ISSN 1808-057X
DOI: 10.1590/1808-057x201501040

Determinants of Financial Literacy: Analysis of the Influence of Socioeconomic and Demographic Variables*,**

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Received on 08.28.2014 – Desk acceptance on 10.18.2014 – 4th version approved on 06.16.2015.

ABSTRACT

Financial literacy helps individuals make more assertive and efficient decisions in the monetary context of their lives. This study has as its central axis developing a model that explains the individuals' financial literacy level through socioeconomic and demographic variables. The sample consists of 1,400 individuals living in Rio Grande do Sul, Brazil, and data analysis was performed by using descriptive statistics and multivariate analysis techniques. As an indicator of the financial literacy level, a measure with three constructs was adopted: financial attitude, financial behavior, and financial knowledge. Logit and probit models were estimated from these explanatory variables: gender, marital status, dependent family members, occupation, age, educational level, father's educational level, mother's educational level, individual income, and family income. Marginal effects (incremental propensity) were positive and statistically significant at the usual levels for these variables: gender (9.56%), educational level (2.54%), individual income (6.32%), and family income (3.73%). The marginal effects (incremental propensities) were negative and statistically significant for the dummy dependent family members (-7.51%), indicating that men who do not have dependent family members and have higher educational and both individual income and family income levels are those who are more likely to belong to the group with high financial literacy levels. Furthermore, it was found that most respondents (67.1%) were classified as having a low financial literacy level. These findings confirm the urgency and need for devising effective actions to minimize the issue of financial illiteracy. It is particularly suggested that major efforts are undertaken to achieve women having dependent family members and low educational and income levels. Such a study is justified by the need to create a model that allows identifying the Brazilians' financial literacy level from socioeconomic and demographic variables. This identification may be useful, for instance, in assisting the various economic player to design financial strategies and products suitable to the customers profile. From the government viewpoint, it may enable, for instance, identifying the most vulnerable groups and thus focus on actions to improve the financial literacy level of these specific groups.

Keywords: financial literacy, forecasting models, socioeconomic variables, demographic variables.

* The authors thank the Brazilian National Council for Scientific and Technological Development (CNPq) for financial support.
** Paper presented at the 38th AnPAD Meeting, Rio de Janeiro, Brazil, 2014.

1 INTRODUCTION

Financial literacy has been recognized as a key skill for individuals who are embedded in an increasingly complex financial scenario. Despite its significance, many studies around the world indicate that much of the world's population still suffers from financial illiteracy and that measures to remedy the problem are urgently needed (Lusardi & Mitchell, 2011; Atkinson & Messy, 2012; Brown & Graf, 2013; Thaler, 2013; World Bank, 2014). For adopting effective financial literacy strategies, it is a must there is initially a model that allows determining the individuals' financial literacy level and which are the priority focuses of action.

The Organisation for Economic Co-Operation and Development (OECD, 2013) conceptualizes financial literacy as a combination of awareness, knowledge, skill, attitude, and behavior required to make financial decisions and ultimately achieve individual financial well-being. In the view of Criddle (2006), being financially literate includes learning about the choice of many alternatives for establishing financial goals.

A significant aspect related to the issue of financial literacy is the identification of its relationship with socioeconomic and demographic variables. Several studies have sought to identify these relationships. Results shown by Lusardi and Mitchell (2011), Atkinson and Messy (2012), the OECD (2013), and Brown and Graf (2013) point out that women have lower financial literacy levels than men. Chen and Volpe (1998) found out that college students had an inadequate knowledge level, especially in relation to investments. In turn, Thaler (2013) suggests that financial literacy is highly correlated with other factors and, among them, Higher Education might be the key. Atkinson and Messy (2012) observed that financial literacy tends to be higher among adults in the middle of their life cycle, and it is usually lower among young and elderly individuals. Results reported by Research (2003) suggest that singles are significantly more likely to have poorer financial literacy than married individuals. Monticone (2010) and Atkinson and Messy (2012) found that low income levels are associated with low financial literacy levels. And, at last, Chen and Volpe (1998) and Research (2003) observed that individuals with longer labor experience are more financially literate.

In turn, in the Brazilian context, studies that seek to assess the individuals' literacy are still very incipient, there are only research that found some differences in relation to socioeconomic and demographic variables (Flores, Vieira, & Coronel, 2013; Potrich, Vieira, & Ceretta, 2013), with no proposition of models to simultaneously assess these variables. This article seeks to advance this issue. Specifically, it intends to develop a model in the Brazilian context that identifies the individuals' financial literacy through socioeconomic and demographic variables.

This study provides innovations in at least two aspects. First, by using a multidimensional construct to analyze financial literacy, proposed by Potrich, Vieira and Kirch (2014), which simultaneously covers the financial attitude, financial behavior, and financial knowledge, as suggested by the OECD (2013). According to Fernandes, Lynch and Netemeyer (2014), there is a marked disconnection between conceptual definitions of financial literacy, thus it might be worth devising new, rather connected measures. It is believed that the measure proposed by Potrich et al. (2014) meets this need and it is, therefore, the most suitable option for our purposes.

Second, by estimating a model that seeks to explain financial literacy level through socioeconomic and demographic variables. According to Fernandes et al. (2014), people with certain psychometric profiles are more likely to engage in activities that increase their financial literacy levels.

The estimation of a model having this nature is of paramount importance, as governments around the world are interested in finding effective approaches to increase the financial literacy level among the population, by creating or improving its national strategies, aiming to offer learning opportunities at the various educational levels (Atkinson & Messy, 2012). It is also important that players in the financial system determine the financial literacy of their clients/investors, so that they are able to devise various strategies and products. It is believed that these innovations and contributions fully justify this study.

The rest of this study is structured as follows: first, the key concepts and the relationship between socioeconomic and demographic variables and financial literacy are introduced. Then, the most relevant aspects of the methodological procedures are introduced and, finally, there are the analysis and discussion of results, as well as the final remarks of the study conducted.

2 THEORETICAL FRAMEWORK

2.1 Financial Literacy

Financial literacy has been recognized worldwide as a significant element of stability and economic and financial growth, which is reflected in the recent approval of the High-Level Principles on National Strategies for Financial Education by the OECD, endorsed through a G20 meeting (OECD, 2013). However, there are some gaps in key aspects involving financial literacy. The first is the fact that the term financial literacy has been often used as a synonym for financial education or financial

knowledge, since these two constructs are conceptually different and using them as synonyms may lead to problems, because financial literacy goes beyond financial education. Huston (2010) argues that financial literacy has two dimensions: understanding, which represents personal financial knowledge or financial education, and its use, i.e. the application of such knowledge in personal financial management.

Lusardi and Mitchell (2011) state that, although it is worth assessing how people are financially literate, in practice, it is hard to explore the way how people process financial information and make decisions based on this knowledge. This is so because financial literacy covers a number of concepts, including financial awareness and knowledge, financial skills, and financial capability, and it is hard to capture all this information in a reasonable length of time to research.

Although research in the financial literacy field has increased over the years, there is little consistency in the way how it is defined, as several authors address the topic differently, assigning different connotations to it (Hung, Parker, & Yoong, 2009). Also, studies have highlighted the ambiguous use of financial literacy, especially in grasping the differences between these constructs, i.e. financial knowledge or financial education. In this way, Robb, Babiarz and Woodyard (2012) make a distinction between the terms, claiming that financial literacy involves the ability to understand financial information and make effective decisions by using such information, while financial education means simply recalling a set of facts, i.e. financial knowledge. In short, the main focus of financial education is knowledge, while financial literacy involves, in addition to knowledge, the individuals' behavior and financial attitude. Thus, as stated by Mccormeck (2009) and Huston (2010), financial literacy goes beyond the primary idea of financial education.

A definition that properly covers this idea is proposed by the OECD, where financial literacy is regarded as a combination of awareness, knowledge, skill, attitude, and behavior needed to make sound financial decisions and ultimately achieve individual financial well-being (OECD, 2013). Thus, the OECD addresses financial literacy in three dimensions: financial knowledge, financial behavior, and financial attitude. This paper adopts such a definition, where financial literacy is defined as a combination of financial behavior, financial knowledge, and financial attitude. This choice is justified because this concept is widely used in the literature, and it encompasses the largest number of dimensions (Atkinson & Messy, 2012).

The dimension financial knowledge is a particular kind of human capital that is acquired throughout the life cycle, by learning subjects that affect the ability to effectively manage revenues, expenses, and savings (Delavande, Rohwedder, & Willis, 2008). Financial behavior is a key element of financial literacy, and it is undoubtedly the most important (OECD, 2013). According to Atkinson and Messy (2012), the positive results of being financially literate are driven by behavior such as planning expenses and building financial security, on the other hand, certain behaviors, such as excessive use of credit, may reduce financial well-being. In turn, financial attitudes are established through economic and non-economic beliefs held by a decision maker on the outcome of a certain behavior and they are, therefore, a key factor in the personal decision-making process (Ajzen, 1991). Table 1 provides a synthesis of the key concepts and dimensions involving financial literacy.

Table 1 *Key concepts and dimensions involving financial literacy*

Financial Literacy Concepts	Dimensions	Authors
Financial knowledge and the application of that knowledge, with self-confidence in making financial decisions.	Financial knowledge and application of knowledge	Huston (2010)
The ability to use knowledge and skills acquired to better management.	Financial knowledge and skills	Hung, Parker and Yoong (2009)
The ability to understand financial information and make effective decisions, by using this information.	Understanding and decision-making	Robb, Babiarz and Woodyard (2012)
It goes beyond the primary idea of financial education, where the influence of financial knowledge on behavior is mediated by financial attitudes.	Knowledge, behavior and attitude	Norvilitis and MacLean (2010)
The choice of numerous alternatives for establishing financial goals.	Effective choice	Criddle (2006)
Making informed financial decisions.	Financial decisions	Remund (2010)
The most specific human capital, measured by financial literacy issues.	Financial knowledge	Robb and Sharpe (2009)
Measured through a set of questions that measure primary financial concepts, such as capitalization of interest, inflation, and risk diversification.	Financial knowledge	Lusardi and Mitchell (2014)
Encompasses financial literacy in three dimensions: financial knowledge, financial behavior, and financial attitude.	Financial knowledge, financial behavior, and financial attitude	Atkinson and Messy (2012); OECD (2013)

In summary, it is noticed that several authors conceptualize financial literacy as a synonym for financial knowledge or financial education, because they measure it only through these constructs. Thus, most definitions are driven by concepts of knowledge and some do that more broadly, also measuring the application of such knowledge as a concept of financial literacy. However, it is noticed that some researchers conceptualize

it broadly, measuring it through other aspects, such as financial behavior, financial attitude, financial experiences, among others. So, it is noticed that the lack of a standardized set of consistent financial literacy measures did not prevent the emergence of a significant number of studies.

2.2 Relationship between Socioeconomic and Demographic Variables and Financial Literacy

In a survey conducted with undergraduate students, Shim, Barber, Card, Xiao and Serido (2010) found that, while some students were seeking to learn how to better manage their finances, others engaged in risky behaviors. According to the authors, a better understanding of the reason for the occurrence of such behavior disparity may be obtained by analyzing the students' socioeconomic and demographic profile, having in mind its influence on financial literacy. In this context, other studies have shown associations and influences of socioeconomic and demographic variables with/on the individuals' financial literacy levels. The main variables under analysis are gender, age, marital status, occupation, number of dependent family members, the educational level of an individual and her/his parents, and income.

Regarding gender, Lusardi and Mitchell (2011) found that women are significantly less likely to answer the questions correctly and more prone to say they do not know the answer. This fact is remarkably similar in financially different countries (Lusardi & Wallace, 2013). On the other hand, women also assess their own financial literacy level more conservatively. According to Lusardi and Mitchell (2011), this finding is the same both for developed countries and the developing countries. Studies conducted by Chen and Volpe (1998) extend the evidence that women have greater difficulty in performing financial calculations and lower knowledge level, which ultimately hinder the ability of making responsible financial decisions.

The differences found in gender may be a result of the socialization of individuals. A study by Edwards, Allen and Hayhoe (2007) concluded that parents maintain different expectations for sons and daughters, as they have higher expectations concerning work and savings for their sons, thus they are more likely to talk about money with their sons. In contrast, the authors observed that parents educate daughters to be financially dependent, since they receive more financial support from their parents than sons at a university age. So, it seems that the significant difference between men and women is explained by the fact that men tend to see money as power and they believe that having money will make them more socially desirable, while women seem to have a rather passive approach to money (Calamato, 2010).

Regarding age, major research suggests that financial literacy tends to be higher among adults in the middle of their life cycle and, it is usually lower among young and elderly individuals (Research, 2003; Agarwal, Driscoll, Gabaix, & Laibson, 2009). Lusardi and Mitchell (2011) showed that respondents aged between 25 and 65 tend to hit 5% more questions than those under 25 or over 65 years. In addition, Scheresberg (2013) found that young adults (25-34 years) have used loans with high costs.

Marital status is also correlated with the financial literacy level. According to Research (2003) and Brown and Graf (2013), singles have a significant propensity to lower financial literacy levels, when compared to married individuals. In general, when people have a low financial literacy level, they run the risk of making bad financial decisions that, in the long term, may result in debts and the latter endanger the well-being of their relationships (Calamato, 2010). Ratifying such evidence, Dew (2008) found that consumer debt is a major threat to marital satisfaction and, therefore, married individuals have higher financial literacy levels.

Regarding the number of dependent family members, the same argument above might be used: aiming at family well-being, individuals with dependent family members might have greater concern with the budget, thus higher financial literacy level. The empirical results, however, do not corroborate this expectation. Servon and Kaestner (2008) found that those having a child are less likely to show low financial literacy levels than those with two or three children. In addition, Mottola (2013) found that families with dependent individuals were more prone to show low financial literacy levels. A potential explanation for these results lies on the reverse causality: individuals with high (low) financial literacy level are more (less) concerned about family planning.

By analyzing occupation, Chen and Volpe (1998) found that individuals with longer labor experience undergo a larger number of financial situations, therefore they acquire more knowledge, thus facilitating the analysis of more complex information and providing a basis for decision-making. On the other hand, according to Research (2003), unskilled or unemployed workers tend to show lower performance due to less contact with financial issues. In addition, financial illiteracy is associated with low job performance and workers' productivity (Kim & Garman, 2004). Working arrangements may also influence financial attitudes and behaviors, considering that individuals with steady income have better conditions to organize and plan their financial life (Calamato, 2010).

Greater financial literacy levels are found in individuals with higher education levels and greater access to financial information. In this way, Amadeu (2009) points out that more contact, during undergraduate or specialized courses, with subjects related to finance and economics positively influences on the daily financial practices. Students from the courses of Economics, Administration, and Accounting had higher financial

knowledge level. Corroborating such evidence, Lusardi and Mitchell (2011) found that individuals with low educational level are less likely to answer the questions correctly and also more likely to say they do not know the answer. However, Chen and Volpe (1998), when assessing students' knowledge on personal finance, found that students, regardless of their educational degree, had an inadequate knowledge level, particularly with regard to investments.

In the same context, the literature suggests that parents play a major role by influencing their children's consumer behavior. Studies have confirmed that most individuals learn more about money management with their parents (Pinto, Parente, & Mansfield, 2005; Clarke, Heaton, Israelsen, & Eggett, 2005). In turn, Jorgensen (2007) found that parents significantly influence their children's knowledge, attitudes, and financial behavior and Mandell (2008) found that the financial literacy of individuals is uniformly related to their parents' education levels. For these reasons, parental education would might play a significant role in their children's literacy.

Regarding income, Atkinson and Messy (2012) found that low income levels are associated with lower financial literacy levels. Monticone (2010) found that wealth has a little, but positive, effect on financial literacy. In turn, Hastings and Mitchell (2011) provide experimental evidence to show that financial literacy is related to wealth. In a study on financial literacy, students from high-income families had significantly higher knowledge levels than students from low-income families (Johnson & Sherraden, 2007). In addition, low-income individuals are more likely to drop out of school, something that, in the long run, contributes to their financial illiteracy (Calamato, 2010). There is also in this case the possibility of reverse causation: individuals with high financial literacy levels, when making better financial decisions, achieve higher income level than individuals with low financial literacy levels. Table 2 shows a synthesis of the relationships between financial literacy and socioeconomic and demographic variables mentioned above.

Table 2 *Synthesis of the relationship between socioeconomic and demographic variables and financial literacy*

Variables	Relation with financial literacy	Authors
Gender	- Women generally have lower financial literacy levels than men; - Women are less likely to answer the questions correctly and more likely to say they do not know the answer; - Men's financial literacy is increasingly faster than that of women; - Making a comparison between women, those married and having higher incomes show higher financial literacy levels.	Chen and Volpe (1998); Agarwal et al. (2009); Lusardi and Mitchell (2011); Atkinson and Messy (2012); OECD (2013).
Age	- The average age from 30 to 40 years is associated with higher financial literacy levels. - Financial literacy is low among young and elderly individuals. - Young adults have used loans with high costs.	Agarwal et al. (2009); Lusardi and Mitchell (2011); Atkinson and Messy (2012); OECD (2013); Scheresberg (2013).
Marital status	- Singles are significantly more prone to have lower financial literacy levels than married individuals.	Research (2003); Dew (2008); Calamato (2010); Brown and Graf (2013).
Having dependent family members	- Individuals who have a child are less likely to have low financial literacy levels than those who have two or three children; - Families with dependent members are more likely to contract loans with higher costs.	Servon and Kaestner (2008); Mottola (2013).
Occupation	- Individuals with longer labor experience have higher financial literacy because of greater familiarity with economic and financial subjects, while unskilled or unemployed workers show less desirable attitudes and behaviors.	Chen and Volpe (1998); Research (2003); Kim and Garman (2004); Calamato (2010).
Educational level	- Those with higher educational levels are those with higher financial literacy levels; - The number of courses related to the financial field attended at a undergraduate education is related to the financial literacy level; - Those with lower education are less likely to answer the questions correctly and more prone to say they do not know the answer.	Chen and Volpe (1998); Amadeu (2009); Lusardi and Mitchell (2011).
Parental educational level	- Parents influence their children's literacy; - Individuals' financial literacy is uniformly related to parental educational levels; - Parents play a major role by influencing their children's consumer behavior; - Individuals learn more about money management with their parents.	Liao and Cai (1995); Pinto et al. (2005); Clarke et al. (2005); Jorgensen (2007); Mandell (2008).
Income	- Low income levels are associated with low financial literacy levels.	Monticone (2010); Hastings and Mitchell (2011); Atkinson and Messy (2012).

3 METHODOLOGICAL PROCEDURES

3.1 Research Hypotheses

Based on the theoretical framework and relationships found in the literature, the following research hypotheses were formulated:

- H1: Men have higher propensity to join the group with higher financial literacy levels vis-à-vis women.
- H2: Young and elderly individuals are less likely to join the group with the highest financial literacy level than middle-aged individuals.
- H3: Married individuals are more likely to join the group with higher financial literacy levels when compared to single individuals.
- H4: Individuals with dependent family members are less likely to join the group with the highest financial literacy level vis-à-vis individuals with no dependent family members.
- H5: Individuals with occupation have higher propensity to join the group with higher financial literacy levels than unemployed individuals.
- H6: The higher an individual's education level, the more likely she/he is to join the group with higher financial literacy levels.
- H7: The higher the parental educational level, the more likely an individual is to join the group with higher financial literacy levels.
- H8: The higher the income level (individual and family), the more likely the individual is to join the group with higher financial literacy levels.

3.2 Sample and Research Instrument

The research was conducted in the state of Rio Grande do Sul, Brazil, and it covered each of the seven mesoregions in this state, in order to determine the financial literacy level of the state's population, as well as to devise an indicator for its assessment. Thus, the target population consisted of inhabitants older than 18 years from the state of Rio Grande do Sul. Thus, considering the amplitude of this population, which totals 7,932,758 individuals, according to the Brazilian Institute of Geography and Statistics (IBGE, 2010), and adopting a sampling process with 95% confidence level and 3.0% sampling error, a sample with 1,067 individuals was obtained, distributed according to the stratum of respondents to be achieved in each mesoregion in Rio Grande do Sul. At the end of the collection period, a final sample of 1,400 individuals was obtained. To carry out data collection, 10 researchers were trained to apply the instrument in November and December 2013.

It is also noteworthy that the questionnaires were applied face to face to respondents, through home visits and meetings at public places. Along with the questionnaire, a free and informed consent term was handled to respondents, and only the study subjects who, after reading the term, agreed to participate in the survey.

To measure the financial literacy l evel, a multidimensional measure proposed by Potrich et al. (2014) was used, which includes the three constructs suggested by the OECD (2013): financial attitude, financial behavior, and financial knowledge. To measure financial attitude, an instrument prepared having the scales proposed by Shockey (2002) and the OECD (2013) as a basis was used. The financial attitude scale, consisting of ten Likert-like questions, with five points, aims to identify how the individual assesses her/his financial management. The more a respondent partially or fully disagrees with the claims made, the better her/his financial attitude.

To measure the behavior adopted by respondents, measures proposed by Shockey (2002), O'Neill and Xiao (2012), and the OECD (2013) were used. The scale, consists of 27 Likert-like questions, with five points, assesses the individuals' financial behavior level. The higher the frequency of a respondent with regard to her/his statements, the better her/his behavior in managing finances.

Finally, as for the questions related to financial knowledge, a financial literacy index was constructed, based on multiple choice questions adapted from Van Rooij, Lusardi and Alessie (2011), the OECD (2013), Klapper, Lusardi and Panos (2013), and on the National Financial Capability Study (NFCS, 2013). The factor, consisting of thirteen questions, aims to explore the respondent's knowledge level concerning issues such as inflation, interest rates, value of money over time, risk, return, diversification, stock market, credit, and government securities. For each of the thirteen financial literacy questions a value equal to 1 was assigned for the correct answer and a value equal to 0 for the incorrect answer. Thus, the financial knowledge index ranged from 0 (where the individual failed in all questions) to 13 (where the individual hit all questions). According to Chen and Volpe (1998), respondents were then classified as low financial literacy level holders (score lower than 8), medium financial knowledge level (score between 8 and 10), and high financial knowledge level (score higher than 10).

By means of this instrument (see the Appendix) and using confirmatory factor analysis and cluster analysis, Potrich et al. (2014) developed a methodology for calculating the financial literacy level and they proposed two clusters of individuals, those with high financial literacy levels and those with a low level of it.

Following the indicator proposed, the measure used in this study is a binary variable whose value is zero (0) for individuals classified as having low financial literacy level and one (1) for individuals with high financial literacy levels.

The socioeconomic and demographic variables selected having the theoretical framework as a basis are: gender (nominal scale: female (0), male (1)), marital status (nominal scale: single (0), married (1)), with dependent family members (nominal scale: no (0), yes (1)), occupation (nominal scale: does not work (0), works (1)), age (ratio scale: number of years since birth), educational level (ordinal scale: Elementary School (1), High School (2), technical education (3), Higher Education (4), specialization course or MBA (5), and Masters'/Ph.D./post-Ph.D. education (6)),

father's education (ordinal scale: equal to that of the educational level), mother's education (ordinal scale: equal to that of the educational level), individual income (ordinal scale: I do not have income (1), up to R$ 700.00 (2), between R$ 700.01 and R$ 1,400,00 (3), between R$ 1,400.01 and R$ 2,100.00 (4), between R$ 2,100.01 and R$ 3,500.00 (5), between R$ 3,500.01 and R$ 7,000.00 (6), between R$ 7,000.01 and R$ 14,000.00 (7), and more than R$ 14,000.00 (8)), and family income (ordinal scale: up to R$ 700.00 (1), between R$ 700.01 and R$ 1,400.00 (2), between R$ 1,400.01 and R$ 2,100.00 (3), between R$ 2,100.01 and R$ 3,500.00 (4), between R$ 3,500.01 and R$ 7,000.00 (5), between R$ 7,000.01 and R$ 14,000.00 (6), and more than R$ 14,000.00 (7)).

3.3 Econometric Model

To analyze the relationship between financial literacy and socioeconomic and demographic variables, this nonlinear model was estimated:

$$Prob(y = 1|x) = G(\alpha + \beta_1 \cdot Gender + \beta_2 \cdot Marital\ Status + \beta_3 \cdot Dependents + \beta_4 \cdot Occupation + \beta_5 \cdot Age + \beta_6 \cdot Age^2 + \beta_7 \cdot Educational\ Level + \beta_8 \cdot Father's\ Educ. + \beta_9 \cdot Mother's\ Educ. + \beta_{10} \cdot Individual\ Income + \beta_{11} \cdot Family\ Income)$$

where y is the dependent variable (financial literacy level), x are the explanatory variables (socioeconomic and demographic), α and β_1,..., β_{11} are the estimated parameters, and $G(\cdot)$ is a cumulative distribution function (CDF), whose specific form depends on the estimator used.

For the purposes of estimation, the logistic model - logit was chosen (assuming that the residue has CDF logistics) and, for the purposes of comparison and robustness, the probit model was used (assuming that the residue has normal CDF). According to Gujarati (2006, p. 480), "both for historical and practical issues, the CDF usually chosen (...) are (1) the logistic and (2) the normal." Also according to Gujarati (2006, p. 495), "in most applications, the models are very similar, and the main difference is that the logistic distribution has slightly fatter tails (...). Therefore, there are no compelling reasons to prefer one model to another." Although the models are similar, the estimated coefficients are not directly comparable (Gujarati, 2006) and, for this reason (and for the purposes of analyzing the economic effect of each variable), the estimated marginal effects will also be shown for each variable, and they are directly comparable.

As we may see, all variables get into the model with a linear term, except *age*, which besides the linear term has a quadratic term. The inclusion of the quadratic term is due to the expectation that the relationship between financial literacy and age is nonlinear and shaped like a parable, i.e. middle aged individuals have higher propensity to join the group with higher financial literacy levels, when compared to young and elderly individuals. Therefore, a positive coefficient is expected for the linear term of the variable age and a negative coefficient for its quadratic term. For all other variables, except having dependent family members, positive marginal effects are expected.

4 ANALYSIS OF RESULTS

This section is divided into three parts: first, the results of univariate and bivariate analyses are shown and discussed; then, the results of estimating the nonlinear model proposed are shown and discussed; and, finally, with less depth, the robustness tests used to check whether the results are sensitive to alternative model specifications are shown and discussed.

4.1 Univariate and Bivariate Analyses

Table 3 displays the descriptive statistics[1] of the variables used in this study for a sample of 1,400 individuals from the state of Rio Grande do Sul, aged over 18 years. In this sample, 44.5% of the subjects were men, 34.5% are married, 29.1% have dependent family members, and 67.5% pursue any professional activity. The average age (median) of these individuals is 29.8 (25) years, the median educational level is complete Higher Education, father's (mother's) the median educational level is High School (High School), and the median individual income (family) is between R$ 700.01 and R$ 1,400.00 (between R$ 2,100.01 and R$ 3,500.00). Regarding the dependent variable of this study, only 32.9% of the respondents were classified as having high financial literacy levels.

[1] Only the appropriate descriptive statistics are shown for each variable scale.

Table 3 *Continuation*

Variable	Freq. / Median	Stand. dev.	Min.	1st Pctile	25th Pctile	50th Pctile	75th Pctile	99th Pctile	Max.	Interval Interq.
Financial Literacy	0.33									
Gender (Male)	0.45									
Marital Status (Married)	0.35									
Has Dependent Family Members (Yes)	0.29									
Occupation (Works)	0.68									
Age	29.78	11.83	18	18	21	25	35	66	80	14
Educational Level			1	1	2	4	4	6	6	2
Father's Educational Level			1	1	1	2	2	6	6	1
Mother's Educational Level			1	1	1	2	3	6	6	2
Individual Income			1	1	2	3	4	7	8	2
Family Income			1	1	3	4	5	7	7	2

Spearman's correlation matrix for ranking variables with an ordinal or ratio scale is displayed in Table 4. All correlations are statistically different from zero at a 10% significance level (except between age and educational level) and they are usually low, indicating that multicollinearity problems are of lesser order. The highest correlations occur between father and mother's educational levels ($r(1388) = 0.63$; $p < 0.01$), indicating that respondents' parents tend to have similar educational levels, and between age and individual income ($r(1388) = 0.51$; $p < 0.01$), suggesting that older individuals tend to have higher income. It is also worth highlighting the positive correlations between educational level and individual income and between father/mother's educational level and family income, indicating that higher educational levels are associated with higher income levels.

Table 4 *Correlation matrix of study variables*

	Age	Educational Level	Father's Educational Level	Mother's Educational Level	Individual Income
Educational Level	0.03				
Father's Educational Level	-0.32	0.08			
Mother's Educational Level	-0.36	0.13	0.63		
Individual Income	0.51	0.28	-0.10	-0.12	
Family Income	-0.08	0.28	0.35	0.35	0.32

For a preliminary analysis of the association between socioeconomic and demographic variables and financial literacy, Table 5 displays the frequency distribution (contingency tables) of the variable financial literacy for each value of the explanatory variables with a nominal or ordinal scale. Moreover, in the last column of this table, there is the Pearson's chi-square association measure – $\chi^2(1, N = 1400)$ - (p value in brackets) between each pair: explanatory variable x financial literacy. It is worth mentioning this is a bivariate analysis and, therefore, the association measure between each pair of variables does not take into account changes in the other explanatory variables.

Table 5 *Contingency tables – financial literacy x explanatory variables*

Financial Literacy —>		Low (0)	High (1)	Pearson's qui2
Variable	Values	% (line)	% (line)	[p value]
Gender	Female	73.4	26.6	30.58
	Male	59.4	40.6	[0.00]
Marital Status	Single	66.7	33.3	0.20
	Married	67.9	32.1	[0.66]
Has Dependent Family Members	No	64.9	35.1	7.63
	Yes	72.6	27.5	[0.01]
Occupation	Does Not Work	71.0	29.0	4.52
	Works	65.3	34.7	[0.03]

Table 5 *Continuation*

Educational Level	Elementary School	88.4	11.6	
	High School	70.6	29.4	
	Technical Education	69.7	30.3	43.28
	Higher Education	65.1	34.9	[0.00]
	Specialization Course or MBA	54.6	45.5	
	Masters'/Ph.D./Post-Ph.D. Education	40.9	59.1	
Father's Educational Level	Elementary School	69.0	31.0	
	High School	69.4	30.6	
	Technical Education	61.3	38.7	8.28
	Higher Education	62.1	37.9	[0.14]
Father's Educational Level	Specialization Course or MBA	58.1	41.9	
	Masters'/Ph.D./Post-Ph.D. Education	55.6	44.4	
Mother's Educational Level	Elementary School	70.2	29.8	
	High School	69.4	30.6	
	Technical Education	64.5	35.5	16.05
	Higher Education	61.9	38.1	[0.01]
	Specialization Course or MBA	50.0	50.0	
	Masters'/Ph.D./Post-Ph.D. Education	61.1	38.9	
Individual Income	I do not have individual income	77.6	22.4	
	Up to R$ 700.00	76.2	23.8	
	Between R$ 700.01 and R$ 1,400.00	72.4	27.6	
	Between R$ 1,400.01 and R$ 2,100.00	62.3	37.7	69.04
	Between R$ 2,000.01 and R$ 3,000.00	57.1	42.9	[0.00]
	Between R$ 3,000.01 and R$ 7,000.00	48.4	51.6	
	Between R$ 7,000.01 and R$ 14,000.00	36.4	63.6	
	More than R$ 14,000.00	40.0	60.0	
Family Income	Up to R$ 700.00	88.4	11.6	
	Between R$ 700.01 and R$ 1,400.00	82.0	18.0	
	Between R$ 1,400.01 and R$ 2,100.00	76.4	23.6	67.66
	Between R$ 2,000.01 and R$ 3,000.00	70.1	29.9	[0.00]
	Between R$ 3,000.01 and R$ 7,000.00	61.3	38.7	
	Between R$ 7,000.01 and R$ 14,000.00	50.8	49.2	
	More than R$ 14,000.00	53.0	47.0	
Total		**67.1**	**32.9**	

From the association measure presented, it can be seen that there is a statistically significant dependence at the 10% level between financial literacy and these variables: gender, having dependent family members, occupation, educational level, mother's educational level, individual income, and family income. Among men, there is a greater proportion of individuals with high financial literacy level (40.6%) than among women (26.6%), corroborating a priori expectations and previous studies. Among individuals having dependent family members is lower proportion with high financial literacy level (27.5%) than among individuals without dependent family members (35.1%), a result in line with previous studies. Among the individuals who work, there is higher proportion with high financial literacy level (34.7%) than among individuals who do not work (29%), a result consistent with a priori expectations and previous studies. As expected, the proportion of individuals with high financial literacy levels increases along

with educational levels (monotonously), mother's educational level (except at the utmost level), individual income (except at the utmost level), and family income (except at the utmost level). Finally, it is worth noticing the relatively marked increase in the proportion of individuals with high financial literacy levels, when switching from Elementary School to High School (17.8% increase), from Higher Education to specialization or MBA (10.6% variation), and from this level to the Masters'/Ph.D./Post-Ph.D. Education (13.6% variation), indicating a strong relationship between education and financial literacy.

4.2 Main Results

Table 6 shows the results of the nonlinear model estimation, defined in the previous section, by means of logit and probit estimators. In addition to the coefficients for each model variable, there are, in the immediately right column, the marginal effects calculated on the median of ordinal scale variables and ratio and observed frequency of the variables in nominal scale. As the results of the two estimators are qualitatively equal and very similar marginal effects, only the results of the logit model will be discussed.

Confirming the results of the bivariate analysis and the hypothesis H1, the variable gender has a positive coefficient (0.441), which is statistically significant at 1% on the estimated model, pointing out that men have higher propensity to join the group with higher levels of financial literacy. In qualitative and quantitative terms, this finding is similar to that found by Chen and Volpe (1998): the logistic regression coefficient of the variable positive gender (0.633) and significant at 1%. If everything is constant, men have a 9.56% higher probability of belonging to the group with high financial literacy levels, when compared to women. This result corroborates the results of Scheresberg (2013), who found that the gender gap is larger concerning the inflation issue, where women have 20 percentage points less propensity to answer correctly than men. It is also in line with findings of Lusardi and Mitchell (2011), Atkinson and Messy (2012), and Brown and Graf (2013) that women usually have lower financial literacy levels than men and it is consistent with the hypothesis that there are differences in the way how men and women are educated with regard to financial aspects and/or in the way how they cope with these issues (Edwards et al., 2007; Calamato, 2010). In addition, women are pointed out as having greater difficulty than men in performing financial calculations, and they also do not master the primary financial concepts and have lower knowledge level, something which hinders making responsible financial decisions (Sekita, 2011).

Table 6 *Results of estimating the nonlinear model*

Explanatory Variables	Expected Sign	Logit		Probit	
		Coefficients	Marginal Effects	Coefficients	Marginal Effects
Constant		-2.637***		-1.628***	
		[-4.37]		[-4.50]	
Gender	+	0.441***	0.0956***	0.266***	0.0953***
		[3.56]	[3.50]	[3.57]	[3.53]
Marital Status	+	-0.0166	-0.00354	-0.00929	-0.00328
		[-0.10]	[-0.10]	[-0.09]	[-0.09]
Having Dependent Family Members	-	-0.360**	-0.0751**	-0.214**	-0.0744**
		[-1.99]	[-2.08]	[-1.99]	[-2.06]
Occupation	+	-0.0495	-0.0106	-0.0401	-0.0142
		[-0.30]	[-0.30]	[-0.41]	[-0.41]
Age	+	-0.00527	-0.00287	-0.000656	-0.00249
		[-0.15]	[-0.88]	[-0.03]	[-0.77]
Age^2	-	-0.000163		-0.000128	
		[-0.38]		[-0.50]	
Educational Level	+	0.119**	0.0254**	0.0713**	0.0252**
		[2.28]	[2.20]	[2.27]	[2.21]
Father's Educational Level	+	-0.0589	-0.0126	-0.0351	-0.0124
		[-1.00]	[-1.00]	[-0.99]	[-0.99]
Mother's Educational Level	+	0.0554	0.0118	0.0315	0.0111
		[1.01]	[1.01]	[0.95]	[0.95]
Individual Income	+	0.296***	0.0632***	0.177***	0.0625***
		[5.15]	[5.28]	[5.17]	[5.27]
Family Income	+	0.174***	0.0373***	0.105***	0.0373***
		[3.16]	[3.19]	[3.23]	[3.25]

Table 6 *Continuation*

Pseudo-R^2	8.18%	8.18%
Log Verisimilitude	- 813.90	- 813.90
Chi^2	122.30	130.40
Chi^2 (p value)	0.0000	0.0000
Observations	1.400	1.400

Notes: This table shows the estimation results of the nonlinear model shown in section 4 by means of logit estimators (columns 3 and 4) and probit estimators (columns 5 and 6). Columns 3 and 5 show the estimated coefficients and the columns 4 and 6 show the marginal effects calculated on the median of the ordinal scale variables, as well as the ratio and observed frequency of the nominal scale variables. Robust standard errors. T-statistics in brackets. *** = $p < 0.01$, ** = $p < 0.05$ e * = $p < 0.10$.

The variable has a negative coefficient, statistically significant at 5% in the estimated regressions, thus it does not reject the hypothesis H4 of this research. Individuals with dependent family members have a 7.51% lower probability of belonging to the group with high financial literacy levels than individuals without dependents, a marginal effect close to that obtained in the bivariate analysis. A result consistent with the findings of Scheresberg (2013), who observed that individuals who have dependent family members, either one or two, are less likely to answer the questions correctly, ranging from 4 to 7 percentage points lower propensity when compared to those without dependent family members. Moreover, although in line with the results reported by Servon and Kaestner (2008) and Mottola (2013), this result is not consistent with the hypothesis that individuals with dependent family members, who aim at the family well-being, might have greater concern about the budget and thus higher financial literacy level.

As expected and corroborating the results of Lusardi and Mitchell (2011), the variable education had a positive coefficient (0.119) and statistically significant at 5%, thus it does not reject the hypothesis H6 of this research. Such result, in qualitative terms, is similar to that found by Scheresberg (2013), who, using a multiple linear regression, identified positive and low coefficients for lower educational levels (High School: 0.067) and positive and high coefficients for higher educational levels (graduate education: 0.388), suggesting that financial literacy rises sharply along with the educational level. In quantitative terms, an additional increase[2] in the educational level elevates the probability of belonging to the group with the highest financial literacy level in 2.54%, a shy marginal effect when compared to other variables, such as individual income (see discussion below). This result is also consistent with Amadeu (2009), who found that greater contact, during undergraduate or specialized education, with financial or economic subjects positively influences the daily financial practices, as students attending the courses of Economics, Administration, and Accounting had higher financial literacy levels.

By contrast, father's and mother's education, contrary to expectations, did not show statistically significant coefficients at the usual levels, indicating that parental education has no significant impact on the individuals' financial literacy. Such result leads to the rejection of the hypothesis H7 and it does not corroborate the literature, which suggests that parental education plays a significant role by influencing their children's consumer behavior, as well as it impacts on their financial literacy level (Pinto et al., 2005; Clarke et al., 2005; Jorgensen, 2007; Mandell, 2008).

The variables individual and family income showed positive and statistically significant coefficients at 1% in the estimated regressions, thus they do not reject the hypothesis H8. An additional level of individual income (family) s by 6.32% (3.73%) the probability of belonging to the group with the highest financial literacy level. These marginal effects suggest that income is one of the most important factors to explain the individuals' financial literacy level. This result contrasts with the findings of Chen and Volpe (1998), who found, by using logistic regression, that the variable income was not significant for determining financial literacy. However, our results are consistent with those reported by Johnson and Sherraden (2007), Monticone (2010), Hastings and Mitchell (2011), Lusardi and Mitchell (2011), Atkinson and Messy (2012), and Scheresberg (2013). Specifically, Lusardi and Mitchell (2011) found that an increase in the income level significantly and gradually elevates the financial literacy level, the first income level is not significant and the second, third, and fourth levels have multiple linear regression coefficients with 0.094, 0.289, and 0.365, respectively. In addition, experimental evidence found by Hastings and Mitchell (2011) show that financial literacy is positively related with wealth. Finally, Johnson and Sherraden (2007) ascertained that students from high-income families had significantly higher knowledge levels than students from low-income families.

The other variables: marital status, occupation, age, and squared age showed no statistically significant coefficients, indicating that they do not play a significant role in the financial literacy of the sampled individuals and leading to the rejection of research hypotheses H2, H3, and H5. These results, therefore, do not support the hypotheses that: (i) married individuals, when aiming at the well-being of their relationships, show higher financial literacy levels (Calamato, 2010); (ii) individuals with longer labor experience undergo a larger number of financial situations (Chen & Volpe, 1998; Research, 2003), thus they have higher financial literacy level and individuals with steady income have

[2] Strictly, this is the marginal effect of an additional educational level for an individual with an average educational level. In the sample of this study, it is the marginal effect for an individual with Higher Education. However, the marginal effects for other educational levels are very similar in terms of magnitude (results not reported, but available upon request) and, therefore, we do not distinguish them when analyzing the results. The same applies to the variables individual income and family income.

better conditions to organize and plan their financial life (Calamato, 2010); and (iii) financial literacy tends to be higher among adults in the middle of their life cycle, and it is usually lower among young and elderly individuals (Research, 2003; Agarwal et al., 2009).

Among the significant variables, that having the highest marginal positive effect on financial literacy is gender (9.56%). Then, there is the impact of income level, both individual (6.32%), and family income (3.73%), as well as education (2.54%). In turn, the fact of having dependent family members was the only one to have a negative marginal effect (-7.51%). In short, the socioeconomic and demographic variables with greater impact on the individuals' financial literacy, respectively, gender, having dependent family members, individual income, family income, and education.

Finally, Table 7 shows the tables that classify the model estimated by logit and probit. As observed, the models classified correctly around 68.9% of the individuals' accuracy level, which is similar to that obtained by Chen and Volpe (1998), where 71.47% of the observations were classified correctly. Among individuals with high financial literacy level, only 25.22% (24.57%) were classified correctly by the model estimated by logit (probit). In turn, among individuals with low financial literacy levels, 90.32% (90.53%) were correctly classified through the model estimated by logit (probit). It is worth recalling that the classification is sensitive to the relative size of each group and it always favors classification in the larger group (StataCorp, 2013).

Table 7 *Logit e probit classification tables*

Model	*Logit*			*Probit*		
Classified	Actual Observations		Total	Actual Observations		Total
	High (D)	Low (~D)		High (D)	Low (~D)	
High Literacy Level (+)	116	91	207	113	89	202
Low Literacy Level (-)	344	849	1,193	347	851	1,198
Total	460	940	1,400	460	940	1,400
Sensitivity - Pr(+|D)			25.22%			24.57%
Specificity - Pr(-|~D)			90.32%			90.53%
Positive predictive value - Pr(D|+)			56.04%			55.94%
Negative predictive value - Pr(~D|-)			71.17%			71.04%
Correctly classified			68.93%			68.86%

4.3 Robustness Tests

By analyzing the correlations for ranking (Spearman's rho) between the explanatory variables (see Table 4), it was observed there is a strong correlation between the variables father and mother's educational level ($r(1388) = 0.63$, $p < 0.01$). This fact may suggest that multicollinearity issues can have affected the results. To check this possibility, the nonlinear model was estimated again including only one out of the two variables. The results including the variable father's educational level and excluding mother's educational level and including mother's educational level and excluding father's educational level are similar to those reported in Table 6 and, for the sake of brevity, are not reproduced herein, but they are available upon request.

Another concern is the inclusion of ordinal scale variables in the estimations. By using variables with an ordinal scale on a linear model, e.g. it is assumed that each level (value) of the scale has the same effect on the dependent variable. To verify whether the results are affected by this choice, the model was estimated again by replacing the ordinal variables by a set of dummy variables (nominal), one for each value in the ordinal scale (excluding a value of each variable captured by the intercept). The results, not reported for purposes of brevity, but available upon request, corroborate, in general terms, those previously discussed. The most significant difference when compared to previous results, which is worth highlighting concerns the effect of family income on financial literacy: only individuals with family income between R$ 5,000.01 and R$ 7,000.00 are more likely to belong to the group with the highest financial literacy level, and the same does not occur for the other family income levels.

5 FINAL REMARKS

Learning on finance plays a major role in shaping responsible attitudes and behaviors with regard to the administration of personal finances, and financial literacy is an essential component for a successful adult life. Thus, this article seeks to go further in this field, aiming to analyze, in the Brazilian context, the influence of so-

cioeconomic and demographic variables on the individuals' financial literacy level, which innovates by estimating a model that seeks to explain financial literacy level from the these variables.

In a preliminary analysis, the fact that most respondents were classified as having low financial literacy level was highlighted. Through bivariate association measures, it becomes possible to see there is a dependency relationship between financial literacy and the variables gender, having dependent family members, occupation, educational level, mother's educational level, individual income, and family income. The estimation results of nonlinear models corroborated these findings, except for the variables mother's educational level, which were not significant, indicating that parental educational level and occupation have no significant impact on the individuals' financial literacy. These results may be summarized as follows: women, who have dependent family members, and having lower educational level, as well as individual and family income levels are those who are more likely to belong to the group with low financial literacy levels.

The results found confirm a priori expectations and previous studies, by pointing out: women as having lower financial literacy levels (Chen & Volpe, 1998; Lusardi & Mitchell, 2011; Brown & Graf, 2013; Mottola, 2013) and families with dependent members (Servon & Kaestner, 2008; Mottola, 2013), in addition to individuals with lower educational levels (Amadeu, 2009; Lusardi & Mitchell, 2011) and individual and family income (Hastings & Mitchell, 2011; Atkinson & Messy, 2012) as those individuals most likely to show low financial literacy levels.

Such conclusions confirm the urgent need for devising effective actions to minimize the financial illiteracy issue. One of the potential measures to be taken refers to the inclusion of subjects regarding financial management and market finance notions in all undergraduate courses, regardless of the knowledge field. Another potential measure concerns the creation and adoption of educational programs, which should promote personal financial literacy in all sectors of society, but with actions and specific contents that are distinguished according to each group's profile.

Some actions in this direction have been mainly promoted by the Central Bank of Brazil (BACEN) and the Brazilian Federal Government, through the Brazilian National Strategy for Financial Education (ENEF). Nevertheless, we suggest rather specific methodologies in order to promote, for instance, university outreach projects aimed at conducting financial literacy courses, not focused just on teaching financial concepts, but providing tips and feasible practices to improve financial attitudes and behaviors. The construction of a strategy aimed at the adoption of subjects and contents aimed at financial literacy also at the early educational levels might, in the long run, make children better prepared for financial management and reduce inequalities before the individuals become adults and responsible for managing resources of their own.

The results of this paper suggest that the group with the lowest financial literacy level is characterized as that consisting of women, with dependent family members, and lower educational and income levels. For financial players, finding this low financial literacy level profile can directly assist in the creation of products and services customized for this audience. Especially by having information about the customer profile, we may predict her/his financial literacy level and, as a consequence, devise various action strategies for groups with low and high financial literacy levels. In addition, being aware of the financial literacy profile of their customer portfolio, financial institutions can establish strategies to increase the literacy level among specific groups, since rather literate customers probably will require rather sophisticated financial products.

The World Bank Report published in 2014 corroborates that the lack of financial knowledge may be a big barrier for financial access among the poor, pointing out financial education as the best policy choice to improve low-income individuals' access to finance (World Bank, 2014). Initiatives to improve financial literacy among the low-income population might even contribute to the microfinance market, as informal entrepreneurs could have better ideas on financial issues within their business ventures and better understanding of the benefits and consequences of the credit obtained. Similarly, microfinance institutions, through the application of the proposed model could identify the micro-entrepreneurs with higher financial literacy levels and, therefore, more prone to grasp the entire credit granting process.

From the academy's viewpoint, the main focus so far has been separately identifying the role played by socioeconomic and demographic variables on financial literacy. This paper is a trailblazer by including several variables in a single model, allowing the identification of the marginal contribution of variables and establishing significance orders.

The contributions of this study are subject to some restrictions, such as the choice of variables and the method. Other scales might be devised and tested as financial literacy indicators. As it was based on a survey research design and cross-section data, the methodology sets limits for addressing the endogeneity issue.

As the main contribution of the research, we highlight that this study is a pioneer in the Brazilian context, by proposing a model that identifies which socioeconomic and demographic variables influence the propensity for a low or high financial literacy level. With this, among other initiatives, we may develop actions to increase the individuals' financial literacy, working on the profile having the most significant deficiencies: women with dependent family members and low educational and income levels.

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Appendix *Questions concerning the constructs financial attitude, behavior, and knowledge*

Financial attitude	**1.**	It is important to set goals for the future.
	2.	**I do not worry about the future, I live only in the present.** **
	3.	Saving is impossible for our family.
	4.	After making a decision about money, I tend to worry too much about my decision.
	5.	I like to buy things, because it makes me feel good.
	6.	It is hard to build a family spending plan.
	7.	I am willing to spend money on things that are important to me.
	8.	I believe the way I manage my money will affect my future.
	9.	**I think it is more satisfying to spend money than save it for the future.** **
	10.	**Money is made to be spent.** **
Financial behavior	**11.**	I make notes and control my personal spending (e.g. monthly spreadsheet of income and expenses).
	12.	I compare prices when making a purchase.
	13.	**I save some money I receive each month for a future need.** **
	14.	I have a spending/budget plan.
	15.	I am able to identify the costs I pay to buy a product on credit.
	16.	I set goals to guide my financial decisions.
	17.	I usually reach the goals I set when managing my money.
	18.	I discuss with my family about how I spend our money.
	19.	I pay my bills on time.
	20.	**I save a part of my income every month.** **
	21.	I spend money before getting it.
	22.	I often ask family or friends to borrow me money to pay my bills.
	23.	I analyze my bills before making a large purchase.
	24.	Every month I have enough money to pay all expenses of my own and fixed household expenses.
	25.	I keep organized financial records and I can find documents easily.
	26.	I avoid buying on impulse and use shopping as a form of entertainment.
	27.	I pay the credit card invoices in full to avoid interest charges.
	28.	**I save money regularly to achieve long-term financial goals such as, e.g. my children's education, purchasing a home, retirement.** **
	29.	I know the percentage I pay as income tax.
	30.	I have my money invested in more than one kind of investment (real estate, stocks, bonds, savings).
	31.	**I start saving more when I get a pay rise.** **
	32.	I have a financial reserve equal to or greater than 3 times my monthly expenses, and it can be quickly accessed.
	33.	Calculate my estate annually.
	34.	Before buying anything, I carefully check whether I am able to pay for it.
	35.	People think my income is not enough to cover my expenses.
	36.	**In the last 12 months I have been able to save money.** **
	37.	When deciding on which financial products and loans I will use, I consider the options from various companies/banks.

Financial knowledge	**38. Assume you have R$ 100.00 in a savings account at an interest rate of 10% per year. After five years, which is the value you have in savings? Consider no money has been deposited or withdrawn.**	
	*** More than R$ 150.00.**	**Less than R$ 150.00.**
	Exactly R$ 150.00.	I do not know.
	39. Assume Joseph inherits R$ 10,000.00 today and Pedro inherits R$ 10,000.00 in about 3 years. Because of inheritance, who will get richer?	
	*** José.**	**They are equally rich.**
	Pedro.	I do not know.
	40. Imagine that the interest rate on your savings account is 6% per year and the inflation rate is 10% per year. After one year, how much you will be able to buy with money from that account? Consider no money has been deposited or withdrawn.	
	More than today.	*** Less than today.**
	Exactly the same.	I do not know.
	41. Assume that in 2014 your income will double and the prices of all goods also will double. In 2014, how much will you be able to buy with your income?	
	More than today.	Less than today.
Financial knowledge	*** Exactly the same.**	I do not know.
	42. Considering a long period of time (e.g. 10 years), which asset does usually offer higher return?	
	Savings account.	Government securities.
	*** Stocks.**	I do not know.
	43. Usually, which asset has the highest fluctuations over time?	
	Savings account.	Government securities.
	*** Stocks.**	I do not know.
	44. When an investor distributes his investments among different assets, the risk of losing money:	
	Increases.	Remains unchanged.
	*** Decreases.**	I do not know.
	45. A loan with maturity of 15 years usually requires higher monthly payments than a 30-year loan, but the total amount of interest paid at the end of the loan will be lower. This statement is:	
	*** True.**	I do not know.
	False.	
	46. Assume you took a loan of R$ 10,000.00 to be paid after one year and the total cost with interest is R$ 600.00. The interest rate you will pay on this loan is:	
	0.3%.	*** 6%.**
	0.6%.	I do not know.
	3%.	
	47. Assume you saw the same television at two different stores for the initial price of $ 1,000.00. The Shop A offers a discount of R$ 150.00, while shop B offers a discount of 10%. What is the best alternative?	
	*** Buying in shop A (discount of R$ 150.00).**	I do not know.
	Buying in shop B (discount of 10%).	
	48. Imagine five friends receive a donation of R$ 1,000.00 and must equally divide the money between them. How much will any of them get?	
	100.	5,000.
	* 200.	I do not know.
	1,000.	
	49. An investment with high return rate will have high risk rate. This statement is:	
	*** True.**	I do not know.
	False.	
	50. When the inflation rate increases, the cost of living rises. This statement is:	
	*** True.**	I do not know.
	False.	

Note: * Correct answer to the question.
** Validated questions about the constructs.