

## WHAT DO WE KNOW ABOUT FINANCIAL LITERACY? A LITERATURE REVIEW

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### *Abstract*

*This article provides a literature review about the dilemma of financial literacy. The individuals and families' financial decision process is getting more vital in recent years. Given the increasingly risky and globalized markets, the actual context of global financial crisis and the continuous increasing in the complexity of financial products and services, individuals must be able to make well-informed and correct decisions. Consequently, higher levels of financial knowledge contribute to more extensive economic growth and development. However, it has been shown that, in global terms, the financial literacy present low values, which suggest the need of financial educational programs in the schools curricula. There is also evidence of a positive relationship between financial literacy and investment decisions, as well as retirement programs. Studies conducted to date suggest that there are socioeconomic conditions that influence the financial knowledge, attitudes and behaviours, such as age, gender, work experience, income and education level.*

**Keywords:** *Financial Literacy, Financial Behavior, Personal Finance*

## FİNANSAL BİLGİ HAKKINDA NE BİLİYORUZ? BİR LİTERATÜR TARAMASI

### *Özet*

*Bu makale finansal okuma ikilemi hakkında bir literatür taraması sunmaktadır. Bireylerin ve ailelerin finansal karar alma süreçleri son yıllarda daha hayati bir hale gelmiştir. Giderek daha küreselleşen ve riskli hale gelen pazarlar göz önüne alındığında, küresel finans krizinin güncel bağlamı ve finansal ürün ve hizmetlerin gittikçe karmaşık hale gelmesi, bireylerin iyi bilgilendirilmiş olmasını ve doğru kararlar vermesini zorunlu hale getirmektedir. Sonuç olarak, daha yüksek düzeylerdeki finansal bilgi birikimi daha kapsamlı ekonomik büyümeye ve kalkınmaya katkı sağlamaktadır. Bununla birlikte, genel olarak finansal okumadaki*

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*zayıflık, okul müfredatlarında finansal eğitim programlarına ihtiyaç duyulduğunu göstermiştir. Finansal okuma ile hem yatırım kararları hem de emeklilik programları arasında olumlu bir ilişki olduğuna ilişkin kanıtlar da vardır. Bugüne kadar yapılan çalışmalar, yaş, cinsiyet, iş tecrübesi, gelir ve eğitim düzeyi gibi sosyoekonomik koşulların finansal bilgi, tutum ve davranışları etkilediğini ortaya koymaktadır.*

**Anahtar Kelimeler:** *Finansal Okuma, Finansal Davranış, Kişisel Finansman*

## **Introduction**

Financial literacy is the ability to understand matters of financial nature, consisting in the set of skills and knowledge that allows an individual to make informed and effective decisions through their understanding of finances. It is associated with the set of attitudes that are relevant for the financial decision-making, behavior and knowledge. These decisions include when to save, when to spend, managing a budget, choosing the right financial products and willingness to address other events, such as financing children's education and planning for retirement. The higher the financial literacy, the higher the benefit for people because it helps them making better financial decisions and gives them more control over their money. Consequently, it improves the economy performance. More financially literate contribute to broader economic growth and development (Kefela, 2010). However, Mak and Braspenning (2012) argue that consumers generally do not have a sufficient level of financial literacy in order to enable them to make informed and rational decisions, concluding that behavioral biases have a distorting influence on consumer decision-making.

This subject has highlighted the importance in the actual context of global financial crisis as well as in the increasing complexity of financial products and services. It intensifies the asymmetry of information between financial institutions and costumers, which justifies the need to acquire competences concerning financial issues, as well as be informed about the increasing complexity and diversity of financial products. It is needed to promote citizens savings and avoid families' over-indebtedness. Being financially literate is a lifelong process. With the constant and quick changes in personal and economic circumstances, individuals need new knowledge and skills to manage successfully their finances (Szpringer, 2007).

The constant innovation in the financial market, the increasing complexity of information and the different needs of investors according to their age, require all investors to be familiar with matters of financial nature, including young people, considered a public-priority target. Young people becomes a more attractive

consumer segment in the economy worldwide (Altintas, 2011). According to Chen and Volpe (1998), young adults need to have the basic knowledge and skills to make important personal financial decisions.

The lack of financial capability can impact not only young people, but also family life (Jorgensen and Savla, 2010). Some possible reasons for family burden and financial difficulties are the increasing number of consumer debt and bankruptcies (Lyons and Hunt, 2003) and a loss of savings and investments for retirement (Grable and Joo, 1998).

So far, the empirical evidence notes that there is a systematic lack of personal finance education in the education system. Jorgensen and Savla (2010) suggest that educators could offer financial seminars and workshops to teach both financial literacy and how parents can increase their ability to discuss, teach, and model financial principles to their children, especially to families with lower income.

However, these education programs involve costs. Willis (2008) contends that the costs of financial education programs outweigh potential benefits. In contrast, other studies support a relationship between financial education, financial literacy and positive financial outcomes (Fox *et al.*, 2005; Lusardi 2003). These mixed results may indicate that not all financial education programs are equally effective, that factors other than financial literacy contribute to financial distress or both. Literature on the cause and effect relationship between financial education and financial literacy is particularly limited (Huston, 2010). Oehler and Werner (2008) carried out an evaluation in England and in Germany, concluding that financial education in the form of advice and training can be effective in the sense of inducing behavioral change.

The remainder of the paper is organized as follows. Section 2 presents the literature review, providing an overview of the main theoretical frameworks about financial literacy as well as the main empirical studies done in this domain. Section 3 presents the main conclusions.

## **1. Literature Review**

Most of the researches in the related literature were generally focused on four main points: 1) measuring financial literacy level; 2) valuing the impacts of financial literacy on financial behaviors and attitudes; 3) assessing special characteristics that widely influence financial literacy level; and 4) evaluating the effectiveness of curriculum in schools or educational programs (Altintas, 2011). In addition, some of the studies focus in particular segments, such as young people and low income individuals, or in particular phenomenon, namely the relationship between financial literacy and retirement planning.

### **1.1. The financial literacy among teenagers and young adults**

A vast group of researchers have analyzed the financial literacy among teenagers and young adults (Chen and Volpe, 1998, 2002; Beal and Delpachitra, 2003; Clarke *et al.*, 2005; Allen *et al.*, 2007; Johnson and Sherradden, 2007; Sherradden *et al.*, 2007; Jorgensen and Savla, 2010; Altintas, 2011).

Research undertaken worldwide, particularly in the US and in the UK has reached to the similar conclusion that young people report poor financial literacy skills (Hoare, 2003; Mandell, 2008).

Poor financial choices could have a number of negative consequences for young people. Financially illiterate graduates might be subject to various financial or judicial enforcements, such as bankruptcy, mortgage crises or financial frauds. In order to protect young adults from the costly consequences of financial illiteracy, the evaluation of financial literacy must be analyzed for transforming them into financially knowledgeable individuals by the help of financial education (Altintas, 2011).

Chen and Volpe (1998) analyzed the relationship between financial literacy and students' characteristics as well as the impacts of financial literacy on students' opinions and decisions among college students. Their results suggest that students in the lower class ranks, younger, with little work experience and female present lower levels of financial knowledge. The authors conclude that college students present low level of financial knowledge, which limits their ability to make informed financial decisions, which is consistent with the results of Beal and Delpachitra (2003), for a group of student population of a regional Australian university.

Sheradden *et al.* (2007) examined a college saving program for public elementary school children, called the "I can save" and conclude that teachers, children, and their families are passionate about the saving program, which taught significant financial education.

Tomášsková *et al.* (2011) conducted a survey to 170 university students in the Czech Republic. The authors conclude that students do not have a comprehensive overview of the basic relations on the financial market, suggesting the introduction of a financial literacy subject on the students' curricula.

Although the relative low level of financial knowledge, Kindle (2010) found that American students have a moderate receptivity to financial education.

### **1.2. The influence of gender on the level of financial literacy among teenagers and young adults**

In the context of the research papers based on teenagers and young adults' samples, several studies analyzed the influence of gender on the level of financial knowledge. However, the evidence is not consensual. Although a vast number of empirical studies suggest that gender is a significant variable impacting on the level of financial literacy (Chen and Volpe, 2002; Al-Tamimi and Kalli, 2009; Almenberg and Säve-Söderbergh, 2011; Fornero and Monticone, 2011; Lusardi and Mitchell, 2011b), others find no relationship between the two variables (Wagland and Taylor, 2009; Jorgensen and Savla, 2010; Altintas, 2011; Bucher-Koenen and Lusardi, 2011).

Chen and Volpe (2002) surveyed a group of about 1,800 college students in order to investigate the gender differences in personal financial literacy, concluding that women generally have less knowledge about personal finance topics as well as education. In general, women have less enthusiasm and confidence in personal finance. One possible reason can be related to the weight of finance in their curriculum, since the evidence shows that women rate English and humanity courses more important, and men rate mathematics and science. In addition, the results show that, for both men and women, experience could have a significant impact on financial literacy.

Wagland and Taylor (2009) explored the gender difference and its impact on the level of financial literacy among Australian undergraduate business students at the University of Western Sydney. Globally, the findings show that gender is not a significant factor influencing the financial literacy level among Australian students, which contradicts the conclusions obtained by Chen and Volpe (1998, 2002), among others. Indeed, it is interesting to note that some responses indicate women to be somewhat more financial literate than men. Altintas (2011) find similar results, in a sample of Turkish individuals.

Bucher-Koenen and Lusardi (2011) examine the financial literacy in Germany, finding no gender disparity in financial knowledge in East Germany.

### **1.3. The influence of parents on the level of financial literacy young people**

Moreover, some studies found evidence of an influence of parents on young people financial knowledge, attitudes and behaviors, such as Clarke *et al.* (2005), Allen *et al.* (2007), Jorgensen and Savla (2010) and Altintas (2011).

Jorgensen and Savla (2010) study the parental influence on the financial literacy of young adults, based on a sample consisting of 420 college students. The authors find that perceived parental influence did not have an effect on financial knowledge, had a direct and significant influence on financial attitude, and had an

indirect and moderately significant influence on financial behavior. Globally, these conclusions are in accordance with the ones of Clarke *et al.* (2005). In addition, they conclude that many parents do not teach their children financial knowledge. The evidence that gender did not influence the financial knowledge is contrary to previous evidence (e.g., Borden *et al.*, 2008) that found male students had more financial knowledge than female students, but meets the results of other studies (eg., Wagland and Taylor, 2009). Consistent with Allen *et al.* (2007) results, Jorgensen and Savla find that both explicit and implicit reported learning increased students' financial attitudes and behaviors. This study, like previous ones, finds that many young adults have inadequate financial knowledge, attitudes, and behaviors.

Based on a survey carried out in the Turkish university students, Altintas (2011) evaluates the university students' financial literacy level and discloses the main characteristics that influence their financial literacy. Results show that university students do not have adequate knowledge on personal finance and financial management, suggesting that they need to improve their financial literacy in order to protect their financial security at the medium and long run. In addition, the results show that the main factors affecting the personal financial literacy of university students are class rank, age, family's income level, and students' discussion potential with their parents about financial subjects. However, he finds no evidence of gender influencing financial literacy, which contradicts the results of Chen and Volpe (1998, 2002), Lusardi and Mitchell (2011b) and Fornero and Monticone (2011), among others, but is in agreement with the results of Wagland and Taylor (2009), Jorgensen and Savla (2010) and Bucher-Koenen and Lusardi (2011).

#### **1.4. The financial literacy of low-income people**

In recent years, other empirical research focused on low-income people (Atkinson *et al.*, 2007; Buckland, 2010).

Atkinson *et al.* (2007) conducted a survey directed to about 5,000 UK adults, from 2006 to 2007. They develop an index for financial literacy and found that, globally, lower income respondents fell in the middle or bottom levels of financial literacy.

Buckland (2010) have interviewed and surveyed a group of low-income Canadian adults. The results show evidence of financial literacy among low-income respondents. They learned to cope with strict budgets, used diversified activities to raise their income, constrained their credit, and were fairly knowledgeable about relevant government programs and banking services. The author concludes that financial literacy varies across socioeconomic groups and their neighborhoods, namely because of the adult learning that occurs within a local context.

### 1.5. The relationship between financial literacy and investment decisions

Some studies have been focused on the relationship between financial literacy and investment decisions in the context of adult people (e.g., Al-Tamimi and Kalli, 2009; Van Rooij *et al.*, 2011b).

The Comissão do Mercado de Valores Mobiliários<sup>1</sup> (CMVM) devote special attention to financial literacy in Portugal. In this context, CMVM (2009) has conducted a survey of about 15,000 families residing in Portugal, in the period between January and April of 2009, concluding that in global terms, the financial knowledge of Portuguese residents is quite low. Particularly, their results show that Portuguese families have a low participation in the securities market. In addition, the findings suggest that some socioeconomic factors are determinant for the participation of Portuguese families in the securities market. It finds that men, household income, education level and higher-skilled occupations have a positive relationship with the probability of investing in the financial markets.

Al-Tamimi and Kalli (2009) have focused on the United Arab Emirates investors. Globally, they find that financial literacy is far from the desired level and that female have a lower level of financial literacy than male. In addition, the authors find a significant relationship between financial knowledge and investment decisions, being religious reasons, firms' reputation, firms' ethics and diversification purposes the major influencing factors.

Van Rooij *et al.* (2011b) analyzed the relationship between households' financial literacy and its stock market participation in the context of the Netherlands, finding that those with low financial literacy are much less likely to invest in the stock market. In line with this conclusion, Calvet *et al.* (2007) reported that low-education and low-wealth investors are likely to hold poorly diversified portfolios, which is consistent with the results of Christelis *et al.* (2010) and Van Rooij *et al.* (2011b), who find that more financially literate individuals tend to include stocks in their portfolios because they better understand the principle of risk diversification.

Klapper *et al.* (2012) study the consequences of greater financial literacy on the use of financial products and financial planning in Russia. Financial literacy is positively related to participation in financial markets and negatively related to the use of informal sources of borrowing.

Carpentier and Suret (2012) administered a survey to 1,814 Canadian investors who manage their own stock portfolios, in order to estimate the level of investors' knowledge and rationality, concluding that their knowledge scores are generally

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<sup>1</sup> Portuguese Committee on Securities Market.

mediocre. The authors find that investors are generally unaware of gaps in their financial knowledge. However, they indirectly recognize these gaps by expecting to achieve returns below than or equal to those of the market index.

In addition, there is evidence showing that higher financial literacy investors invest in lower cost funds (Hastings *et al.*, 2010; Hastings and Mitchell, 2011) and that investment performance declines with advanced age (Korniotis and Kumar, 2011).

### **1.6. The relationship between financial literacy and retirement planning**

Another approach developed in the last years is the study of the relationship between financial literacy and pension plans (Almenberg and Säve-Söderbergh, 2011; Bucher-Koenen and Lusardi, 2011; Crossan *et al.*, 2011; Fornero and Monticone, 2011; Lusardi and Mitchell, 2011a, 2011b; Van Rooij *et al.*, 2011a).

Bucher-Koenen and Lusardi (2011), Fornero and Monticone (2011), Lusardi and Mitchell (2011a, 2011b) and Van Rooij *et al.* (2011a) find that households who are more financially knowledgeable are more likely to plan for retirement, concluding that there is a positive and strong relationship between financial knowledge and retirement planning, in the context of Germany, Italy, United States and Netherlands, respectively. According to the evidence founded in the previous empirical research, Lusardi and Mitchell (2011a) found that, around the world, financial literacy is critical to retirement security.

In contrast, Almenberg and Säve-Söderbergh (2011), not controlling for demographic variables and Crossan *et al.* (2011) find that financial literacy is not related with retirement planning, respectively in Sweden and New Zealand.

Planning has also been associated with higher wealth even among the better educated people (Ameriks *et al.*, 2003) and it is also of interest for the young and middle aged (Lusardi and Mitchell, 2009).

Power *et al.* (2011) tried to determine the level of graduating business finance students' retirement knowledge, motivation to save for retirement, and relationship between financial education and financial literacy before and after taking a senior-level Personal Risk Management and Insurance (PRMI) course. They find that many individuals have limited knowledge regarding financial issues and are ill prepared to make sound financial choices. In particular, business students were more financially literate than non-business students and business students' familiarity with retirement plans and personal level of readiness to make retirement planning decisions improved significantly after taking the principles class, which suggests that there is a curricula deficiency in business education in the area of financial and retirement literacy. The results support the findings of Jennings *et al.* (2003) that communication and benefits value interact in complex ways and that

student who have a greater benefits (retirement) understanding may need less communication. In addition, the results are in accordance with the findings of previous studies that showed gender differences exist in the area of retirement planning and level of financial knowledge (Chen and Volpe, 1998, 2002; Al-Tamimi and Kalli, 2009; Almenberg and Säve-Söderbergh, 2011; Fornero and Monticone, 2011; Lusardi and Mitchell; 2011b, among others), but in contrast with the results of Wagland and Taylor (2009), Jorgensen and Savla (2010), Altintas (2011) and Bucher-Koenen and Lusardi (2011), who find that gender is not a significant factor influencing the financial literacy level. Power *et al.* (2011) stated that their findings provide support for including financial literacy as a general education requirement at colleges and universities.

### **1.7. The socioeconomic conditions influence on the financial literacy**

Several studies find evidence those other factors, such as socioeconomic conditions influence the financial knowledge, attitudes and behaviors (Chen and Volpe, 1998; Xiao *et al.*, 2006, Mendes and Abreu, 2006; Buckland, 2010; Almenberg and Säve-Söderbergh, 2011; Bucher-Koenen and Lusardi, 2011; Fornero and Monticone, 2011; Lusardi and Mitchell, 2011b).

In the Portuguese context, several studies were carried out. Mendes and Abreu (2006) analyzed the financial literacy level of Portuguese investors, surveying about 1,200 investors. The results show that the financial literacy of Portuguese individual investors is low, which is consistent with the results of Benavente (1996) and the results of a study carry out by Banco Espírito Santo (BES, 2006). The authors conclude that the academic degree and the financial knowledge have a significant impact on the individual financial decisions. This evidence justifies the need for efforts development by the regulatory authorities and private organizations to increase the disclosure of financial information as well as the promotion and development of financial education programs for investors.

Some years later, Banco de Portugal<sup>2</sup> (2010) conducts a financial literacy survey, which project began in 2008. In general, Portuguese have positive attitudes, but they do not always correspond to appropriate financial behavior. The evidence that only a small percentage of respondents reveals saving habits, suggesting that Portuguese seem not to be sensitive to saving is disturbing, namely in the actual context of international financial crisis. The results show that the level of financial literacy is directly related to schooling and to the income range of respondents. However, the evidence shows that individual cannot adequate properly the financial products to their risk profiles. It can be associated with the evidence of a significant gap in the understanding of basic financial concepts and in knowledge of the main

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<sup>2</sup> Bank of Portugal.

sources of information. The study concludes that respondents trust the credit institutions, which is crucial to the financial system stability. In what concerns the questions about financial concept knowledge, a significant number of interviewees give incorrect answers, instead of admitting not knowing, suggesting they overestimate their financial apprehension, which can be in agreement with the overconfidence phenomenon (DeBondt, 1998; Shefrin, 2007) in the context of the behavior finance.

Henriques (2010) surveyed about 500 residents in Portugal, in order to understand the level of financial literacy of the Portuguese population, by establishing a profile of this population with regard to knowledge of financial terms, and tried to establish whether there are socio demographic factors that influence this type of knowledge. Globally, the author concludes that the Portuguese population presents a low level of financial literacy. The results show that variables such as age, sex, marital status, educational attainment, employment status, area of education and income have a strong influence on the level of literacy. Indeed, women, the younger and older people, single persons, lower qualifications, unemployed and that they have a lower income are the ones that present low levels of literacy knowledge.

Almenberg and Säve-Söderbergh (2011) empirical analysis shows that financial literacy levels in Sweden are lower among women, older people, and those with low earnings and education.

Bucher-Koenen and Lusardi (2011) demonstrate that knowledge of basic financial concepts is missing among women, the less educated, and those living in East Germany.

In the context of the United States, Lusardi and Mitchell (2011b) find that financial knowledge is especially low among the young, women, and the less-educated. Finke *et al.* (2011) conclude that financial knowledge scores decline about 1% each year after age 60.

Fornero and Monticone (2011) find that Italian males, the more educated individuals and the residents in the Centre-North possess higher literacy.

### **1.8. The financial literacy around the World**

Very recently, some studies focus on the analysis of financial literacy across the world (Atkinson and Messy, 2011; Lusardi and Mitchell, 2011a).

Lusardi and Mitchell (2011a) analyzed the financial literacy across eight countries (Germany, the Netherlands, Sweden, Japan, Italy, New Zealand, United States and Russia), motivated by the fact that, in an increasingly risky and globalized marketplace, people must be able to make well-informed financial

decisions. Their results show that financial illiteracy is widespread even when financial markets are well developed as in Germany, the Netherlands, Sweden, Italy, Japan, and New Zealand. The authors found that there are remarkable differences across countries. Globally, they found common patterns, such as: women are less financially literate than men and more educated people are more informed. They found also evidence that ethnic, racial and regional differences have a significant impact in the financial knowledge.

Atkinson and Messy (2011) report a OECD International Network on Financial Education questionnaire being piloted in 12 countries taking into account knowledge, behaviors and attitudes related to personal finances, in order to assess financial literacy. However, the framework for the analysis is being prepared, so, the results and conclusions have not yet been reported.

### **Conclusions**

This paper reviews the major contribution to the state of art of the financial literacy.

According the theoretical and empirical research done so far, we can summarise the main conclusions:

- Globally, people present low levels of financial literacy, even in the segment of young people, which limits their ability to make informed financial decisions (Chen and Volpe, 2002; Hoare, 2003; Allen et al., 2007; Jorgensen and Savla, 2010; Altintas, 2011, among others);
- There is a curricula deficiency in business education in the area of financial and retirement literacy. Consequently, Power et al. (2011), among other authors, suggest the inclusion of financial literacy as a general education requirement at colleges and universities;
- In what concerns the financial knowledge among low-income people, the results are curious. Whereas Atkinson et al. (2007) find that lower income individuals fell in the middle or bottom levels of financial literacy, Buckland (2010) find evidence of financial literacy among low-income respondents;
- Individuals tend to overestimate their financial knowledge (Banco de Portugal, 2010), which suggest some evidence of the overconfidence phenomenon (DeBondt, 1998);
- There is a positive relationship between financial literacy and investment decisions (Al-Tamimi and Kalli, 2009; Van Rooij et al., 2011b) as well as between financial knowledge and portfolios diversification (Calvet et al., 2007; Van Rooij et al., 2011b);

- A vast number of studies find a positive relationship between financial literacy and retirement programs (Bucher-Koenen and Lusardi, 2011; Fornero and Monticone, 2011; Lusardi and Mitchell, 2011a, 2011b; Van Rooij et al., 2011a). However, the results are not consensual, since other authors, such as Almenberg and Säve-Söderbergh (2011) and Crossan et al. (2011) find no significant relation between financial literacy and retirement planning;
- Although parents can have an influence on financial attitude of young adults, the perceived parental influence did not have an effect on financial knowledge (Jorgensen and Savla, 2010). Many parents do not teach their children financial knowledge (Clarke et al., 2005).
- There are some socioeconomic conditions that influence the financial knowledge, attitudes and behaviours, such as age, gender, marital status, work experience, income and education level. In global terms, the empirical research shows that financial knowledge is negatively related with some variables (Henriques, 2010; Almenberg and Säve-Söderbergh, 2011; Bucher-Koenen and Lusardi, 2011; Fornero and Monticone, 2011; Lusardi and Mitchell, 2011b), such as:
  - o Female;
  - o Younger and older people;
  - o Single status;
  - o Unemployed;
  - o Lower qualifications;
  - o Lower income;
  - o Lower education.
- In what concerns the relationship between financial literacy and gender, the results are not unanimous. Whereas some authors find that women generally have less knowledge about personal finance topics, such as Chen and Volpe (2002), Al-Tamimi and Kalli (2009), Almenberg and Säve-Söderbergh (2011) and Lusardi and Mitchell (2011a, 2011b), others find no relationship between the two variables (Wagland and Taylor, 2009; Jorgensen and Savla, 2010; Altintas, 2011; Bucher-Koenen and Lusardi, 2011).

One of the current trends in research on this topic is to analyze the financial literacy around the World. The scarce evidence points to remarkable differences across countries. However, given the paucity of studies, we need to wait some more time...

**References:**

- Al-Tamimi, H. A. H., & Kalli, A. A. B. (2009). Financial literacy and investment decisions of UAE investors. *The Journal of Risk Finance*, 10(5), 500-516.
- Allen, M. W., Edwards, R., Hayhoe, C. R., & Leach, L. (2007). Imagined interaction, attitudes towards money and credit, and family coalitions. *Journal of Family and Economic Issues*, 28, 3-22.
- Almenberg, J., & Säve-Söderbergh, J. (2011). Financial literacy and retirement planning in Sweden. *Journal of Pension Economics & Finance*, 10(4), 585-598.
- Altintas, K. M. (2011). The dynamics of financial literacy within the framework of personal finance: An analysis among Turkish university students. *African Journal of Business Management*, 5(26), 10483-10491.
- Ameriks, J., Caplin, A., & Leahy, J. (2003). Wealth accumulation and the propensity to Plan. *Quarterly Journal of Economics*, 68, 1007-1047.
- Atkinson, A. A., & Messy, F. (2011). Assessing financial literacy in 12 countries: An OECD Pilot Exercise. *Journal of Pension Economics & Finance*, 10(4), 657-665.
- Atkinson, A., McKay, S., Collard, S., & Kempson, E. (2007). Levels of financial capability in the UK. *Public Money and Management*, 27(1), 29-36.
- Banco Espírito Santo – BES (2006). “Os estudantes, a matemática e a vida financeira”. Lisbon: Centre of Banco Espírito Santo Studies.
- Banco de Portugal (2010). Survey on the financial literacy on the Portuguese population. Retrieved: March 15, 2012, from <http://clientebancario.bpportugal.pt>.
- Beal, D. J., & Delpachitra, S. B. (2003). Financial literacy among Australian university students. *Economic Papers*, 22(1), 65-78.
- Benavente, A. (1996). “A Literacia em Portugal: resultados de uma pesquisa extensiva e monográfica”. *Fundação Calouste Gulbenkian*. Lisbon: Conselho Nacional de Educação. ISBN: 972-31-0713-9.
- Borden, L. M., Lee, S., Serido, J., & Collins, D. (2008). Changing college students’ financial knowledge, attitudes, and behavior through seminar participation. *Journal of Family and Economic Issues*, 29, 23-40.
- Bucher-Koenen, T., & Lusardi, A. (2011). Financial literacy and retirement planning in Germany. *Journal of Pension Economics & Finance*, 10(4), 565-584.
- Buckland, J. (2010). Are low-income Canadians financially literate? Financial literacy in the context of personal and structural constraints. *Adult Education Quarterly*, 60(4), 357-376.
- Calvet, L., Campbell, J., & Sodini, P. (2007). Down or out: assessing the welfare costs of household investment mistakes. *Journal of Political Economy*, 115, 707-747.
- Carpentier, C. & Suret, J. (2012). “Financial knowledge and rationality of Canadian investors”. Working Paper from <http://ssrn.com/abstract=2038930>.
- Chen, H., & Volpe, R. P. (2002). Gender differences in personal financial literacy among college students. *Financial Services Review*, 11(3), 289-307.

- Chen, H., & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. *Financial Services Review*, 7(2), 107-128.
- Christelis, D., Jappelli, T., & Padula, M. (2010). Cognitive abilities and portfolio choice. *European Economic Review*, 54, 18-38.
- Clarke, M. D., Heaton, M. B., Israelsen, C. L., & Eggett, D. L. (2005). The acquisition of family financial roles and responsibilities. *Family and Consumer Sciences Research Journal*, 33, 321- 340.
- Comissão do Mercado de Valores Mobiliários – CMVM (2009). “O perfil do investidor particular Português”, *Estudos CMVM*, 3, p. 1-19. Retrieved: March 24, 2012 from <http://www.cmvm.pt/CMVM/Estudos/Em%20Arquivo/Documents/EstudoCMVM0320093.pdf>.
- Crossan, D., Feslier, D., & Hurnard, R. (2011). Financial literacy and retirement planning in New Zealand. *Journal of Pension Economics & Finance*, 10(4), 619-635.
- DeBondt, W. (1998). A portrait of individual investor. *European Economic Review*, 42(3-5), 831-844.
- Finke, M., S., Howe, J. & Huston, S. J. (2011). “Old Age and the Decline in Financial Literacy”, Working Paper from <http://ssrn.com/abstract=1948627>.
- Fornero, E., & Monticone, C. (2011). Financial literacy and pension plan participation in Italy. *Journal of Pension Economics & Finance*, 10(4), 547-564.
- Fox, J. J., Bartholomae, S., & Lee, J. (2005). Building the Case for Financial Education. *Journal of Consumer Affairs*, 39, 195-214.
- Grable, J. E., & Joo, S. (1998). Does financial education affect knowledge, attitudes, and behavior? An empirical analysis. *Personal Finances and Worker Productivity*, 2(2), 213-220.
- Hastings, J., & Mitchell, O. S. (2011). “How financial literacy and impatience shape retirement wealth and investment behaviors”. NBER Working Paper No. 16740.
- Hastings, J., Mitchell, O. S., & Chyn, E. (2010). “Fees, framing, and financial literacy in the choice of pension managers”. Pension Research Council Working Paper, Wharton School.
- Henriques, S. M. (2010). “Aspetos da literacia financeira dos Portugueses: um estudo empírico”, Master Thesis, Aveiro, DC: University of Aveiro, Portugal.
- Hoare, S. (2003). Making it all. *Financial World*, 32-37.
- Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44(2), 296-316.
- Jennings, M., Werbel, J. D., & Power, M. L. (2003). The impact of benefits on graduating student willingness to accept job offers. *Journal of Business Communication*, 40(4), 289-302.
- Johnson, E., & Sherradden, M. S. (2007). From financial literacy to financial capability among youth. *Journal of Sociology and Social Welfare*, 34(3), 19-146.
- Jorgensen, B. L., & Savla, J. (2010). Financial literacy of young adults: The importance of parental socialization. *Family Relations*, 59, 465-478.

- Kefela, G. (2010). Implications of financial literacy in developing countries. *African Journal of Business Management*, 5(9), 3699-3705.
- Kindle, P. (2010). Student perceptions of financial literacy: relevance to practice”, *Journal of Social Service Research*, 36(5), 170-481.
- Klapper, L. F., Lusardi, A. & Panos, G. A. (2012). “Financial literacy and the financial crisis”. Working Paper from <http://ssrn.com/abstract=2013864>.
- Korniotis, G. M. & Kumar, A. (2011). Do older investors make better investment decisions?, *The Review of Economics and Statistics*, 93(1), 244-265.
- Lusardi, A. (2003). “Saving and the Effectiveness of Financial Education”, PRC Working Paper 2003-14.
- Lusardi, A., & Mitchell, O. S. (2011a). Financial literacy around the World: an overview. *Journal of Pension Economics & Finance*, 10(4), 497-508.
- Lusardi, A., & Mitchell, O. S. (2011b). Financial literacy and retirement planning in the United States. *Journal of Pension Economics & Finance*, 10(4), 509-525.
- Lusardi, A., & Mitchell, O. S. (2009). “How ordinary consumers make complex economic decisions: financial literacy and retirement readiness”. NBER Working Paper 15350.
- Lyons, A. C., & Hunt, J. L. (2003). The credit practices and financial education needs of community college students. *Association for Financial Counseling and Planning Education*, 14(1), 63-74.
- Mandell, L. (2008). “The financial literacy of young American adults: Results of the 2008 national Jump Start coalition survey of high school seniors and college students”. Retrieved: March 19, 2012 from JumpStart Coalition for Personal Financial Literacy: from [http://www.jumpstartcoalition.org/upload/2009Book complete after Lew Edits.pdf](http://www.jumpstartcoalition.org/upload/2009Book%20complete%20after%20Lew%20Edits.pdf).
- Mak, V. & Braspenning, J. J. (2012). “Errare humanum est. financial literacy in European consumer credit law”. Working Paper from <http://ssrn.com/abstract=2016862>.
- Mendes, V., & Abreu, M. (2006). “Cultura financeira dos investidores e diversificação das carteiras”. CMVM Working paper, Lisbon.
- Oehler, A., & Werner, C. (2008). Saving for retirement: a case for financial education in Germany and UK? An economic perspective. *Journal of Consumer Policy*, 31, 253-283.
- Power, M. L., Hobbs, J. M., & Ober, A. (2011). An empirical analysis of the effect of financial education business students’ perceptions on graduating business students’ perceptions of their retirement planning familiarity, motivation, and preparedness. *Risk Management and Insurance Review*, 14(1), 89-105.
- Shefrin, H. (2007), *Behavioral corporate finance: Decisions that create value*. McGraw Hill Irwin.
- Sherraden, M. S., Johnson, L., Elliot, W., Porterfield, S., & Rainford, W. (2007). School-Based children’s saving accounts for college: The “I can save” program. *Children and Youth Services Review*, 29(3), 294-312.
- Szpringer, W. (2007). Improving financial literacy: reconciling suppliers and consumers?. *Finance & The Common Good*, III(28/29), 159-166.

- Tomášková, H., Mohelská, H., & Nemcová, Z. (2011). Issues of financial literacy education. *Social and Behavioral Sciences*, 28, 365-369.
- Van Rooij, M. C. J., Lusardi, A., & Alessie, R. J. M. (2011a). Financial literacy and retirement planning in the Netherlands. *Journal of Economic Psychology*, 32, 593-608.
- Van Rooij, M. C. J., Lusardi, A., & Alessie, R. J. M. (2011b). Financial literacy and stock market participation. *Journal of Financial Economics*, 101, 449-472.
- Xiao J. J., Sorhaindo, B., & Garman, E. T. (2006). Financial behavior of consumers in credit counseling. *International Journal of Consumer Studies*, 30, 108-121.
- Wagland, S. P., & Taylor, S. (2009). When it comes to financial literacy, is gender really an issue?. *Australasian Accounting Business and Finance Journal*, 3(1), 13-25.
- Willis, L. E. (2008). Against Financial Literacy Education. *Iowa Law Review*, 94, 197-285.