# DEFINING AND MEASURING FINANCIAL LITERACY. NEW EVIDENCE FROM ROMANIAN' STUDENTS OF THE MASTER IN FINANCE

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**Abstract**

*This paper aims at defining and measuring financial literacy. The first objective of defining financial literacy was accomplished through reviewing the literature, finding the definition of these two concepts, "financial" and "literacy", for a better understanding of meanings of these two concepts. This study surveys 200 students from the Master in Finance, at several Faculties of Economics and Business Administration from Romania (Bucharest, Braşov, Cluj, Craiova, Iaşi). The results that we obtained show that the participants correctly answered at 74.79% of questions. Our study's results indicate that male students have a higher level of literacy related to personal finance than female students. Also, the survey shows that 75% of economist students from Romania have a medium to high level of financial literacy, but only 48.8% have a high level of financial literacy*

## 1. INTRODUCTION

In our days, all financial actions become more and more important. People must make plans for their retirements, decide about borrowing an amount of money for different needs (buy things, education, holidays, etc.), insurance their live, homes and things. In this context, for all these actions it is necessary a minimum level of financial knowledge and abilities for each person, in order to take a good financial decision, because all these financial decisions are vital to the future health of our nation˝s economy.

This study has two objectives. First, is to define financial literacy, i.e. to find all the aspects that must be included in the financial literacy definition. Secondly, the study will provide evidence on financial level of students from the Master in Finance, from several Romanian Faculties of Economics, identifying which categories of students are more literate and what are not.

The paper is organized as follows. The second section reviews previous studies on defining and measuring financial literacy. The section 3 describes the used methodology. The section 4 presents the results and the section 5 presents the limits of our model. Finally, we present our conclusions.

## 2. LITERATURE REVIEW

### 2.1. Defining financial literacy

Struggling for economic prosperity is difficult for everyone – and especially hard for young people who have never learned how to plan to achieve financial security. Even if in our days all financial actions have became more and more important, we are confronting with a lack of financial knowledge and abilities of people, confirmed by poor financial literacy test conducted by ING[1] across the country, in 2010. Their study revealed that over 50% of Romanian does not use financial services and products and they feel afraid about their financial future. Further, this gap in our country''s financial education is a consequence of a poor financial teaching provides by parents, teachers and policymakers regarding avoid the mistakes of spending too much and saving too little.

The aim of this study is to clearly define the concept of financial literacy. Firstly, we will review the previous research, with a focus on aspects that must be included in the financial literacy definition. Next, we will group all these definitions by complexity and, finally, we will adopt a stance regarding this concept.

Along the time, researchers have tried to highlight the role that financial literacy plays in our social and economic world (Chen and Volpe, 1998; Moore, 2003; Schagen, 2007, cited by ANZ Bank 2008; Lusardi, 2008; Arnone, 2009). Promoting financial literacy has been a primary mission of credit unions from United States since they were established. Edward A. Filene, the father of the American credit union movement in 1908, put it bluntly: "Credit unions are educational institutions" (CUNA, 2002).

Studies investigating the financial literacy concept are not limited. Researchers from different areas have defined financial literacy in many different ways. Some of these definitions take into consideration that financial literacy means only what people know about finance (NCEE, 1999; Cutler and Devlin, 2000; Lusardi, 2008). In addition, other researchers like Moore (2003), Financial Services Authority – United Kingdom (2006), Servon and Kaestner (2008) and Arnone (2009) claim that financial literacy concept is more comprehensive and they have pointed the importance of financial skills and abilities. Furthermore, some authors, with a focus on the world''s financial situation, stated that financial awareness of a person has an increasing importance (Mason and Wilson, 2000; Baron et. al., 2005; Schagen, 2007, cited by ANZ Bank 2008). All these differences existing in the economic literature regarding financial literacy concept, will be discussed in this paper.

The survey conducted in 1999, by National Council on Economic Education (NCEE) from United States takes a first step in defining the financial literacy concept. They agreed that a financially literate person must be familiar with basic economic principles and knowledge about the United States economy and, also, to understand some key economic terms. Even if, Cutler and Devlin (2000) shared the same view of financial literacy definition, they have claimed that a financially literate person must hold some narrow financial knowledge, with a focus on personal finance.

In general terms, Lusardi (2008) shared the same definition, but he pointed more clearly what key economic terms a person must know. In his opinion, a financially literate person must know about interest compounding, the difference between nominal and real value and, also, some minimal knowledge about risk diversification. In our opinion, this is a definition more comprehensive through which we better understand what kind of knowledge is required from a financially literate person.

Until this point, all those definitions of financial literacy highlight only knowledge of a person about finance area and there is no emphasize on financial skills and abilities. For this reason we will call this definition to be "*theoretical definition of FL*".

However, not all researchers have shared this view in defining financial literacy. For example, Moore (2003) had a focus on the financial skills and abilities. He sustained that individuals are considered financially literate if they are competent and can prove they are capable to use their financial knowledge. This view of defining financial literacy is more complex than "theoretical definition of FL", because in this case, expectations from a financially literate person are higher and that person must demonstrate the ability to put into practice his or her financial knowledge.

At this point we can see that Moore is more reserved in put the stamp of financially literate person. He agreed that persons must have financial knowledge, but further he stated that those persons must have some skills and abilities regarding mental arithmetic, in understanding some financial information presented in graphical form and in using different financial products.

This way of defining financial literacy was also shared by Servon and Kaestner (2008), who stated that a person must have the ability, firstly, to understand, and, secondly, to make use of financial concepts. In addition, Arnone (2009) emphasized the importance of personal financial planning, because people must to demonstrate some skills in using their financial background, not only in a short term financial decisions, but also in long term financial decisions.

We consider that the definitions of financial literacy provided by Moore (2003), Servon and Kaestner (2008), and Arnone (2009) put a focus on the financial skills and abilities, required from a financially literate person. So, our opinion is that this category of definitions is an "*applied definition of FL*".

Regarding financial awareness, Mason and Wilson (2000) stated that financial literacy refers to individual"s ability to obtain, understand and evaluate the relevant information necessary to make financial decisions, with a focus on the awareness of the likely financial consequences. The financial level stated by Mason and Wilson is much higher than levels proposed by the previous two categories of definitions. At this level is a focus on a person"s ability to be aware about the consequences of its financial actions.

Furthermore, others authors have pointed that being financially literate includes developing an awareness of successful strategies and informed judgments for making thoughtful spending, saving, and credit use decisions (Baron et. al., 2005; Schagen, 2007, cited by ANZ Bank 2008).

This last category of definition for financial literacy, which we have identified after reviewing previous research, is the most complex and comprehensive, because the conditions for a person to be considered financially literate are greater, besides knowledge and abilities, there is a focus on financial awareness. Put this all together, we will name this definition category as an "*awareness definition of FL*".
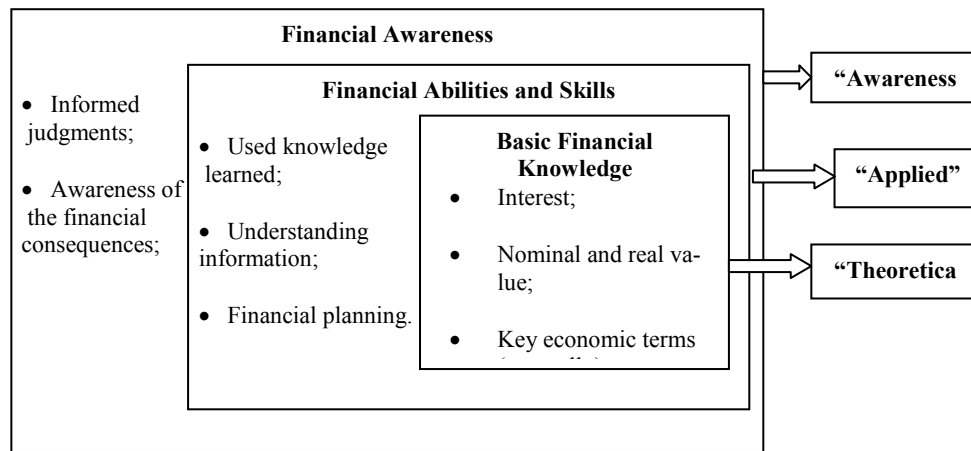
**Figure no. 1 Categories of financial literacy definitions**

For a better image of all the three categories of financial literacy definitions, which we have identified after reviewing previous research, we synthesized the main components in the Figure 1.

The purpose of this review has been to clearly define the concept of financial literacy, with a focus on aspects that must be included in the financial literacy definition. From our point of view, we consider that *financial literacy implies a persons' minimal knowledge about financial terms such as money, inflation, interest rate, credit and others, but besides this the abilities and skills of that person to use all this information in personal life, being aware about the consequences of its financial actions.*

This clearly define of financial literacy is mandatory for a society of financially literate consumers, who want to avoid scams, predatory lenders and the enticement of over-spending.

### 2.2. Measuring financial literacy

Measurement of financial literacy level was an important preoccupation for many re-searchers who conducted several surveys to identify the level of financial literacy of different category of people.

Chen and Volpe (1998) analyzed personal financial literacy among 924 students at 14 colleges, both public and private schools in California, Florida, Kentucky, Massachusetts, Ohio and Pennsylvania from United States. Participants were asked to answer 52 questions including 36 multiple-choice questions on personal finance.

Aware of the different levels of financial literacy among sub-groups of the sample, they analyzed the variation using logistic regression modelling. Participants were classified into two groups:

  ➢ Persons having *more knowledge* are those with higher percentages of correct answers than the median percentage according to their percentages of correct answers.

> ➢ Persons having *less knowledge* are those with lower percentages of correct answers than the median percentage according to their percentages of correct answers

The dichotomous variable was then used in the logistic regression as the dependent variable. Eight independent variables (*type of course – business or not, year at college, sex, race, nationality, work experience, age and income*) were included in the model to explain the dependent variable. The model was found to have high explanatory power.

The less knowledgeable group was found to be highly likely not to be studying business, but to be from lower classes (i.e. not in final-year undergraduate or graduate classes), to be female and to have less work experience and to be under 30 years of age. Race, nationality and income were found to be not significant.

This study concluded that college students need to improve their knowledge of personal finance, because the overall mean of correct answers for the survey was about 53%. Another remark is that none of the mean scores for each area of general knowledge, saving and borrowing, insurance, and investments were above 65%.

Beal and Delpachitra (2003) conducted a research among students at the University of Southern Queensland (USQ) in Toowoomba, Queensland, during the first semester of 2002, where first-year Faculty of Business students as well as students in other faculties or disciplines were targeted.

Survey instrument used by Beal and Delpachitra was represented by a questionnaire, formed from a total of 25 technical four-option multi-choice questions spread roughly equally over the five general areas analyzed. Additionally, there were nine questions asked for demographic information and a tenth question investigated respondents" risk tolerance using degrees of agreement with four statements by means of five-point Likert scales.

The questionnaire investigated the following five financial areas:
1. **Basic concepts -** Compound interest, Risk and expected return, Diversification of portfolio, Achievement of saving and Early withdrawal penalty;
2. **Markets and instruments** - Price of AUD, Definition of „cash" rate, Historical returns of Australian asset classes, Loan guarantee and Fixed and variable rates;
3. **Planning** - Effectiveness of planning, Bank reconciliation, Expenditure recording, Checking bank statements and „Free" credit;
4. **Analysis and decisions** - „Mortgage buster" I loan offset accounts, Persistent credit card debt, Source of urgent funding, Monetary problem solving and Present value of income stream;
5. **Insurance** - Insurance excess, Risks covered with householders" policies, Vehicle insurance premiums, Risks covered with vehicle CTP policies and Term life insurance benefits.

The research has found that financial literacy is not high and this, no doubt, stems from the lack of financial-skills education in high schools. Of the five identified areas of financial skill or knowledge, decision-making skills and knowledge of insurance appeared to be the least well developed. The weighted average score for decision making skills was 47% and for knowledge of insurance was 46%.

Gerek and Kurt (2008) conducted a study through which they try to determine the level of economic literacy of university students from Anadolu University, Eskisehir, Turkey. In their data collection they used the standards of Economic Survey developed by National Council on Economic Education. As a result of the study, when the correct responses of the students were turned into scores, it was revealed that they had a mean score of 65; that both female and male students had the same number of correct answers, while the students taking

the economy course were more successful than those who did not take the same course; and that the students had an average level of economic literacy.

Lalonde and Schmidt (2009), made a study to examine the financial literacy level of college students at a small liberal arts college in the North-eastern United States and examine the factors that contribute to financial literacy. They gain the accept of Jumpstart Organization to use in their survey instrument the questions build by this organization for purpose to measure financial knowledge in four areas: **Income**, **Money Management**, **Saving and Investment** and **Spending and Debt**. This survey conclude that class rank, as indicated by its impact on the number of credit cards, and motivation, as measured by interest in personal finance, were the most significant predictors of financial literacy. In the same time, this study contradict the results of previous surveys related the gender and personal financial literacy that have consistently indicated men having a higher level of literacy related to personal finance than women.

Another research was conducted by Lusardi, Mitchell and Curto (2010) through they showed that financial literacy is low; only 27% knew about inflation and risk diversification and could do simple interest rate calculations. Moreover, women proved to be the least financially literate. Differences between women and men persisted even after accounting for many demographic characteristics, family background characteristics and peer characteristics.

In their research they include a set of three financial literacy questions, also included in Wave 11 of the National Longitudinal Survey of Youth from United States. These three questions have been added to many surveys in the United States and abroad. The wording of the questions was:

1. *Suppose you had $100 in a savings account and the interest rate was 2% per year. After five years, how much do you think you would have in the account if you left the money to grow: more than $102, exactly $102 or less than $102? {Do not know; refuse to answer};*
2. *Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After one year, would you be able to buy more than, exactly the same as or less than today with the money in this account? {Do not know; refuse to answer};*
3. *Do you think that the following statement is true or false? "Buying a single company stock usually provides a safer return than a stock mutual fund." {Do not know; refuse to answer}.*

*Hypotheses*

1. $H_0$: The financial literacy level of male students from the Master in Finance is the same as financial literacy level of female students.

   $H_1$: The financial literacy level of male students from the Master in Finance is significant different (expected higher) than financial literacy level of female students.

2. $H_0$: The financial knowledge level of students from the Master in Finance is the same as financial awareness level.

   $H_1$: The financial knowledge level of students from the Master in Finance is significant different (expected higher) than financial awareness level.

### 3. METHODOLOGY

#### 3.1. Financial literacy – definition

In achieving the objectives of measuring the financial literacy level, first step is represented by a clear definition of what financial literacy means, the minimal requirements from a student to be considerate financially literate.

In defining financial literacy we started with the analysis of these two words: "financial" and "literacy". It is important to see how these two concepts are explained by dictionaries from different country, in order to understand the meanings of each word, for a better defining of "financial literacy" expression.

In this stage we searched on the Internet, different definition given to these concepts, choosing to present them in their original version because sometime, if a phrase is translate into another language it may lose some meanings or significations. All these are synthesized in Table 1.

Analyzing all these four definitions for term "Financial" we see that English and French Dictionary define "Financial" by only referring to *Finance* (French Dictionary)/ *Money Management* (English Dictionary) and *Money*. These two definitions are quite broad, because don't refers to any other specific domain from financial area.

More detailed is the definition from Romanian Dictionary, which besides the two components presented above, includes a specific component to financial area: Credit.

The most detailed definition given for word "financial" was found in the Spanish Dictionary, which presents several specific components of what this term includes, make references to: *finance, banking, securities* and *large commercial business*.

*Table no. 1 Definitions for "financial" and "literacy" concepts*

| Concept definitions *(English version)* | |
|---|---|
| **"FINANCIAL"** | **"LITERACY"** |
| **ROMANIAN DICTICTIONARY[2]** | |
| "*FINANCIAL* – Regarding finance organization; regarding finance, money and credit circulation, etc." | "*LITERACY* - The act of literate people; training the illiterate persons; combat illiteracy." |
| **FRENCH DICTICTIONARY[3]** | |
| "*FINANCIAL* – Regarding finance, money." | "*LITERACY* - Learning to read and to write an illiterate population. Instruction." |
| **SPANISH DICTICTIONARY[4]** | |
| "*FINANCIAL* – Regarding public finance, banking and securities issues or large commercial business." | "*LITERACY* - Action and effects of literacy, teaching to read and to write". |
| **ENGLISH DICTICTIONARY[5]** | |
| "*FINANCIAL* - related to money or how money is managed." | "*LITERACY* - the ability to read and to write; knowledge of a particular subject or a particular type of knowledge." |

Even if, there are several differences between the definitions analysed, the core meaning present in all of these is that the word "financial" refers to *finance* and *money*. These differences are shown in the figure 2 for a better understanding.
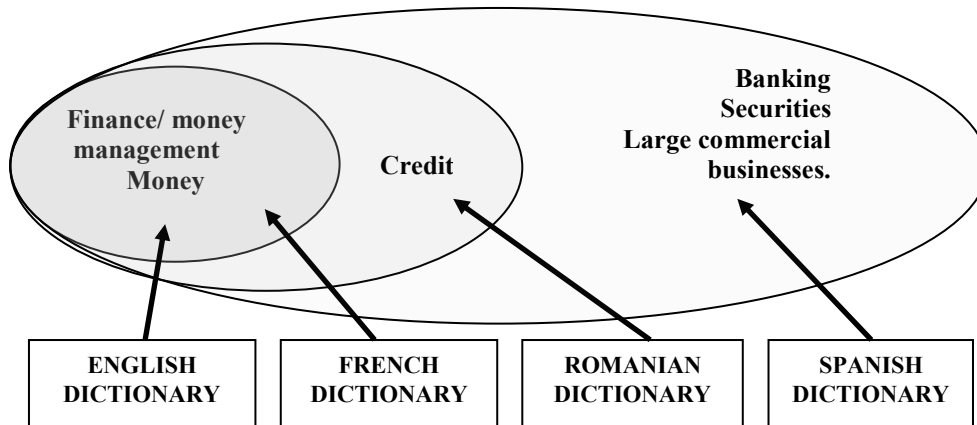
**Figure no. 2 Coverage significations of definitions for "FINANCIAL"**

Regarding the second term "Literacy", the definitions from each dictionary are quite similar, specially referring to a person"s ability to write and read, or in other words the basic knowledge of a particular subject (English Dictionary).

This first stage of defining financial literacy is quite important, because, based on the resulting definition we will measure the financial literacy level.

Analyzing all definition for financial literacy in the economic literature and the meanings of each word (financial and literacy), we conclude that financial literacy implies a persons" minimal knowledge about financial terms such as money, inflation, interest rate, credit and others, but besides this the abilities and skills of that person to use all this information in personal life, being awareness about the consequences of its financial actions.

*3.2. Questionnaire construction*

To achieve the survey purpose, we built an instrument represented by a questionnaire (Annex 1), through which we will measure the level of financial literacy of the students that are studying a Master in Finance at several Faculties of Economics from Romania.

The questionnaire was built by taking into consideration all three identified levels of financial literacy: **knowledge, abilities** and **awareness.** For each category we selected four questions, through which we will measure the level of each component. The questionnaire was primary written in English, after that we translated into Romanian, and then we asked two people to retranslate the questionnaire into English, resulting that there weren"t term meaning differentia or bad understanding of initially translate.

The questionnaire has 15 questions which are divided into four categories. The first four questions constitute the first questions category which measures the level of financial knowledge of a person. The second questions category is measuring the level of financial abilities of a person and is formed by the questions from 5 to 8. Another question category is represented by the questions from 9 to 12, which are measuring the financial awareness level of a person, and the last three questions from questionnaire compose the last category of questions which identify the person (age, sex and income).

In the questionnaire we used only closed questions:

➢ Simple questions (dichotomous) – gender identification – 13;
➢ Questions with one choice from several alternatives – 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 14 and 15;
➢ Questions with multiple choice from several alternatives – 8.

For these questions we had used the following types of scales:

➢ Nominal scale: 1, 2, 3, 4, 5, 6, 7, 8, 10, 12 and13;
➢ Likert scale – 9 and 11;
➢ Interval scale: 14 and 15.

### 3.3. Sample selection

The sample chose for accomplish the survey objectives it was represented by 200 students from Master in Finance, at several Faculties of Economics from Romania. This survey was a *cross-sectional survey*, because we collected information from a sample that has been drawn from a predetermined population. Furthermore, the information was collected at just one point in time, although the time it took us to collect all of the data was two weeks.

In our survey we used a *convenience sampling;* by this manner the subjects were easily accessible. We had used this procedure because we had a limited time for the survey. This is one of the weakest sampling procedures. Generalization to a population can seldom be made with this procedure.

The responses from each participant are used to calculate the mean percentages of correct scores for each question, section and the entire survey. Consistent with the existing literature (Chen and Volpe – 1998), the mean percentages of correct scores is grouped into:

(1) More than 80%;
(2) 60% to 79%;
(3) Below 60%.

The first category represents a relatively high level of financial literacy; the person has the basic financial knowledge, abilities in using them and awareness about the consequences of its personal financial actions. The second category represents a medium level of financial literacy; the person has the basic financial knowledge, some abilities in using them but the person is less or not awareness about the consequences of its personal financial actions. Third category represents a relatively low level of financial literacy; the person has the basic financial knowledge, very few or no abilities in using them but the person isn˝t awareness about the consequences of its personal financial actions.

### 4. RESULTS

To this survey answered 200 students from Master in Finance at several Faculties of Economics and Business Administration from academic centres in the country (Bucharest, Braşov, Cluj, Craiova, Iaşi). Almost all respondents are between 20 and 25 years old, and the majority of them are women. All these detailed characteristics of the respondents are presented in Table 2.

*Table no 2 Characteristics of the sample*

|  | Number of participants | Percentages (%) |
|---|---|---|
| 1. Gender | | |
|   a. Male | 54 | 27 |
|   b. Female | 146 | 73 |
| 2. Years of age: | | |
|   a. 20 – 22; | 84 | 42 |
|   b. 23 – 25; | 113 | 56.5 |
|   c. 26 – 29; | 1 | 0.5 |
|   d. 30 or older. | 2 | 1 |
| 3. Income: | | |
|   a. No income; | 33 | 16.5 |
|   b. Less than 500 RON; | 58 | 29 |
|   c. 501-700 RON; | 31 | 15.5 |
|   d. 701-1,000 RON; | 41 | 20.5 |
|   e. 1,001-1,500 RON; | 21 | 10.5 |
|   f. More than 1,500 RON | 15 | 7.5 |

The overall results of the survey are presented in Annex 2. The mean of correct answers for the entire survey is 74.79%, indicating on average the participants answered correctly about 9 questions from 12 questions related to financial literacy measurement. The reliability of the 12-question survey is 0.735 (we don't include here the last three identification questions). This value from Cronbach alpha indicates that the questionnaire is reliable, which further increases its validity. Survey results suggest that the students included in the study have a medium to high level of financial literacy.

52% of the respondents gave an incorrect response for question 5, which show that the students didn't understand the inflation effects. One explanation could be that, the inflation is always perceived as a negative concept for consumers. While the banks loaning fixed-interest credits lose money due to inflation (a constant increase in general prices), the persons who take these fixed-interest credits gain benefits from the inflation. The reason is that they do not lose any money due to the fixed-repayment of the loan when the inflation is higher.

Based on the data collect through the study, we were able to calculate the level of financial knowledge, abilities, and awareness and, in the end, the level of financial literacy for each person who participates to this survey.

Regarding the financial literacy level of male and female students, we found that there is a significant difference between these two recorded values. The Sig. (2-tailed) value of 0.003 is less than 0.05 so the null hypothesis is rejected. That means, we can assume with 95% confidence, that there is a significant difference between the financial literacy level of male students and the financial literacy level of female students at Faculties of Economics and Business Administration in Romania. The financial literacy level of male students of 81.01% is higher than financial literacy level of female students, which is only 72.58%. This study confirm the results of previous surveys (Lusardi, Mitchell and Curto, 2010) related to gender and personal financial literacy that have consistently indicated men having a higher level of literacy related to personal finance than women.

Our expectation regarding the significant difference between financial knowledge level and financial awareness level of students is confirmed by statistical tests. Moreover, we try

to see if there is any significant difference between level of financial knowledge and financial awareness, separately for male and female students.

The result was that, with a confidence of 99%, there is a significant difference between financial knowledge level and financial awareness level, for both male and female students. This significant difference shows us, that the financial awareness level of female students (67.24%) / male students (76.81%) is lower that their financial knowledge level of female students (83.79%) / male students (90.00%).

*Table no. 3 Percentages value of persons from each category of financial literacy*

| | Low *(below 60%)* | Medium *(61 – 79%)* | High *(over 80%)* |
|---|---|---|---|
| | *MALE* | | |
| FINANCIAL LITERACY | **20.37%** | **20.37%** | **59.26%** |
| *Knowledge* | *9.25%* | *18.51%* | *72.24%* |
| *Abilities* | *35.18%* | *22.22%* | *42.60%* |
| *Awareness* | *24.07%* | *29.62%* | *48.14%* |
| | *FEMALE* | | |
| FINANCIAL LITERACY | **26.71%** | **29.45%** | **43.84%** |
| *Knowledge* | *17.12%* | *11.64%* | *59.49%* |
| *Abilities* | *47.26%* | *23.97%* | *28.77%* |
| *Awareness* | *37.67%* | *30.82%* | *27.40%* |
| | *TOTAL* | | |
| FINANCIAL LITERACY | **25.0%** | **27.0%** | **48.8%** |
| *Knowledge* | *15.0%* | *22.5%* | *62.5%* |
| *Abilities* | *44.0%* | *25.5%* | *30.5%* |
| *Awareness* | *34.0%* | *33.5%* | *32.5%* |

*Source:* [authors" calculations]

In the same time we had found that, for both male and female students, there were recorded significant differences between components of financial literacy. Moreover regarding the financial knowledge level of male and female students, we found that there is not any significant difference, because the Sig. (2-tailed) value of 0.255 is greater than 0.05 so the null hypothesis is not rejected. In the same time for the other two components of financial literacy, we found significant differences between male and female students. So even if, both male and female has a minimum level of financial knowledge, only males seems to have better financial abilities and to be more aware about it.

Analyzing data from Table 3, we observe that 75% of Romanian students that are studying a Master in Finance have a medium to high level of financial literacy. Going further, we can see that only 48.8% of Romanian students have a high level of financial literacy, being a quite big difference between the percentage of male and female, because about 59.26% of male students have a high level of financial literacy, while only 43.84% of female students have a high level of financial literacy.

A limit of this research is represented by the fact that, the numbers of question measuring financial literacy level are too small (only twelve). To measure financial literacy more precisely, for next studies it would be necessary to increase the number of questions. Also, in this manner we can increase the Cronbach alpha, because for this survey this indicator is close to the lower limit (0.735), a greater value will assure a higher reliability, which further increases its validity.

## 5. CONCLUSIONS

This study surveys 200 students from Master in Finance at Faculties of Economics and Business Administration from several academic centres in the country (Bucharest, Braşov, Cluj, Craiova, Iaşi). Almost all respondents are between 20 and 25 years old, and the majority of them are women. Results show there is a significant difference between the financial literacy level of male students and financial literacy level of female students. Financial literacy level of male students of 74.40% is higher than financial literacy level of female students, which is only 67.24%.

There is significant difference between financial knowledge level and financial awareness level of students, both male and female.

The survey, also, shows that 75% of Romanian students from master of Finance and Banks have a medium to high level of financial literacy, but only 48.8% of Romanian students have a high level of financial literacy, being a quite big difference between the percentage of male and female, because about 59.26% of male students have a high level of financial literacy, while only 43.84% of female students have a high level of financial literacy.

The final conclusion is that students from Romania have a medium to high level of financial literacy. Desirable will be that more students to have a high level of financial literacy, because 48.8% of students is still a small number. This study can be a warning for all academic centres to take into account a more appropriate financial curriculum. One direction will be to introduce more applied courses through which students will be able to learn advanced financial issues, which will help them to gain financial knowledge and abilities.

Further research can compare the financial literacy level of different specialization, and in the same time to extend the sample"s size. Furthermore, other research can follow the financial literacy level over a period of several years starting from the moment that a cohort of students begins the bachelor or master studies to see the influence of teaching on students" level of financial literacy.

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**Notes**

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**Annex no. 1** *The objective of each question from the questionnaire*

| Question | Objective |
|---|---|
| 1. The most liquid asset is:<br>a. Money in a certificate of deposit account;<br>b. Money in a checking account;<br>c. A car;<br>d. A house. | Test the respondent"s knowledge about the level of liquidity had by different forms of money; |
| 2. The public institution responsible with monetary policies implementation is:<br>a. Parliament;<br>b. National Bank of Romania;<br>c. National Commission of Transferable Security;<br>d. Government. | Test the respondent"s knowledge about the public institute responsible with monetary policy in Romania; |
| 3. Which of the following instruments is NOT typically associated with spending?<br>a. Cash;<br>b. Credit Card;<br>c. Debit Card;<br>d. Certificate of deposit. | Test the respondent"s knowledge about differences between saving and consumption; |
| 4. Suppose you had 1,000 RON in a saving account and the interest rate was 9% per year. After four years how much do you think you would have in the account if you left the money to grow:<br>a. More than 1,090 RON;<br>b. Exactly 1,090 RON;<br>c. Less than 1,090 RON;<br>d. I don"t know | Test the respondent"s knowledge about interest rate; |
| 5. Which of the following are most to be helped by inflation?<br>a. Banks that loaned money at a fixed rate of interest;<br>b. People who borrowed money at a fixed rate of interest;<br>c. People living on a fixed income;<br>d. No correct answer. | Test the respondent"s ability in understanding the inflation effects in real life; |
| 6. What will you do, if you"ll have 1 million RON?<br>a. I will spend all money at shopping;<br>b. I will invest the money for profit;<br>c. I will keep the money at home. | Test the respondent"s ability to choose a financial product regarding investments, in a situation when the person has a large amount of money; |
| 7. Many people put aside money to take care of unexpected expenses. If you have money put aside for emergencies, in which of following forms would it be of LEAST benefit to you if you needed it right away?<br>a. Stocks;<br>b. Saving account;<br>c. Invested in a down payment on the house;<br>d. Checking account. | Test the respondent"s ability to choose the appropriate financial products in a specified situation. |

| Question | Purpose |
|---|---|
| 8. What financial services and products do you use?<br>a. Checking account;<br>b. Deposit account;<br>c. Debit card;<br>d. Credit card;<br>e. Consumer credit;<br>f. Foreign exchange;<br>g. Insurance policy;<br>h. Investment funds;<br>i. Private pension funds;<br>j. Other financial services;<br>k. I never used financial services and products. | Test the respondent"s ability to use a specific financial product/services in real life; |
| 9. Assume you have 100,000 RON and you want to put the money in a deposit account. The solution you find is that to make deposits at several banks.<br>a. Approve;<br>b. Partially approve;<br>c. Not sure;<br>d. Partially disapprove;<br>e. Disapprove. | Test the respondent"s risk awareness about the consequences of putting a large amount of money into one deposit account at only one bank. If the person is aware of the risks, he/she will choose to deposit the money at several banks. |
| 10. Which of the following statements is true?<br>a. Your bad loan payment record with one bank will not be considered if you apply to another bank for a loan;<br>b. Banks and others lenders share the credit history of their borrowers with each other and are likely to know of any loan payments that you have missed;<br>c. People have so many loans it is very unlikely that one bank will know your history with another bank;<br>d. No correct answer. | Test the respondent"s awareness of what assume taking a credit, and what are de consequences, if the person don"t pay back the loan in a regularly way. |
| 11. Rank the importance of next item: "Spending less than your income."<br>a. Very important;<br>b. Somewhat important;<br>c. Not sure;<br>d. Somewhat unimportant;<br>e. Very unimportant. | Test the respondent"s awareness of being a spender type of person. The person will choose that the affirmation is very important if that person is aware of the risk in being a spender type. |
| 12. Do you maintain financial records?<br>a. Maintain very detailed records;<br>b. Maintain minimal records;<br>c. Maintain no records. | Test the respondent"s awareness of the consequences of all its financial actions, and the understanding that maintaining financial record is very important for personal finance. |
| 13. You are:<br>a. Male;<br>b. Female. | Show the person"s sex. |

| 14. What is your age? | Show the person's age. |
| a. 20 – 22;   c. 26 – 29;<br>b. 23 – 25;   d. 30 or older. | |

| 15. What is your monthly income? | Show the person's monthly income. |
| a. No income;<br>b. Less than 500 RON;<br>c. 501 – 700 RON;<br>d. 701 – 1,000 RON;<br>e. 1,001-1,500 RON;<br>f. .More than 1,500 RON | |

**Annex no. 2** *Mean percentages (%) of correct responses to each survey question*

| | Master's students | | |
|---|---|---|---|
| | **Male** | **Female** | **Total** |
| **Knowledge** | | | |
| 1. Asset liquidity | 75.92 | 78.08 | 77.50 |
| 2. Monetary policy implementation | 100.00 | 86.98 | 90.50 |
| 3. Non spending instruments | 96.29 | 80.13 | 84.50 |
| 4. Interest rate calculation | 94.44 | 87.76 | 89.50 |
| **Mean correct responses for the section** | **90.00** | **83.79** | **85.50** |
| **Median correct responses for the section** | **100.00** | **100.00** | **100.00** |
| **Abilities** | | | |
| 5. Inflation effects understanding | 51.85 | 46.57 | 48.00 |
| 6. Investment abilities | 96.29 | 89.72 | 91.50 |
| 7. Ability of choosing the most appropriate financial product | 55.55 | 44.52 | 47.50 |
| 8. Ability in using financial services/products | | | |
| ➢ *Checking account;* | *55.55* | *53.42* | *54.00* |
| ➢ Deposit account; | *44.44* | *28.08* | *32.50* |
| ➢ *Debit card;* | *79.62* | *73.97* | *75.50* |
| ➢ Credit card; | *14.81* | *14.38* | *14.50* |
| ➢ *Consumer credit;* | *7.40* | *4.10* | *5.00* |
| ➢ Foreign exchange; | *55.55* | *43.83* | *47.00* |
| ➢ *Insurance policy;* | *25.92* | *10.95* | *15.00* |
| ➢ Investment funds; | *9.25* | *3.42* | *5.00* |
| ➢ *Private pension funds;* | *9.25* | *8.90* | *9.00* |
| ➢ Other financial services; | *7.40* | *7.53* | *7.50* |
| ➢ *Never used financial services/products.* | *0* | *0* | *0* |
| **Mean correct responses for the section** | **75.00** | **66.72** | **69.00** |
| **Median correct responses for the section** | **75.00** | **75.00** | **75.00** |
| **Awareness** | | | |
| 9. Risk awareness | | | |
| ➢ *Excellent;* | *44.44* | *28.08* | *32.50* |
| ➢ Good; | *25.92* | *34.93* | *32.50* |
| ➢ *Good and excellent;* | *70.37* | *63.01* | *65.00* |
| 10. Understanding the consequences of unpaid back credit | **55.55** | **40.41** | **44.50** |
| 11. Awareness of being a spender type of person | | | |
| ➢ *Excellent;* | *61.11* | *56.16* | *57.50* |
| ➢ Good; | *11.11* | *15.06* | *14.00* |
| ➢ *Good and excellent;* | *72.22* | *71.23* | *71.50* |
| 12. Appropriate financial behaviour | | | |
| ➢ *Detailed financial records;* | *27.77* | *23.28* | *24.50* |
| ➢ Minimal financial records; | *57.40* | *47.94* | *50.50* |
| ➢ *Maintain financial records (total).* | *85.18* | *71.23* | *75.00* |
| **Mean correct responses for the section** | **76.81** | **67.24** | **69.87** |
| **Median correct responses for the section** | **75.00** | **75.00** | **75.00** |
| **Mean correct responses for the entire survey** | **81.01** | **72.58** | **74.79** |
| **Median correct responses for the entire survey** | **83.33** | **75.00** | **75.00** |