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IMPACT OF EDUCATION ON THE FINANCIAL LITERACY: A CASE OF SLOVAKIA

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INTRODUCTION

Knowledge about finance is very important not only for companies, but also for individuals. Beňová et al. (2012) define the finance, as the relations between economic subjects in the economic transactions where the money supply is created, distributed and spent. In the resent years, exact the household´s finance and personal money management became the point of interest from the view of financial literacy (Lusardi and Mitchell, 2011). The connection between finance and literacy was firstly used by the Jump$tart Coalition for Personal Financial Literacy in 1997. Some initiatives to improve the quality of personal finance through financial education goes back to the 1950s and 1960s (Bernheim et al., 2001).

Financial literacy can we define as “the ability to use knowledge and skills to manage one's financial resources effectively for lifetime financial security” (Hastings et al., 2012). More complex explanation, given by OECD (2011) is, “Financial literacy is knowledge and understanding of financial concepts and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society and to enable participation in economic life”. It also includes the knowledge of basic financial concepts, such as the working of interest compounding, the difference between nominal and real values, and the basics of risk diversification (Lusardi, 2008). Similar definitions of financial literacy are also given by another authors (see Hilgert et al, 2003; Moore, 2003; Lusardi and Tufano, 2009 and others).

Many authors point out relevance of financial education, proved that it is one of the most appropriate tools for avoiding the bad decision´s consequences (see Christelis et al., 2010; Gerardi et al., 2010; Banks and Oldfield, 2007; Lusardi et al., 2010).

Higher level of financial literacy can increase level of living standard. Poor knowledge about finance leads to negative credit behaviour resulting into the higher indebtedness and debt accumulation problems (Stango and Zinman, 2009), high-cost borrowings and loans (Lusardi and Tufano, 2009), and wrong choices of mortgages and other financial products (Moore, 2003). The financially illiterate people have mainly the opposite financial behaviour and according to Jappelli and Padula (2011) are the less financially informed individuals found in countries with more generous Social Security benefits. Generally can be claimed that financially literate consumers make better financial decisions, do more invest and participate on the stock markets, use diversification for risk elimination (Graham et al., 2009), are able to choose mortgages and loans with lower fees (Choi et al., 2011), avoid indebtedness (Hastings and Tejeda-Ashton, 2008), manage their wealth more effectively (Stango and Zinman, 2007), plan for retirement and accumulate more retirement savings.

The Slovak republic´s political situation before 1989, characterised by the centralised economy, when only one commercial bank and insurance company had existed, made the financial decision making and need for the financial literacy absolutely meaningless. After 1989, the transformation into the market economy brought the competitiveness and diversity of financial instruments, for which the households of Slovak republic had not been prepared enough. The low financial literacy and level of education reflected into many mistakes and wrong investing decisions made by the households, as well as politicians on the national level in the process of privatisation

(Morvay et al., 2005). From the perspective of Slovak republic is the definition stated by the Ministry of Education of the Slovak republic (2008) in the document the National standard of financial literacy as the ability to use the knowledge, skills and experiences for the effective management of own resources with the objective to ensure lifelong financial security of individual and his household. It is not a final state rather the continual development influenced by variables such as age, family, culture or birth of living. The Ministry of Education of the Slovak republic emphasised the importance of financial literacy development by formulating the National Standard of Financial Literacy in 2008. (Ministry of Education of Slovak republic and Ministry of Finance of Slovak republic, 2008).

The Slovak Bank Association (SBA) created the index for measuring the level of financial literacy, and provided the study in the 2012, the average financial literacy resulted into 68 %, however, the evaluation can be considered as misleading, taking into account that the monitoring was done as the voluntary online questionnaire (Slovak Banking Association, 2012). It put on the 9th place from 11 selected European countries (ING, 2012).

In substance the National Standard is divided into seven areas (Slovak Banking Association, 2012):

1. A person in the sphere of money
2. The financial responsibility and decision-making
3. Ensuring money to cover financial needs-income and job
4. Planning and money management
5. Loans and Debt
6. Savings and investments
7. Risk Management and Insurance

The aim of the paper is to measure the overall level of financial literacy on a sample of students in Slovakia and also the influence of education level and education focus.

1. DATA AND METHODOLOGY

We performed a questionnaire consisting from 10 questions on a sample of 608 students from two faculties of Slovak University of Agriculture in Nitra. One faculty was the Faculty of economics and management with economic focus and the other faculty was Technical faculty with non-economic focus. We selected this two faculties with the goal to compare the financial literacy based on the focus of the Study programme.

The sample of students allowed to evaluate the impact of selected determinants. The sample structure is in table 1 and 2.

Table 1: Structure of the respondents: Highest education achieved

	Frequency	Percent	Valid Percent	Cum.Percent
High School	235	38.7	38.7	38.7
Bachelor	373	61.3	61.3	100.0
Total	608	100.0	100.0	

Source: own

Table 2: Structure of the respondents: Education focus

	Frequency	Percent	Valid Percent	Cum. Percent
Economic	375	61.7	61.7	61.7
Non-economic	233	38.3	38.3	100.0
Total	608	100.0	100.0	

Source: own

The main source for processing the data is the Index of financial literacy (IFIG). It is an average score of correct answers of respondents. The

$$\mathrm{IFIG} = \frac{\textit{Number of correct answers of all respondents}}{\textit{Number of respondents}}$$

highest possible IFIG value can be 1, the lowest 0. If IFIG is 1 it means all questions were answered correct.

To measure whether the results are influenced by the selected determinants (education level and education focus) non-parametric statistical methods were used. To verify the existence of statistically significant differences between the individual groups of respondents (depending on a particular determinant) the Mann-Whitney U test was used. A null statistical hypothesis with parity of all the medians is tested. If the p-value is lower than the chosen level of significance (0.05), the null hypothesis is rejected. This means that the difference between at least one pair of the medians calculated from the sample is too big to be a result of only random selection, i.e. it is statistically significant – there is a relationship between the variables. If the p-value is equal or higher than the chosen level of significance, the null hypothesis cannot be rejected. This means that the difference between each pair of the medians calculated from the sample can only be a result of random selection, i.e. it is not statistically significant – there is no statistically significant difference between the variables.

2. RESULTS

The overall index of financial literacy of students from both faculties was 0.627 in year 2015. What is more important, we can confirm differences in results based on the determinants. The results show the higher the achieved education, the higher the financial literacy. Also the economic oriented education helps to improve the financial literacy as well. IFIG results based on determinants are in table 3.

Table 3: Average IFIGs according to structure of respondents

EDUCATION	IFIG	FOCCUS	IFIG
high school	0.577	economic	0.674
bachelor	0.658	non-economic	0.553

Source: own calculations

The results of the test show that both determinants have influence but not in all individual questions (I_1 to I_10). The education focus caused statistically significant differences in case of 7 questions, education level only in case of four questions (see tables 4 and 5).

Table 4: Results of Mann-Whitney Test for individual questionnaire items: Highest education achieved

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8	I_9	I_10
p level	**0.000**	**0.012**	0.614	**0.007**	0.227	0.052	**0.000**	0.387	0.095	0.181

Source: own calculations

Note: Statistically significant differences are "bolded"

Table 5: Results of Mann-Whitney Test for individual questionnaire items: Education focus

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8	I_9	I_10
p level	**0.000**	**0.000**	**0.000**	0.275	**0.000**	**0.002**	**0.022**	0.873	**0.003**	0.167

Source: own calculations

Note: Statistically significant differences are "bolded"

The questions of the questionnaire were further divided in four areas of financial literacy. The first area was focusing in interest (IFIGi), second area was dealing with financial market (IFIGfm), third area was questioning risk management (IFIGr) and the last area was personal finance (IFIGpf).

The impact of highest education achieved and focus of education on four areas of financial literacy was evaluated using linear regression. The results show that the overall index of finance literacy ($IFIG_o$) is influenced by education level and education focus of the respondents (table 6). Also questions focused on interest and financial market were significantly influenced by education achieved and focus of education. No impact of determinants can be confirmed in the area of personal finance.

Table 6: Results of linear regression: EDUCATION, FOCUS

	IFIGi	IFIGfm	IFIGr	IFIGpf	IFIGo
EDU	yes	yes	no	no	**yes**
FOC	yes	yes	yes	no	**yes**

Sorce: own

The concrete values of IFIG for groups of students based on education achieved and education focus are in table 7. The overall IFIG is higher in case of students of bachelor degree compared with high school graduates. Within the groups of education the focus is also important. High school graduates with economic focus responded with better results in all areas of financial literacy. The same is in case of bachelor graduates.

Table 7: IFIG Results for determinants and areas of financial literacy

		IFIGi	IFIGfm	IFIGr	IFIGpf	IFIGo
high school	economic	0,615	0,485	0,658	0,793	0,633
	non-economic	0,458	0,412	0,539	0,657	0,505
bachelor	economic	0,725	0,616	0,707	0,707	0,696
	non-economic	0,565	0,454	0,607	0,760	0,590

Source: own calculations

3. DISCUSSION

The level of financial literacy is affected by various determinants. Based on the results of previous research mainly age, gender, education and income have significant impact on financial literacy. Hung et al. (2009) in their study claim that the level of financial literacy increases with the level of education and income. The factors, as gender and age do not have significant impact on the level of financial literacy. Murphy (2013) agrees with the assumption that the level of education has the highest correlation with financial literacy, but also the other factors such as age, race, gender and earnings are of influence. Lusardi and Mitchell (2011) emphasise the importance of age, as the determining factor, and state that middle age people have the highest level of financial literacy, whereas Bhushan et al. (2013) showed that financially literacy is not affected by age.

As stated by Murphy (2013), the level of education is also a relevant determinant of financial literacy. Based on the results of our research we can confirm that education and the focus of education affects the level of financial literacy. Bachelor school graduates with IFIG average 0.658 answered almost one out of ten question more correct when compared to high school graduates. The next examined determinant – education focus has also impact on financial literacy according to our sample. The difference is even higher in that case. IFIG of students with economic focus was 0.674 and in case of students with non-economic focus 0.553.

CONCLUSION

The aim of this paper was to measure the level of financial literacy on a group of Students in Slovakia and the importance of education level and education focus on the financial literacy. Our results show that the higher the education the better the financial literacy. And also the economic focus of education has significant and positive effect on the level of financial literacy.

The need for education and increase of competencies of households is generally beneficial for the economy and the country. This fact is perceived also by financial intermediaries who prefer educated clients. The importance of financial literacy was significantly tested by the financial crisis. In Slovakia just like in any other country financial crisis caused a decrease in value of mutual funds (almost by 60%). The reaction of households or individual investors in Slovakia was to sell the investment which showed full illiteracy in the field of financial investments and the need to increase financial literacy. The government implemented in 2013 the National Standards of Financial Literacy to increase to increase financial literacy in Slovakia. They define the knowledge, skills and experience in financial education and personal finance management, which should secondary graduate have. Results of our research show that education has positive effect on financial literacy and therefore we consider the implementation of financial literacy education into the curriculum in Slovakia positive.

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Abstract

The Financial crisis in 2008 increased the focus of financial intermediaries and also national authorities for financial education and financial literacy of households. Bank association in Slovakia started to measure and increase the financial literacy of population and government implemented the National standard of financial literacy into the curriculum of grammar schools and high schools. This paper examines the level of financial literacy of students in Slovakia and the influence of determinants education level and education focus. We performed a questionnaire with 10 questions on a sample of 608 students from two Faculties of Slovak University of Agriculture. The questions were linked to 4 areas: interest, risk management, financial market and personal finance. To measure the level of financial literacy we use Index of financial literacy IFIG). Using Index of financial literacy and Mann-Whitney U test techniques we find that education level and education focus are relevant determinants of financial literacy level. Students with bachelor degree have better results when compared to high school students. The success rate measured by the IFIG of bachelor students was 0,658 and the success rate of high school students was 0,577. We also found differences based on the education focus. We compared two groups: students with economic focus of education with students with non-economic focus of education. Based on our results we can conclude that economic focus of education increases the level of financial literacy. The success rate of students with economic focus of education was significantly higher (0,674) compared to the students with non-economic focus of education (0,553).

Keywords: financial literacy; index of financial literacy; determinants; education

JEL Classification: D14, D31