IS THE FINANCIAL LITERACY AFFECTED BY THE FIELD OF STUDY? (A COMPARISON OF SPECIALISED SECONDARY SCHOOLS)

Dana Kubíčková – Vladimír Nulíček – Irena Jindřichovská

Abstract

The transition to a market economy system, changes in the life style, the impact of new technologies, strengthening marketing efforts of financial intermediaries, place an increasing pressure on the ability to make correct financial judgements and the decisions generally referred to as "financial literacy". However, the content of this term is not defined precisely, many research studies analysed this phenomena and confirmed relatively low levels both in adults and in the young generation and its dependence on many factors. The aim of our study is to find out if the level of financial literacy is affected by the studied field. We used a questionnaire-based research methodology. We asked about the solution of three model financial situations to compare two student groups. One group included students of a business academy and the second group included students of a secondary grammar school. Our results confirmed the slightly higher level of financial literacy of the students of the grammar school. The differences between these two groups of students did not confirm the impact of the field of study but turned our attention to other influencing factors.

Key words: Financial literacy, Secondary school, Finance, Management of family finance

JEL Code: A22, I25, D14

Introduction

The transition to a market economy has changed the way of decision making in various level of the economic system. One of the main features of these changes has been an individual responsibility for personal affairs: a person acquires its own responsibility for his/her employment, education, health care etc. It has brought a quite new and still unaccustomed way of thinking in the management of personal and family finances. Changes in life style, the impact of new technologies and technical means, strengthening of marketing efforts by financial institutions along with the development of the global economy in the last decades place an increasing pressure on individual ability to make financial judgements and decisions. In the

same time the complexity and the difficulty of the decision-making increases as a result of increasing complexity and dynamics of the financial world.

The spectrum of situations that have to be solved on an individual base is expanding. "Individuals are taking responsibility for a growing number of financial decisions" (Hung et al., 2009, p. 5). Along with this process the demands for information and the knowledge of methods and procedures for solving these situations rationally is increasing. The rapid expansion of complex financial products to the retail marketplace, such as mortgages, credit cards, consumer loans, pension accounts, and their rational use proves to be difficult for ordinary educated users. On the other hand, there are many day-to-day situations the solution of which needs more than a specific theoretical knowledge, but real practical experience and information. All these facts are the reasons of requirement of deeper and more extensive knowledge and experience generally referred to as financial literacy.

The need to increase the financial literacy of the general population is frequently stated by politicians, educationalists and professionals. Many researchers point out the effects and consequences of financial illiteracy for the whole economic system. But only a little attention is paid to the systematic solution of this problem. The reason can be seen, inter alia, in the fact that this ability depends on many aspects and reflects many elements of the economic, social and cultural system. In the transition economies it acquires other, specific dimensions.

One of the results of these changes is the fact that the younger generation more than a previous generation has to face many situations which need and ask to make financial decisions mostly with a significant impact on a family´s or own financial situation. On the other hand, it is the young generation that has far more opportunities to acquire the experience in solutions of such situations. In addition, they can acquire more or less knowledge for its solution in their study fields. In the business academies as one type of secondary school students acquire relatively wide range of information in the field of business economy and financial market. Thus, it might be assumed that the students of this type of secondary school have a relatively high degree of financial literacy compared to other students.

To find out if the level of financial literacy of the students of secondary schools depends on the studied field became the impetus for our research.

1   Literature Review

The financial literacy and illiteracy is a topic of research studies for the last three decades. The majority of them is focused on the level and extent of the financial literacy and illiteracy closely tied to the retirement planning and wealth accumulation (Lusardi et al., 2011, Behrman et al.,

2012), especially in the conditions of United States. The authors find, from various point of view, a fundamental problem: large segments of the US population have low level of financial literacy. The content of the term financial literacy was derived from the ability to plan the funds for the retirement age.

The attention to the problem of financial education increased at the end of the last century with the increase in financial market operations conditioned by the development of information and computer technologies. The researchers aimed to analyse the ability to make the financial decisions from many points of view: they assessed, for example, the impact of financial decisions in personal life and wealth, the relation between wealth and financial education, the effects of the investment in the financial education (Lusardi et al., 2011) etc. The other studies focussed on the problem of how to measure the level of the financial literacy. Some studies concluded that there is not any connection between the financial education and the level of financial welfare, the other studies stressed the obligatory financial education in high schools significantly increased the adult propensity to make savings (Bernheim et al., 2001).

Many studies were conducted to measure and compare this ability to plan and make savings in various countries, social groups or generations to examine the links between the financial knowledge and the savings and investment behaviour (Delavande et al., 2008, Lusardi & Mitchell, 2011). Albeit the number of studies on the financial literacy is increasing, there is no clear consensus about what the financial literacy actually is. Some researchers aimed to define what the category includes. Most often financial literacy is described as a financial knowledge (Huston, 2010), but many researchers point out that it is a broader category and stressed that being able to make the right decisions is also an additional component. Lusardi & Tufano (2015) extended the concept of financial literacy by the decision making in elementary everyday choices, e.g. payment methods, use of credit cards, keeping a family budget, making mobile payments, etc. Some authors try to classify the elements of financial literacy (Remund, 2010, Lusardi, 2012, Hung et al., 2009).

A special group of studies aimed to assess the financial literacy of young people and students of both secondary schools and universities (Belász et al., 2016, Agnew & Harrison, 2015, Montanaro & Romagnoli, 2016). Their findings bring some new aspects of financial literacy and factors that influence its level and scope: students from rich families prove to have poor financial literacy compared to students from poorer backgrounds, the financial literacy is more related to foreign language skills and the general cognitive aptitude or the level of social integration, gender differences, etc.

The complexity of the phenomenon of the financial literacy and the ambiguous definition of this term make it very difficult to formulate tools for measuring and comparing it. One of the tools, a questionnaire, has been created with the aim to compare the level of financial literacy level in two groups of secondary school students from two different countries, by Balász et al. (2016). We have used this questionnaire in our research.

2   Aim, Research Methodology and the Sample

The aim of this study is to find out if the level of financial literacy is affected by the studied fields. We compared selected attributes of financial literacy of students of two types of secondary schools, i.e. a secondary grammar school and a business academy. The curriculum in the business academy provides quite a wide set of knowledge in economics and finance. We supposed that the field of study and the systematic knowledge gained in the business academy influence the way and rationality of financial decisions, regardless of a male and a female. This supposition was the base for the scientific hypotheses formulation in our research:

H1: the level of financial literacy measured by the selected three situations is higher in the set of business academy students.

H2: the level of financial literacy is conditioned by the field of study.

The used research method was a questioning. The questionnaire was formulated based upon the prior literature. We used the questions-model situations used in the research of Balász et al. (2016), the aim of which was to compare the level of the financial literacy of secondary school students – from a business academies in two different countries, the Czech Republic and the Slovak Republic. The aim of our research was to extend its results to a related area.

The questionnaire in our research consisted of four parts. The first part provided an identification of respondents including their age and the achieved level of parents' education. The second part included three model situations. The respondents had to choose one from the suggested solutions which is the best one according to their point of view. The model situations represent three basic, most often situations in day-to-day life, where some financial information and knowledge as well as experiences are necessary: the process of creating savings, the process of obtaining external finances through the bank loan and the process of paying for goods and services. The resulting data were processed using the basic statistics (percentage) and the chi squared test to test the significance of differences. More details about the model situations and results in both students' groups are presented in part 3.

The sample of respondents consisted of two groups of students, 16 – 18-years-old. The first one was formed by the students of a business academy (46 in total, 19 male, 27 female). The second group was formed by the students of a secondary grammar school (73 in total, 26 male, 47 female). There were found quite great differences in the level of parents' education in the two groups of students. As this fact could affect the results, we have added this information to the data set description presented in table 1.

Tab. 1: Data Set Description

	Business Academy (BA)				Secondary grammar school (SGS)			
	Number		*Level of parents' education (in %)*		*Number*		*Level of parents' education (in %)*	
	abs.	*in %*	*Mother U/S*	*Father U/S*	*Abs.*	*in %*	*Mother U/S*	*Father U/S*
Male (M)	19	41.30	x	x	26	35.60%	x	x
Female (F)	27	58.70	x	x	47	64.40%	x	x
Total	46	100.00	26.1/69.6	23.9/65.2	73	100.00%	74.0/26.0	72.6/27.4

Source: own investigation
Note: U/S = university degree / secondary degree of various orientation (professional, comprehensive)

3 Results and Interpretation

3.1 Model situation No 1

In the first step of the questionnaire we investigated the ability to manage personal savings. This ability represents one of the elementary abilities to ensure a higher quality of individual life because it is not threatened by unexpected fluctuations in revenue and expenditure.

The answer lied in the selection from four proposed variants of solution. The proposed solution focused on different phases of the economic cycle, only in the last one the savings creation was assessed in connection with the volume of the personal income and expenditure. The question and proposed answers, and the frequency of responses are presented in table 2.

Tab. 2: The results of the first model situation

1st question-model situation: *At what stage of the economic cycle it is advisable to save money?*					
	BA together M/F	**SGS together M/F**	**BA together M/F**	**SGS together M/F**	**p-value total M/F**
	46 19/27	73 26/47	100% 41.3%/58.7%	100% 35.6%/64.4%	
a) in the recession phase because of the need to prepare for bad times.	9 2/7	10 5/5	19,5% 4.3%/15.2%	13,6% 6.8%/6.8%	

b) in the phase of expansion, because people have higher salaries.	22 10/12	41 13/28	47,8% 21.7%/26.1%	56,2% 17.8%/38.4%	
c) savings do not make sense.	0 0/0	1 1/0	0 % 0%/0%	1,3% 1.3%/0.0%	
d) it depends on the current revenue and expenditure.	15 7/8	19 7/12	32,6% 15.2%/17.4%	26,0% 9.6%/16.4%	
chi-squared test: *critical value: 5% = 7.815* *1% =11.341*					10,747 3.492/11.276

Source: own investigation
Note: M = male, F = female

The solution No. 2 was considered as the correct one. In both groups the answer No 2 was the most frequent. The proportion of correct answers was lower in the group of BA students compared to the group of the SGS students. But in the BA group the fourth solution was also very frequent (32.6% cases) which can be considered as a more conservative, more cautious or a thoughtful approach. In the SGS group the answer No 4 was also quite frequent (26%), but the proportion is a little lower.

The significance of the differences between the answers in the two groups was measured by the chi-squared test. The value of chi-squared test for the total groups (10,747) is higher than the critical value at the 5% level of significance and therefore we reject the hypothesis about the similar distribution of results in the groups at the 5% significance level. The differences between the two students´ groups are significant. In the case of the 1% level of significance there is the same situation and we can reject the hypothesis about the similar results´ distribution in the groups at the 1% significance level. From the gender point of view it can be noticed that in case of the male students´ results the value of chi-squared is lower than the critical value that means the differences between the male respondents of both groups are not significant.

An interesting complement of these results is the number of the other solutions, especially of the fourth solution. This can be assessed as a careful approach and a wise solution, too. The higher portion of this solution is in the BA students' group.

3.2   Model situation No 2

In the second model situation we tested the ability to assess and to consider all the conditions of a bank loan. The answer was a choice of one from the two offered options, the option b) was considered correct. The results are presented in table 3.

Tab. 3: The results of the second model situation

2nd question-model situation:				
You need to borrow 3.350 EUR for one year. The first financial institution offers the following conditions: interest rate of 8.95% p.m. with the payment of a fee of 20 EUR. The second financial institution offers the following conditions: interest rate of 10.99% p.a. without charges for granting the loan. Which offer would you choose?				
	BA together M/F	**SGS together M/F**	**BA together M/F**	**SGS together M/F**	**p-value total M/F**
	45 *19/27*	*73* *26/47*	*100%* *41.3%/58.7%*	*100%* *35.6%/64.4%*	
a) the loan from the financial institution A	30 11/19	34 8/26	66,6% 24.4%/42.2%	46,6% 10.6%/35.6%	
b) the loan from the financial institution B	**15** **8/7**	**37** **16/21**	**33,3%** **17.8%/15.5%**	**50,7%** **21.9%/28.8%**	
chi-squared test: *critical value 5% = 3.841* *1% = 6.635*					13,552 5.125/11.26

Source: own investigation

The structure of answers is quite different in the two groups: the larger portion of correct solutions was in the group of GS students. The relation of the correct options is 33.3% in the case of the BA students compared to 50.7% in the case of the GS students. This difference was confirmed as significant by the chi square test, where the resulting value (13.552) is higher than the critical value (3.841) on the 5% level of significance and one degree of freedom. Only in the case of male students was the chi square value lower than the critical value at the 1% level of significance. That means the differences between the results in the two groups of male students are not significant and can be assessed as similar.

3.3. Model situation No 3

In the third model situation we tested the ability to assess the advantages and conditions of using various forms of payment.

In the third situation the correct solution was the second one. It was the most frequent answer in both groups: in the BA group 69.6% and in the SGS group 63.0%. Also the third solution when the students assessed the price as too high for the purchase had a quite high frequency. Some students in the SGS group decided to use an ATM (first solution), while in the BA group this solution was not chosen by any student. The chi-squared test confirmed the significant differences between the two groups in total on both the 5% and 1% levels of significance. Only in the case of the male responses was the test value lower than the critical value at the 1% level of significance. It means there are no statistically significant differences in the responses of the male students in the two groups.

The answers and their distribution in both groups of students are presented in table 4:

Tab. 4: The results of the third model situation

3rd question-model situation: *Imagine the following situation: You are in a country where all payments are in US dollars. You want to buy pants that cost $100. What would you choose when you have no dollars in cash?*					
	BA together M/F	**SGS together M/F**	**BA together M/F**	**SGS together M/F**	**p-value total M/F**
	46 *19/29*	*73* *26/47*	*100%* *41.3%/58.7%*	*100%* *35.6%/64.4%*	
a) I will take my money from an ATM	0 0/0	5 1/4	0 0/0	8,0% 1.3%/5.5%	
b) I will pay with a payment card	**32** **15/17**	**46** **15/31**	**69,6%** **32.6%/37.0%**	**63,0%** **20.5%/42.5%**	
c) It doesn't matter/I will not buy it	14 4/10	21 10/11	30,4% 8.7%/21.7%	28,8% 13.7/15.1%	
chi-squared test: *critical value 5% = 5.991* *1% = 9.210*					11.594 4.600/11.594

Source: own investigation

Conclusion and Limitation

The aim of our research was to find out if the level of financial literacy is influenced by the study field. We supposed a higher level of financial literacy of the business academy students.

The results did not confirm both the first and the second hypothesis. In the two from the three model situations the higher financial literacy was confirmed in the group of grammar school students. The first situation was based on some theoretical knowledge, in the second situation some mathematical judgment was necessary. The higher score of correct answers of the business academy students was only in the third case requiring more day-to-day experience. Based on these results, it can be concluded that the field of study and systematic knowledge was not confirmed as a prerequisite for financial literacy.

But the research implies many questions. The two groups of students differed in their parents' level of education: a significantly higher proportion of parents with a university education was identified in grammar school students. This could affect the solutions that the students chose in all three situations.

All these findings have an important limitation associated primarily with the sample size examined and the structure of the interviewed students. A larger number of students would lead to the increased reliability and explanatory power of the results. Another limitation arises from the choice and construction of the model situations. There is no common agreement of the researchers concerning the content of the category of financial literacy and thus it is very

difficult to measure its level and construct a scale as well as the tool for its measurement. The model situations used in our research allow measuring only three selected and partial elements of the skill referred to as the financial literacy. Its construction and wording could be improved, the number of verified situations could be extended and graded according to the difficulty, etc.

Our research pointed out the significance of the factors influencing the level of financial literacy, for example the family living standard or the level of the parents' education, residence, etc. These aspects are highlighted by other researchers (Riitsalu & Poder, 2016). In our research, these aspects were not assessed and their influence we can only assume. This question could become the theme for future research, in which the concentration should be to classify and identify the factors affecting and determining the level of financial literacy.

Acknowledgment

References

Agnew, S., & Harrison, N. (2015). Financial literacy and student attitudes to debt, *Journal of Retailing and Consumer Services*, *25*, 122-129.

Behrman J., Mitchell O. S., Soo C., & Bravo, D. (2012). How Financial Literacy Affects Household Wealth Accumulation. *American Economic Review 3*, 300-304. https://doi.org/10.1257/aer.102.3.300

Belás, J., Nguyen, A., Smrčka, L., Kolembus, J., & Cipovová, E. (2016). Financial Literacy of Secondary School Students. Case Study from the Czech Republic and Slovakia. *Economics and Sociology, 4,* 191-206.

Bernheim D., Skinner J., & Weinberg, S. (2001). What Accounts for the Variation in Retirement Wealth among U.S. Households? *American Economic Review, 4,* 832–857.

Delavande, A., Rohwedder, S., & Willis, R. J. (2008). Preparation for Retirement, Financial Literacy and Cognitive Resources. https://doi.org/:10.2139/ssrn.1337655 .

Hung, A., Parker, A. M., & Yoong, J. (2009). Defining and Measuring Financial Literacy, (RAND Working Paper WR708), 28 pp. https://ssrn.com/abstract=1498674 .

Huston, S. J., (2010). Measuring Financial Literacy. *The journal of consumer affairs, 2*, 296-316. https://doi.org/10.1111/j.1745-6606.2010.01170.x

Lusardi, A., & Mitchell, O. S. (2011). Financial literacy around the world: an overview. *Journal of Pension Economics and Finance, 4,* 497-508.

Lusardi, A., Michaud, P. C., & Mitchell, O. S. (2011). Optimal Financial Literacy and Saving for Retirement. 40 pp. RAND Working Paper Series No. WR-905-SSA. http://dx.doi.org/10.2139/ssrn.1978960

Lusardi, A. (2012). Financial literacy or financial capability? *In: Financial literacy and ignorance* [online] [cit. 12. 4. 2019]. http://annalusardi.blogspot.cz/ .

Lusardi A., & Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness, *Journal of Pension Economics and Finance*, *4,* 332-368.

Montanaro, P., & Romagnoli, A. (2016). Financial Literacy of Italian Teens and Family's Background: Evidence from PISA 2012. Bank of Italy Occasional Paper No. 335. http://dx.doi.org/10.2139/ssrn.2845350

Remund, D. L. (2010). Financial literacy explicated: The case for a clearer definition in an increasingly complex economy, *Journal of Consumer Affairs, 2,* 276-295.

Riitsalu, L., & Poder, K. (2016). A glimpse of the complexity of factors that influence financial literacy, *International Journal of Consumer Studies, 6,* 722-731.

Contact

Dana Kubíčková
University of Finance and Administration, Prague
Estonská 500, 100 00 Praha 10
dana.kubickova@centrum.cz

Vladimír Nulíček
University of Finance and Administration, Prague
Estonská 500, 100 00 Praha 10
vnulicek@gmail.com

Irena Jindřichovska
Metropolitní Univerzita Praha
Prokopova 100/16, 130 00 Praha 3
irena.jindrichovska@seznam.cz