted to finding a systemic solution to multidisciplinary problems in the field of modern development, management, administration of various systems, corporate social responsibility, innovation management in various fields of environmental management.

For scientists, scientists, students, graduate students, representatives of business and public organizations and higher education institutions and a wide range of readers.

330.3:005(063)

TABLE OF CONTENTS

Changes in the financial habits of university students studying economics as a result of environmental crises

Botond Kálmán, PhD Student, Hungarian University of Agriculture and Life Sciences, Hungary

Abstract

The study presents a sub-area of a larger research. In the basic research, I examined the development of the financial culture of the students of Hungarian and foreign universities in two stages, with a questionnaire survey, which I conducted in the autumn of 2019 and the autumn of 2020. The actuality of the second query was the coronavirus pandemic that had broken out in the meantime. My results show that environmental crises have a significant impact on the financial situation and habits of individuals-households. An appropriate level of financial culture is essential to address the personal financial difficulties caused by the crisis. Theoretical and practical introduction of this in the education system can be the basis for the proper treatment of many later problems.

Introduction

The history of the world economy can be examined in several ways. Fitting to the topic of the present work, I will now focus on the history of crises, analyzing the historical curve of development, but in the light of length constraints, I will only flash a few excerpts. Perhaps the greatest financial crisis of antiquity was reported by Tacitus (Tenney, 1935), which led to the collapse of the entire banking system of the Roman Empire. A similar crisis threatened the world in the early 1600s, when Le Maire, a rogue who acquired a majority stake in the Dutch East India Company, who was considered the world's first supply chain and also on the board, wanted to treat the company's

money as his own property. In this case, however, the other shareholders acted on time, preventing bankruptcy (Schoorl, 1968). The crisis of 1929 and, fortunately, less critical of 2008, is already part of our modern history. Nowadays, a crisis situation has arisen again in connection with the COVID-19 pandemics.

It can also be seen from this brief outline that economic recessions return from time to time, as Kondratyev illustrated (Grinin et al., 2016). The other conclusion that can be drawn is that, apart from rogues, the causes of the crises were mainly overproduction and over-lending, as well as the resulting loss of confidence and inflation. However, the coronavirus has caused a global problem due to limited reproduction due to forced closures. Depending on the cause, the solution may be different, but for individuals, consequences are the same: financial insecurity and financial difficulties. The solution is for them to have the right level of financial knowledge (Kovács, 2017; Kovács & Terták, 2019). The importance of teaching these was recognized as early as the 18th century (UNSGSA, 2016). But it was not until the 1990s that the topic came into the focus of research. Research on financial literacy has already begun among university students (Bakken, 1966; Danes & Hira, 1987). These studies also drew attention to the importance of financial literacy education. Nevertheless, worldwide - including Hungary - there is a significant lag in this area (Béres et al., 2013; Disney & Gathergood, 2013; Kovács, 2015; Lusardi & Mitchell, 2014; Pintye & Kiss, 2017).

However, progress has begun, and the first National Core Curriculum (NAT) after the change of regime has already included economic knowledge in competence-based education (Baranyi, 1993). Knowledge that can be used in practice has become the basic measure of the level of knowledge (Kovács, 2015; Németh, 2015, 2017)

Methodological summary

In my present research, I focus on students in higher education. On the one hand, because they had already studied during the mentioned NAT period. On the other hand, because they are the ones who will soon enter the labor market with a degree in hand, where they will also have to use the knowledge they have acquired. I examined the financial culture of university students studying economics in three countries (Austria, Hungary and Slovakia) using an offline questionnaire. Therefore, I chose this method on the one hand to reduce the distortion effect (Gunter et al., 2002; Zhang et al., 2017) and on the other hand in the hope of a higher response rate (Ilieva et al., 2002; Mehta & Sivadas, 1995; Tse, 1998; Tse et al., 1995). Both of my expectations were met, especially the response rate was high (92%) compared to the average rate of 30 percent typical of online questionnaires.

The questions were compiled partly on the basis of the OECD (Kossev, 2020) classification (knowledge, behavior, attitude), but I also supplemented my questionnaire with questions examining financial security and crisis stress (Ali et al., 2015; Spitzer, 2021). The questions were closed, partly to be decided (yes / no), partly to be answered on a multi-level Likert scale. The answers were processed using IBM-SPSS Statistics, IBM-SPSS-Amos and R-software package. I used regression models, a road model (structural equation model) and cluster formation as methods. In the present work, I analyze only a small slice of the results, the development of students' financial habits. I conducted the queries twice, in the fall of 2019 and 2020, during the attendance educational period with attendance.

Results

I measured financial habits with 18 questions in the questionnaire, these are the daily use of banking services (bank account, bank or credit card, Internetbank, mobile bank), modern financial technologies (Revolut, Tranfewise), the willingness to take out insurance (health, life, accident insurance, Casco) and bill payment habits that were affected. For the yes-no questions, the yes answer was one point, an no was zero. Where an activity frequency was asked, the most common behavioral response received one score, never zero, and the other responses received a proportional value between the two extreme values. The index of financial behavior was created as the average of the 18 responses, with a theoretical minimum of zero and a theoretical maximum of 1.

The average value of financial behavior became 0.62 (standard deviation: 0.09), and its overall model became 18.99% explanatory. Financial knowledge ($\eta^2 2 = 0.0804$; $p < 0.001$) and students' work schedules ($\eta^2 2 = 0.0411$; $p < 0.001$) have the greatest effect on behavior. Financial habits changed significantly ($p = 0.048$) from 2019 (0.63) to 2020 (0.64), but the magnitude of the increase is quite small. I was able to show a significant difference ($p < 0.001$) between the financial habits of full-time (0.62) and correspondence educated (0.66) students. In the case of the latter, I measured a significantly higher value. This means that they are more involved in financial life and are more active in other areas.

The model included two quantitative variables, of which the independent effect of stress did not prove to be significant ($p = 0.641$), however, the positive effect of financial knowledge (0.276) was significant ($p < 0.001$), which suggests that if someone is better informed about finance then it also appears in his or her habits, which then covers several areas. In the case of stress, on the other hand, I was able to show a significantly different effect between the two examined

time points in 2019 and 2020 (p = 0.026). Its negative impact (-0.0218) was only in 2020, i.e. the more stressful someone was this year, the less they did their usual financial activities. The change is likely to be related to increased stress levels due to the coronavirus pandemic, but causal linkage requires further research because the Granger test, which provides the response, is not applicable in the present case due to the lack of time series data.

At the time of preparing the road model, the explanatory variables for financial behaviour were: financial literacy, financial attitude, age, stress, and crisis situation, the latter being shown by the COVID-19 epidemic at the time of the study. The completed model is shown in Figure 1. and Table 1. table shows:

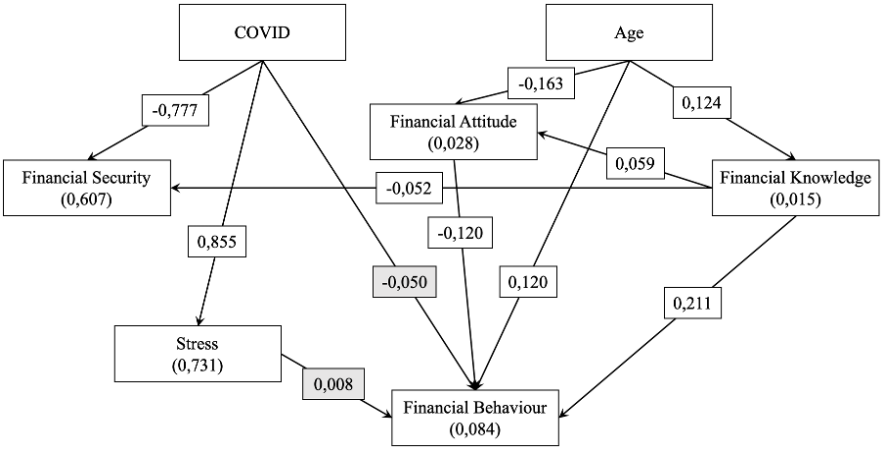

Figure 1 The path model of the sub-sample of economics specialists (standardized direct effects, the ratio of the explained variance in parentheses, the non-significant direct effects in gray)

Table 1 Full and (direct + indirect) effects included
in the path model of a sub-sample of economics professionals

Cause / Effect	Age	COVID	Financial knowledge	Stress	Financial attitude
Financial knowledge	0,124 (0,124+0)	0 (0+0)	0 (0+0)	0 (0+0)	0 (0+0)
Stress	0 (0+0)	0,855 (0,855+0)	0 (0+0)	0 (0+0)	0 (0+0)
Financial attitude	-0,156 (-0,163+0,007)	0 (0+0)	0,059 (0,059+0)	0 (0+0)	0 (0+0)
Financial security	-0,006 (0+-0,006)	-0,777 (-0,777+0)	-0,052 (-0,052+0)	0 (0+0)	0 (0+0)
Financial behaviour	0,165 (0,120+0,045)	-0,044 (-0,050+0,007)	0,204 (0,211+-0,007)	0,008 (0,008+0)	-0,120 (-0,120+0)

Based on the model, the epidemic has no significant direct effect on students' financial activities and habits, but it has significantly increased students' stress levels. However, the behavior-modifying effect of increasing stress is orders of magnitude weaker than that of changes in the level of financial literacy and experience gained with age.

Among the other notable results of the model, I highlight that I experienced a negative change in financial attitude with age. Of course, no far-reaching conclusion can be drawn from this, since the studied population is made up of university students, so we cannot find a significant difference in terms of their age. My other observation is that increasing financial literacy reduces the (of course, subjective) sense of financial security.

In the further analysis, I examined how much financial activity is rising or declining among students from 2019 to 2020. To this end, I separated and examined three groups of questions.

The questions in the first group measured spending. These included the frequency of credit card use, the amount spent on the credit card, and the evolution of online purchases.

The second group of questions examined the use of modern financial technology opportunities in 2019 and 2020. This includes the use of Internetbank and mobile banking, as well as the frequency of the use of payment services such as Revolut or Transferwise.

I created the third set of questions given the nature of the crisis. So I started from the premise that the primary cause of the crisis caused by the coronavirus pandemic is a health problem.

Therefore, I have placed the development of health insurance in this issue and supplemented it with the provision of increasing use of motor vehicle insurance due to isolation provisions, i.e. CASCO. (Comprehensive insurance) See on Figure 2

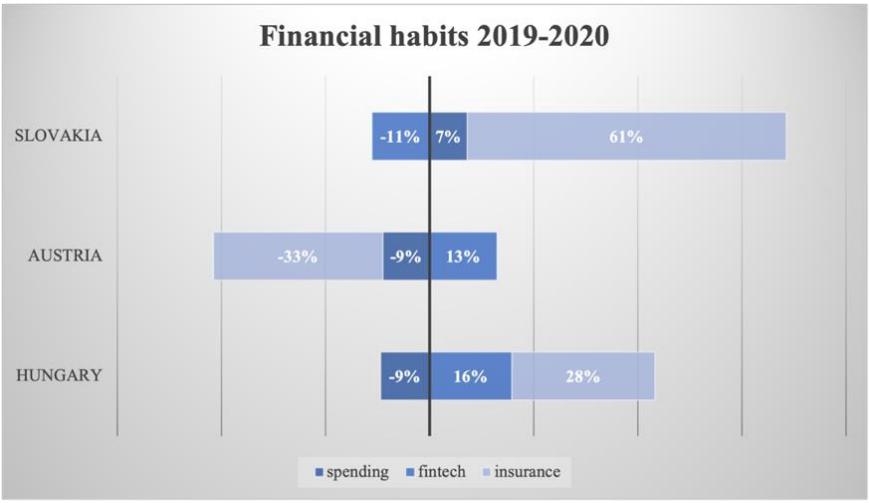

Figure 2: Financial habits 2019-2020

Spending results were in line with expectations. As a result of the crisis, spending in 2020 was 5.7 percent lower than in the previous year for the sample as a whole.

Slightly different from the general trend are Slovak students who spent more, albeit by only 7.3 percent. Hungarian students reduced their expenses the most, with a decrease of almost 9.4 percent.

The impact of financial literacy can be well demonstrated by examining the frequency of credit card use and the evolution of credit

card spending. As these are undergraduate students in economics, who are presumably aware of the dangers of credit card overruns, I have found a decline in both the overall sample and individual countries (Figure 3).

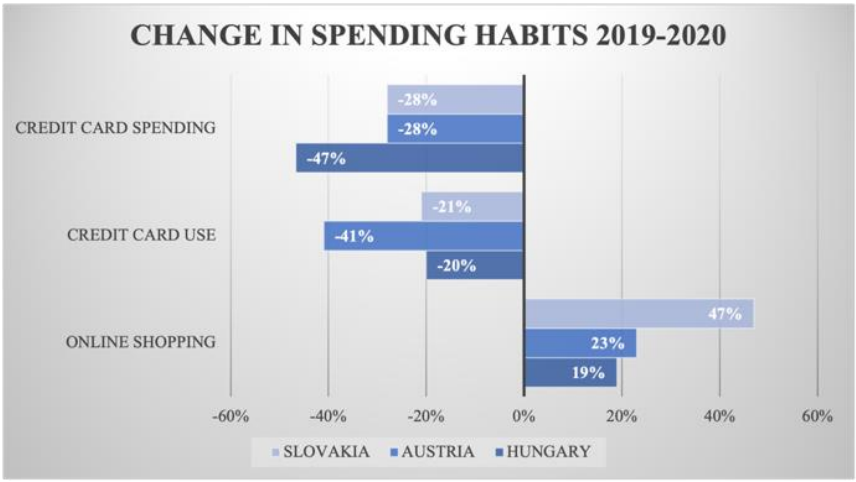

Figure 3: Changes in the expenditure of university students during the period under review

The sample as a whole used its credit card 27 percent fewer times in the crisis year of 2020 than a year earlier, and the amount spent also fell by 34 percent. Outstandingly, the frequency of credit card use among Austrian students fell by 41 percent.

On the other hand, credit card spending was reduced the most by Hungarian students, who withheld such expenses by 47 percent. Due to the shortages caused by the virus situation, the frequency of

online purchases also increased, I was able to show an overall increase of 30 percent.

Slovak university students made the most use of this opportunity, among them the share of online purchases increased by 47 percent, and the lowest among Hungarians (19 percent increase). On the other hand, it is an interesting result that among the Slovak students, who buy the most online, the frequency of using Internetbank increased the least, by only 7 percent.

Recourse to modern financial technology and services also increased, by 5.9% for the sample as a whole. In this field, however, Hungarian students are at the forefront (increase: 15.8%, followed by Austrians (increase: 12.9%).

Slovak respondents came in third - but they made less use of these opportunities during the crisis (I found a decrease of 11.1 percent). The dominant element of the decline is a significant (58 percent) decline in the use of services such as Revolut or Transferwise. The increase in mobile payments and Internet banking use (by 18 and 7 percent, respectively) does not differ significantly from students in the other two countries (Figure 4).

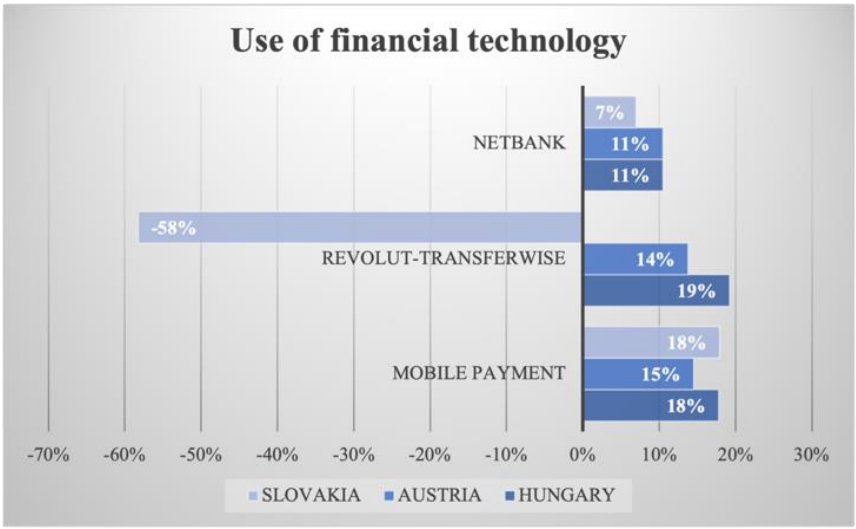

Figure 4 Trends in the use of modern financial technology and services

The insurance market has also changed, with only Austrian students thinking they need less insurance. They have reduced both their private health insurance and CASCO-type needs. However, for the sample as a whole, the demand for security has increased, mainly for health insurance (27 percent increase) but also to a lesser extent (11 percent) for the CASCO type. Most of all, Slovak students felt the need for such protection of their health, among them the importance of health insurance increased by 61 percent compared to the previous year's opinion

Summary

Economic crises affect finances, not only at the global and business level, but also in terms of an individual's financial security and position. The importance of financial literacy for professionals has been clear for more than fifty years, yet this situation still exists today. The role of financial knowledge can be well demonstrated by examining university students who specialize in economics.

The present work also focused on such students. The basic question of my work was how environmental crises affect individual financial behavior in an environment where the level of financial literacy is above average. My findings show that the knowledge gained helps to avoid many pitfalls, such as irresponsible credit card use.

The developed model also clearly indicates that financial behavior is influenced primarily by the level of knowledge, and secondarily by practical experience with age, and the impact of crisis situations also prevails through these factors. The aim of the present study was to draw attention to the need to teach economic competencies because it significantly helps to prevent future individual-household financial difficulties.

References

Ali, A., Rahman, M. S. A., & Bakar, A. (2015). Financial Satisfaction and the Influence of Financial Literacy in Malaysia. *Social Indicators Research*, *120*(1), 137–156. https://doi.org/10.1007/s11205-014-0583-0

Bakken, M. R. (1966). *Money Management Understanding of Tenth Grade Students*. University of Alberta. https://archive.org/details/Bakken1966/page/n13/mode/2up

Baranyi K. (1993). *Ez lett volna a Nemzeti Alaptanterv 1993-ban [This would have been the National Core Curriculum in 1993, in Hungarian]*. Művelődési és Közoktatási Minisztérium Szakmai Irányítási Főosztály. http://mek.oszk.hu/11900/11959/11959.pdf

Béres D., Huzdik K., Kovács P., Sápi Á., & Németh E. (2013). *Felmérés a felsőoktatásban tanuló fiatalok pénzügyi kultúrájáról [Survey on the financial culture of young people in higher education, in Hungarian]* (p. 73) [Kutatási jelentés]. Állami Számvevőszék. https://www.asz.hu/storage/files/files/Szakmai%20kutat%C3%A1s/2013/t353.pdf?download=true

Danes, S. M., & Hira, T. K. (1987). Money Management Knowledge of College Students. *Journal of Student Financial Aid*, *17*(1), 4–16.

Disney, R., & Gathergood, J. (2013). Financial literacy and consumer credit portfolios. *Journal of Banking & Finance*, *37*(7), 2246–2254. https://doi.org/10.1016/j.jbankfin.2013.01.013

Grinin, L., Korotayev, A., & Tausch, A. (2016). Kondratieff Waves in the World System Perspective. In L. Grinin, A. Korotayev, & A.

Tausch, *Economic Cycles, Crises, and the Global Periphery* (pp. 23–54). Springer International Publishing. https://doi.org/10.1007/978-3-319-41262-7_2

Gunter, B., Nicholas, D., Huntington, P., & Williams, P. (2002). Online versus offline research: Implications for evaluating digital media. *Aslib Proceedings*, *54*(4), 229–239. https://doi.org/10.1108/00012530210443339

Ilieva, J., Baron, S., & Healey, N. M. (2002). Online Surveys in Marketing Research. *International Journal of Market Research*, *44*(3), 1–14. https://doi.org/10.1177/147078530204400303

Kossev, K. (2020). *OECD/INFE 2020 International Survey of Adult Financial Literacy* (OECD/INFE, p. 78) [International Survey of Adult Financial Literacy]. OECD. https://www.oecd.org/financial/education/oecd-infe-2020-international-survey-of-adult-financial-literacy.pdf

Kovács L. (2017, March 8). *A pénzügyi kultúra fejlesztése, mint önérdek [Developing a financial culture as a self-interest in Hungarian]*. Pénz7, Miskolc. https://gtk.uni-miskolc.hu/files/11370/I_2-Kov%C3%A1cs%20Levente.pdf

Kovács L. (2015). A pénzügyi kultúra Európában, Magyarországon és a Miskolci Egyetemen. [Financial literacy in Europe, in Hungary and in the University of Miskolc in Hungarian]. *Mérleg és Kihívások*, 179–187. https://m2.mtmt.hu/api/citation/25318108

Kovács, L., & Terták, E. (2019). *Financial Literacy Theory and Evidence*. Verlag Dashöfer.

Lusardi, A., & Mitchell, O. S. (2014). The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of Economic Literature, 52(1), 5-44.*, *52*(1), 5–44. https://doi.org/10.3386/w18952

Mehta, R., & Sivadas, E. (1995). Comparing Response Rates and Response Content in Mail versus Electronic Mail Surveys. *Market Research Society. Journal.*, *37*(4), 1–12. https://doi.org/10.1177/147078539503700407

Németh, E. (2015). Nem megtanulni, megérteni kell a dolgokat [You don't have to learn, you have to understand things, in Hungarian]. *Pénzügyi Szemle - Online*. https://www.penzugyiszemle.hu/interju/nem-megtanulni-megerteni-kell-a-dolgokat-interju-nemeth-erzsebettel

Németh E. (2017). Pénzügyi kultúrát fejlesztő képzések: Felmérés és diagnózis [Financial culture development courses: Survey and diagnosis, in Hungarian]. *Új Pedagógiai Szemle*, *67*(7–8), 46–69.

Pintye, A., & Kiss, M. (2017). Közgazdász hallgatók pénzügyi kultúrája [Financial literacy of economics students, in Hungarian]. *Taylor Gazdálkodás- És Szervezéstudományi Folyóirat – A Virtuális Intézet Közép-Európa Kutatására Közleményei*, *9*(1), 191–199.

Schoorl, H. (1968). *Isaäc Le Maire. Koopman en bedijker*. Tjeenk Willink & Zoon.

Spitzer, R. L. (2021). *GAD-7 (General Anxiety Disorder-7)—MDCalc*. https://www.mdcalc.com/gad-7-general-anxiety-disorder-7

Tenney, F. (1935). The Financial Crisis of 33 A. D. *The American Journal of Philology*, *56*(4), 336. https://doi.org/10.2307/289972

Tse, A. C. B. (1998). Comparing Response Rate, Response Speed and Response Quality of Two Methods of Sending Questionnaires: E-mail vs. Mail. *Market Research Society. Journal.*, *40*(4), 1–12. https://doi.org/10.1177/147078539804000407

Tse, A. C. B., Tse, K. C., Yin, C. H., Ting, C. B., Yi, K. W., Yee, K. P., & Hong, W. C. (1995). Comparing Two Methods of Sending out Questionnaires: E-mail versus Mail. *Market Research Society. Journal.*, *37*(4), 1–7. https://doi.org/10.1177/147078539503700408

UNSGSA. (2016, April 20). *Strengthening the Roots of Financial Resilience in Financial Education*. United Nations | UNSGSA Queen Máxima. https://www.unsgsa.org/speeches/strengthening-roots-financial-resilience-financial-education

Zhang, X., Kuchinke, L., Woud, M. L., Velten, J., & Margraf, J. (2017). Survey method matters: Online/offline questionnaires and face-to-face or telephone interviews differ. *Computers in Human Behavior*, *71*, 172–180. https://doi.org/10.1016/j.chb.2017.02.006