

Financial Decision-Making among Finance Students: An Empirical Study from the Czech Republic

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Abstract—Making sound financial decisions is an essential skill which can have an impact on life of each consumer of financial products. The aim of this paper is to examine decision-making concerning financial matters and personal finance. The selected target group was university students majoring in finance related fields. The study was conducted in the Czech Republic at Masaryk University in 2015. In order to analyze financial decision-making questions related to basic finance decisions were developed to address the research objective. The results of the study suggest gaps in detecting best solutions to given financial decision-making questions among finance students. The analysis results indicate relation between financial decision-making and own experience with holding and using concrete financial products.

Keywords—Financial decision-making, financial literacy, personal finance, university students.

I. INTRODUCTION

CONSUMERS of the financial products need to face the complex financial products, wide range of products and countless providers of financial services and products which make it more difficult to make sound financial decisions and select the optimal option for the individual consumer. Another obstacle that impedes decision-making is a vast quantity of information imposed on the consumer who is required to select only the information relevant to make sound decision.

Financial decision-making is another important part of the financial literacy as we need to transform our financial knowledge into action in the form of financial behavior and actual financial decision-making. The term of financial literacy is defined by OECD as “*a combination of awareness, knowledge, skill, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial wellbeing.*” [1] The World Bank defines financial capability as “*the internal capacity to act in one’s best financial interest, given socio-economic environmental conditions. It encompasses the knowledge (literacy), attitudes, skills and behavior of consumers with regard to managing their resources, and understanding, selecting, and making use of financial services that fit their needs*” [20]. Therefore, this paper aims to examine such decision-making.

Extensive research and surveys were conducted, on the international level OECD measures financial literacy [1]-[8], and developed toolkit [12] for measuring such financial literacy facilitating international comparison. The World Bank focuses on measuring financial capability [9] using the

questionnaire developed for such reason [10]. Research in this area indicates several influencing factors, such as gender [3], age [17], education [23], parents’ education [18], income level [6], and region [2]-[4]. Majority of these variables are used in the analysis. Within the broad comprehension of financial literacy topic, university students as a target group were tested as well in various studies in different countries across the world, for instance in Australia [5], Hungary [7]-[11], Turkey [13], South Africa [14], and USA [15]-[19].

II. METHODOLOGY

When considering which financial product to select, we can make sound financial decision based on certain financial knowledge, logic or experience. In order to study financial decision-making among students of finance, simple questions testing basic financial concepts or financial products were developed. Questions were based on the research and surveys of WB and OECD which detected key areas of interest testing financial literacy and personal finance management [12]-[21]. The areas focused on budgeting, debt management, knowledge of financial products, and planning the retirement. Therefore, the survey comprised six questions aiming at these areas. Questions are based on the real data and information to which a consumer exposed in financial markets and institutions, hence the survey contained questions on budgeting, selecting a current account, loans, and mutual funds.

The size of the sample was $n = 575$. In terms of the characteristics of the respondents, gender ratio within the sample was relatively equal. The age of the respondents ranged between 19 and 25 years. The survey was presented to the students of the Faculty of Economics and Administration at Masaryk University in the Czech Republic. Participating students were both undergraduate and graduate students majoring in finance related fields.

The aim of this paper is to examine whether there is a link between basic financial decision-making of finance students and demographic, socio-economic, and other selected variables. Due to the categorical nature of the data a chi-square statistics testing association between variables was selected.

Variables included in the analysis were respondents’ gender; year of the study; region they come from; whether they live in urban or rural area; their work situation, whether they work and study at the same time; their income level; whether they are risk-averse or are likely to be inclined to the risk products; self-assessment of their personal finance knowledge; and whether they have experience with the concrete product.

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III. RESULTS

First question concerning budgeting presents a list of income and expenditure of the household. Respondents were to decide whether the overall household budget is balanced, in deficit or surplus. In order to select the correct answer, the numeracy skills were necessary for basic calculations, but primarily it was essential to decide into which category the budget belongs.

A chi-square statistics was conducted in order to examine if females and men differ on whether they selected the correct option or not. The same method was used for testing whether other demographic and socio-economic factors have association with the correct decision selection. Besides the already mentioned variables, experience with the tested situation was added as variable as well. The results are presented in Table I.

TABLE I
CHI-SQUARE ANALYSIS OF DECISION-MAKING ON BUDGETING AMONG
SELECTED VARIABLES

Variable:	p-value	Cramer V
Gender	.000*	.167
Year of Study	.691	.091
Region	.258	.189
Living in Urban Area	.744	.064
Work Situation	.670	.102
Income Level	.838	.095
Risk-aversion	.044*	.145
Self-assessment	.498	.084
Have Budget	.027*	.102
Monitor Expenses within Budget	.282	.089

Source: Author's work based on calculations in SPSS 22.0.

Table X shows Chi-square results indicating the significant association between decision-making on budgeting and gender ($\chi^2 = 13.16$, $df = 1$, $N = 473$, $p = .000$). Association with risk-aversion of the respondent is also significant ($\chi^2 = 9.77$, $df = 4$, $N = 464$, $p = .044$). What is more, results of chi-square analysis indicate that experience in the form of having a budget is significant ($\chi^2 = 4.92$, $df = 1$, $N = 473$, $p = .027$).

According to Global Findex Database [22] a major part of population owns a financial product, mostly a current account. It is necessary to compare and select the optimal product whose parameters are according to the needs of the client. Therefore, a question testing such decision was developed providing respondent with the current account's offer of three different banks together with the specified needs of an imaginary client. The question was based on the real data of bank fee policy and other conditions. Respondents were assigned to detect the optimal offer. Whether their correct responses differ with demographic and other variables shows Table II. The results shown in Table II suggest significant association between decision-making on account and respondent's risk-aversion ($\chi^2 = 30.50$, $df = 12$, $N = 537$, $p = .002$). Association with the own experience, having current account with debit card, is shown as significant ($\chi^2 = 9.88$, $df = 3$, $N = 545$, $p = .020$).

TABLE II
CHI-SQUARE ANALYSIS OF DECISION-MAKING ON ACCOUNTS AMONG
SELECTED VARIABLES

Variable:	p-value	Cramer V
Gender	.355	.077
Year of Study	.130	.123
Region	.922	.135
Living in Urban Area	.568	.087
Work Situation	.984	.077
Income Level	.699	.111
Risk-aversion	.002*	.138
Self-assessment	.109	.106
Have Current Account with Debit Card	.020*	.135

Source: Author's work based on calculations in SPSS 22.0.

Loans are another financial product widely used among consumers. The selection of the optimal loan is crucial for posterior financial fitness of personal finances and repaying the financial commitments, hence the ability to decide which loan is appropriate depends on the understanding of the loan concept and information provided in the prospectus. The question tested such ability with presenting real examples of the loan including interest rate, annual percentage rate, the amount of monthly installment, the total loan amount, fees time period, and total amount payable of the loan. Table III shows whether there is an association between providing the correct answer to the question and selected variables.

TABLE III
CHI-SQUARE ANALYSIS OF DECISION-MAKING ON LOANS AMONG
SELECTED VARIABLES

Variable:	p-value	Cramer V
Gender	.208	.057
Year of Study	.772	.083
Region	.334	.180
Living in Urban Area	.905	.050
Work Situation	.055	.160
Income Level	.217	.149
Risk-aversion	.895	.048
Self-assessment	.340	.097
Have Credit Card	.038*	.095
Have Unsecured Loan	.093	.076

Source: Author's work based on calculations in SPSS 22.0.

Table III provides results of chi-square analysis implying the existence of association between decision-making on loans and actual experience of having a credit card ($\chi^2 = 4.32$, $df = 1$, $N = 483$, $p = .038$). Other selected variables do not show significant association with decision-making concerning loan as a credit product.

How do students usually make their choice of financial product is provided in Table IV. The question is adapted from OECD toolkit measuring financial literacy [12]. The question focuses on the way the respondents select the product. Of the students 72% consider several options from different companies before making my decision, 6% of the students usually consider various options from one company, 10% of the respondents do not consider any options at all, and 1% of the participating students look around but cannot find any options to consider.

TABLE IV
WAYS OF CONSIDERING OF A FINANCIAL PRODUCT

How do you usually make your choice of financial product? I consider:	Valid percent (%)
Several options from different companies	72
Various options from one company	6
Do not consider any other options at all	10
I look around but I cannot find any options to consider.	1
Don't know	11

Source: Author's work based on calculations in SPSS 22.0.

What kind of information sources influence students' decisions when considering a financial product is shown in Table V. The multiple-choice question is retrieved from OECD toolkit and sources of information are grouped into categories such as product specific information, best buy guidance, general advice, media coverage, adverts, and other [12].

TABLE V
INFORMATION SOURCES INFLUENCING DECISIONS

What kind of information sources influences your choice of financial product?	Valid percent (%)
Product specific information:	
- Unsolicited information sent through the post	1
- Information picked up in a branch	51
- Product specific information found on the internet	73
- Information from sales staff of the firm providing the products (including quotes)	48
Best buy guidance:	
- Best-buy tables in financial pages of newspapers/magazines	45
- Best-buy information found on the internet	46
- Specialist magazines/publications	36
- Recommendation from independent financial adviser or broker	40
General advice:	
- Advice of friends/relatives (not working in the financial services industry)	44
- Advice of friends/relatives (who work in the financial services industry)	68
- Employer's advice	8
Media coverage	
- Newspaper articles	7
- Television or radio programmes	2
Adverts:	
- Newspaper adverts	1
- Television adverts	2
- Other advertising	2
Other:	
- My own previous experience	58
- Other source	15

Source: Author's work based on calculations in SPSS 22.0.

Results in Table V demonstrate that the most influential sources of information when considering a financial product are, for instance, product specific information found on the internet (73%), advice of friends or relatives working in the financial services industry (68%), their own previous experience (58%), information picked up in a branch (51%), information from sales staff of the firm providing the products

including quotes (48%), best-buy information found on the internet (46%), and best-buy tables in financial pages of newspapers (45%).

IV. CONCLUSION

The significant source of information for students when considering a financial product are sources found on the internet comparing more options. Decision-making is also influenced by advice of friends or relatives who work in the financial services, as well as students' own previous experience. Another source of information includes information about the financial product provided by the financial institution offering the product. Consequently, it is important to maintain the provided information accurate, clear, and understandable for all potential consumers.

Results suggest that among participating finance students decision-making in basic financial matters is marginally affected by demographic or socio-economic factors. In all presented questions own experience is significant factor for students' decision and selection of the best option when considering several offers and conditions. The experience includes the hold of the actual financial product. Therefore, the results of the study underline the importance of the financial inclusion on the whole.

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REFERENCES

- [1] A. Atkinson, and F. Messy, *Measuring Financial Literacy: Results of the OECD / International Network on Financial Education (INFE) Pilot Study*, OECD Working Papers on Finance, Insurance and Private Pensions, No. 15, OECD Publishing, Paris, 2012.
- [2] T. Bucher-Koenen, A. Lusardi, R. Alessie, and M. van Rooij, "How Financially Literate Are Women? An Overview and New Insights," *NBER Working Papers*, pp. 3-33, 2014.
- [3] C. Bumcrot, J. Lin, and A. Lusardi, "The Geography of Financial Literacy," *Numeracy: Advancing Education in Quantitative Literacy*, vol. 6: Issue 2, pp.1-26, 2013.
- [4] G.L. Clark, "Roepke Lecture in Economic Geography--Financial Literacy in Context," *Economic Geography*, vol. 90 Issue 1, pp.1-23, 2014.
- [5] M. Cull, D. Whitton. University Students' Financial Literacy Levels: Obstacles and Aids. *Economic and Labour Relations Review*. Vol. 22, Issue. 1, pp.99-114, 2011.
- [6] A. Hung, J. Yoong, and E. Brown, "Empowering Women Through Financial Awareness and Education", *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 14, OECD Publishing, Paris, 2012.
- [7] K. Huzdik, D. Béres, E. Németh. An Empirical Study of Financial Literacy versus Risk Tolerance Among Higher Education Students. *Public Finance Quarterly*. Vol. 59 Issue 4, pp.444-456, 2014.
- [8] E. Kempson. *Framework for the Development of Financial Literacy Baseline Surveys: A First International Comparative Analysis*. OECD Working Papers on Finance, Insurance and Private Pensions. No. 1. Paris: OECD Publishing, 2009.
- [9] E. Kempson, V. Perotti, K. Scott, *Measuring Financial Capability: A New Instrument and Results from Low- and Middle-Income Countries*, World Bank, 2013.
- [10] E. Kempson, V. Perotti, K. Scott, *Measuring Financial Capability: Questionnaire and Implementation Guidance for Low- and Middle-income Countries*. World Bank, 2013

- [11] A. Luksander, D. Béres, K. Huzdik, E. Németh, "Analysis of the Factors that Influence the Financial Literacy of Young People Studying in Higher Education," *Public Finance Quarterly (0031-496X)*, vol. 59, Issue 2, pp. 220-241, 2014.
- [12] OECD/INFE, *Toolkit for Measuring Financial Literacy and Financial Inclusion*, OECD Publishing, Paris, 2015.
- [13] A. Özdemir, F. Temizel, H. Sönmez and F. Er, "Financial Literacy of University Students: A Case Study for Anadolu University, Turkey," *International Journal of Management Economic*, vol. 11, Issue 24, pp. 97-110, 2015.
- [14] Shambare, R. and Rugimbana, R. Financial Literacy Among the Educated: An Exploratory Study of Selected University Students in South Africa. *Thunderbird International Business Review*. Vol. 54, Issue 4, pp. 581-590, 2012.
- [15] Shim, S., Serido, J. and Xiao, J. *Arizona Pathways to Life Success for University Students: Cultivating Positive Financial Attitudes and Behaviors for Healthy Adulthood*. The University of Arizona, 2009.
- [16] Shim, S., and Serido, J. *Life After College: Drivers for Young Adult Success*. The University of Arizona, 2014.
- [17] B.A. Tannahill, "The Role of Financial Literacy in Retirement Decision Making," *Journal of Financial Service Professionals*, vol. 66, Issue 2, pp.32-35, 2012.
- [18] V. Vyvyan, L. Blue and M. Brimble, "Factors that Influence Financial Capability and Effectiveness: Exploring Financial Counsellors' Perspectives," *Australasian Accounting Business*, vol. 8 Issue 4, pp. 3-21, 2014.
- [19] J. Xiao, S. Ahn, J. Serido and S. Shim, "Earlier financial literacy and later financial behaviour of college students," *International Journal of Consumer Studies*, vol. 38, Issue 6, pp.593-601, 2014.
- [20] World Bank, *A Toolkit for the Evaluation of Financial Capability Programs in Low- and Middle-Income Countries*, 2013.
- [21] World Bank, *Financial Capability Surveys Around the World*, 2013.
- [22] World Bank, The Global FINDEX Database, 2014.
- [23] L. Xu, B. Zia, "Financial literacy around the world: An Overview of the Evidence with Practical Suggestions for the Way Forward," *World Bank Policy Research Working Paper*, No. 6107, 2012.