THE EFFECT OF FINANCIAL LITERACY ON TRUST: DO FINANCIALLY LITERATE INDIVIDUALS HAVE MORE TRUST IN THE FINANCIAL SYSTEM?

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Abstract

This study analyzes the effect that financial literacy has on individuals' trust in the financial system. For this end, three different sorts of financial literacy are used, basic financial literacy, financial knowledge of investment products and financial awareness on the role played by financial institutions. Among the three types of financial literacy examined, sophisticated financial literacy, in particular that related to knowledge of investment products, plays the most relevant role in explaining individuals' financial trust. The findings show that less financially literate individuals are less likely to trust the financial system as a whole, as well as banks. Moreover, individuals with lower financial awareness perceive also lower levels of honesty and solvency in banks.

I. Introduction

The 2008 financial crisis has had a considerable impact in many aspects; one of them, being the trust of individuals in the financial sector (Ricci and Caratelli, 2017). Indeed, it has negatively influenced perception and confidence in financial institutions, financial intermediaries and their managers (Guiso, 2010).

Trust can be defined as the probability by which a party estimates that a particular action will be performed by another party or parties (Gambetta, 2000). Therefore, trust in the financial sector can be considered as the reliance on the diverse components of the financial system (Balloch, Nicolae, & Philip, 2015), one of the most important being financial institutions. Trust has been proved to be critical in free market transactions as well as fundamental in household financial market participation (Arrow, 1972). Hence, the concept of trust is directly linked with investment. In fact, it has been argued that the absence of trust in the financial industry, and therefore in financial institutions, could make investment decline exponentially, up to the point where it could cease to exist (Sapienza & Zingales, 2012). For instance, Van Rooij, Lusardi and Alessie, 2011 find that trust in the financial market affects stock market participation, making trust an essential influence on this particular kind of investment. Indeed, the absence of individuals´ trust makes participation in the stock market unattractive, since this mistrust causes a lower expected return on their financial portfolios (Georgarakos & Pasini, 2011). Furthermore, recent literature has proved that trust in financial institutions has an explicit impact on individuals´ financial decisions such as investment in private retirement funds (Ricci & Caratelli, 2017). Therefore, any investment decision, and not only those decisions regarding investment in the stock market, requires an action of trust from an investor (Kersting, Marley & Mellon, 2015).

On the other hand, recent research shows that investment decisions and households' behavior are also motivated by financial awareness, or financial literacy (Lusardi & Mitchell, 2014; Balloch et al., 2015). Financial literacy is defined as the awareness, knowledge and expertise, an individual has regarding the concepts needed to understand the functioning of the financial market and of investment (Kersting et al., 2015). For example, it has been shown that financial literate individuals are more likely to participate in the stock market and are also more likely to invest a larger proportion (Van Rooij et al., 2011). Therefore, the lack of financial literacy helps explaining the participation puzzle mentioned in the literature that relates to the low participation of households

in the securities markets (Balloch et al., 2015). In addition, financial literacy is relevant to the extent that households with a low financial literacy (below the median), have less profitable investments compared to households with a higher level of financial awareness (Von Gaudecker, 2015). Supplementary to trust and financial literacy, other factors have proved to have an influence on investment, such as wealth, education or gender (Van Rooji et al., 2011).

Research on financial trust and financial literacy is important to academia, policy makers and financial market practitioners (Guiso, Sapienza & Zingales, 2008). Literature has focused on the effect of both variables in financial decisions, however, the relationship between trust in the financial system and financial literacy has been left, with some few exceptions, uncovered.

This paper contributes to fill in the gap of the literature in two ways. First, by analyzing in detail to what extend trust in the financial system is driven by individuals' financial literacy while controlling for the effect of the above-mentioned factors that the literature has found to influence financial decisions. The second contribution is to explore the effect of financial literacy in trust by distinguishing among three different types of financial literacy: (i) basic knowledge of financial concepts (inflation, simple and compound interest rates, and diversification); (ii) knowledge of the different products and instruments available in the markets through which households can invest their savings; (iii) and the awareness of the role played by non-commercial financial institutions (specifically depositary and auditing firms).

The study is organized in the following sections. Section II presents a review of the literature and the hypotheses tested. Section III describes the data and the descriptive statistics. Methodology and results are reported in Section IV, while section V presents the discussion of the results. Finally conclusions are summarized in section VI.

II. Literature Review and hypothesis tested

A) Literature Review

Few researchers have focused on the combined effect of individuals´ financial literacy and trust, and its impact on financial decisions regarding investment. Indeed, trust and financial literacy have been found to justify the probability of participation in stock markets – stock market purchasing decisions and the share of wealth invested (Balloch et al., 2015) – and on decisions on retirement

planning as well (Ricci & Caratelli, 2017). On the other hand, after the economic crisis, trust in financial systems has been subject to multiple investigations. For instance, Mayer (2008) has explored how the development of financial markets is based on trust. However, although the literature has observed that financial literacy on the one hand and trust on the other, tend to impact the financial system, financial decisions and investment positively, the relationship between trust and financial literacy has not yet been investigated enough. Below, the literature review is presented, and subsequently the hypotheses tested.

a) Financial Literacy positively affects investment decisions and participation in the financial market

Many studies have relied on the Standard & Poor's rating service Global Financial Literacy survey (Gallup, 2014), to measure financial literacy. The S&P survey is based on questions about the understanding of three specific elements: (i) the effect of inflation on the time value of money; (ii) the effect of diversification on risk; (iii) and the effect of simple and compound interest rates on the value of savings and investments. Within this framework of basic financial literacy, recent literature has demonstrated that financial literacy does have an impact on financial decisions.

For example, financial literacy affects directly retirement planning decisions. Indeed, it is positively related to retirement planning to the extent that an average individual with a low financial literacy is less likely to have a private pension scheme whereas an average individual with higher financial awareness is much more likely to do so (Ricci & Caratelli, 2017). In addition, researchers have established causality and found that it is financial literacy which directly affects retirement planning, and not the contrary (Lusardi & Mitchell, 2010). The lack of basic financial literacy has been found to be linked not only to the lack of retirement planning, but also to poor borrowing from financial institutions (Lusardi, 2008). Furthermore, an individual´s level of financial literacy is highly important for stock market ownership since it directly affects his decision to participate in the financial market (Cardak and Wilkins, 2009). Indeed, Van Rooij et al. (2011) observed that the lower the level of individual´s financial literacy, the lower the probability that they will own stocks and Balloch et al. (2015) state that households with a high level of stock market literacy invest more of their wealth in stocks than households with lower levels of stock market awareness. One of the channels by which financial literacy drives market participation is through the reduction of information cost barriers (Balloch et al., 2015).

As a result, financial literacy is a key factor positively influencing investment, in particular in retirement pensions and in the stock market. It affects individuals´ choices in both participation and financial decisions related to financial markets.

Although the majority of the papers that have analyzed the effect of financial literacy on investments or retirement plans, have restricted the concept of financial literacy used to the knowledge of basic concepts related to finance such as interest rates, inflation, or diversification, some authors (Van Rooij et al., 2011) have extended this concept to knowledge related to financial products or instruments (e.g. bonds) available in the market to invest in. However, the concept of financial literacy referred to the role played by financial institutions (rating agencies, auditing firms, depositaries, central banks, etc.) remains uncovered in the academic literature.

b) When there is an advisor, financial literacy loses its effect

Only 25% of households with a lack of investment skills seek for professional advice, 25% seek for advice in their private network (friends) and 50% make financial decisions on their own judgement (Von Gaudecker, 2015). Therefore, half of the population lacking financial literacy seeks financial advice.

Although in the majority of the literature financial literacy has a positive influence on financial decisions or investments, analyses of the interaction between financial literacy and financial advice have shown different results. Some authors state that financial literacy and financial advice go hand-in-hand, due to the fact that individuals with high financial literacy tend to receive more financial advice (Collins, 2012). However, other authors, like Von Gaudecker (2015) found that individuals with a higher level of financial literacy rely on their own judgement whereas individuals with lower levels tend to seek advice in friends and family.

Most households with a high level of financial literacy, or that rely on a financial advisor (either a professional or private contacts) make better financial decisions achieving acceptable investment outcomes compared to households with a below-the-median level of financial literacy (Von Gaudecker, 2015). Indeed, households relying either, on advice from a professional or from their private network, regardless of their level of financial literacy, make better investment decisions with superior returns. Thus, financial literacy does not impact the expected returns of those who

seek advice. In comparison to this group, households who do not rely on any kind of advice, but do have a high level of financial literacy, obtain the same results.

Consequently, the returns from households seeking financial advice do not change with financial literacy. Hence, having a high level of financial literacy and making autonomous decisions has the same effect as having a financial advisor regardless of the individual´s level of financial literacy. Moreover, Von Gaudecker (2015) finds that outcomes from households relying on professional advisors are very similar to the outcomes from households relying on their private network (family and friends) for advice. Individuals with a low level of financial literacy relying on their own judgement, and not on any external advice, make poor investment decisions, obtaining lower expected returns on their portfolios than people with higher financial literacy or relying on external help.

Therefore, financial literacy can be said to positively affect financial decisions and participation in the financial market, only if the individual or household does not have a financial advisor. In the case where financial advice is provided, financial literacy is not positively related to financial-decision making.

c) Trust positively affects investment decisions and participation in the financial market

Guiso et al. (2008, p.2557) define trust as "the subjective probability individuals attribute to the possibility of being cheated". They state that this subjective probability has two components: (i) the objective characteristics of the financial framework (investor protection, legal enforcement, occurrence of frauds, etc.); (ii) the subjective characteristics of the person and his perceptions. Consequently, literature's measures for trust have differed widely giving more or less weight to either the objective or the subjective element. As an example, Guiso et al. (2004) and Ricci & Caratelli (2017) use a regional indicator of social capital as a proxy for trust in financial system. This is a measure closer to the objective component of the trust concept. However, other authors weigh more the subjective component asking directly to individuals. For instance, Guiso et al. (2008) capture specific trust in financial institutions through a survey conducted by a large Italian bank, to customers, that includes a question about their confidence towards the bank. Balloch et al. (2015) rely also on direct questions included in the "Trust in Financial Institution sub-model

under the department of Labor (DOL) Pilot survey". Thus, comparisons among results from different authors are challenging.

It can be said that any type of financial contract is a trust intensive contract (Guiso, Sapienza & Zingales, 2004) and due to this, investment decisions require trust from the investor into the financial system and institutions. Indeed, recent research indicates that trust in both financial intermediaries and financial institutions, directly affects investors´ financial decisions (Kersting et al., 2015).

As financial literacy, trust has also a positive influence when it comes to financial decision-making regarding pension plans (Ring, 2005), and is directly linked with investment in the stock market (Pasini & Georgarakos, 2009). Some authors argue that trust in the financial market is the main factor driving participation (Guiso et al., 2008). As a matter of fact, mistrust negatively affects stock market participation, making it unappealing by lowering expected investment returns (Georgarakos & Pasini, 2011). Moreover, trust not only has a positive relationship with stock market participation, but also with the amount invested in stocks and with investment in any kind of risky assets. Indeed, households with higher levels of trust towards the stock market, tend to hold riskier assets (Balloch et al., 2015) and as expected, the greater the level of trust of an individual in financial institutions or in financial advisors (specific trust), the more likely the individual will hold risky assets (Guiso et al. 2008; Monticone, 2010). The extent to which an individual, trusts his or her bank or financial advisor, partially explains households 'stock market participation and the individuals´ decisions regarding the specific stocks in which they invest (Guiso et al. 2008).

Indeed, trust has been found crucial to balance the growing complexity of financial products and services with the limited knowledge that individuals have in financial markets (Ricci & Caratelli, 2017).

d) Other factors influencing investment decision, trust and financial literacy.

Apart from trust and financial literacy, other external factors have to be considered when it comes to financial decisions or behaviors. Some factors affecting financial decisions can inevitably be related to the effects of trust or financial literacy. Indeed, some external factors interact with both

financial awareness and trust in financial institutions. For example, it could be expected that an individual´s previous investment experience would affect subsequence investments, but also his trust on financial institutions or markets, and his financial literacy about the investment that he has done, through the process of 'learning by doing'.

Previous research accentuates the relevance of some socio-economic and demographic factors that could affect either financial decisions, trust in financial institutions or financial literacy, such as gender (Jacobsen, Lee & Marquering, 2008), age (Castle, Eisenberger, Seeman, Moons, Boggero, Grinblatt & Taylor, 2012), the geographical area where the individual lives, level of education, marital status, household size, financial advice and wealth (Ricci & Caratelli, 2017, Von Gaudecker, 2015).

Among these socio-demographic factors, wealth, gender and age have been proven to be positively related with some financial decisions. In fact, high-income (wealth), gender (being male) and age (middle age) have been found to be positively related with retirement planning (Ricci & Caratelli, 2017). Calvet, Campbell, & Sodini (2007, 2009) find that wealthier households invest more efficiently and more aggressively, however it remains unknown if this is due to the fact that they are better advised or better equipped (financial literacy) to make autonomous financial decisions.

Gender and age are also relevant factors in the analysis of investment behavior. It is important to consider gender in stock market participation since some authors, find that women tend to participate much less than men in the stock market (Van Rooij et al., 2011). In addition, men tend to be more trusting in the financial markets than women, due to an increased optimism in economic and financial indicators (Jacobsen et al., 2008). Regarding age, previous research has proved that older individuals tend to trust the financial system more than young individuals (Castle et al., 2012).

The intellectual capacities of an individual can also influence financial decisions. In fact, evidence has shown that the level of intellect has a strong correlation with participation in the stock market (Christelis, Jappelli, & Padula, 2010; Grinblatt, Keloharju & Linnainmaa, 2011). Indeed, the capacity to understand investment, and then to acquire financial literacy, and education are relevant variables when it comes to investment behavior (Christelis et al., 2010 & 2011; Guiso et al., 2008; Georgarakos and Pasini, 2011; Graham et al., 2009; Van Rooij et al., 2011).

Bönte and Filipiak (2012) argue that even if social interaction does not have a direct relationship with investing in financial instruments, word-of-mouth does have an indirect relationship with investment, since it can change individuals´ perceptions of financial instruments. Finally, other variables such as economic shocks, future expectations (Balloch et al., 2015), optimism (Puri and Robinson, 2007) and past stock market returns (Malmendier and Nagel, 2011), are some other factors that either directly or indirectly explain the differences in stock market participation (Balloch et al., 2015), having a weight in financial decisions, financial activity and in trust and financial literacy.

e) Relationship between financial literacy and trust

Surprisingly, there is a substantial lack of research on the analysis of how financial literacy influences investors´ trust in financial markets as well as the trust in the intermediaries operating in the financial markets. The only work we know that covers this relationship is the one of Kersting et al. (2015) who verify that well-educated or financially literate investors (in particular novice nonprofessional investors) have a lower level of trust towards financial markets compared to investors that are not financially literate.

Taylor-Goodby (2005) analyzes trust in both private and public pensions and finds that in general it is quite low. His study proves that important differences exist based on the contrasting socio-demographic factors of individuals: middle-class individuals with a higher level of education tend to have a lower level of trust in public and private pensions. However, groups of individuals with a lower education tend to trust more both types of pensions. Since education can help to acquire financial literacy, this theory can be linked to the idea that a higher level of financial literacy could cause lower levels of trust in financial institutions among the population.

According to these findings, financial literacy is negatively related to trust in the financial markets. Indeed, results from the analysis conducted on this topic, indicate that the more conscious or well-informed the investor, the less trusting he will be in the financial market and intermediaries operating in it. In fact, Individuals with high financial literacy understand better how self-interested actions coming from financial intermediaries could negatively impact their wealth and investments. Furthermore, financially literate individuals are aware of how the financial market should operate and therefore, are more likely to distinguish scenarios in which markets are not

operating as intended. This causes individuals with high financial literacy to have a lower level of trust in the financial system, in particular in the financial market and in the financial intermediaries (the individuals operating in the financial market).

However, as pointed out by Kersting at al. (2015) the opposite argument can rationally be applied for individuals with low financial literacy. Individuals who lack financial literacy, do not have a general understanding of how financial markets function and the particular responsibilities that the individuals operating them have. In this case, mistrust comes from a lack of knowledge since individuals cannot trust environments they do not know or understand, doubting about any information they receive.

It is reasonable to expect that the level of financial literacy could impact either positively or negatively the level of individuals' trust in the financial system as pointed out by Kersting et al. (2015). Therefore, it makes sense to ask to what extent financial knowledge influences individuals' trust in financial institutions and intermediaries. The nature of the concept of financial literacy in itself prevents it from endogeneity problems with trust (i.e. the relationship between financial literacy and trust only goes in one direction). It does not make sense to ask whether the trust that individuals have in the financial system influences their financial knowledge. As a matter of fact, trust in financial institutions (and their managers) has been affected negatively by the recent economic crisis (Guiso, 2010) whereas financial literacy has not been negatively affected neither by the crisis nor by the fall in financial trust.

Conclusions based on the literature review show that both trust and financial literacy have positive effects on participation and on the share invested in financial instruments, except when households rely on external financial advice, in which case financial literacy loses its effect. Nevertheless, the influence of financial literacy on financial trust still remains vague. The only empirical evidence found, shows a negative correlation (Kersting et al., 2015). However, a positive correlation is also plausible, given that theoretical arguments also exist (i.e. individuals with lower financial literacy will have more doubts about the veracity of the information they receive from intermediaries, thereby they exhibit a lower trust in them).

B) Hypotheses tested

To answer the research question of this study "**to what extent financial literacy affects individuals' trust in the financial system"** and based on the previous discussion of the literature, the following hypotheses are proposed.

1) **Hypothesis 1: Trust in the financial system is positively affected by three different types of financial literacy (basic financial literacy, financial literacy on investment products, and financial literacy on financial institutions).**

   Basic financial literacy is related to individuals' general knowledge of finance concepts such as simple and compound interest rates, inflation effect on purchasing power, and diversification effect on risk.

   Financial literacy on products is related to individuals' perceived knowledge about the different types of financial assets (stocks, bonds, etc.) and instruments (pension funds, mutual funds, hedge funds, life insurance products, etc.) available in markets to invest in.

   Financial literacy on financial institutions is related to individuals' knowledge about the important role played by depositary and auditing firms which constitute a mechanism of guaranty for investors.

The concept of financial system is approximated in this hypothesis by a broad set of financial institutions of two types, commercial institutions (banks, insurance companies, wealth management firms, etc.) and non-commercial institutions of two types, "private" (rating agencies, depositary firms, and auditing firms) and "official" (central bank, security exchange commission, etc.) that are presented in the next section of data.

Given the importance of bank institutions as the main intermediary of Spanish households, the same hypothesis, but specifically for banks, is tested:

2) **Hypothesis 2: Trust in banking institutions is positively affected by three different types of financial literacy (basic financial literacy, financial literacy on products, and financial literacy on institutions).**

Finally, following Guiso (2010), who distinguishes between two different components of trust in the banking system, one relating to honesty and one relating to solvency, the following hypotheses are proposed:

3) **Hypothesis 3: Perceived honesty in banks is positively affected by three different types of financial literacy (basic financial literacy, financial literacy on products, and financial literacy on institutions).**

4) **Hypothesis 4: Perceived solvency in banks is positively affected by three different types of financial literacy (basic financial literacy, financial literacy on products, and financial literacy on institutions).**

III. Data & Descriptive Statistics

A) Data

This study is based on a dataset composed of primary data from an online survey about financial behavior, conducted by the Center for Insurance Research at IE Business School in 2017, to a random sample of Spanish individuals, representative of the Spanish population in terms of distribution of gender and age (participants were aged between 20 and 74 years old). A response ratio of 75% was obtained, collecting 1,538 completed surveys. For more information about the survey please refer to Núñez & Silva (2017). From this dataset we gather information regarding our dependent and independent variables as well as the control variables used in the study. The survey was conducted in Spanish, but for the purposes of presenting this work, the questions used to build the variables, have been translated into English.

Dependent Variable:

The information collected in the survey about the individuals´ perceived level of trust in financial institutions is used in this study in order to build the dependent variables for the four hypotheses.

- Specifically for **H1**, **trust in the financial system** is measured through the question: *"Indicate the degree of trust you have (1 none - 7 maximum) in each one of the following eleven institutions: banks, financial advisors, insurance firms, insurances brokers, wealth asset*

management companies, depositary firms, auditing firms, rating agencies, Bank of Spain, General Insurance Office, Spanish Securities and Exchange Commission". The first 5 institutions are commercial intermediaries whereas the subsequent 6 are non-commercial "private" or "official" financial entities. The values given by respondents to these institutions are averaged in order to measure their "trust in the financial system". For some of the analyses, the variable obtained is recoded as a dummy variable, assigning 0 "low trust" to levels from 1 to 3.5, and 1 "high trust" to levels from above 3.5 to 7.

- To measure the dependent variable of **H2, trust in banking institutions**, the information mentioned above is used, but only for banks – therefore, the data is collected through the question: "*Indicate the degree of confidence you have (1 none - 7 maximum) in each one of the following institutions: banks"* –. Thus, values ranging from 1 to 7 are obtained. For some analyses this variable is recoded again as a dummy variable, being assigned 0 "low trust" to those levels from 1 to 3.5, and 1 "high trust" to those levels from above 3.5 to 7.

- Finally, for **H3** and **H4**, **honesty and solvency perceived in banks** are measured through the survey's questions "*Rate the level of honesty you perceive in banking institutions*" *(0 "I don´t know", 1 none - 3 maximum)* and "*Rate the level of solvency you perceive in banking institutions*" *(0 "I don´t know", 1 none - 3 maximum))*. For some analyses the honesty perceived variable is recoded as a dummy variable again, with 0 being "low honesty perceived*"* (for original answers 0 and 1) and 1 being "high honesty perceived" (for original answers 2 and 3). Similarly, for some of the performed models the solvency perceived variable, is recoded as 0, "low solvency perceived" (for original answers 0 and 1) and 1, "high solvency perceived" (for original answers 2 and 3).

Independent Variables

To build the independent variables for this study, the information regarding individuals´ degree of financial literacy collected through the survey is utilized. Three different variables are established in order to capture different components of financial literacy.

- The first independent variable, **basic financial literacy**, is based on the answers to four questions taken from Gallup (2014) regarding basic financial notions related to the

diversification effect on risanek, inflation effect on purchasing power and simple and compound interest rates. The questions and answers used to build the basic financial literacy variable are presented in the following table (Table 1). A coding system based on the number of correct answers is used, with values from 0 (none of the four answers is correct) to 4 (the four answers are correct). This variable is used in some models as a dummy with value 1 for those respondents with more than 2 correct answers and value 0 for the rest of the cases.

Table 1. Questions about basic financial literacy

Question
1) *"Imagine that you have some money saved, do you think it is safer to invest in a single investment product or distribute it among several?" (1 "One product", 2 "Various products", 3 "I do not know")*
2) *"Suppose that over the next 10 years the prices of consumer goods double. If your income is also doubled:* *can you buy less goods than you currently can; can you buy the same goods than at the current time; or can you buy more goods than currently?" (0, "I do not know", 1 "Less", 2 "The same", 3 "More")*
3) *"Suppose you need to borrow €100 for one year and that after that year you have to repay the loan plus the interest charged for it. What amount would be lower at the time of returning the loan plus the interest charged? 105 or 100 plus 3%" (0 "I do not know", 1 "€105", 2 "€100 plus 3 percent")*
4) *Suppose you put money in a bank deposit with a two-year maturity and during that period you do not withdraw any money from that deposit. If the bank pays the money that is in the deposit with an annual interest of 15 percent, will the bank give you less money for your deposit the second year than the first, give you the same amount, or give you more money?" (0 "I do not know", 1 "Less", 2 "The same", 3 "More")*

- The second independent variable, **financial literacy on investment products,** is created through the information in the survey corresponding to participants´ perceived knowledge about different types of financial assets and instruments. Individuals have been asked: "*Rate (1 none – 7 maximum) the knowledge you have for each of the following investment products"*. This

variable is recoded as a dummy in some models with 0 (for original values from 1 to 3.5) and 1 (for original values above 3.5 to 7). The investment products considered in the survey are listed in the following table (Table 2).

Table 2. Investment products considered in the survey and in this study

Investment products
a. Basic investment products
Mutual Funds (Monetary, Fixed Income, Equity, Mixed/Global, or Guaranteed Funds)
Pension Plans or Funds
Savings Insurance Policies (Income, SISP, LTISP, IPP, Unit Linked)
Common Stocks (Public Listed Shares)
Bonds (Treasury Bills, Bonds, Obligations, and others)
b. Additional investment products
Variable Capital Investment Companies
Preference Shares
Exchange Trade Funds
Hedge Funds
Real Estate Investment Funds
Mortgage Securitization Funds
Venture Capital Funds

- Finally, the third independent variable, **financial literacy on financial institutions' role**, has been created through the information collected from three questions in the survey regarding individuals´ knowledge on the role and functions played by depositary (two questions) and auditing firms (one question). The following table (Table 3) shows the questions used to build the variable. The coding system for the depositary entities´ questions assigns 1 to individuals answering positively both questions, otherwise 0 is assigned. In the same way, the coding system for the auditing entities' question assigns 1 when respondents answer positively and otherwise 0 is assigned. The metrics used for the variable, correspond to the sum of both coding systems, varying from 0 to 2 *(0 "no institutional financial literacy", 1"low institutional financial literacy" and 2 "high institutional financial literacy").* The variable is recoded as a dummy in some models with 0 for values 0, and 1 for values 1 and 2.

Table 3. Questions about financial literacy on financial institutions' role

Question
1) "*Did you know that one of the main functions of the Depository Entity is the supervision of the actions performed by the Pension and Mutual Funds' management firm?" (1 yes – 2 no)*
2) "*When deciding which product to invest in, did you know that the Depository Institution provides greater security to your investment when you opt for pensions or mutual funds, compared to other investment products?" (1 yes – 2 no)*
3) "*Do you know if the issuers of the investment products mentioned in the previous list (table 2.A in this study) are obliged to audit their accounts?" (1 yes – 2 no, 3 "I don't know")*

Control Variables

The dataset allows collecting variables that have been proved to be relevant in previous literature to analyze financial decisions, trust or financial literacy. Therefore, they are considered as control variables in this study´s analysis of the effect of financial literacy in individuals' trust in the financial system. We break down these variables into two groups: i) behavioral variables indicating if individuals are active investors or not, and if investors rely or not on professional advice; ii) socio demographic variables such as age, gender, and socio-economic level.

i) Behavior variables

The survey allows to build behavioral variables such as whether participants have invested in a variety of financial assets (those listed in table 2) and whether they have relied on a professional financial advisor or not. These variables will be used as control variables in the regression models.

- The variable reporting whether individuals are **active investors** or not is created through a question in the survey asking if in the last two years individuals have invested or held the products included in table 2. The variable is coded as 0 being assigned if individuals haven't invested (or held) in any investment products in the last two years, and 1 if otherwise.

- The variable describing whether participants have a **financial advisor** or not, is obtained through a question in the survey, directly asking individuals if they rely on a financial advisor for investment decisions. 0 is assigned to "no reliance on a financial advisor" and 1 to "reliance on a financial advisor".

ii) Socio-demographic variables

The socio-demographic variables included in the study refer to **gender (**coded as 0 for men and 1 for women), participants´ **age (**goes from 20 to 74), and households' **socio-economic level[1],** that is based on a variety of concepts (income level, education and profession of the main contributor, and household size and number of members with incomes). The socio-economic classification ranges from 1 (highest socio-economic level to 7 lowest socioeconomic level)

B) Descriptive statistics.

The descriptive statistics for the dependent, independent and control variables are exhibited in table 4.

Table 4. Descriptive Statistics for all the variables used in the study

Descriptive Statistics (1)

					Percentiles (Median)		
	Min	Max	Mean	Std. Deviation	25	50	75
A. Dependent Variables							
Trust in the Financial System	1	7	2.85	1.306	1.73	2.90	4.00
Trust in Banks	1	7	2.85	1.602	1.00	3.00	4.00
Honesty Perceived in Banks	0	3	1.32	.844	1.00	1.00	2.00
Solvency Perceived in Banks	0	3	1.54	1.064	1.00	2.00	2.00
B. Independent Variables							
FL basic	0	4	2.24	1.246	1.00	2.00	3.00
FL products	1	7	2.24	1.197	1.26	1.86	2.96
FL institutions	0	2	.56	.714	.00	.00	1.00
C. Control Variables							
Active investor	0	1	.46	.499	.00	.00	1.00

[1] The survey socio-economic data is based on the classification provided by the "Asociación para la Investigación de Medios de Comunicación" that is widely used in Spain.

Financial advisor	0	1	.42	.494	.00	.00	1
Age	20	74	48.67	14.863	37.00	49.00	63.00
Gender (man=0)	0	1	.51	.500	.00	1.00	1.00
Socio-economic (inverse order)	1	7	4.03	1.727	3.00	4.00	5.00

(1) N 1538 for all the variables

Dependent Variable

As mentioned in the data section Financial Trust is measured in four different ways according to the four proposed hypotheses. The first measure of trust relates to the individuals' trust in the financial system (a group of 11 sorts of institutions, 5 being commercial institutions and 6 noncommercial ones). The second measure refers to trust in the main type of commercial financial institutions, banks. Both measures are originally valued from 0 (no trust) to 7 (maximum). These two measures of trust exhibit the same low mean values and also low standard deviations, being the dispersion of the perceived trust in banks slightly higher than the one for the 11 institutions jointly analyzed (Table 4.A). The Pearson's correlation coefficient was computed for them, resulting in 0.81. This high correlation and the fact that mean and median values are very similar (and also standard deviation) for both variables of trust seems to indicate that individuals do not discern when it comes to trust the different types of financial institutions, identifying the banks with the financial system shaped by a broader number of financial institutions such as central banks, insurance supervisors, securities exchange commissions, rating agencies, depositary institutions, etc.

The third and fourth measures of trust are indeed specific elements of financial trust highlighted by the literature, honesty and solvency. These measures are originally valued from 0 (no answer) to 3 (maximum trust). It can be observed in Table 4.A that perceived banks' solvency exhibits higher mean and, overall, median, than perceived banks' honesty. To analyze deeper both variables Table 5 shows their frequencies.

Table 5. Frequencies for Honesty and Solvency Perceived in Banks variables

Frequencies				
	Honesty		Solvency	
	Percentage	Accumulated	Percentage	Accumulated
No answer	16.6	16.6	23.6	23.6

Low	42.8	59.5	19.0	42.6
Average	32.4	91.9	36.8	79.4
High	8.1	100.0	20.6	100.0
	100.0		100.0	

It is interesting to observe that more than 20% of respondents exhibit a high confidence in banks' solvency, while only 8% of respondents show a high level of trust in banks' honesty. In line with this result, Pearson's correlation coefficient between both perceived banks' honesty and perceived banks' solvency is just 0.55. Thus, they seem to capture different dimensions of trust. Moreover, Pearson's correlation coefficients between trust in banks and perceived banks' honesty and solvency are quite low (0.25 and 0.27 respectively), whereby our interpretation is that the concept of trust is complex and that these two variables, perceived honesty and solvency are only partially capturing it.

Independent Variables

Table 4.B presents the descriptive statistics for the independent variables related to financial literacy. As previously explained in the data section, we breakdown financial literacy in three components, one basic, about financial concepts, and two more specific, about financial products and financial institutions' role. From the table it can be observed that the population exhibits the highest level of financial literacy for basic concepts with a mean and a median value of 2.24 and 2 in a scale from 0 to 4. On the contrary, individuals' perceived knowledge about financial products is very low, with a mean value of also 2.24 but a lower median of 1.86 in a larger scale of 1-7. Individuals' understanding of auditing and depositary firms' role (mean and median of 0.566 and 0 in a scale of 0-2) is very low. Therefore, although individuals' knowledge about concepts such as the effect of diversification on risk, or inflation on purchasing power, and interest rates, is reasonable, their awareness about financial products or the role played by important financial institutions is very poor.

We find that Pearson's correlation coefficients between basic financial literacy and financial products literacy and financial institutions literacy are very low, being respectively 0.23 and 0.29. However, as it could be expected, the correlation between financial products literacy and financial institutions literacy is higher, 0.43, since both variables represent a more sophisticated and specific

knowledge of finance. Nevertheless, this correlation is sufficiently reduced to consider separately both components in the models, knowledge about financial products and knowledge about the role of depositary and auditing firms.

Correlations between the dependent and independent variables are also analyzed. All the dependent variables (trust variables) are positively correlated with the financial literacy variables, being the values below 0.30 for all of them, with the exception of the correlation between financial literacy of products with trust in financial system (0.45) and with banks (0.39).

Moreover, amid the independent variables, basic financial literacy has the lowest correlation coefficient with all the trust variables – the coefficients being 0.19 for trust in the financial system, 0.14 for trust in banks, 0.17 and 0.25 respectively for honesty and solvency in banks –. This can be interpreted as sophisticated financial literacy (especially financial products literacy but also literacy on financial institutions) partially explaining and having a greater impact in trust in financial intermediaries and institutions, while basic financial literacy having very little influence in trust.

Control Variables

Regarding the behavioral variables, 46% of the population in the sample studied have invested or held investment assets in the last two years and 42% of individuals have sought financial advice at least one time. However, although the variables active investor and financial advisor are positively correlated with all the trust variables and financial literacy variables, the correlation coefficients are quite low (always below 0.30 except for active investor with product financial literacy which is 0.34, and for active investor with financial advisor which is 0.31). This can be interpreted as previous investing experience or seeking financial advice, having only a limited effect on financial trust, and having a limited contribution to the financial literacy of individuals.

Age exhibits very low correlations with all the variables, being the highest those with perceived honesty and solvency and with active investor variables (being positive and slightly superior to 0.20). The mean and median age values in the sample are both 49 years.

Gender and socio-economic status are negatively correlated with all the trust and financial literacy variables. However, the correlation coefficients are very low. This means that if the individual is a woman, the level of trust in financial institutions or intermediaries and the level of financial

literacy will be lower than if the individual were to be a man. The socio-economic variable is from a scale from 1 to 7, 1 being the maximum socio-economic level, therefore, the interpretation of the negative correlation coefficient is that the lower the socio-economic level, the less trust and financial literacy the individual will have.

Since in some of the models performed in this study, the dependent and independent variables are recoded as dummy variables, table 6 exhibits the descriptive statistics for the new recoded variables.

Table 6. Descriptive Statistics for the variables recoded as dummies

Descriptive Statistics					
	N	Mín	Max	Mean	Standard Deviation
Dependent Variables					
Binary Trust in the Financial System	1538	0	1	.35	.478
Binary Trust in Banks	1538	0	1	.37	.482
Binary Honesty Perceived in Banks	1538	0	1	.41	.491
Binary Solvency Perceived in Banks	1538	0	1	.57	.495
Independent Variables					
Binary FL_basic	1538	0	1	.47	.499
Binary FL_products	1538	0	1	.17	.374
Binary FL_institutions	1538	0	1	.43	.496

It can be observed that after the recoding process 35% and 37% of respondents are classified as individuals with low trust in the financial system (all financial institutions) and in banks respectively. However, the percentage of individuals who rely in the honesty and solvency of banks is higher, 41% and 57% respectively. Hence, our previous interpretations remain valid, financial trust is a complex concept that goes beyond honesty and solvency attributed to banks.

Regarding the independent variables, only 17% of respondents perceived to have knowledge regarding the investment products available in the market to invest in, while 47% and 43% of individuals exhibit a good level of financial literacy of both components basic financial knowledge and awareness of financial institutions' role.

Since the recoding process leads to a loss of information when grouping values to convert them into binary values, the estimated correlation coefficients for the recoded binary variables are lower than those for the original values, but relations are of the same sign.

IV. Analysis and Results

In light of the previous analysis, a classical lineal regressions model is performed to test the hypotheses, in which the equation is:

$$Trust = B_o + B_1 FLBasic + B_2 FLProducts + B_3 FLInstitutions + \sum B_i control_i + e$$

Although the correlations found among the explanatory variables were relatively low (see previous section) we tested the model for multicollinearity by examining tolerance and the Variance Inflation Factor (VIF) checking that none of the variables presents collinearity with the others. We also check that the models do not present heteroscedasticity by examining the correlation between absolute value of residuals and predicted values, finding that there is no correlation between them. Finally the normality of residuals is checked by the analysis of atypical normalized residuals. Only few cases, from 1 to 6 out the 1538, are above 3 standard deviations the mean value (zero).

Table 7 shows the results obtained in these linear regressions for the models based on Hypotheses H1 to H4.

Table 7. Linear Regression testing hypotheses H1 to H4

	H1 Trust in the Financial System		H2 Trust in Banks		H3 Honesty Perceived in Banks		H4 Solvency Perceived in Banks	
	Coef.	S. E	Coef.	S. E	Coef.	S. E	Coef.	S. E
Constant	1.658***	.163	1.622***	.209	.430***	.113	.350**	.138
Ind. V								
FL_Basic	.066***	.025	.036	.032	.044**	.017	.112***	.021

FL_Products	.397***	.028	.427***	.036	.123***	.020	.110***	.024
FL_Institutions	.132***	.047	.183***	.061	.070**	.033	.201***	.040
Control V.								
Active_Investor	.296***	.067	.296***	.085	.171***	.046	.235***	.057
Financial_Advisor	.243***	.063	.196**	.080	.053	.043	.002	.053
Age	-.004**	.002	-.005*	.003	.009***	.001	.011***	.002
Gender (man "0")	.153**	.061	.234***	.078	-.037	.042	-.108**	.051
Socio-economic	-.007	.018	-.007	.023	-.006	.012	-.007	.015
N	1538		1538		1538		1538	
Adjusted R2	.243		.174		.132		.179	

*, **, and *** statistically significant at 0.10, 0.05 and 0.01 respectively

The significance or adjusted R^2 of the first model testing H1, is 24.3%. Therefore, the independent variables and the control variables predict the variability of trust in the financial system to an extent of 24.3%.

It is to be noticed that in this model, all the estimated coefficients except for the socio-economic factor are highly statistically significant (0.01 and 0.05). Regarding the independent variables it can be observed that the three components of financial literacy have a positive and very high statistically significance impact in individuals' trust in the financial system. The highest coefficient is that of the financial products literacy variable, meaning this variable has an important effect when it comes to predicting trust in the financial system.

Whether individuals have investment experience (Active Investor) and whether participants have a financial advisor (Financial Advisor) also matters, positively impacting trust. The only variable that negatively impacts trust in the financial system, is age (the older the individual, the less trust), with a very small coefficient yet significant. The gender coefficient with positive sign and significant, indicates that women exhibit a higher level of trust in the financial system. The coefficient for the socio-economic level is negative because the higher the level in the scale from 1 to 7, the lower the socio-economic level, which means that the higher the socio-economic level

of an individual, the higher his or her trust will be. However, this last coefficient is very low and is not statistically significant.

The second model, testing H2, and therefore the extent to which financial literacy and the control variables affect trust in banks, has a significance of 17.4% measured by the adjusted R^2. In this model, most of the regression coefficients are again, statistically significant.

It is remarkable that the coefficient for financial products literacy (FL_Products) is again the highest and is very significant, meaning that this variable is the one that affects the most trust in banks. The financial literacy on institutions (FL_Institutions) coefficient is also positive with a high statistical significance. However, contrary to the previous model, basic financial literacy (FL_Basic) has still a very small positive coefficient but is not statistically significant. Therefore, we cannot assume that basic financial literacy affects trust in banks.

Additionally, the variables Active Investor and Financial Advisor, also have an important weight in trust in banks (the coefficients are high and very significant). Age again, with a very small coefficient, is the only variable negatively influencing trust in banks. Gender coefficient is positive and significant meaning that women have more trust in banks, while again socio-economic level does not have any effect in individuals' trust in banks.

The third and fourth models, testing H3 and H4, and therefore testing the extent to which financial literacy combined with control variables affects the honesty and solvency perceived in banks, have a significance of 13.2% and 17.9% respectively as indicated by their adjusted R^2.

For these two models, the three financial literacy variables are very statistically significant. Among the financial literacy variables, the one affecting the most the level of honesty perceived in banks is financial products literacy (FL_Products) whereas financial literacy on institutions (FL_Institutions) has a largest impact on solvency perceived.

The variable that has the greater impact – and is also very statistically significant – in the honesty and solvency perceived in banks is whether the participant is an active investor, meaning that if individuals have invested in the last two years, the honesty and solvency they perceive in banks will be greater. Moreover, age is not only statistically significant and has small coefficients, but unlike in the previous models, the variable positively impacts honesty and solvency perceived in

banks: the older the individual the more honesty and solvency he or she will perceive in banks. Although gender is not statically significant nor has an important weight when it comes to influence the level of honesty perceived, however, it is significant for the level of solvency perceived. Additionally, in contrast with the previous models, gender has a negative coefficient, and therefore individuals being women are less likely to perceive solvency in banks. Again, socio-economic level is not having any impact in perceived banks' honesty or solvency.

Robustness test

Some of the papers reported in the literature treat financial literacy and trust variables as binary variables, assuming that from a threshold level of basic financial knowledge individuals are financially literate (otherwise they are not) or from a threshold value of confidence, they exhibit financial trust (otherwise they do not). Although the original variables used in this study are continuous, they were recoded based on the thresholds used in the literature, and consequently converted into dummy variables. Subsequently we perform logistic regressions as robustness tests to contrast the hypotheses.

Logistic regression models calculate the probability that an individual belongs to a class (low trust vs. high trust) by transforming a linear function of independent variables through the logistic function (the coefficients are estimated using the maximum likelihood criterion). Indeed, the logistic regression estimates the value of a linear function of the explanatory variables, and through the logistic function, it transforms these values into the probability of belonging to one of the groups or classes. The form of the regression is as follows:

$$Logit\ (trust = 1) = B_o + B_1 FLBasic\ + B_2 FLProducts + B_3 FLInstitutions + \sum B_i control_i + e$$

Both the dependent and independent variables used in the logistic regressions ran are dummy variables, where value 1 is assigned to individuals who present the feature (trust or financial literacy) and value 0 to those who don't.

Table 8 shows the results obtained for the four models based on H1 to H4.

Table 8 – Logistic Regression testing hypotheses H1 to H4

	H1	H2	H3	H4

	Trust in the Financial System		Trust in Banks		Honesty Perceived in Banks		Solvency Perceived in Banks	
	Coef.	Exp(B)	Coef.	Exp(B)	Coef.	Exp(B)	Coef.	Exp(B)
Constant	-.950 ***	.387	-.979 ***	.376	-2.226 ***	.108	-1.485 ***	.226
Independent V.								
FL_Basic	.182	1.200	.045	1.046	.002	1.002	.392 ***	1.480
FL_Products	1.273 ***	3.571	1.268 ***	3.555	.789 ***	2.200	.632 ***	1.882
FL_Institutions	.298 **	1.347	.356 ***	1.428	.404 ***	1.498	.708 ***	2.030
Control V.								
Active_Investor	.348 ***	1.417	.221 *	1.247	.589 ***	1.802	.638 ***	1.892
Financial_advisor	.426 ***	1.532	.388 ***	1.475	.232 **	1.261	.117	1.124
Age	-.009 **	.991	-.004	.996	.024 **	1.024	.023 ***	1.024
Gender (man "0")	.154	1.167	.324 ***	1.382	-.068	.935	-.314 ***	.730
Socio_economic	-.032	.969	-.054	.948	-.001	.999	-.015	.985
N	1538		1538		1538		1538	
Hosmer & Lemeshow Chi-cuadrado	9.029***		5.419 ***		12.681***		6.431***	
R^2 Nagelkerke	13.9%		12.7%		15.6%		21.0%	

Wald statistical significance *, **, and *** at 0.10, 0.05, and 0.01 respectively

The previous logistic coefficients were obtained.

For the first model, a significant R^2 of 13.9% is observed. It can be noticed that the three financial literacy variables are positively affecting trust in the financial system. However, only financial products literacy and institutions financial literacy are highly statistically significant. Thus we can only confirm the results of the previous linear model for two of the three financial literacy variables, but not for the basic financial knowledge variable.

Moreover, being an investor or having a financial advisor, have both a positive and significant impact on trust in the set of different financial institutions. Age is significant as well but has a negative impact on trust, making older individuals more trust averse in the financial system. Lastly, being female as well as having a greater socio-economic status positively affects trust, but not in a significant way.

The second model has a significance of 12.7%, and as in the previous model, the three independent variables positively affect trust in banks, however, only financial products literacy and institutional financial literacy are significant when it comes to explaining trust in banks. Furthermore, it can be observed that all the variables except age positively affect trust in banks. Being an active investor, having a financial advisor, and gender unlike in the previous model, affect significantly trust in banks. As in the linear regression socio-economic level is not having any significant impact regarding trust in banks.

The third and fourth models testing H3 and H4 have an R^2 of 15.6% and 21% respectively. Regarding the financial literacy variables, it is noted that they all affect positively the level of honesty and solvency perceived in banks. However, when it comes to honesty perceived, only financial product literacy and financial literacy related to institutions are significant, whereas for solvency perceived in banks, the three variables – basic financial literacy, financial products literacy, and financial institutions literacy – significantly predict H4. In addition, having investment experience, and age positively and significantly affect perceived honesty and solvency. Having a financial advisor positively and significantly predicts honesty perceived, but not solvency, while again socio-economic status is not significant for these models. Regarding solvency perceived in banks, gender is highly significant and negatively predicts the model, meaning that men exhibit higher perception of solvency for banks than women. In the case of honesty perceived in banks gender is not significant.

Overall, logistic regression results confirm the predictions of linear regression models for the independent variables.

V. Discussion

The objective of this thesis is to investigate the **extent to which financial literacy affects individuals' trust in the financial system.** Previous research has shown the relevance and positive effect of financial trust and financial knowledge on investment decisions. Therefore, this study is important because trust in the financial system can promote economic development through investment while facilitating companies´ financing. Moreover, confidence in financial institutions is necessary to participate in financial markets and to encourage savings. For instance, in developed economies where life expectancy is increasing, and birth rates are decreasing,

household investment activity is fundamental to generate savings in this current environment where public pension systems are having difficulties to cover retirement payments.

The main findings from this thesis are that financial literacy has always a positive influence in trust in the financial system. Indeed, contrary to the evidence showed by previous literature, where a negative relationship between well-educated or financially literate investors and their level of trust towards the financial markets is observed (Kersting et al., 2015), the results from this study show that trust in the financial system is positively affected by financial literacy.

However, the extent of this positive effect, depends on the type of financial literacy an individual has. Moreover, among the three types of financial literacy distinguished in this thesis, financial product awareness is the one that has the most important effect when it comes to predicting trust in the financial system and in banks. Hence, individuals having a broader and explicit knowledge in different types of financial assets and instruments (such as stocks, bonds, pension funds, mutual funds, life insurance products, etc.) have more trust in the financial system and banks. Institutional literacy and thus the understanding of the importance of the role played by depositary and auditing firms, happens to be very relevant as well (although less important than the previous type of financial knowledge) when explaining trust in the financial system and in banks. However, even though previous literature has based findings and focused on individuals´ basic financial literacy regarding individuals´ general knowledge of financial notions – such as interest rates, inflation and diversification effect on risk – we find that this type of literacy, although having a positive effect, is the least relevant and the extent to which it explains trust in the financial system and especially in banks is somewhat limited.

Honesty and solvency, two different components of trust in banks identified in previous research (Guiso,2010), are also positively affected by financial literacy. The type of financial literacy that is the most relevant when describing perceived honesty in banks is again the awareness of financial products. Additionally, basic financial knowledge and financial literacy regarding financial institutions, specifically auditing and depositary firms, play a secondary, yet important role when predicting perceived honesty. Interestingly, perceived banks' solvency (the ability of banks to meet their long-term debts and obligations) is mostly explained by the literacy individuals have on financial institutions' role, what makes sense given solvency constitutes a mechanism of guaranty

for investors. Therefore, individuals with a wider knowledge regarding the role played by some institutions, in particular depositary and auditing firms, perceive a higher level of solvency in banking institutions. This is the only case in which the individuals' knowledge about institutions' roles and functions prevail over individuals' awareness on financial investment products, when it comes to explaining this specific component of trust, perceived solvency. Therefore, basic financial literacy and financial products literacy also contributes, although with a smaller weight, to explaining and predicting solvency perceived in banks.

Consequently, the findings from this thesis show that more sophisticated financial literacy predicts to a greater extent than basic financial literacy, individuals' trust in the financial system. In particular, it is the knowledge about investment products that has the highest relevance in terms of explaining trust in financial institutions, in banks and in the level of individuals 'perceived honesty in banks. And additionally, financial understanding regarding institutions functions and roles, is the most relevant type of financial literacy explaining the level of solvency perceived in banks. Therefore, unsophisticated or basic financial literacy, on the other hand, fails to have a meaningful impact, playing a more discrete role when explaining financial trust.

The analysis of the influence of financial literacy on financial trust in this study has involved two types of control variables: behavioral variables and socio-demographic variables.

Two types of behavioral controls are distinguished: Whether participants are active investors (and have held investment assets in the last two years) and whether individuals have received financial advice (at least occasionally). Holding investment assets and the reliance on a financial advisor appear in this study as being very relevant when it comes to explaining trust in the financial system and in banks. Indeed, having investment experience and relying on a financial advisor, increases the level of confidence individuals have in both the financial system and in banks.

Previous research has shown that having a financial advisor cancels the effect of financial literacy on financial decisions or investments. Therefore, it could be interesting to address if financial advice interacts with financial literacy to explain trust, in the sense the literature has found they interact to explain investment decisions. That is to say, if financially literate individuals trust more regardless of whether they rely on an advisor, as well as if non-financially literate individuals show more confidence in the financial system when they rely on financial advisors.

On the other hand, having investment experience makes individuals more aware of the investment assets they have held. Therefore, investment experience could be seen as a proxy for financial products literacy at least involving products in which individuals have invested. From this view, the analysis of the relationship between financial literacy and "investor/non-investor" status would also result of great interest. It would shed light on the direction of the relationship between financial literacy and individuals' investment status, and therefore to answer questions such as: is financial knowledge influenced by individual's "investor non-investor" status? Are those individuals with higher financial literacy investing more in financial products?

Socio-demographic variables that have been of relevance in previous research regarding decision making, trust and financial literacy, have been used as controls in this study, to analyze the extent of the relationship between financial trust and financial awareness. The variables incorporated in the study were socio-economic status, age and gender.

Although the literature finds that individuals´ socio-economic level (including wealth and education) partially contributes to explaining financial decisions, the results in our study show that its impact on trust is insignificant. Hence, socio-economic status does not contribute to explaining neither trust in the financial system or in banks, nor honesty or solvency perceived in banks. Indeed, this is an unexpected and interesting result, meaning that confidence in the financial system is not driven by the education level or the population' income as could have been anticipated. The impact of the financial crisis and the numerous scandals of corruption could be behind this result.

Additionally, outcomes from this study show that age has a very small yet negative relationship with trust in the financial system and trust in banks, meaning that the older the individual, the less likely he or she will have trust in financial institutions. Previous literature in contrast, outlines a positive relationship between age and trust in the financial system, with middle aged and older individuals being inclined to have more trust in the financial system. More in line with previous literature observations, the results from this thesis show that age does have a positive relationship with the two components of trust in banking institutions analyzed: perceived honesty and solvency in banks. As a matter of fact, being older shows to relatively impact in a positive manner, the level of honesty and the level of solvency perceived in banks.

Finally, gender contributes to explaining the trust puzzle; women have a significantly higher level of trust in both the financial system and banks compared to men. However, regarding the honesty perceived and especially the solvency perceived in banks, men tend to exhibit higher levels of these two components of trust in banking institutions. Therefore, previous literature is only partially in line with these results, since researchers have argued that men tend to trust more the financial markets.

Implications

Considering that previous literature has treated financial literacy and financial trust as binary variables, a threshold level can be established to determine if individuals have financial literacy or trust in the financial system. through this process, this work shows that only 17% of individuals exhibit financial products literacy, whereas 43% and 47% respectively have financial literacy regarding institutions and basic financial literacy. Interestingly, outcomes show that the most important type of financial literacy affecting financial trust is financial products awareness, and yet it is the least present among the population. The most frequent type of financial knowledge, basic financial literacy, is the least relevant or important when it comes to explaining trust in the financial system and in banks as well as the perceived honesty and solvency in banking institutions.

In light of these results, this study has two main implications. The first one is the need of better financial education and the need to provide more information about investment options and products to promote saving among households. Indeed, official organizations have focused so far on promoting basic financial knowledge (e.g. the education plan launched by the Securities Exchange Commission in Spain). However, one of the conclusions of this research is that the emphasis of financial education should be on informing individuals on the diversity of the products and instruments available for investment as well as on the functions of financial institutions.

The second implication is that for financial entities, greater financial education regarding financial products literacy and awareness on different types of financial institutions among individuals would have positive repercussions on investment and financial activity. Hence, sophisticated financial literacy contributes to having trust in the financial system, and financial trust incentivizes financial participation.

Therefore, both official institutions and financial entities should get involved in providing deeper and broader information about investment products and instruments with transparency and clear explanations about the risk-return tradeoff and other implications of these instruments for investors (e.g. taxes effects).

VI. Conclusions & Limitations

After the financial crisis that began in 2008, numerous academic and professional works have focused on the study of trust in the financial system. On the other hand, the financial authorities have reacted to this crisis by implementing measures to raise the basic financial literacy of individuals[2] and by requiring financial intermediaries, through new regulation, greater transparency in the information they provide to their clients. In spite of it, the financial literature has far ignored the role played by financial literacy in explaining individuals' trust in the financial system and intermediaries.

This work tries to fill this gap by analyzing the effect of different types of financial literacy (basic and sophisticated) on individuals' financial trust. The evidence resulting from the models proposed, points at the sophisticated financial literacy as the most important factor determining individuals' financial trust.

Specifically, the results show that financial literacy of investment products and instruments available in the market (bonds, stocks, mutual funds, pension funds, hedge funds, saving insurance, etc.) is the most significant key driver of individuals trust in the whole financial system as well as in the banking institutions. Moreover it is also the most important variable affecting perceived honesty in banks. However, individuals feel that this kind of financial knowledge about products is the one that they lack most. When it comes to explaining solvency, again, the most important factor is one of the sophisticated types of financial knowledge analyzed, although this time, it is the awareness about the functions and roles played by two financial institutions, auditing and depositary firms, that provide additional guaranties to investors, what matters the most.

[2] e.g. the financial education plan launched by the Bank of Spain and the Securities and Exchange Commission in Spain.
https://www.cnmv.es/portal/Publicaciones/PlanEducCNMV.aspx

Interestingly, basic financial literacy, although important, shows lower effect, and in some cases no effect to explain individuals' financial trust (e.g. trust in banks). Basic financial literacy is however more relevant at the time of explaining the perceived solvency in banks, contributing to the model the same that knowledge of investment products.

The results of the study also suggest that individuals that are active investors exhibit a higher level of confidence in both the financial system as a whole and in banking institutions; as well as those individuals who rely on financial advisors.

Nevertheless the results should be taken with caution since the study has focused on the Spanish population, and cultural factors and the specific circumstances of the country could affect the findings. Therefore, a generalization of these results would require further research with samples from other countries. Another limitation and area of future research is the further elaboration of the variable financial literacy related to the role played by relevant financial institutions. This work has measured financial literacy in institutions through the individuals' knowledge about the functions performed by two institutions, auditing and depositary firms. However, the role played by other institutions such as the Central Bank, Insurance Official Authority, Securities Exchange Commission, etc. is very relevant for the appropriate functioning of the financial system. Thus, individuals' knowledge about the role played by these institutions should reinforce their confidence in the financial system. Future research in these two areas, extending the sample to other countries, and broadening the number of institutions considered in the variable financial literacy on institutions would be very valuable.

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