

Financial Literacy: Study of a University Students Sample

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ABSTRACT

This article aims to study the level of financial literacy of a sample of University students in the metropolitan area of Porto, in Portugal. The research method used is quantitative and exploratory, demanding an inquiry made to the population under study.

The literature review is based on financial literacy field studies. It was found that almost half of young people between 18 and 24 years ignore the household income, but the majority (62.0%) has an opened account at the Bank. It was concluded that the students in this sample had meager knowledge of finance, not coming to recognize the Euribor as the interest reference rate in the Euro zone.

The University students have a low knowledge about the commission's banks charge for bank accounts and only around 20.0% know the exact amount are charged. Although the vast majority considers very important financial planning (66.8%), it was found that young people chooses not to make investments, opting to keep the money in the checking account.

Keywords: financial literacy, financial education, financial literacy, financial decisions, financial wellness

INTRODUCTION

Countries have become societies based on knowledge and economy, more than in the past, making information and knowledge the key of competitiveness, standard of living and individual or collective well-being of populations.

This political and social complexity embraced the world where we currently live, and brought a growing complexity and diversity of the markets and financial instruments, as well as consumption marketing. Financial literacy is the "gun" required, to enable decision-making financially aware and beneficial to the economic and financial well-being of individuals, families and society in General.

Financial literacy won a lot after capturing the attention in the lives of people worldwide, especially after the global financial and economic crisis started in 2007, this importance won accentuating and entered in compulsory form in the lexicon of the populations.

The worsening financial situation, in line with the strong climate of instability that people and families have lived and live currently, associated with the changes that have occurred to demographic, economic and political level, requires a smaller margin of error in the planning and financial decisions, which highlight the importance of financial literacy societies.

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The way financial literacy affects material well-being, comprises the ability to discern between financial choices, discuss financial and monetary affairs, plan ahead and respond competently to everyday situations that involve financial decisions, including events in the global economy.

In this sense, the importance of financial literacy is increasingly recognized at international level, being considered essential to promote awareness of the actions on the economy, and also in individual and collective aspects.

A proper management of the family budget, combined with a medium-and long-term planning, and a careful choice of financial products, has direct benefits for individuals as well as for the stability of the financial system in all.

All this makes increasingly necessary to develop the knowledge and financial capacities of populations, as an essential for the development of a training strategy and the respective implementation.

The article besides this introductory part is divided into four parts, the first part deals with the topic of financial literacy concepts according to several authors and their determinants. In the second part it is presented the methodology used in the study. In the third part the researchers present the study of the investigation, analysis and interpretation of data and results. Finally, the last part presents the conclusions of the study.

STATE OF THE ART

According to the literature reviewed, the definition of financial literacy focuses on the knowledge and the ability that people have to communicate about financial concepts, managing personal finances and plan effectively on short and medium or long terms. The importance of having high levels of financial knowledge, to the general population, is recognized around the world. The causes of the low levels recorded are pointed to the increased complexity of the economy, the lack of financial education in schools and universities, culture persuasive immediate gratification caused by aggressive consumer marketing and the proliferation of credits available.

Financial literacy in the Genesis itself, but it's also a relative concept, because it depends, on one hand, of the complexity of the financial system and the financial products transacted, and on the other hand, by the lack of each individual. This situation provides multiple definitions of financial literacy, in the absence of a universally accepted definition.

One of the most published definitions of financial literacy is the proposal by the author.

According to Kirsch (2001), literacy is not just the capacity developed during the years of education, but rather, a set of skills, knowledge and strategies that individuals acquire throughout life in different contexts and in interaction with their peers and communities.

Financial literacy does not have an official definition, in this way it has been described in different ways by various researchers. Mason and Wilson (2000) define financial literacy as the ability of an individual to obtain, understand and evaluate information relevant to make decisions with awareness of the likely financial consequences.

In turn, Thaden and Rookey (2005) defined financial literacy as understanding financial facts, concepts, principles and technological tools that are the key to make financial decisions. While, Fox, Bartholomae, and Lee (2005) described the same concept with understanding and knowledge of financial concepts.

Due to the disagreement in the definition of financial literacy, Remund (2010) conducted a study aimed at aggregating the existing definitions into one, summarizing a definition centered on the confidence and management capacity of individuals ' personal finances, Deciding on the short term and planning in the medium and long term. The same author found evidences that fall into four categories: budget, savings, loans and investments, all based on the individual's behavior or ability.

Orton (2007) relates financial literacy as the ability to read, analyze, manage and communicate about the personal financial condition. Modernell (2010) argues that financial literacy is a set of guidelines and clarifications on appropriated attitudes in the planning and use of personal financial resources. Beal & Delpachitra (2003) defines financial literacy as the ability to make informed judgments and make effective decisions related to financial management.

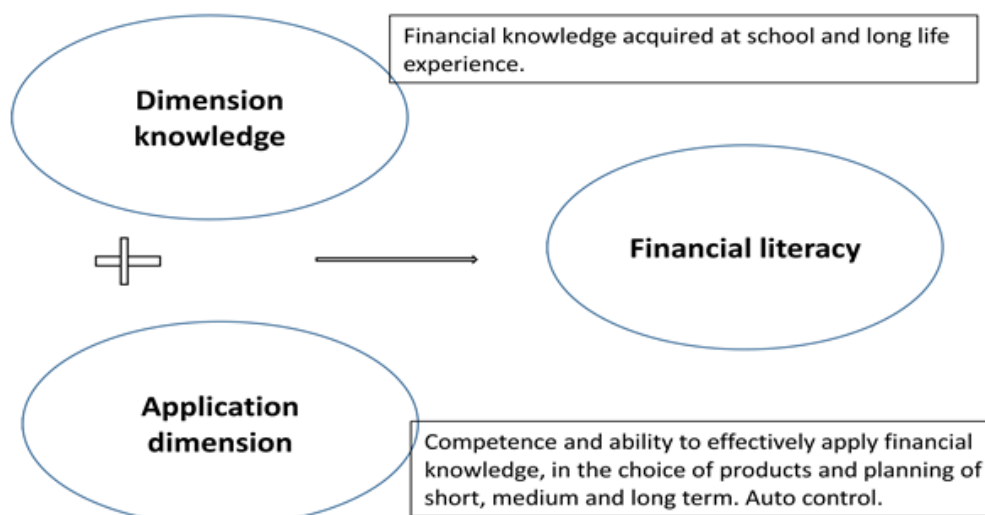


Figure 1. Dimensions of the concept of financial literacy
Source: Adapted from Huston (2010)

Huston (2010) argues that the definition of financial literacy with the idea of financial knowledge should not be confused. Financial literacy may involve two dimensions: that of understanding, which relates to the knowledge of content in the field of personal finances, and the use, which refers to the application of such content to the level of personal finances. According to the author, literacy has a broader spectrum than financial knowledge, since it has underpinning an individual's ability to make financial decisions based on his financial knowledge. In this sense Huston (2010) summarizes that the concept of financial literacy should be centered on the dimension of knowledge and the size of the application, as summarized in **Figure 1**.

Fernandes et al. (2014) corroborate this opinion through the conclusions found in its study, which aimed to analyze the relationship between the levels of financial education and the quality of individual financial decisions, where they concluded that education or financial knowledge positively influence financial behavior. The authors found evidences that an increase in the education of people only explains 0.1% of the variations in financial behavior, thus concluding that a change in behavior requires more than an increase in knowledge (Fernandes et al., 2014). Abreu and Mendes (2010), add to these concepts the idea that financial literacy is transversal to the various types of information to which the individual has access, being positively influenced by them. Three dimensions of information can influence the degree of individual financial literacy achieved:

- The financial knowledge revealed in the answers to concrete questions about the financial market;
- School education, due to its positive influence on the development of the ability to manage various sources of information;
- Access to and choice of the sources of information used for its decision-making.

Garcia et al. (2013) argues that financial literacy is assessed as a combination of awareness, knowledge, skill, attitude and behavior needed to make sound financial decisions in order to achieve individual financial well-being. According to Xu and Zia (2012) the term of financial literacy can encompass different concepts, including awareness and knowledge about finances, financial products, institutions, personal skills, the ability to manage money and the financial planning.

Table 1 summarizes the main concepts and dimensions found in the literature and which has served as a basis for several authors in order to explain financial literacy, which are essentially based on two major dimensions: knowledge and behavior financial.

Table 1. Summary of the main concepts and dimensions of financial literacy

Dimension	Concept of financial literacy	Authors
Financial knowledge and application.	Financial knowledge and the application of that knowledge. Self-confidence in making financial decisions.	Huston (2010)
Financial knowledge and Skills	Ability to use the acquired knowledge and skills to a better family budget management.	Hung, Parker, and Yoong (2009)
Financial understanding and decision	Ability to understand the financial information and use it in making decisions.	Robb, Babiartz, and Woodyard (2012)
Knowledge, behavior and attitudes.	Influence of financial knowledge about behavior, assessed by financial attitudes.	Norvilitis and MacLean (2010)
Effective planning.	Diversity of instruments and options for the establishment of financial goals.	Criddle (2006)
Financial decisions	Making informed financial decisions.	Remund (2010)
Financial knowledge	The most specific human capital, measured through financial knowledge issues.	Robb and Sharpe (2009); Lusardi and Mitchell (2014)
Financial knowledge, financial behavior and financial attitude	It encompasses financial literacy in three dimensions: financial knowledge, financial behavior and financial attitude.	Atkinson and Messy (2011); Garcia et al. (2013)

Source: The authors

Empirical Studies

Authors such as Armantier et al. (2015) and Allgood and Wastad (2016) consider and define financial literacy as a one-dimensional form, as objective financial knowledge. On the other hand, there are authors such as Agarwalla et al. (2013), Garber and Koyama (2016) and Potrich, Vieira and Kirch (2018) who study financial literacy as a multidimensional form, involving knowledge, attitude and financial behaviors.

Hogarth and Hilgert (2002) concluded that consumers with higher levels of financial knowledge are more likely to behave responsibly financially. Similarly, Perry and Morris (2005) found evidence that consumers with high levels of financial knowledge were more able to responsibly manage their family budget and financial life, either through budgets, savings or Short, medium and long-term planning.

Likewise, Lusardi and Mitchell (2014) demonstrated that financial literacy influences financial planning, which in turn increases the realization of wealth. In line with the conclusions of Delavande, Rohwedder, and Willis (2008), the authors have measured that the financial knowledge allows investors to obtain higher rates of return on their investments regardless of the level of risk.

Bird (2008) sought to measure the level of financial literacy of Australian university students, with reference to students from the University of Wollongong. The author applied the questionnaires methodology, through online answers, concluding that, in general, the university students had a good level of financial literacy, and the financial comprehension was the determinant with lower results.

The OECD (2014) measured the level of financial literacy of 15-year-olds in 18 countries in the way they generated money. The author found evidence that in 17 of the 18 participating countries boys and girls had similar competences in financial literacy.

According to Mandell and Klein (2009) and Grifoni and Messy (2012), individuals with more financial skills can make better decisions, besides that these aggregated behaviors will have positive consequences in the economy as a whole. In this sense, financial literacy should be regarded as a crucial factor in the management of each individual's daily life, in the collective life of society and in the economic performance of nations. Financial ignorance carries significant costs. Consumers who fail to understand the concept of interest composition spend more on transaction fees, increase debts, and incur higher interest rates when they resort to loans (Calcagno, & Monticone, 2015; Lusardi & Tufano, 2015).

The authors Lusardi and Mitchell (2014) report that consumers with a lower literacy level are less likely to plan their retirement, accumulate wealth and invest in stocks, are more likely to contract a loan in disadvantageous conditions.

According to Bruhn and Zia (2011) Individuals with low incomes and low levels of education are less conducive to refinancing their housing loans during a period of lowering interest rates. Atkinson et al. (2007)

concluded in relation to gender that the level of financial literacy is higher in men compared to women and increased as household income increases.

Lusardi and Tufano (2015) and Lusardi (2015) concluded that individuals with low level of financial literacy present greater problems with debts, less probability of accumulating wealth and are less likely to plan their retirement financially.

Also Bernheim (1997), Bernheim and Garrett (2003), Cutler and Delvin (2000) and Chen and Volpe (1998) concluded that low levels of financial literacy pose a serious problem for the economic well-being of families and nations.

Silgoner, Greimel-Fuhrmann and Weber (2015) find evidence of financial illiteracy in the Austrian population, especially among women, youth, older people, and those with low education and training. The authors conclude that the lack of financial knowledge is conduits to risky financial behaviors, such as insufficient savings, lack of planning of the reform, hiring of loans without motives, impulse purchases and compulsive consumption.

The authors Garg and Singh (2018) analyzed the level of financial literacy among youth in the world. Based on previous studies and focusing on the impact of socio-economic and demographic factors such as age, gender, marital status and remuneration on youth literacy. The authors found evidence that the level of financial literacy among young people is low, being a cause for concern. The authors also concluded that socio-economic, demographic, age, gender, income, marital status and educational level influence the level of financial literacy of young people, having found an interrelationship between financial knowledge, financial attitude and financial behavior.

Financial Literacy Assessment Instruments - Determinants of Financial Literacy

The level of financial literacy is associated with several determinants, the most common being: gender, age, education level, region, and marital status, and professional status, level of income, training in economics/finance, experience and knowledge of financial products, employment and profession, among others.

O'Neill and Xiao (2012) with a quiz consisting of twenty questions describing the frequency of conducting best practices for effective financial management assessed the financial behavior of individuals at budgetary level, spending and savings. Klapper, Lusardi and Panos (2012) Study financial literacy by analyzing variables such as interest rates, compound interests, inflation and sales discounts.

Monticone (2010) in his study associates higher levels of schooling with higher levels of financial knowledge, since individuals with more education have less difficulty acquiring financial knowledge. Financially-illiteracy consumers are more likely to contract a housing loan with disadvantageous conditions.

According to Campbell (2006) individuals with low incomes and low levels of education are less conducive to refinancing their housing loans during a period of lowering interest rates. Lusardi, Mitchell and Short (2010) stressed their study in the analysis of financial literacy and financial sophistication among people over 55 years. This study was centered on this specific demographic group, as it is one of the groups that have low levels of financial literacy, according to other studies carried out.

In addition, illiteracy has several consequences that are reflected in this age group, such as: less likely to plan the reform, more likely to end with a lower level of wealth when they reach the latter, less likely to invest in stocks and more likely to opt for more expensive loans.

According to Lusardi, Mitchell and Short (2010), people over 55 years of age demonstrate a lack of knowledge of the basics of actions and risk diversification. Atkinson et al. (2006) in a study presented by the Financial Services Authority (FSA) in the United Kingdom raises issues related to the financial and monetary area, and it has been found in relation to gender that the level of financial literacy is higher in men Compared to women and that increased as the income of families also increased.

Abreu and Mendes (2010) concluded that the level of financial knowledge of the national investors is reduced, and that the married respondents, around 44 years old, with a medium or higher course living on the coast and in the greater port and exercising liberal professions, were the investors who had a higher level of financial knowledge.

Likewise, Lusardi and Mitchell (2008) demonstrated that financial literacy influences financial planning and increases the realization of wealth, adding to what had already been determined by Delavande,

Table 2. Instruments for measuring financial literacy

Dimensions	Instruments	Authors
Financial knowledge	Interest rate, simple and compound. Inflation, savings, risk diversification, mortgages, investments.	Lusardi and Mitchell (2014); Robb, Babiarz, Knoll and Houts (2012); Klapper, Lusardi and Panos (2012); Brown and Graf (2013);
Behavior and financial attitudes	Financial attitudes, Financial behavior in relation to the family budget. Financial management, personal credit, consumption and investment and savings	Atkinson and Messy (2011); O'Neill and Xiao (2012); OECD (2014)

Source: Own development

Table 3. Determinants of financial literacy

Evaluation Instruments	Conclusions	Authors
Gender	-Evidence of lower levels of financial literacy in women compared with men; -Women are less likely to answer the questions correctly and more likely to say that they don't know the answer; -Evidence of faster financial literacy of men compared with women; -Married women with higher income and have best levels of financial literacy.	Chen and Volpe (1998); Agarwal et al. (2015); Lusardi and Mitchell (2014); Atkinson and Messy (2012); OECD (2014).
Age	-The average age of 30 to 40 years is associated with the highest rates of financial literacy; -Financial literacy is low between the younger and older; -Young adults have resorted to loans with high costs.	Agarwal et al. (2009); Lusardi and Mitchell (2014); Atkinson and Messy (2012);
Marital status	-Single men are significantly more likely to have lower levels of financial literacy than married people.	Brown and Graf (2013).
Occupation	-The time of service is positively related to literacy by virtue of greater coexistence with economic and financial issues, while workers with low qualification or unemployed feature less desirable attitudes and behaviors.	Chen and Volpe (1998); Kim and Garman (2004).
Schooling	-Higher levels of schooling are directly related to higher levels of financial literacy; -Training in the financial area is related to the level of financial literacy;	Chen and Volpe (1998); Lusardi and Mitchell (2014).
Parents education	Parents influence the literacy of their children; -The financial literacy of individuals is uniformly related to levels of education of their parents; Parents play an important role to influence the consumption behavior of their children; -Individuals learn more about money management.	Mandell and Klein (2009).
Income	-Low income levels are associated with low levels of financial literacy.	Monticone (2010); Atkinson and Messy (2012).

Source: Own development

Rohwedder, and Willis (2008) that they financial knowledge allows investors to obtain higher return rates on their assets, for any level of risk.

More recently, Monticone (2010) concluded that in recent years it has been demonstrated that financial knowledge affects a wide range of financial behaviors, including the accumulation of wealth, participation in the stock market, diversification of portfolio and indebtedness and responsible financial behavior.

With regard to the impact of low levels of financial literacy, the same researcher has shown that, generally, individuals with low levels of financial literacy tend to have high costs in their financial options (including high rates of Loans and commissions).

Other authors have also concluded that people with low level of financial literacy are more in need of debt problems (Lusardi & Tufano, 2015), are less likely to accumulate wealth efficiently (Hilgert, Hogarth, & Beverly, 2003) and are less likely to plan their retirement financially (Lusardi and Mitchell, 2014). In the same sense, Bernheim (1997) found that those families lacking basic financial knowledge have savings behaviors dominated by basic rules and can limit them. Analyzing the increase in the number of people with low levels of financial literacy, that this represents a serious problem for the economic well-being of the nation, as well as the welfare of such individuals. With the same goal, Cuter and Delvin (2000) have proven that the cost of these low levels is substantial for society.

Table 2 presents a synthesis, based on the literature review, of the main instruments used in studies to measure financial literacy, essentially falling into two major dimensions, knowledge and financial behavior.

Table 3 presents the most recurrent determinants in studies aiming similar to ours, measuring, understanding and explanation of financial literacy.

Table 4. Course Area

Courses	N	Percentages (%)
Management	196	46.0%
Economy	71	16.7%
Right	81	19.0%
Psychology	46	10.8%
International Relations	28	6.6%
Tourism	4	0.9%
Total	426	100.0%

Source: Own elaboration

METHODOLOGY

Quantitative methodology represents a set of methods that calls for statistical procedures. It is a process of inquiry for understanding a problem, framed by a theory composed of variables measured with numbers and analyzed through statistical procedures.

Quivy and Campenhoudt (2008) refer to the survey lends itself well to a pedagogical by the very precise and formal nature of your building and your practical application. Having regard to the objectives of this research and your exploratory nature, for this study was an investigation of exploratory character, through survey, hand-delivered, performed in a Portuguese University.

The study was conducted through the use of surveys by questionnaires applied to students from several courses; the Portuguese University was fully available to answer. The whole process of data collection took place between the months of March/April 2019 and resulted in a total of 426 investigations completed, consisting of 22 questions answers closed.

After collecting the completed questionnaire surveys, statistical treatment of your data, we used the program *Statistical Package for the Social Sciences* (SPSS) 24th version, as a tool for statistical analysis of the data collected.

The population of our study consists of 426 students from 1st to 3rd year of several Portuguese university degrees. The questionnaire to students was divided into two parts, the first begins with the raising of their personal and family data, concerning parental qualifications and income, and then the questions of the second part, and they focus on their concessions on their behaviors /financial skills.

ANALYSIS OF THE RESULTS

With regard to statistical data observed, checks – if, of sampling inquired, 424 426 responded to this question, the majority were female (55.16%), and (44.37%) male. It turns out that the respondents were between the ages of 18 to 57 years, most, that's 97.3% were between 18 to 24 years.

As shown in **Table 4**, of the 6 courses of our sampling, most respondents attend the course management (46%), law (19%), Economics (16.7%), psychology (10.8%), international relations (6.6%), and finally tourism (0.9%).

As regards the year attended, the majority of respondents attend between the 1st and 2nd year and 26.70% only goes to the 3rd year of the respective degrees.

As for information on the educational level of the parents of inquired, noted that on average, the education of the mother are slightly higher than those of the father. In the case of parents, 11.3% have 4 years of training; representing 60.9% to between 5 to 12 years, 17.9% have a Bachelor's degree, master's degree and 6.6% 3.3%. For mothers, 3.5% have 4 years of training, 62.4% have between 5 to 12 years, 21.2% have a Bachelor's degree, master's degree and 3.5% 8.0%.

When asked about the annual income of the household, almost half (48.60%) the inquired do not know, and the rest of the respondents identify this income between the €10000 more than €50000 annually.

Students surveyed, 42.0% identified themselves as having no salary/allowance, 29.2% would get an allowance less than €200, 19.3% received between €200 and €400, 5.4% received between €400 and €600 and 4.0% salary/allowance greater than €600.

As for financial products, the majority of respondents is holder of a deposit account to order and debit card (62.0%), for other products (34.9%) is holder of DP, (29.4%) credit card (10.1%) do not use any of the financial

Table 5. Financial products of which is holder

	Frequency	Percentages (%)
None	43	10.1%
Deposite to order	238	62.0%
The Term deposit	134	34.9%
Investment Fund	16	4.2%
Debit card	238	62.0%
Credit card	113	29.4%
Actions	17	4.4%
Obligations	7	1.8%

Source: Own elaboration

Table 6. What usually does with the money you save?

	N	Percentages (%)
Spend it immediately	11	4.4%
Just drop it on the usual account (DO)	165	65.7%
Do a DP or other Financial application	75	29.9%

Source: Own elaboration

Table 7. If a DP has interest rate 3% and inflation 4%, do you consider that you have obtained positive income in your savings?

	N	Percentages
Yes	49	11.8%
No	211	50.7%
Don't no	156	37.5%
NR	10	
Total	426	100%

Source: Own elaboration

products mentioned, only small percentage offers other products such as shares, bonds and investment funds (4.4%, 1.8% and 4.2%).

Of those polled, bank account holders (59.9%), claim not to know the commissions the bank charge for your account, just (19.5%) you know the exact amount that you are charged, and (20.6%) refer to meet about.

Of the respondents who have resorted to a credit, (45.20%) These don't compare interest rates before contracting credit and, more than half (54.80%) the compared. Asked about their financial behaviour, it was found that the majority (60%) of respondents responded have a savings, and (40%) does not have. It was noted that those who have most savings (65.7%) just drop it on the usual account (DO) and (29.9%) do a DP or other financial application, few respondents (4.4%) the spend immediately.

When asked about the importance of making a family budget planning, the majority of respondents considers very important to do this planning (66.80%), and 29.20% considers it important, only (0.50%) It is considered unimportant, and (3.40%) of respondents didn't know how to answer this question.

In this group, related with the financial knowledge, a set of multiple choice questions, where the respondent had to tick the option he considered correct for each of the issues presented. It turns out that of the three multiple-choice questions to assess financial knowledge on the Euribor, the Spread and the savings certificates, which features a greater number of right answers (40.7%) is the case of Euribor, then the savings certificates (40%).

The question concerning the certificates of Aforro is the highest percentage of "I do not know" (44.5%) and percentage of wrong answers (15.4%). The spread had the highest percentages of wrong answers (35.9%).

On a question related to the bank's liability for the payment of a loan, if it had been contracted together with another person, the majority, that is 67.4%, considers that both have responsibility for the totality of the debt to the Institution (the Bank), and (18.9%) Of respondents does not know how to inform who would have the responsibility.

In view of a different question of multiple choice (**Table 7**), the majority of respondents (50.7%) consider not obtaining savings income if a DP has a 3% interest rate and 4% inflation; being a good part (37.50%), does not know how to answer this question.

Regarding the claim, a 15-year loan for housing purchases usually requires higher monthly payments than a 30-year loan, but the total interest will be lower, given this statement (53%) Of respondents considers true, (19.4%) considers it false and (27.7%) Don't know.

Regarding true or false questions, the majority is unaware that the price paid for insurance is designated as an insurance premium (57.7%). They respond correctly to the question of the meaning of inflation and the impact it has on increasing the cost of living. They confuse the use of the credit card. In its understanding, according to the responses presented, paying partially with the credit card, there is no place to pay interest; Analysis is presenting a wrong high rate of answers (83.5%).

From the survey carried out, it is observed that students in management and economics and students with "Allowance/maturity" have higher values for the detention of financial products, namely order and term deposits and cards of Debt and credit. Also the same students who have "allowance/maturity" and attend the undergraduate courses in management and economics, have high knowledge, in relation to the others in matters related to knowledge about inflation, the association between Roscoe and Profitability and risk diversification. Both groups have a few knowledge about the use of credit cards and insurance.

CONCLUSIONS

Financial literacy is a current topic in the panorama of personal and family finances. This study focuses on financial literacy in university students of several courses, where 97.3% of the sample students are between 18 and 24 years old (both inclusive).

It was observed that almost half of the students in the sample (48.6%) Have no notion of how much is the household's illegitimate income and 42.0% have no allowance or a right transfer to their personal account in order to manage it. However 62.0% have open account in the bank, with deposit to order and use debit card, still having 29.4% of the student's credit card.

The young universities students have a low knowledge about the commissions that the bank charges for their bank account and only about 20.0% know the exact amount they are charged. Although the vast majority considers it to be very important to make financial planning (66.8%), it was found that young people choose not to make financial investments, choosing to keep the money in the account to order.

It was found that the majority of young people does not know the benchmark interest rate of the euro area (Euribor), do not know what the spread of an interest rate is, nor does it recognize the certificates of savings as public debt securities, which allow us to save safely and with the assurance of the State.

Finally, we can conclude that the students of the higher education of the sample, have a few knowledge about finances, and do not have discipline in the management of their accounts to the order, although most of them are holders of this type of accounts.

Disclosure statement

No potential conflict of interest was reported by the authors.

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