

Mathematical and financial literacy: A research with prizren University students

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Abstract

This study aimed to determine the financial and mathematical literacy levels of university students. Therefore the study contributes to the reflection of students' knowledge of mathematics and finance acquired during their studies to the problems they face in real life as well as to examine how this background affect their opinions in practice. Findings has shown that students' financial and mathematics literacy general achievement levels is 39.7%. It is satisfactory to found that the studnets of Faculty of Economics have higher levels of financial mathematical literacy knowledge than those of the Faculty of Education and the Faculty of Technology, and that the Faculty of Education is at the forefront of the Faculty of Technology students despite the fact that the Faculty of Education does not provide does not courses in the field of economics and finance. In addition, considering the university students to be more sensitive about their current financial and economic information, it is not expected that the overall success in the findings will be lower than 40%.

Keywords: Mathematical Literacy, Financial Literacy, Prizren University, Students, Kosovo;

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1. Introduction

Developed countries should update their educational programs in relation to the changes happening in scientific world. Competition between countries is focused on the quality of education and the working staff qualification. One of the important elements of schools and other educational institutions is to educate individuals, advance scientific researches, and the production of the new products. The indication might be that individuals who practice the habit of acquiring these skills are fitting the approach of lifelong learning! At the beginning of a country's strong structure, the field of education requires that its individuals should be good at mathematics which is considered the queen of science. The contemporary trend in recent years states that individuals who are educated are required to be information literate, science literate, mathematically literate and financial literate. In this context, the concept of "literacy" plays an active role in the establishment of goals, objectives of the programs in the education system of countries. It is an important regulation skill that will start and last a lifetime in individuals who have managed to stand on their own feet, how the individuals should manage their money and valuable assets briefly on the budget.

In return the individual spends some or all of his income in consumption. Individuals who spend more than their income may borrow, but if the spending rate is habitual, being under the influence of borrowing is quite a headache. Therefore, the important factor that makes increases difficult when making these and similar financial decisions is the low level of financial information (Barış, 2016). While the ability of the individual to understand finance is directed for having sufficient financial literacy knowledge, sufficient knowledge and skills have forced the strengthening of mathematics literacy knowledge. For many students, even though university years are known as the first step towards an independent life, the same cannot be said for students who study at university and are dependant to their parents. University students studying independently from their families should be able to manage their financial expenses, adjust their expenses, and make financial decisions on their own. Therefore, the current study was carried out to determine the levels of mathematics and financial literacy of university students. While it is inevitable for students studying at the university to study mathematics, it is also important to include students that study in the department that has economics and financial courses, thus to research how their level of literacy differs between departments.

2. Mathematical literacy definition

Literacy requires that students not only improve their literacy skills, but also improve their knowledge and performance, contribute to society more effectively, associate abstract concepts in mathematics with current imaginary examples, solve problems and evaluate (NRC, 1989). Mathematical literacy was expressed by OECD as follows (OECD, 2016);

"As a citizen who thinks, produces, and criticizes, it is the capacity of the individual to understand and recognize the role played by mathematics in the world around him by using mathematical thinking and decision-making processes to solve the problems he will face today and, in the future,".

The individual who is mathematically literate is able to transfer mathematics, which is considered as a difficult and abstract lesson, to daily life, to approach problems by questioning, and to produce solutions by thinking critically.

However, within the scope of the curriculum of mathematics, with an approach that is not realistic in real life, where individuals focus on the knowledge dimension and try to solve the routine problems that encounter without understanding the abstract processes are considered low-achievement

classes. In this context, mathematical literacy that educators emphasize has gained great attention today. In addition, it is possible for individuals to be conscious consumers by making conscious decisions so they can calculate their daily needs, interest rates, taxes, and they can transfer the mathematics they have learned at school to daily life. Many questions arise about where and how to use daily life mathematics and mathematical literacy, which takes mathematics as functional applications of daily life, gains importance (Kaiser & Willander, 2006).

In the life cycle, the individual is required to plan his future expenditures based of his monthly income, from his daily basic shopping (e.g. cash expenditure or bank card, etc.) to his monthly income. It is possible that these behaviours may produce desired results if the individual is trained for applying mathematical and financial literacy.

3. Financial literacy definition

Financial literacy is mentioned in various literature. However, in its general sense, Financial Literacy it is said to act in accordance with material realities while using or managing money (Tasha, Vardari & Arapi, 2018). Xu and Zia in their study in Huston (2010), described financial literacy as “the ability of individuals to make effective financial decisions”. In addition, Xu and Zia (2012) state that financial literacy is a concept that covers more general topics such as financial products, financial institutions and financial planning.

Today, the way people manage their earnings or wealth has become very important. Nevertheless, it has been observed that technology is not a big factor in the development and decision making (Baris, 2016). The other similar studies that has been carried out also support this. For example, Lusardi and Mitchell (2011) emphasized that financial literacy was quite low in their study, and assumed that technological development was also unsuccessful in changing this phenomenon. They also have revealed that financial literacy across the world is quite low regardless the level of countries development.

Low financial literacy is seen as a worldwide problem, but this is not the problem of individuals only but also for the general economic order. Such problems are more common in developing or underdeveloped countries than in developed countries. In his study, Van Rooij (2011) stated that the government is facing the problem of insufficient retirement accumulation, and that the insufficient amount of household savings will have an impact on public policies other than the individual welfare effect.

4. Literature review

In the literature review where students' mathematical and financial literacy are examined in terms of various variables (Akyüz & Pala, 2010; Uysal & Yenilmez, 2011; Özgen & Bindak, 2011), studies related to mathematics literacy level of prospective teachers in different fields were also found.

In order to determine the mathematical literacy level of teacher candidates, Güneş and Gökçek (2013) have conducted the study with students (118 pre-service teachers) who studied in the senior grades of Education Faculty - Classroom Teaching (EFCT), Science Teacher Education (STE) and Mathematics Teacher Education (MTE). The data were obtained through “mathematical literacy self-efficacy scale” and semi-structured interviews. They have found out that there is a significant relationship between the departments and prospective teachers' mathematical literacy levels. However, it has been revealed that there is no significant relationship between the science teacher education and the literacy levels of pre-service teachers in the Faculty of Education.

In the research of Muyo and Gür (2018), who have examined the skills of teacher candidates of Prizren University Education Faculty Solving Mathematics Problems, (Education Faculty Primary Education Teacher, PET = 26), (Preschool Education PE = 27) and (Physics-Chemistry Teacher Education PCTE = 12) that has been conducted with a total of 65 teacher candidates, including students, where the data was collected through worksheets and semi-structured interview form prepared by prospective teachers at the end of the application, the results revealed that there is no meaningful difference in the mathematics literacy levels of the pre-service teachers in all three departments, and it would take time to develop math literacy levels in order to gain experience in problem solving and establishment in mathematics. Interviews with prospective teachers showed that they had inadequate questioning method, that was a must to address the problem. This is attributed to the low experience of such problems and their difficulties in solving the problems due to the lack of mathematics knowledge. The pre-service teachers of Physics-Chemistry Teaching department emphasized the importance of highlighting importance to mathematics literacy in mathematics education and that questions involving real life problems may include more than one answer. Teacher candidates had difficulty in expressing themselves in the application of mathematics worksheets due to the low level of mathematics literacy in high school and primary school and not having specific classes at the university level.

In their studies Demir and Altun (2018), have evaluated Mathematical Literacy, Question Writing Process and Skills with the aim of giving pre-service teachers the ability to select and write the question about mathematics literacy. The study was conducted with pedagogical formation program with group students studying maths and the data were obtained from the report of PISA applications. The video recordings taken in the courses of the application process, the pre-test and post-test data related to the evaluation of teaching were obtained from observations and interviews. The findings obtained showed that prospective teachers were interested in the subject and actively participated in the teaching process. At the end of the applications, it was observed that pre-service teachers' awareness of mathematics literacy increased and their ability to choose and write questions in this field improved. In addition, the results regarding the opportunities and difficulties faced by pre-service teachers during the question writing process were reached. It was suggested that the education within the scope of this study should be enriched and included in undergraduate programs.

Işıl and Altun (2018), in their research tried to determine the difference of mathematical literacy problems among other problem types among secondary school students. 105 students of mixed classes were included in the study group, and the data analysis were conducted on students' diaries that they have filled weekly of their processes of solving mathematical literacy problems. As a result of 98 hours of practice in total, the opinions of middle school students about mathematical literacy problems were determined from the data obtained in the diaries filled by the students. The findings of the study include students' opinions on a) assessment of the solution of mathematical literacy problems; b) assessed the characteristics of mathematical literacy problems and c) assessed them in three categories as other assessments. As a result, it has been revealed that there is a suitable environment for practicing mathematics literacy in the course, which is highly consistent with mathematics literacy literature (Bozkurt & Altun, 2019).

Tuna and Ulu (2016) in their study measured the financial literacy level of Sakarya University Business Administration students in their study. They analysed the gender, age, personal income, class or type of education and applied a questionnaire to 326 randomly selected students. They applied frequent analysis, independent t-test and variance analysis to the data obtained, and as a result,

gender, age and class factors determined that they had statistically significant differences for the level of financial knowledge.

In their theoretical study, Alkaya and Yağ (2016), researched the financial literacy knowledge, attitudes and behaviours of students at Nevşehir Hacı Bektaş. Financial literacy level was determined by frequency-percentage distribution. The results showed that there is a relationship between financial attitudes and financial behaviours; students display positive behaviours and attitudes, but say that their financial information is not at the desired level.

Mändmaa (2019) studied the relationship between students "financial literacy and students" financial views and choices. Applying the regression analysis, he analysed the students' skills in planning financial transactions using tools such as debit cards and bank loans. As a result, it has been observed that students, especially male students, who attend science or mathematics classes have more knowledge.

5. Method and findings

The present study was carried out with 276 university students as an unemployed sample group studying in Turkish and Albanian language at the University of Prizren "UkshinHoti" in Kosovo, in Faculty of Education, Faculty of Economics and Faculty of Technology). The survey conducted was developed by the International Network on Financial Education (INFE), and established by the OECD, to measure the financial literacy levels of people from different countries with different backgrounds (Atkinson ve Messy, 2012). The questionnaire prepared was applied to 14 different countries in 4 different continents and a financial knowledge score was developed for all countries. Considering that the data collection tool was going to be applied on the students of Turkish and Albanian language, it has been updated and adapted for implementation in accordance with the opinions of experts (Professors from field on Mathematics and Finance in its context of translation and content consistency. The questionnaire consisted of four parts: students' demographic, basic financial-economic, basic banking and advanced mathematics-financial literacy. In the first part of the questionnaire, demographic (gender, age, department, class, education level, father and mother education status, credit and debit card, mathematics and economics courses and internet banking to determine student profiles) questions were included. In the second part, questions about Basic Finance and Economics Level (7question) were asked where the participants were asked to select the answer that was most appropriate for them with *TRUE*, *FALSE* and *NO IDEA*. In the third part of the questionnaire with similar answer options, (7question) question about the Retail Banking Level was asked. In the fourth part of the questionnaire, it was aimed to measure the knowledge of students about Advanced Mathematics and Calculations Interest (6 question).

The questionnaire was tested on 60 students (in Turkish and Albanian). Before the main study a pilot implementation of the study was carried out. As a result of the pilot application, question translation has been checked for comprehensibility, therefore the final version of the questionnaire that could be used in the original study was redrafted. The questionnaire has been filled out by the University of Prizren "Ukshin Hoti", the Faculty of Education, the Faculty of Economics and the Faculty of Technology students. Considering that the students have already taken mathematics, economics and finance courses, it has been tried to measure the mathematical financial literacy levels of undergraduate university students. The questionnaire was distributed to the students in the classroom settings by the researchers, all time respecting the suitable conditions, but the questionnaires were completed in the online setting due to the pandemic measures stated by the university. The questionnaire was carried out in a 45-day (March-April, 2020) time period. The data obtained were

calculated using the SPSS 26 package program, frequency average, crosstab, and general average mean responses.

5.1. Socio-demographic features of students

Socio-demographic and personal characteristics emerge as important factors affecting students' financial literacy levels and budgeting behaviour. The literature provides evidence that students' gender, GPA, household income and education level have an impact on the level of financial literacy (Lusardi & Mitchell, 2011). However, in our survey study, the students were asked about their demographic features, basic financial and economic questions, basic banking questions, and advanced mathematics and interest rate hiring questions.

The 66.3% of students within the scope of the study (Table 1) are girls and 33.7% are boys. 44.2% of the student's sample are from the Education faculty, 28.6% from the Technology faculty, 27.2% from the Faculty of Economics. Considering the average age of students, the age range 18-25 of student's proportion of students was 87.0%, 26-35 age range was 8.7% and the ratio of students who are 35 years old and above is 4.3%. As per to the average class of the students participating in the survey, the highest rate belongs to the third-class students with 64.5%, the second-class students with 26.8% and the first and fourth-class students with the rates of 4.3%. When the respondents who participated in the survey were asked to be their second university, 90.6% of them stated that they were their first university and 9.4% were their second university. When asked about the family education of the students, both the mother's education status (48.6%) and the father's education status (49.3%) were high school graduates.

Table 1. Demographic features

Demographic features		Number of Participants (n)	Percent (%)
Gender	Male	93	33.7
	Female	183	66.3
Faculty	Faculty of Education	122	44.2
	Faculty of Economics	75	27.2
	Faculty of Technology	79	28.6
Age	18-25	240	87.0
	26-35	24	8.7
	35 above	12	4.3
Class	1st Class	12	4.3
	2nd Class	74	26.8
	3rd Class	178	64.5
	4th classes	12	4.3
Educational status	First University	250	90.6
	Second University	26	9.4

Father's educational status			
	Illiterate	2	7.0
	Lettered	4	1.4
	Primary education	48	17.4
	High school	136	49.3
	University	80	29.0
	Postgraduate	6	2.2
Mother's educational status			
	Illiterate	2	7
	Lettered	4	1.4
	Primary education	102	37.0
	High school	134	48.6
	University	30	10.9
	Postgraduate	4	1.4
Do you use credit or debit cards?			
	Yes	128	46.4
	No	148	53.6
Have you taken a Math lesson before?			
	Yes	139	50.4
	No	137	49.6
Have you taken an Economics class before?			
	Yes	132	47.8
	No	144	52.2
Do you use internet banking?			
	Yes	80	29.0
	No	196	71.0

According to the results obtained, 53.6% of the students stated that they did not use credit or debit cards, only 46.4% of the students stated that they used credit or debit cards. The 50.4% of students stated that they took Mathematics and 47.8% took Economics courses before. Furthermore, It was observed that 52.2% of the students who participated in the study did not take Economy lessons previously and 49.6% did not take Math lessons. Regarding the rate of using internet banking, that was our last question in the demographic question, 71.0% of the students stated that they do not use internet or electronic banking.

5.2. Findings related to the basic level of finance and economy

In the survey, seven basic financial and economy related questions were asked to determine the financial literacy levels of the students. The distribution of answers of basic financial and economic literacy questions is shown in Table 2. When the correct answers of the students are examined, the question with the highest rate is to the "Inflation" choice, respectively 46.4%. of the students circled the right choice of the question. Whereas the choice of "inflation in Kosovo", the correct response rate was only 28.3%. The 31.8% of students have chosen "Compound phase". For "Budget" accounts choice 39.9% students do agree, 34.1% circled the "Stock market" whereas 50.0% of students have chosen the precious metals as a correct answer. Finally, to "Simple Interest Calculation" choice 18.1% have circled the wrong option given. When the general average is calculated, only 35.5% of the students were able to respond correctly to the Financial and Economic questions of the basic level whilst 37.3% of students marked the answers as No Idea.

Table 2. Answers to Finance and Economics Questions at Basic Level

A. Distribution of Answers (N = 276)								
	Right (Correct)		Wrong (Incorrect)		No Idea		Total	
	N	%	N	%	n	%	N	%
1. Inflation	128	46.4	20	7.2	128	46.4	276	100.0
2. Inflation in Kosovo	78	28.3	62	22.5	136	49.3	276	100.0
3. Compound interest	88	31.9	66	23.9	122	44.2	276	100.0
4. Budget	110	39.9	124	44.9	42	15.2	276	100.0
5. Stock Markets	94	34.1	58	21.0	124	44.9	276	100.0
6. Simple interest	156	56.5	50	18.1	79	25.4	276	100.0
7. Precious Metals	138	50.0	38	13.8	100	36.2	276	100.0
B. Distribution of Correct Answers (n = 276)								
Value (n=276)	Questions	1	2	3	4	5	6	7
		128	78	88	110	94	50	138
Percent (%)		46.4	28.3	31.9	39.9	34.1	18.1	50.0
Correct answer mean								35.5

*Correct answers are marked in **BOLD**.

5.3. Findings on the basic level of individual's banking literacy

The distribution of answers to basic level Retail banking literacy questions is given in Table 3. Accordingly, the highest rate of correct choice of answer is seen on the "internet loan application" choice, with a share of 68.8%. It turns out that there is a dependency in the internet "banking usage" rate in Table 1 and the answers given to "apply for loan from the Internet", because the rate of internet banking usage is 29.8%, while the rate of internet application usage is 68.8%. However, it is known that internet banking applications for credit applications have been enhanced. The second highest rate of correct answers choice is 63.8% respectively the choice of the fee transactions of the Bank. While the IBAN question is answered with correct choice at a rate of 56.1%, the EFT question remains at a rate of 26.4%. It is seen that 42.8% of the students answered the question of share all right from internet banking. The lowest number of correct answers choice was the question about the use of credit, which rate was 15.9%. The average rate of students who have marked the Individual Banking questions at the basic level with No Idea, was 26.5%. At the basic level, the average rate of correct answer to the questions of Retail Banking literacy was 45.3%. This rate shows that it is 10% higher in the correct answers choice to the basic Finance and Economics questions.

Table 3. Answers to Individual's Banking Questions at a Basic Level

A. Distribution of Answers (n = 276)								
	Right (Correct)		Wrong (Incorrect)		No Idea		Total	
	n	%	N	%	n	%	N	%
1. Bank transaction fees	50	18.1	176	63.8	50	18.1	276	100.0
2. Credit usage	182	65.9	44	15.9	50	18.1	276	100.0
3. IBAN	156	56.1	14	5.1	106	38.4	276	100.0
4. EFT	138	50.0	68	24.6	70	25.4	276	100.0
5. Internet banking loan applications	190	68.8	32	11.6	54	19.6	276	100.0
6. Internet banking stock buying	118	42.8	48	17.4	110	39.9	276	100.0

B. Distribution of Correct Answers (n = 276)

	Questions	1	2	3	4	5	6	
Value (n=276)		176	44	156	68	190	118	
Percent (%)		63.8	15.9	56.1	24.6	68.8	42.8	
Correct answer mean								45.3

*Correct answers are marked in **BOLD**.

5.5. Information on advanced level mathematical and financial calculations

In the study, the statistical results and percentages of the answers of the students studying in different departments to advanced mathematics and finance calculations questions are given in Table 4. There are 6 questions where students can use their mathematics and financial knowledge together. Considering the percentages of the answers given to the first question in Table 4, 192 students (69.6%) answered with the correct answer and (44 student) answered 15.9% with no idea, and those who marked the wrong answer were higher than 36 student and 13.0%. Similarly, in the second question, the correct answer is paralleled with the percentage of answers given to the first question, in which 68 people focused on 24.6%, while (162 student) had no idea with 58.7%. In Table 4, the results of the students are very close to each other, while it is satisfactory that the correct answerers are 34.8% with (96 students). Even if the number of those who answered correctly in the fourth and fifth questions was 26% with (74 students), 8% was the answer to the wrong answer and the highest of those who marked the no idea answer is an indication that the students are unstable and the problem is not understood. In the sixth question, it is seen that the students who answered the distribution of the students with a very close average to each answer as percentages are the lowest with (38 student) and 13.8%. Accordingly, when the percentages of the correct answers given by the students to six questions related to advanced mathematics and finance calculations are analysed, it is seen in the results of the table that 192 students showed 69.6% success in the first question and 162.7% in the second question and 58.7% showed success. The interesting question is that four and five are 74 students and 26.8% success rates are the same. It can also be said that the students concentrate on the correct answer with the same percentage, their knowledge and experience about the interest agenda are dominant. In the sixth question, a 13.3% success decline with 38 students indicates that the students choose the answer "No Idea", which indicates that they do not understand the question or answer it by ignoring it.

Table 4. Answers to Advanced Level Mathematics and Finance Literacy Questions

A. Distribution of Answers (n = 276)

	Answer 1		Answer 2		Answer 3		No Idea		Total	
	n	%	N	%	N	%	n	%	N	%
1. Financial and Mathematical calculations, question 1	4	1.4	36	13.	192	69.	44	15.	276	100.
				0		6		9		0
2. Financial and Mathematical calculations, question 2	32	11.	162	58.	14	5.1	68	24.	276	100.
		6		7				6		0
3. Financial and Mathematical calculations, question 3	60	21.	96	34.	64	23.	56	20.	276	100.
		7		8		2		3		0
4. Financial and Mathematical calculations, question 4	32	11.	74	26.	68	24.	102	37.	276	100.
		6		8		6		0		0
5. Financial and Mathematical calculations, question 5	20	7.2	74	26.	70	25.	112	40.	276	100.
				8		4		6		0
6. Financial and Mathematical calculations,	38	13.	80	29.	62	22.	96	34.	276	100.

question 6	8	0	5	8	0		
B. Distribution of Correct Answers (n = 276)							
	Questions	1	2	3	4	5	6
Value (n=276)		192	162	96	74	74	38
Percent (%)		69.	58.	34.	26.	26.	13.
		6	7	8	8	8	3
Correct answers mean							38.3

*Correct answers are marked in **BOLD**.

5.6. Overall average result of financial and mathematical literacy

As per to general averages (Table 5) of the correct answer's choice to the Financial and Economic, Retail Banking and Mathematical-Interest questions, it has been investigated to what extent the students respond correctly to all questions. Accordingly, the average of correct answers given to the questions in the Finance and Economics category was 35.5%, the average of the correct answers given in the Retail banking category was 45.3% and the average of correct answers given to the Mathematics and Interest calculations questions was 38.3%. A total average result has been obtained by calculating all these averages. Accordingly, the general financial mathematical literacy averages of the students of the Faculty of Education, Economy and Technology who participated in the survey were found to be 39.7%.

Table 5. Categorically correct answer means

Categorically Correct Answer Means	
Finance and Economy	35.5
Retail Banking	45.3
Mathematics and Finance Calculations	38.3
Overall mean	39.7

5.7. Financial and mathematical literacy level according to Faculties

Table 6 shows the averages of the correct answers given to the questions according to the student's choices. According to the results, students of the Faculty of Economy have the best overall average of 42.4%, the Faculty of Education with 37.7%, and the 37.7% for the Faculty of Technology. Categorically, the answers to the Basic Finance and Economics questions best rank is for Faculty of Economy with 38.4%, the Faculty of Education with 35.7% and the Faculty of Technology with 33.2%. As per to Retail Banking Literacy, students of the Faculty of Economics have the highest average that of 48.0%. Secondly, the Faculty of Education with an average of 44.9% and the third place belongs to the Faculty of Technology with 43.6%. Considering the correct answers choice to the Mathematics and Financial literacy level, the Faculty of Economy has the highest correct answer choice average with an average of 40.9%, followed by the Faculty of Education with an average of 38.1% and the Faculty of Technology with an average of 36.6%. As shown in Table 6, the success of the students of different departments in each category in the questionnaire is in line with the percentage, it can be seen that the Faculty of Economy students are ahead of the Faculty of Technology and the correct answer choice from the Faculty of Technology students in each category of the survey.

Table 6. Financial and Mathematical Literacy Level by Faculty

	Finance and Retail Banking Mathematical and Overall Economic Literacy Financial Literacy Average			
Faculty of Education	35.7	44.9	38.1	39.5
Faculty of Economics	38.4	48.0	40.9	42.4
Faculty of Technology	33.2	43.6	36.5	37.7

Considering revealed results, it is shown that the students of the Faculty of Economics have the highest Financial and Mathematical literacy. It has been concluded that the students of the Faculty Education are in the second place in financial and mathematical literacy and whereas in the third place are the students of the Faculty of Technology.

6. Results and Discussion

In recent years, the raising importance on information for literate individuals in developing countries, the number of literacy studies that have been investigated in different areas, have shed light on the research of the level of mathematical financial literacy together. Studies along with suggestions of enhancing mathematics literacy they do also suggest to know where, when and how to use the knowledge acquired by undergraduate students in their out-of-school life. Being able to solve the problems faced by students who are raised with mathematics literacy in their real lives with the knowledge of mathematics as an addition contributes to willingness to solve the problem by modelling. Also, the development of financial literacy levels of individuals involves their knowledge of financial issues, financial decision making and financial behaviour. Thus, university students at the undergraduate level should have a good understanding of the importance of mathematics literacy and financial literacy, and receive adequate training in mathematics, economics and finance. As a result of the study, it was revealed that students studying at the different departments of the university did not have an awareness about the basis of the questions they solved in the field of mathematical and financial literacy. This clearly demonstrated at the overall average of the departments of Faculty of Education that are with (39.5%), what is slightly different from the students of the Faculty of Technology (37.7%), from the students of the Faculty of Economics (42.4%) ahead of the general achievement average in mathematics financial literacy levels according to the departments. In terms of "personal banking and basic financial-economy" questions of education faculty students, they have achieved a better overall average than Technology faculty students. The achievement of these results can be explained by the experience and experiences gained by the students from their independent and free lives rather than the education they receive. These experiences "student house rent, school allowance and semester allowance, credit card" force individuals to learn about. Findings of the study showed that financial mathematical literacy levels of university students (39.7%) were generally low. While the average of the Education Faculty students' knowledge questions about Retail Banking was 44.9% satisfactory, it showed that the average math literacy level of 38.1% was low in the knowledge questions related to Advanced Mathematics and Finance Calculations. This coincides with findings in the study of Muyo and Gür (2018), who claimed that Faculty of Education has given more importance to mathematics literacy in mathematics education. The findings of the study in the information questions related to Retail Banking Calculations is were 45.3%, whereas 38.3% in Information Questions about Mathematical Financial Calculations and 35.5% in Financial Economics Calculations, where university students were eager to participate, responding to the survey questions closely.

Rankings indicated that the education they received in the field of mathematics, economics and finance was insufficient at the literacy level, and their success was mostly due to their life experience. In line with the findings, the fact that students of the Faculty of Economics are ranked at the top of each category in the survey compared to other departments, but fixed below 50% on average, showed that their education at literacy level in finance and economics was insufficient.

6.1. Conclusion and Recommendations

Based on the results of the study, some suggestions can be made to teachers and university students in educational programs. First of all, the importance of literacy as the center of the educational environments is to provide opportunities for individuals to grow up. In this case, class rates should be organized in the way that students can carry their own experiences to classroom settings and discuss the mathematics and economical-financial literacy, as well as use appropriate course materials in line with their skills. Similarly, in-service seminars should be conducted in the sense of determining literacy knowledge levels in the teacher development process and for their teaching related fields. This study was applied to Turkish and Albanian students studying at Kosovo's public university, and the range can be expanded further where including students studying Bosnian may be included. For more the comparisons of the related issue could be performed based on different universities.

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