

LEGAL MINDS AND FINANCIAL KNOWLEDGE: SURVEY ANALYSIS OF FINANCIAL LITERACY AMONG MACEDONIAN LAW STUDENTS

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Abstract

Financial literacy is an important competency that empowers individuals to manage their resources and make prudent financial choices. In our work, we focus on examining financial literacy among law students in the Republic of North Macedonia. We conducted a survey with 129 law students from the University Ss. Cyril and Methodius in Skopje, the most prominent and oldest university in the country. The students demonstrated high knowledge of banking and credit and low knowledge in more complex financial areas, such as the share market, compound interest rate, and time value of money. Moreover, we used ANOVA and logistic regression to examine how different factors impact financial literacy. The analysis of the variance showed that there is a statistically significant difference between the students from various ethnic backgrounds and students originating from different regions. The logistic regression was employed to analyze the impact of socio-demographic, educational, and personal characteristics of the students on their financial knowledge. The results suggested that only region is a statistically significant socio-demographic predictor of financial knowledge. Personal characteristics, including financial influence and financial attitudes, have a favorable and statistically significant impact on the financial literacy of students, while the impact of financial behavior has proved to be positive but insignificant. The results from the study can further be used by the relevant financial regulators and entities in the country to advance the learning environment about finance competencies. We also recommend the innovation and modernization of the curriculums of law schools by integrating courses, training, and workshops that will strengthen students' financial knowledge.

Keywords: Financial literacy; Financial knowledge; Undergraduate students; North Macedonia.

JEL codes: G53, I21, I22, K10.

I. INTRODUCTION

Financial literacy is an important life skill that allows people to take control of their finances and make responsible financial decisions. A broad understanding of this idea regards financial literacy as a set of abilities for managing money responsibly. Another approach is to consider it as the capacity to comprehend and apply various financial skills. These skills include but are not limited

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to, comprehending fundamental financial concepts such as savings, spending, investing, financial product understanding, credit, debt, tax planning principles, and insurance.

The Republic of North Macedonia has identified financial education and financial literacy as areas of national strategic importance. The country has adopted a strategic document to support further development of financial education and financial inclusion and to improve and establish an adequate legal and institutional environment for consumer protection in the country's finance field.¹ One of the main objectives of this strategy is to contribute to a better understanding of the basic financial concepts and terms of individual target groups and the population as a whole. Some of the critical activities to achieve this goal include increasing the awareness of financial education on a broad basis, strengthening the coordination of the entities involved in the financial education process, and increasing the financial literacy of the adult population by defining target groups.

On a national level, the first organized effort to assess the financial literacy and competencies in the Republic of North Macedonia was organized by the National Bank of the Republic of North Macedonia. Namely, in 2018, they published a report about the financial literacy competencies of the adult population in the country.² In this work, the financial literacy level is assessed using the methodology of the OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion.³ According to this methodology, three pillars of financial literacy were assessed: financial knowledge, financial behavior, and financial attitudes of the population. The results suggest that the adult population in the country has a low level of financial knowledge, with many lacking basic understanding. While 42% of adults demonstrate positive financial behavior, 40% fail to establish long-term financial objectives. Additionally, only 20% of the adult population has financially literate attitudes, which is lower than the G20 countries average. The overall financial literacy score for the adult population in the country is 11.8 points out of 21, and it is behind the G20 countries average. The Macedonian population's financial literacy score is 56 percentage points, indicating a need for improved financial literacy activities.

Another OECD report analyses the financial literacy levels among the adult population in selected economies from the Southeast European region.⁴ This report also employs the OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion⁵ and refers to the following countries: Bulgaria, Croatia, Georgia, North Macedonia, Moldova, Montenegro, and Romania. The findings indicate that adults in South East Europe scored on average 57% of the highest possible financial literacy scores. The adult population's financial literacy is lower than the EU

¹ Coordination body of the financial regulators for financial education and financial inclusion (2020). *Strategy for Financial Education and Financial Inclusion of the Republic of North Macedonia 2021-2025*. Retrieved from <https://www.nbrm.mk/ns-newsarticle-strategija-za-finansiska-edukacija-i-finansiska-inkluzija-na-republika-severna-makedonija-2021-2025.nsp> (Accessed at 15 June 2024).

² National Bank of the Republic of Macedonia (2018). Adult Financial Literacy Competencies in Macedonia: Results of the OECD/INFE Based Methodology Study. Available at: <https://www.nbrm.mk/content/Adult-Financial-Literacy-Competencies-in-Macedonia-2017.pdf> (Accessed at 15 June 2024).

³ OECD (2018). OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion. Retrieved from <https://www.oecd.org/financial/education/2018-INFE-FinLit-Measurement-Toolkit.pdf> (Accessed 15 May 2024)

⁴ OECD (2020). Financial Literacy of Adults in South East Europe. Available at: www.oecd.org/daf/fin/financial-education/Financial-Literacy-of-Adults-inSouth-East-Europe.pdf (Accessed 15 May 2024)

⁵ OECD (2018), *Ibid*.

and OECD average (64% and 65%, respectively). Moreover, the report showed heterogeneity between and within countries.

This study investigates the level of financial literacy within a particular subset of the adult population in the Republic of North Macedonia, namely undergraduate law students. Considering that evaluating the extent and factors influencing financial literacy among this particular group will aid in achieving the country's strategic objectives, we believe our work is highly significant for the leading financial education entities in the country and for enhancing the financial literacy of the adult population.

In our work, we aim to answer the following questions:

- What is the level of financial literacy among law students in the Republic of North Macedonia?
- How well are the students familiar with the key financial concepts and skills?
- What are the determinants of the financial literacy among the university students?
- What are the policy recommendations for improving the financial literacy of the adult population?

The rest of the paper is structured as follows: Section 2 provides an overview of the pertinent financial literacy literature, specifically focusing on university students. Section 3 addresses the methodological issues related to the study. Section 4 examines the characteristics of the sample used in the analysis. Section 5 presents the results of the analysis and subsequent discussion. The study is concluded in Section 6. The reference list and annexes are provided below.

II. LITERATURE REVIEW

The related literature includes numerous definitions of financial literacy. One of the most comprehensive definitions is offered by the Organization for Economic Cooperation and Development. OECD understands financial literacy as “the process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction, and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities to make informed choices, to know where to go for help, and to take other effective actions to improve their financial wellbeing.”⁶ *Differentia specifica* of this definition is that it understands financial literacy as financial knowledge or skills, but also as financial behavior. Moreover, financial literacy can be understood as “the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial wellbeing.”⁷ Lusardi defines financial literacy as understanding fundamental financial concepts such as interest compounding, the distinction between nominal and real values, and the fundamentals

⁶ OECD INFE (2011) Measuring Financial Literacy: Core Questionnaire in Measuring Financial Literacy: Questionnaire and Guidance Notes for conducting an Internationally Comparable Survey of Financial literacy. Paris: OECD.

⁷ Servon, L. J., and Kaestner, R. (2008). Consumer financial literacy and the impact of online banking on the financial behavior of lower-income bank customers. *Journal of consumer affairs*, 42(2), 271-305.

of risk diversification.⁸ Huston defines financial literacy as the ability of an individual to comprehend and use personal finance information.⁹ Garman and Gappinger understand financial literacy as the “knowledge of facts, concepts, principles, and technological tools that are fundamental to being smart about money,” while Mason and Wilson described financial literacy as a “meaning-making process” in which individuals employ a mix of skills, resources, and contextual knowledge to process information and make financial decisions.^{10 11}

The impact of financial literacy is immense. Studies have shown that financial literacy is positively connected with better money management¹² and can increase individuals’ wealth¹³. Financially literate individuals have the knowledge and abilities to make wise investment decisions and develop their assets over time. Also, financial literacy is positively associated with better credit card management¹⁴¹⁵, enhanced retirement planning¹⁶, and reduced financial stress.¹⁷

Financial knowledge and financial literacy have been a topic of interest for university students since the late 1980s. Danes and Hira found that students had low levels of knowledge in insurance, credit cards, and financial management¹⁸. Chen and Volpe found that about half of the respondents in their survey correctly answered financial knowledge questions.¹⁹ In addition, non-business majors, women, lower classes, students under 30 years old, and those with little work experience demonstrated lower levels of financial knowledge. Britt et al. found that 90% of students showed interest in learning about specific financial education topics, such as counseling services, savings, investments, and budgeting.²⁰ Murphy and Yetmar found that while students acknowledge

⁸ Lusardi, A. (2008). Household Saving Behavior: The Role of Financial Literacy, Information, and Financial Education Programs. The George Washington University School of Business, *NBER Working Paper* No. 13824.

⁹ Huston, S. J. (2010). Measuring Financial Literacy. *Journal of Consumer Affairs*, 44(2): 296-316.

¹⁰ Garman, E. T., and J. Gappinger, A. (2008). Delivering Financial Literacy Instruction to Adults. Retrieved from <http://6aa7f5c4a9901a3e1a1682793cd11f5a6b732d29.gripelements.com/pdf/10-book-review-rebeccatravnichek-192.pdf> (Accessed 15 May 2024)

¹¹ Mason, C. L. J., & Wilson, R. M. S. (2000). Conceptualising financial literacy. *Loughborough University*, 41. Retrieved from: <https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/2016/3/2000-7.pdf> (Accessed at 15 June 2024)

¹² de Bassa Scheresberg, C. (2013). Financial Literacy and Financial Behavior among Young Adults: Evidence and Implications. *Numeracy* 6, Iss. 2, Article 5. DOI: <http://dx.doi.org/10.5038/1936-4660.6.2.5>

¹³ Behrman, J. R., Mitchell, O. S., Soo, C., and Bravo, D. (2010) Financial Literacy, Schooling, and Wealth Accumulation. *NBER Working Paper 16452*. <http://www.nber.org/papers/w16452>.

¹⁴ Allgood, S. and Walstad W. (2013). Financial Literacy and Credit Card Behaviors: A Cross-Sectional Analysis by Age. *Numeracy* 6, Iss. 2, Article 3. DOI: <http://dx.doi.org/10.5038/1936-4660.6.2.3>

¹⁵ Kristopher S. G., and Goette, L., and Meier S. (2010). Financial literacy and subprime mortgage delinquency: evidence from a survey matched to administrative data. *FRB Atlanta Working Paper 2010-10*. Federal Reserve Bank of Atlanta.

¹⁶ van Rooij M., and Lusardi A., and Alessie R. (2012). FINANCIAL LITERACY, RETIREMENT PLANNING AND HOUSEHOLD WEALTH. *Economic Journal*, 122: 449–478.

¹⁷ Mansor M., Sabri M., Mansur M., Ithnin M., Magli, A.M., Husniyah, A.R., Mahdzad, N.S, Othman, M.A., Zakaria, R.H., Satar, N.M., and Janor H. (2022). Analysing the Predictors of Financial Stress and Financial Well-Being among the Bottom 40 Percent (B40) Households in Malaysia. *Int. J. Environ. Res. Public Health* 2022, 19(19), 12490; <https://doi.org/10.3390/ijerph191912490>

¹⁸ Danes, S. M., and T. K. Hira. (1987). Money Management Knowledge of College Students. *Journal of Student Financial Aid* 17(1), 4-16.

¹⁹ Haiyang C., and Volpe R.P. (1998). An analysis of personal financial literacy among college students, *Financial Services Review* 7(2): 107-128. [https://doi.org/10.1016/S1057-0810\(99\)80006-7](https://doi.org/10.1016/S1057-0810(99)80006-7)

²⁰ Britt, S., Jariah, M., Husniyah, A. R., and P.Laily. (2004). Financial Behavior and Problems among University Students: Need For Financial Education. *Journal of Personal Finance* 3(1): 82–96.

financial planning as important, they lack the necessary skills and knowledge to prepare financial plans and prefer professional advice.²¹

Over the past twenty years, a significant body of research has been published about the determinants of students' financial literacy in a specific country. Ibrahim et al. conducted research on financial literacy among university students in Malaysia, revealing that students often lack proper money management skills.²² Spending habits and study years significantly affect financial literacy, while age and gender have a negative impact. Kaur, Vohra, and Arora found that financial literacy among students with commerce and management backgrounds from the Guru Nanak Dev University in Punjab is fairly good, regardless of demographic characteristics.²³ They recommend incorporating financial and economic concepts into university curriculums. Nidar and Bestari found that personal financial literacy among Padjadjaran University students is influenced by factors such as education level, faculty, income, parental knowledge, and insurance ownership.²⁴ A survey in Nepal found that most college students have basic financial knowledge but lack an understanding of credit, taxes, the stock market, financial statements, and insurance. Financial literacy factors include income, age, education, college type, and student attitude. Gender, university affiliation, financial behavior, and influence have no effect.²⁵ A study in Australia found low financial literacy among first-year undergraduate students, with financial skills education in high school being a primary factor.²⁶ Major factors influencing financial literacy include gender, nationality, class rank, work experience, and college major. Shahrabani (2013) discovered a low level of financial literacy among the students in Israel. Factors influencing financial literacy were gender, nationality, class rank, work experience, and college major.²⁷

Some studies examine the factors of financial literacy in countries in the South Eastern European region. Thus, Alkan et al. found that factors such as age, class, gender, marital status, personal income, and economic knowledge influence financial literacy levels among university students in Turkey. However, certain groups, such as women, students under 25, STEM students, and those with a single marital status, had lower financial literacy scores.²⁸ Akben-Selcuk and Altiok-Yilmaz found that formal education, deep learning approaches, and parental financial teaching were

²¹ Murphy, D. S., and Yetmar, S. (2010). Personal financial planning attitudes: a preliminary study of graduate students. *Management Research Review*, 33(8): 811–817. doi:10.1108/01409171011065617

²² Ibrahim, D. Harun, R., and Z. Isa. (2009). A Study on Financial Literacy of Malaysian Degree Students. *Cross Cultural Communication* 5(4): 51–59.

²³ Kaur, M., Vohra, T., and Arora, A. (2015). Financial Literacy among University Students: A Study of Guru Nanak Dev University, Amritsar, Punjab. *Asia-Pacific Journal of Management Research and Innovation*, 11(2), 143–152. <https://doi.org/10.1177/2319510X15576178>

²⁴ Nidar, S. R., and S. Bestari. (2012). Personal Financial Literacy among University Students: Case Study at Padjadjaran University Students, Bandung, Indonesia. *World Journal of Social Sciences* 2(4): 162-171.

²⁵ Thapa, B. S. & Nepal, S. R. (2015). Financial Literacy in Nepal: A Survey Analysis from College Students. *NRB Economic review*, 49-74.

²⁶ Beal D. J., and Delpachitra S. B. (2003). Financial literacy among Australian university students. *Economic Papers: A Journal of Applied Economics and Policy*, 22(1): 65–78. doi:10.1111/j.1759-3441.2003.tb00337.x

²⁷ Shahrabani, S. (2013). Financial Literacy Among Israeli College Students. *Journal of College Student Development*, 54(4), 439–446. doi:10.1353/csd.2013.0063

²⁸ Alkan, Ö., Oktay, E. ., Ünver, Ş., and Gerni, E. (2020). Determination of Factors Affecting the Financial Literacy of University Students in Eastern Anatolia using Ordered Regression Models. *Asian Economic and Financial Review*, 10(5), 536–546. <https://doi.org/10.18488/journal.aefr.2020.105.536.546>

associated with higher financial literacy²⁹. In Greece, male students, those keeping expense records, and highly educated fathers had higher financial literacy levels.³⁰ Pavković, Anđelinović, and Mišević conducted a confirmatory factor analysis on financial literacy among University of Zagreb students, revealing significant heterogeneity across different units.³¹

Some studies compare financial knowledge among university students from different countries. Ergün found that financial literacy is medium in eight European countries (Estonia, Germany, Italy, Netherlands, Poland, Romania, Russian Federation, and Turkey), with male students, business majors, PhD students, and those with high-income levels having more knowledge.³² In a later study, he found that mothers significantly impact the financial knowledge of university students in ten European countries, while higher parental education had no effect.³³

The literature review incorporates works that analyze financial literacy among students from specific scientific fields. A study in South Africa found that demographic factors like gender, age, language, race, and income level affect financial literacy among undergraduate accountant students.³⁴ In Mauritius, undergraduate management students have a medium level of financial literacy, but age, gender, language, race, and income are not significant determinants.³⁵ In Lesotho, a study found low financial literacy among university students in the education field and

²⁹ Akben-Selcuk, E., and Altiok-Yilmaz, A. (2014). Financial Literacy among Turkish College Students: The Role of Formal Education, Learning Approaches, and Parental Teaching. *Psychological Reports*, 115(2): 351–371. doi:10.2466/31.11.pr0.115c18z3

³⁰ Philippas, N. D., & Avdoulas, C. (2019). Financial literacy and financial well-being among generation-Z university students: Evidence from Greece. *The European Journal of Finance*, 1–22. doi:10.1080/1351847x.2019.1701512

³¹ Pavkovic, A., Anđelinovic, M., & Misevic, D. (2018). Measuring financial literacy of university students. *Croatian Operational Research Review*, 9(1): 87–97. doi:10.17535/corr.2018.0008

³² Ergün, K. (2018). Financial literacy among university students: A study in eight European countries. *Int J Consum Stud*. 42: 2–15. <https://doi.org/10.1111/ijcs.12408>

³³ Ergün, K. (2018). Parental Influence on Financial Knowledge of University Students. In: Jajuga, K., Locarek-Junge, H., Orłowski, L. (eds) *Contemporary Trends and Challenges in Finance*. Springer Proceedings in Business and Economics. Springer, Cham. https://doi.org/10.1007/978-3-319-76228-9_22

³⁴ Clercq, De. B., and J. M. P. Venier. (2009). Factors Influencing a Prospective Chartered Accountant's Level of Financial Literacy: An Exploratory Study. *Meditari Accountancy Research* 17(2): 47-60.

³⁵ Ramasawmy, D., Thapermall, S., Dowlut, S. A., and M. Ramen. (2013). A Study of the Level of Awareness of Financial Literacy among Management Undergraduates. *Proceedings of 3rd Asia-Pacific Business Research Conference 25 - 26 February 2013, Kuala Lumpur, Malaysia*.

recommended including financial education courses.³⁶ In addition, some studies examine the financial literacy of secondary school students or youth.^{37 38 39 40 41}

The literature review on the body of research regarding financial literacy has revealed a significant focus on investigating the factors that influence financial literacy, particularly among young adults and university students. Financial competencies are typically assessed through surveys. Some works examine the level of financial literacy and analyze the disparity in financial knowledge among various subsets of the sample or population. The most commonly utilized technique for this analysis is analysis of variance (ANOVA). However, some studies focus on comprehending the factors influencing financial literacy. Many studies employ a collection of socio-demographic factors, such as age, gender, location of residence, and personal or family income, as predictors of financial literacy. Several studies use educational characteristics, such as the specific stream and prior or ongoing education type. Furthermore, certain studies incorporate variables that describe the participants' personality traits, such as attitudes, influence, and conduct. The most commonly employed technique for this study is logistic regression.

III. METHODOLOGY

In our study, we analyze the financial literacy of university undergraduate students in law in the Republic of North Macedonia. We targeted this specific subset of the adult population based on previous research.^{42 43 44}

The main instrument for data collection is a survey. The survey was conducted with undergraduate law students from the Iustinianus Primus Faculty of Law - Skopje at the University Ss. Cyril and Methodius in Skopje. This law faculty is the country's oldest and biggest state law school. In the academic year 2022/2023, the total number of undergraduate law students was 520.⁴⁵ The authors

³⁶ Seotsanyana, M. E. (2018). Assessment of university students' level of financial literacy: the voices of the National University of Development Studies education students. *Africa Review*, 11(1), 63–76. doi:10.1080/09744053.2018.1538680

³⁷ Zhu, A. Y. F., Yu, C. W. M., and Chou, K. L. (2019). Improving Financial Literacy in Secondary School Students: An Randomized Experiment. *Youth & Society*, 0044118X1985131. doi:10.1177/0044118x19851311

³⁸ Amagir, A., Groot, W., van den Brink, H. M., and Wilschut, A. (2020). Financial literacy of high school students in the Netherlands: knowledge, attitudes, self-efficacy, and behavior. *International Review of Economics Education*, 100185. doi:10.1016/j.iree.2020.100185

³⁹ Cameron, M. P., Calderwood, R., Cox, A., Lim, S., & Yamaoka, M. (2013). Personal Financial Literacy among High School Students in New Zealand, Japan and the USA. *Citizenship, Social and Economics Education*, 12(3): 200–215. doi:10.2304/csee.2013.12.3.200

⁴⁰ Lusardi, A., Mitchell, O.S., Curto V. (2010). Financial literacy among the young: Evidence and implications for consumer policy, *CFS Working Paper, No. 2010/09*. Goethe University Frankfurt, Center for Financial Studies (CFS), Frankfurt a. M., <https://nbn-resolving.de/urn:nbn:de:hebis:30-78626>

⁴¹ Agarwalla, S. K., Barua, S. K., Jacob, J., and J. R.Varma. (2013). Financial Literacy among Working Young in Urban India. *Indian Institute of Management Ahmedabad, Working Paper, No. 2013-10-02*.

⁴² Ramasawmy, D., Thapermall, S., Dowlut, S. A., and M. Ramen (2013). *Ibid*.

⁴³ Rangchian, M., Nezami, S., Jafari Seresht, D., and Larki-Harchegani, A. (2019). Pharmacy students' level of financial literacy and its differences among students with various career intentions. *Currents in Pharmacy Teaching and Learning*. doi:10.1016/j.cptl.2019.10.008

⁴⁴ Seotsanyana, M. E. (2018). *Ibid*.

⁴⁵ Data was provided by the Student service department at the Iustinianus Primus Faculty of Law – Skopje.

administered the survey personally in December 2022. The students answered the questionnaire in their classrooms during break time. The survey was distributed to 150 students (sample size) and was answered by 129 respondents (response rate is 86%).

The instrument was derived from a pre-existing survey released to analyze the financial literacy of college students in Nepal.⁴⁶ The survey instrument consisted of 52 questions to capture the sample's socio-demographic, educational, and personal characteristics. The socio-demographic section included questions about age, gender, place of origin (region), monthly family income, and ethnic background of the respondents. The educational variable was previous education (type of secondary school). The respondents' personal characteristics included three sections of questions: financial behavior, financial influence, and financial attitudes. The financial knowledge section included 11 multiple-choice questions about different aspects of financial literacy.

The study formulated the following hypotheses:

H1: The financial knowledge of students with different socio-demographic characteristics significantly differs. (Age, Income, and Region).

H2: The financial knowledge of students with different personal characteristics significantly differs. (Financial Behavior, Financial Influence, and Financial Attitudes).

The gathered responses were processed and categorized using SPSS 19 statistical software. First, to summarize the characteristics of the sample, frequencies and descriptive statistics (mean, median, and standard deviation) were calculated. Subsequently, to assess if there exists a substantial disparity among students belonging to various gender and age groups, ethnic backgrounds, locations, family incomes, and previous educational backgrounds, an analysis of variance (ANOVA) was conducted.

The participants were categorized into two groups according to their demonstrated financial knowledge. Respondents who answered fewer or equal questions correctly compared to the sample median were classified as students with low financial literacy. Students who scored above the median were categorized as students with a high level of financial understanding. Following that, this binary variable was employed as the dependent variable in our model.

In order to examine the existence of a statistically significant relationship between socio-demographic variables (*Age, Region, and Income*), *Financial behavior, Financial influence, and Financial attitudes* on one hand and *Financial knowledge* on the other hand, we have constructed a binary logistic model. The model specification is the following:

$$\log \left[\frac{p}{(1-p)} \right] = \beta_0 + \beta_1 AGE + \beta_2 REGION + \beta_3 INCOME + \beta_4 BEHAVIOR + \beta_5 INFLUENCE + \beta_6 ATTITUDE + e_i \quad \dots(1)$$

⁴⁶ Thapa, B. S., and Nepal, S. R. (2015). *Ibid.*

Where

p = the probability of a student who is more knowledgeable about finance;

AGE = 1 if the participant is 20 years old or less, 0 otherwise;

REGION = 1 if the participant is from the Skopje region (capital city), 0 otherwise;

INCOME = 1 if the participant's household monthly income exceeds 40 000 MKD, 0 otherwise;

BEHAVIOR = Financial Behavior measured on a 5-point scale;

ATTITUDE = Financial Attitude measured on a 4-point scale;

INFLUENCE = Financial Influence measured on a 7-point scale;

e_i = Error term.

IV. CHARACTERISTICS OF THE SAMPLE

A total of 129 respondents provided answers to the sample questionnaire. Around 70% of them were female students. The dominant age group was 18 to 20 years old (83%). The ethnic background of a vast majority of students was Macedonian (87%); however, students from other ethnic groups also answered the questionnaire. Approximately half of the respondents live in the Skopje region (the country's capital city). Concerning the monthly income distribution of the family, the income was relatively equally distributed in the different income groups. With regard to the previously completed education (gymnasium versus vocational school), the sample was balanced. Detailed information about the socio-demographic characteristics of the sample is provided in Appendix 1.

The financial behavior section of the questionnaire included questions about the spending habits of the students, maintaining records, use of savings, managing money in problem, experience in using different financial services and usage of additional income. Most students consider them to be neither economical nor spending, regarding their spending habits and maintain minimal records about their spending and savings. Almost half of the respondents keep their savings in cash, around 20 percent deposit the savings in a bank, and around 20 percent do not keep the savings and spend them to buy consumer goods. The most preferred exit strategy for managing money in a problem is to cut down spending (63%). When they have additional income, more than 30 percent of the students use it to purchase household goods. Less than 5 percent of the students use it to buy shares, and less than 1 percent buy insurance. More information about the forms of financial behavior is provided in Appendix 2.

The survey also included questions about different aspects of financial behavior. The students were asked to provide information about various aspects of their financial behavior on a 1 to 4 Likert scale. The mean scores are above 3 (out of 4) for the questions "I budget and track my spending" and "I compare prices when shopping." However, fewer students answered that they contributed to a bank savings account regularly and invested in shares (See more in Appendix 3).

Concerning financial intentions, parents and the internet are the most influential factors for financial literacy. The mean score of both variables is above 3 (out of 4). Friends and media least influence the students. More information about different channels of financial influence is provided in Appendix 4.

The results from the analysis of the financial attitudes are provided in Appendix 5. All financial attitude components have mean values above 2 (out of 4), indicating their significance. The students completely agree that they possess a sense of autonomy over their financial situation and possess the ability to use their future income to accomplish their objectives.

The financial knowledge section consisted of 11 questions covering different aspects of finance, including numeracy, inflation, compound interest, time value of money, money illusion, financial statements, share market, banking, insurance, taxes, and credit. The results from this section are given in Table 1.

Table 1. Correct answers from financial knowledge

Question	Frequency	Percentage
Numeracy	66	51.2%
Compound Interest Rate	36	27.9%
Inflation	65	50.4%
Time Value of Money	37	28.7%
Money Illusion	72	55.8%
Share Market	18	14.0%
Banking	104	80.6%
Insurance	84	65.1%
Taxes	58	45.0%
Credit	92	71.3%
Total	129	100.0%

The students, on average, answered correctly 5.4 out of 11 questions (49.9%). The median score is 5. The students demonstrated the highest knowledge in banking (81 percent answered correctly) and credit (71 percent answered correctly). On the other hand, only 14 percent of the respondents provided correct answers to the question related to the share market in the country.

V. ANALYSIS OF FINANCIAL LITERACY

Two distinct analyses were performed to address the research questions in this paper: analysis of variance (ANOVA) and logistic regression.

Analysis of the variance (ANOVA)

ANOVA has been used to test if there is a statistically significant difference in financial knowledge among students with different socio-demographic and educational backgrounds. The results are provided in Table 2. They indicate that gender, age, income, and previous type of education are

not statistically significant when explaining differences in financial literacy. The ethnic background is statistically significant at a 5% significance level, meaning that students from different ethnic groups demonstrate different levels of financial knowledge. The region of origin is a borderline case at a significance level of 15%.

Table 2. Results from ANOVA

Characteristics	F stat.	p-value
Gender	0.488	0.486
Age	0.006	0.940
Ethnicity	4.793	0.030
Region	2.075	0.152
Income	0.475	0.492
Education	0.270	0.604

Source: Author's calculations.

Logistic regression

Table 3 presents the results from the Omnibus test of model coefficients and the model summary of the logistic regression about the financial knowledge specified in equation (1).

Table 3. Results from Omnibus test of model coefficients and model summary

		Chi-square	df	Sig.
Step 1	Step	10.294	6	0.113
	Block	10.294	6	0.113
	Model	10.294	6	0.113
-2 Log likelihood		Nagelkerke R Square		Cox & Snell R Square
147.095		0.111		0.074

Source: Author's calculations.

The model is significant at a 15% significance level, as indicated by a Chi-square value of 10.294 and a p-value of 0.113. This result suggests that the predictors in the model significantly contribute to explaining the variation in the dependent variable. The -2 Log Likelihood value measures the model's fit, with lower values indicating a better fit. The Cox & Snell R Square and Nagelkerke R Square values suggest that the model explains approximately 7.4% and 11.1% of the variance in the dependent variable, respectively. These values indicate a modest explanatory power of the model.

Moreover, we conducted the Hosmer and Lemeshow test to check if the observed data differed significantly from the model-predicted data. The results of this test are provided in Table 4.

Table 4. Hosmer and Lemeshow Test results

Step	Chi-square	df	Sig.
1	15.114	8	.057

Source: Author's calculations.

The Hosmer and Lemeshow test yields a p-value of 0.057, which is greater than 0.05 but less than 0.15, suggesting that the model fits the data reasonably well at the 15% significance level. This result indicates that the observed data are not significantly different from the model-predicted data.

To examine the impact of socio-demographic and economic variables and financial attitudes, behavior, and influence on the financial knowledge of law students, we have developed a logistic regression model. The results about the impact of these variables are provided in Table 5.

Table 5. Results from Logistic Regression Analysis predicting Financial Knowledge

	B	S.E.	Wald	df	Sig.	Exp(B)	95%C.I.for EXP(B)	
							Lower	Upper
<i>Age</i>	.500	.574	.757	1	.384	1.648	.535	5.079
<i>Region</i>	-.631	.418	2.286	1	.131	.532	.235	1.206
<i>Income</i>	-.153	.434	.124	1	.725	.858	.366	2.010
<i>Behavior</i>	.209	.207	1.014	1	.314	1.232	.821	1.849
<i>Influence</i>	.252	.114	4.891	1	.027	1.287	1.029	1.610
<i>Attitude</i>	.366	.237	2.397	1	.122	1.443	.907	2.294
<i>Const.</i>	-3.255	1.290	6.366	1	.012	.039		

Source: Author's calculations.

The results suggest that the *Financial Influence* positively affects financial knowledge at a significance level of 5%. The odds ratio is 1.287, indicating that students who were greatly impacted by positive financial examples have 1.287 times higher odds for financial knowledge than students who were not financially influenced in their past (parents and peers). The variables *Attitudes* and *Region* manifest borderline significant effects at a 15% level. Attitudes positively affect financial knowledge, and when the financial attitude increases by 1 point, the odds for financial knowledge are likely to increase by 1.443. The odds ratio of the *Region* variable is 0.532, suggesting a negative relationship. The odds of students from the Skopje region having more knowledge is 0.532 times that of students from other regions. Age and financial behavior manifest positive relationships with financial knowledge but are not statistically significant. Income is likely to have a negative impact, but it is statistically insignificant. The constant indicates the baseline odds when all predictors are zero. It is statistically significant at the 1% level.

The standard error of all of the independent variables in the model is less than 2 (two), indicating that multicollinearity is not an issue. The model's overall percentage of correct classifications (70.2%) is higher than the proportion of accuracy by chance (53.47%), meaning that the model has a good predictive performance and indicates that the predictors significantly contribute to accurately predicting the outcome variable.

VI. DISCUSSION AND CONCLUSIONS

Law students in the Republic of North Macedonia exhibited a solid understanding of fundamental financial principles. The mean score is 5.4 correct answers out of 11, which corresponds to a percentage of 49.9. The median score is 5. The results of this study are marginally inferior to those of the previous study conducted by the National Bank of the Republic of North Macedonia.⁴⁷ The average number of accurate responses in the previous study was 56 percentage points. However, it is important to exercise caution when comparing these findings due to the differences in the methodological framework.

The students understood banking and credit better, with over 70% of the respondents correctly responding to these questions. Undergraduate curricula often include integrated courses focusing on banks, financial operations, and credit. Conversely, the lowest score was observed in the field of the share market, compound interest rate, and time value of money. About this, over half of the participants preferred retaining their savings in cash rather than purchasing an insurance policy, putting funds in a bank, or investing in the stock market.

The ANOVA results indicate that not all of the socio-demographic characteristics of the respondents are statistically significant in explaining their different levels of knowledge. Among the factors examined, only *Ethnicity* exhibits statistical significance at a 5% level, while *Region* is barely significant at a 15% level. This result suggests that students with diverse ethnic backgrounds and those from different locations displayed varying levels of financial literacy.

Regarding the second hypothesis, the logistic regression results indicate that financial influence has a favorable effect on financial literacy, with statistical significance at a 5% level. Financial attitudes have a favorable impact on financial knowledge, albeit it is not as significant as financial influence. This is indicated by the coefficient's p-value of 0.12. Financial behavior was a statistically insignificant factor in determining knowledge of finances. This conclusion is consistent with prior research on this topic.⁴⁸

Three socio-demographic factors were incorporated into the logistic regression model. Among them, only the variable *Region* exhibits statistical significance at a 15% significance level. The negative beta coefficient indicates that students from the Skopje region have a lower likelihood of financial literacy than students from other parts of the country.

Although care must be taken not to generalize the results beyond this University, the analysis of the level and determinants of financial literacy among the law students proved that although the students demonstrated some basic financial knowledge, still further advancement is needed in more complex financial topics such as compound interest rate or time value of money. The government, the central bank (NBRM), other relevant financial institutions and organizations, and education organizations (universities and faculties) need to take further action to improve the financial literacy of the student population. Based on the analysis results, it is highly recommended that curriculums in the educational system be modernized and innovated by incorporating

⁴⁷ National Bank of the Republic of Macedonia (2018). *Ibid.*

⁴⁸ Thapa, B. S. & Nepal, S. R. (2015). *Ibid.*

additional financial concepts through training, workshops, or seminars. This suggestion aligns with previous research recommendations.⁴⁹ In addition, we support further implementation of the activities and measures foreseen in the National Strategy for Financial Education and Financial Inclusion of the Republic of North Macedonia 2021-2025) by inclusion of all relevant stakeholders from the financial environment.

⁴⁹ Kaur, M., Vohra, T., and Arora, A. (2015). *Ibid.*

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Appendix 1. Socio – demographic characteristics of the sample

Gender	Frequency	%
Female	90	69.77%
Male	37	28.68%
No answer	2	1.55%
Age	Frequency	%
18 - 20	107	82.95%
21-23	17	13.18%
24-26	3	2.33%
27 and above	2	1.54%
Ethnicity	Frequency	%
Albanian	7	5.43%
Bosnian	2	1.55%
Croatian	1	0.78%
Macedonian	111	86.05%
Serbian	2	1.55%
Turkish	4	3.10%
Other	2	1.55%
Region	Frequency	%
East	7	5.43%
North East	7	5.43%
Pelagonia	10	7.75%
Polog	5	3.88%
Skopje	71	55.04%
South East	12	9.30%
Vardar	16	12.40%
No answer	1	0.78%
Income	Frequency	%
Up to 20.000 MKD	15	11.63%
Between 20.001 and 40.000 MKD	36	27.91%
Between 40.001 and 60.000 MKD	30	23.26%
Between 60.001 and 80.000 MKD	17	13.18%
Between 80.001 and 100.000 MKD	13	10.08%
More than 100.000 MKD	16	12.40%
No answer	2	1.55%
Education	Frequency	%
Gymnasium	73	56.59%
Vocational education and training	56	43.41%
TOTAL	129	100%

Appendix 2. Financial behavior (1)

<i>Spending habit</i>	<i>Frequency</i>	<i>%</i>
Very economical	11	8.53%
Somewhat economical	29	22.48%
Neither economical nor spending	49	37.98%
Somewhat spending-oriented, rarely saving money	32	24.81%
Very spending-oriented, hardly ever saving money	8	6.2%
<i>Maintaining Records</i>	<i>Frequency</i>	<i>%</i>
Maintain no records	11	8.53%
Maintain minimal records	68	52.71%
Maintain very detailed records	50	38.76%
<i>Use of savings</i>	<i>Frequency</i>	<i>%</i>
Buy gold and jewelry	2	1.55%
Deposit it into bank account	28	21.71%
Invest it in our own business	5	3.88%
Invest it in the capital market	1	0.78%
Keep it in cash	62	48.06%
Spend it on consumer goods	28	21.71%
No answer	3	2.33%
<i>Managing Money in Problem</i>	<i>Frequency</i>	<i>%</i>
Cut down expenses and save	81	62.79%
Spend our savings	33	25.58%
Use a credit card or bank loan	4	3.10%
Work extra hours or do additional jobs	4	3.10%
Non applicable	7	5.43%
<i>Use of Additional Income</i>	<i>Frequency</i>	<i>%</i>
Bank deposit	21	16.28%
Buy an insurance policy	1	0.78%
Buy shares	6	4.65%
Go for travel or vacation	21	16.28%
Investment in own business	18	13.95%
Purchasing of household goods like furniture, clothes etc.	40	31.01%
Repay earlier debts	16	12.40%
Bank deposit	21	16.28%
Non applicable	2	1.55%
Other	4	3.10%
TOTAL	129	100%

Appendix 3. Financial behavior (2)

Items	Mean	Std. Deviation
I budget and track my spending	3.27	0.781
I contribute to a bank saving account regularly	1.91	0.976
I compare prices when shopping for purchases	3.17	0.924
I have a life insurance policy	2.20	1.193
I invest in the shares	1.31	0.731
I read to increase my financial knowledge	2.59	1.034
I spend less than income	2.70	1.105
I plan and implement a regular savings/investment	2.40	1.013

Appendix 4. Financial influence

Items	Mean	Std. Deviation
Parents	3.65	0.608
Friends	1.90	0.889
School	2.24	1.063
Books	2.58	1.116
Media	2.29	0.993
Work	2.50	1.210
Life experience	3.28	0.835
Internet	3.11	0.945

Appendix 5. Financial Attitudes

Items	Mean	Std. Deviation
I feel in control of my financial situation	3.33	0.852
I feel capable of using my future income to achieve my goals	3.30	0.899
I worry to manage my finance	3.10	1.034
I am uncertain about where my money is spent	3.32	1.007
I feel credit cards are safe and risk free	2.53	1.038
I feel capable of handling my financial future (e.g. buying insurance)	3.09	0.896
I am afraid of loan	2.28	1.119
I give importance to saving money from my monthly income	3.18	0.938
I feel having life insurance is an important way to protect	2.97	0.947
I enjoy thinking about and have interest in reading about	2.55	1.064
"I enjoy talking to my peers about money related issues	2.45	1.107