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The impact of decision-makers´ financial literacy on the financial performance of the companies

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STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

Resumo

Este estudo tem como objetivo fundamental aferir o nível de literacia financeira dos decisores das pequenas e médias empresas (PME) portuguesas. Adicionalmente, pretende identificar-se uma relação potencialmente positiva entre o nível de literacia financeira dos decisores e o desempenho financeiro das respectivas empresas com base em três indicadores : retorno sobre ativos (ROA), rentabilidade de capital próprio (ROE), margem de lucro líquida (Net Profit Margin).

A metodologia de investigação envolve uma abordagem quantitativa, utilizando dados de um questionário estruturado de uma amostra de PMEs de vários sectores de atividade da base de dados Orbis do Bureau van Dijk, bem como de uma base de dados adquirida e a divulgação do inquérito junto de associações empresariais de todo o país.

Os resultados mostraram que uma grande percentagem dos decisores das PME tem uma literacia financeira elevada, em termos de conhecimentos financeiros. De forma adicional, este estudo identificou uma relação positiva entre a literacia financeira e os três parâmetros de desempenho financeiro, nomeadamente o ROA, ROE e Net Profit Margin. Os resultados não revelaram qualquer relação entre a literacia financeira e o sexo e a idade, mas mostram uma diferença significativa no nível de educação, em particular entre as pessoas com um diploma de licenciatura e as pessoas com o 9º ano ou equivalente. Além disso, não foi encontrada qualquer relação significativa com a importância da contabilidade, bem como com o grau de tolerância ao risco.

Palavras-chave: decisores; desempenho financeiro; educação financeira; literacia financeira; PME.

Abstract

The main purpose of this study is to assess the financial literacy level of decision-makers in Portuguese small and medium-sized enterprises (SMEs). Additionally, it intends to identify a potentially positive relationship between the financial literacy level of decision-makers and the financial performance of their firms based on three indicators: return on assets (ROA), return on equity (ROE), and Net Profit Margin.

The research methodology involves a quantitative approach, utilizing data from a structured questionnaire of a sample of SMEs across various industries from the Orbis database of the Bureau van Dijk, as well as from an acquired database and the divulgation of the survey to business associations throughout the country.

The results showed that a large percentage of SME decision-makers have high financial literacy in terms of financial knowledge. Additionally, this study identified a positive relationship between financial literacy and the three parameters of financial performance, namely ROA, ROE and Net Profit Margin. The findings did not reveal any relation concerning financial literacy and gender and age but show a significant difference in education level, particularly between people with a BSc degree and those with 9th-grade or equivalent education.

Furthermore, no significant relation was found regarding the importance of accounting, as well as with the degree of risk tolerance.

Keywords: decision-makers; financial education; financial literacy; financial performance; SME.

Index

Abbreviations and/or Acronyms

CNSF- Conselho Nacional de Supervisores Financeiros

FL- Financial Literacy

OECD- Organization for Economic Co-Operation and Development

ROA- Return on Assets

ROE- Return on Equity

SME- Small and Medium-sized Enterprises

List of Figures

List of Tables

1. Introduction

This dissertation focuses globally on the importance of financial literacy in SMEs, targeting decision-makers' levels of financial literacy and how it relates to financial performance. The literature on financial literacy has primarily focused on the general population and students, with limited studies examining the levels of financial literacy within organizations. However, it is crucial to perceive the financial literacy of decision-makers as it can have a significant impact on the financial management, performance, and growth of a company.

The problem of financial illiteracy is prevalent globally, with some variations between developed and developing countries (Mbarire and Ali, 2014). Every year, this issue impacts millions of families as financial illiteracy has negative effects on people's lives. Sometimes, the consequences of financial illiteracy can be severe, including bankruptcy, unmanageable debt, foreclosure, and insufficient savings for retirement (Reich and Berman, 2015).

In the last few years, this topic has gained some prominence on the part of organizations that seek to increase financial literacy. In response to such concerns, financial education programs are often developed and promoted by agencies and organizations. This strategy resides on the idea that a more educated population will be financially more responsible.

Financial education in the workplace has shown potential regarding the increase of knowledge and beneficial financial behaviours, such as greater retirement savings (Bayer et al., 2009; Bernheim & Garrett, 2003; Kim & Garman, 2003; Loibl & Hira, 2005; Thaler & Benartzi, 2004), which is meaningful considering that most adults are not confident on the efforts that they made to save for retirement (Lusardi and Mitchell, 2011).

Similarly, financial education in school appears to improve the understanding of financial knowledge as well as beneficial financial behaviours which include savings and asset accumulation (Bernheim et al., 2001).

This problem has persisted for a long time and in all places without exception. The literature on this topic has gained considerable notoriety in recent years due to the negative results found in surveys (Atkinson, A., & Messy, F. A. M. F. L., 2012), as well as several financial scandals that have had a direct effect on people such as Enron, WorldCom, Wirecard, BES, Parmalat, and Lehman Brothers.

Financial scandals, such as those mentioned above, urge governments, banks, and economic organizations, in general, to make people more financially knowledgeable so that the dimension of these events is not as impactful.

Governments and institutions then seek to assess the levels of financial literacy, since financial education, financial consumer protection and financial inclusion are essential factors for the financial empowerment of individuals and the overall stability of the financial system (OECD, 2021).

On another level, these surveys will also provide governments and institutions with important information that they can use as the basis to reference themselves, know which solutions to better use, and work together to find answers for improving financial literacy and well-being within their populations.

Studies like Atkinson and Messy (2012), Lusardi and Mitchell (2014), and Mbarire and Ali (2014) reveal that the levels of financial literacy are low in high-income countries and even lower in middle and low-income countries. Factors such as gender, age, education, and sources of information have been found to affect the levels of financial literacy.

Over the years, literature has focused on the general population and students, leaving aside how this problem affects companies, which are the engine of economies. Studies concerning the levels of financial literacy in organizations are, in general, few. Financial literacy studies, in its majority, address the levels of financial literacy in society, education, and an approach to consumer behaviour.

These studies concerning levels of financial literacy of SME managers/decision-makers are limited, but the findings are similar to those applied to the general population. Managers/decision-makers frequently lack oversight and do not have sufficient competence in managing the financial aspects of their business (Domingos, 2017; Eresia-Eke & Raath, 2013; Hussain et al., 2018).

Eresia-Eke and Raath (2013) assert that the financial illiteracy of business owners can be a barrier to proper financial management, and as a result, business growth.

However, Berman and Knight (2013) assert that financially intelligent employees can help in the matters of the company and make the company grow. To do so, employees must be capable of reading/interpreting financial information, as well as the existence of an environment of financial transparency where financial information is available to all employees (Keegan, 1974).

Since we are studying decision-makers and not only managers in general, we consider that these employees may mitigate the lack of financial knowledge and help managers by being involved in the financial management of a company.

This research intends to determine decision-makers' financial literacy and the relationship between their financial literacy and companies´ financial performance.

2. Literature Review

2.1- Definition of Financial Literacy

The concept of financial literacy does not have a consensual definition of what it means specifically, nor has its limits settled by the corresponding literature. According to Remund (2010), FL[1] is the degree to which a person comprehends essential financial concepts and has the capacity and confidence to manage personal finances through proper, short-term decision-making and good, long-term financial planning while taking into consideration economic events and changes.

For Schagen and Lines (1996), financial literacy is the capacity to make informed judgments and to take effective decisions regarding the use and management of money, and for Atkinson and Messy (2012:14) is “a combination of awareness, knowledge, skill, attitude, and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing”.

Aprea et al. (2016) consider financial literacy to be a part of financial health that describes a person's knowledge and skill in managing personal finances. Reich and Berman (2015) regard financial literacy to be the acquisition of the essential knowledge and skills to effectively manage finances, use financial services, and navigate the consumer market. Moreover, the authors say it can also comprise financial behaviours including budgeting, bill payment, debt acquisition and payment, management of consumer problems, and comparison shopping.

OECD (2014) gives a broader definition, describing it as the “knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial wellbeing of individuals and society, and to enable participation in economic life”.

[1] Financial literacy

Huston (2010), on the other hand, links financial literacy with two different concepts. One is the financial knowledge that may be used to manage personal finance, and the other is the treatment of the finance part of a business.

Because there is no agreed-upon definition of financial literacy among academics and specialists in the available literature, the word has diverse interpretations by different authors and their works. Some may see it as a concept of attainment of the necessary knowledge and skills to manage finances, utilize financial services, and navigate the consumer market effectively.

Lusardi (2015) considers financial literacy as an essential skill to live and thrive in the 21st century and lists four new aspects of the financial literacy definition. First, financial literacy relates not just to knowledge and skills, but also to its objective, which is to facilitate successful decision-making. Second, the goal of financial literacy is to enhance people's financial health rather than to change specific behaviours like getting them to save more money or pay down debt. Third, financial literacy has an impact on society as a whole as well as the economy's cycle. Fourth, financial literacy enables young people to engage in the economy, just as fundamental skills like reading, writing, and scientific knowledge.

Kiyosaki (2001) considers financial literacy as the key to becoming financially independent and building wealth. The author emphasizes the importance of financial literacy and advocates for a better understanding of money management. For people to make wise financial and investment decisions and to achieve financial freedom, the author contends that financial literacy is vital. Financial literacy is, for the author, "the ability to read and understand financial statements, which allows you to identify the strengths and weaknesses of any business."

Some branches of the literature view financial literacy as a concept that is closely related to financial knowledge, attitude, and behaviour. These three components can also impact an individual's level of financial literacy, as experience and real-life outcomes can shape and reinforce their understanding and beliefs about money and finance. For Atkinson and Messy (2012), only these three dimensions should be used to judge financial literacy, as it is both justified and widely used in literature.

Overall, we can conclude that financial literacy is a complex concept that is defined by interconnected components including financial knowledge, attitude, and behaviour.

2.2- The importance of financial literacy

Studies in this area have gained some interest, especially among governments, banks, and economic organizations, which seek to assess the level of financial literacy in populations in general. Atkinson and Messy (2012) discuss the findings of a survey conducted by OECD´s International Network on Financial Education (INFE), intending to capture the financial literacy of people from diverse backgrounds in a total of fourteen countries across four continents. In the work, the authors argue that the majority of the population has low levels of financial literacy, knowing only very basic financial knowledge, in addition, significant proportions of the population in every country do not understand everyday financial concepts such as compound interest and diversification.

Atkinson and Messy (2012), and Potrich, Vieira and Kirch (2015), add that financial literacy assists individuals in more assertive and efficient decision-making. Individuals with positive financial behaviours such as appropriate planning for expenditures and concern for financial stability have higher levels of financial literacy. Whereas those with negative behaviours, such as heavily relying on credit and loans, have lower levels of financial well-being.

Financial literacy enables business success, especially when resources are flexible, and entrepreneurs have easy access to capital (Adomako & Danso, 2014). It also assists business owners and managers to innovate, budgeting, manage debt, accounting literacy, timely raw material acquisition, production, fixed and variable costs, and stock management (Jemal, 2019; Reich and Berman, 2015).

One of the primordial studies regarding financial literacy concerns Lusardi and Mitchell (2014), whose authors conducted extensive research on some of the most prominent works in the field and took an economic view of financial literacy, as well as the costs of being financially illiterate. The work lays the groundwork for several studies concerning financial literacy. The authors' definition of financial literacy is: "peoples´ ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions" (Lusardi and Mitchell, 2014:6). The authors also confirm, as almost all financial literacy literature does, that the majority of the population lacks financial literacy and basic financial knowledge. The authors argue that generalizing financial literacy programmes is ineffective, and therefore they should be targeted to specific groups of society. This line of thinking is followed by many studies (Lusardi & Mitchell, 2011; Hastings et al, 2013; Domingos, 2017) which assert that there is a big difference between traditional financial education and structured financial education initiatives.

Grohmann et al. (2018) found a link between financial literacy and financial inclusion when examining various countries, through four measures of financial inclusion. These were: owning a bank account at a formal financial institution; owning a debit card; the usage of a bank account to save; and lastly using a debit card during the year prior.

Financial inclusion gives individuals and businesses, access to financial products and services in an affordable and sustainable way regardless of their economic situation. The lack of financial inclusion is still a significant issue around the world, and according to the Findex data made in 2017, it shows that 1.7 billion adults still lack a bank account, which corresponds to the share of adults owning a bank account by 69 per cent (Demirgüç-Kunt et al., 2015; Demirgüç-Kunt et al., 2018). Of this number, about 56 per cent corresponds to women, and the largest unbanked population comes from countries such as China, India, Pakistan, and Indonesia. This situation has improved over time since in 2011, the account ownership corresponded to 51 per cent, and in 2014 to 62 per cent, meaning that just in eleven years, the levels of financial inclusion rose by 18 percentage points.

In addition, in high-income countries, about 94 per cent of adults have a bank account, in contrast with 63 per cent of adults in developing countries (Demirgüç-Kunt et al., 2018). This data mirrors the continued growth of financial inclusion as it is being powered by constant technological improvements like digital banks and payments, and the financial services and products available through phones and the internet (Demirgüç-Kunt et al., 2018).

The Findex data also reflects that government policies aimed at increasing financial inclusion are working and that it is of high importance for policymakers to understand what the financial inclusion factors are, and how they may be affected by national policies (Grohmann et al., 2018).

Financial inclusion improves financial infrastructure, which is at the heart of the financial system and has welfare effects that extend beyond financial benefits to the real economy (Grohmann et al., 2018), such as increasing employment (Bruhn and Love, 2014), improving the potential of people´s income and thus reducing poverty (Demirgüç-Kunt et al., 2018), and increasing savings (Brune et al., 2016). The increase in savings is good for the economy since it is with personal savings that most businesses get started.

Financially informed customers with a higher degree of financial literacy make better decisions for themselves and their businesses, supporting more financial inclusion and requiring more sophisticated financial services (Grohmann et al., 2018). Financial literacy and financial inclusion have a tight relationship since improving financial literacy leads to more financial inclusion. Therefore, improving financial literacy is significantly beneficial.

Several surveys conducted worldwide, such as in the United Kingdom (Atkinson et al., 2007), Austria (Fessler et al., 2007), Kenya (Mbarire and Ali, 2014), and internationally (Atkinson and Messy, 2012), have revealed that financial literacy levels are low in high-income countries and even lower in middle and low-income countries (Mbarire and Ali, 2014).

In many of these studies, socio-demographic results indicate that women have significantly lower levels of financial knowledge than men in almost all of the countries surveyed, and men are more likely to outperform women on various literacy tests (ANZ, 2008; Van Rooij et al., 2011; Atkinson and Messy, 2012).

Another relevant factor is age, which reveals that in most countries, middle-aged people have higher levels of financial literacy, while the young and old respondents are more likely to have lower levels (ANZ, 2008; Van Rooij et al., 2011; Atkinson and Messy, 2012).

Educational levels also affect the levels of financial literacy, in this case, individuals with a higher level of education such as a bachelor's or master´s degree are more likely to display positive financial behaviours and attitudes, as well as advanced levels of knowledge, in opposition to the ones with below high school level of education (Atkinson and Messy, 2012; Carraher and Auken, 2013; Mbarire and Ali, 2014; Jemal, 2019).

The choice of financial advisors and sources of information influences the respondents' levels of financial literacy. In their studies, Van Rooij et al, (2011), and Mbarire and Ali, (2014), discovered that the majority of respondents with low financial literacy depended on family and friends for information and financial advice. Whereas households with higher levels of financial literacy sought knowledge and financial advice from financial experts (e.g., an accountant or financial planner), and other outlets (such as newspapers, television, and the Internet) (Van Rooij et al, 2011; Mbarire and Ali, 2014).

The findings of the previous studies show that financial literacy is a serious challenge faced by all countries globally. The results provide evidence from which the countries can identify the national financial literacy problems and develop appropriate policies and strategies to counter them.

Moreover, strategies such as more specialized financial education programmes targeted at specific subgroups can work, as well as financial education initiatives that can establish a more beneficial relationship between entrepreneurs and the financial sector, more precisely the banking sector which is the origin of financing for most businesses (Lusardi and Mitchell, 2011; Lusardi and Mitchell, 2014; Domingos, 2017; Trombetta, 2016). If studies are conducted in more countries, the results and data become more accurate, enriched, and generalizable to all countries.

The PISA (Programme for International Student Assessment) financial literacy assessment measures the ability of 15-year-olds to demonstrate and apply financial knowledge and skills in a triennial worldwide survey.

With it, countries can assess the levels of financial literacy of their youth population, which reveal if students close to the end of mandatory education have obtained the financial knowledge and skills required for full participation in the 21st-century society´s economic life.

The PISA data have had a considerable impact on education policy in some countries. For instance, following the PISA results, substantial educational policy reforms were implemented in Switzerland and Germany, as student performance was lower than expected (Ertl, 2006; Bieber, 2010). These educational reforms included the establishment of national standards, as well as additional support for disadvantaged students, particularly those from immigrant backgrounds (Ertl, 2006). In countries such as the United States and France, the PISA data was used for education reforms to boost efficiency and competitiveness (Figazzolo, 2009). Additionally, it was also used for increased testing and assessment in Germany, Ireland, and Australia (Figazzolo, 2009).

New Zealand and the Czech Republic are two countries which already have a national financial literacy strategy established, and they performed significantly higher on the financial literacy assessment (Lusardi, 2015).

PISA is important because the levels of financial literacy and the inequalities in financial knowledge among young people can have serious repercussions in the future. As a result, governmental initiatives could be targeted directly toward disadvantaged students, more precisely girls and students from low-income families (Lusardi, 2015).

With big changes to pension systems and increased life expectancy in most developed nations, the duty of saving for retirement has shifted to individuals, even though few people have the ability to make sound financial decisions (Kim and Garman, 2003; Lusardi, 2015). Therefore, achieving financial security after retirement may be more challenging.

Lusardi and Mitchell (2011) tested the hypothesis of low levels of financial literacy being connected with poor planning, that is, whether people who declare being unable to plan for retirement and cannot execute their retirement saving plans are also the people who do not have financial knowledge and are least familiar with essential economic notions. The findings revealed that only two-thirds of the respondents comprehend compound interest, which the authors consider worrisome since respondents are older Americans between the age of 50 and 60 and do not comprehend a primary economic concept, which goes into the idea that financial illiteracy is widespread among older Americans. In addition, three-quarters of the respondents correctly answered the question concerning inflation and are aware that if the interest rate was 1 per cent and inflation was 2 per cent, they would be able to buy less after a year. Notwithstanding, only half of the respondents perceive that holding a single company stock has a higher risk than investing in a stock mutual fund.

Also, people often misunderstand essential financial concepts, specifically those concerning bonds, stocks, mutual funds, the compound interest process, as well as loans (mortgages for example). These results also apply to young Americans (Lusardi, 2015). Regarding retirement plans, even though they were just a few years away from leaving the workforce, a tiny fraction of respondents indicated that they had considered retirement planning. Furthermore, even among the educated, there is a general lack of retirement preparation.

Financial literacy is associated with factors such as higher income, education, and wealth holdings. Being financially literate is also substantially and positively linked to planning and related to good retirement plans. As Lusardi and Mitchell (2011) noticed, in the sample, fewer than one in five older Americans were successful in planning their retirement. In addition, the authors concluded that the people who cannot answer the questions of the study are much less likely to prepare and succeed in their planning endeavours.

Lusardi (2015) argues that the younger generation will face more financial risks because of increased life expectancy, reduced welfare and occupational benefits, and unpredictable economic and career prospects. In addition, today´s younger generation faces significantly more demanding financial decisions than the previous generations. Financial services and products are now more intricate and widely available because of globalization and the internet. The author also states that financial literacy is an essential skill and necessary to prosper in today's world, much as basic literacy such as reading, and writing was required to contribute to and achieve in an industrialized society. As a result, it is impossible to successfully thrive in the modern world without being financially literate.

2.3- The importance of financial literacy in organizations

Generally, there is the assumption that managers have high levels of financial literacy to run their companies, make sound financial decisions and prepare for future financial needs (Domingos, 2017). Financially literate individuals who can handle finances while actively engaging in business decision-making are needed for enterprises to perform well (Eresia-Eke and Raath, 2013). One of the most important success factors in business is financial management, which is dependent on the financial literacy of the company´s owners. Financial literacy requires managers to have financial knowledge, a well-defined attitude toward financial issues, and a sense of financial awareness (Sudarmoyo & Tahir, 2021).

Today, the challenging business environment demands SME managers to possess a set of skills to survive and maintain a competitive position (ALI and LI, 2021). Because financial literacy is vital in coping with ongoing economic developments (Huston, 2010), SMEs with increased FL, networking competencies, and market orientation will support a favourable financial performance (ALI and LI, 2021).

Networking competency is defined as a firm’s ability to build, manage, and deal with interactions with different types of relationships such as suppliers, customers, and other organizations. It also allows businesses to stay competitive in the market and enhance new market entry (Ritter et al., 2002; Parida et al., 2016). Market orientation enables SMEs to increase productivity by promoting more contact, cooperation, and coordination among personnel, to provide a superior customer value, and it can assist a company in better matching its assets and resources to the needs of its customers (Liao et al., 2011; ALI and LI, 2021).

Financial literacy and networking competency are positively associated with the financial performance of SMEs, and market orientation enhances the influence of financial literacy and networking competency on SMEs' financial performance (ALI and LI, 2021).

The topic of financial literacy is challenging for enterprises following the current awareness given by a range of diverse banking corporations, government agencies and all sorts of economic organizations. Investors, for instance, are worried about entrepreneurs’ lack of understanding of financial concepts (Adomako and Danso, 2014).

García-Pérez-de-Lema et al., (2021) argue that governments, financial institutions and agents, policymakers, Economic Chambers or employers’ associations and practitioners need to enforce policies to address the level of CEO's financial literacy in order to increase it, which in its turn can mean a stimulus for employment and SME growth, through obtaining more technological innovation developments.

Policymakers and governments could implement financial literacy aid programs to help managers/owners of SMEs to develop and enhance their levels of financial literacy. The programs could include the adoption of educational training programs, some to increase accounting skills like preparing financial statements and balance sheets and budgeting, or programs to evaluate investment opportunities (ALI and LI, 2021).

Agyapong and Attram (2019) suggested that policymakers develop a platform to enable the owner-managers of SMEs, to increase their financial literacy and enhance their enterprises' performance. On a similar note, to increase the levels of financial literacy of medium-sized business owners, Jemal (2019) advised governments to support financial literacy training and to include financial literacy matters in the school curriculum (Lusardi, 2015; Domingos, 2017; Hussain et al., 2018; Fauziyah et al., 2022).

School-based financial education initiatives are not only practical, but they also benefit all demographic groups (Lusardi, 2015). In the United States, some states have required high schools to include personal finance classes in the curriculum. Financial literacy in high school is mandatory in some countries, such as the United Kingdom.

Governments could also facilitate the access of owners/managers of SMEs, to various networks with other parties such as banks and improve business matching prospects (ALI and LI, 2021).

As proven by Jemal (2019) and Sudarmoyo and Tahir (2021), the majority of owners and managers lack the skills necessary to determine the most favourable choices to enhance the efficiency of their businesses.

Financial literacy is increasingly important in business financing decisions and their subsequent success. The lack of financial literacy in a firm can have an impact on the company´s day-to-day money management, as well as its capacity of using capital for long-term purposes like investing in profitable projects and ventures.

According to Adomako and Danso (2014), the internal strengths of a company, such as access to financial capital and resource flexibility, determine the direct impact of financial literacy on business performance. The authors investigated the direct relationship between financial literacy and firm performance, as well as the potential moderating effects of resource flexibility and financial capital availability on this relationship.

They found that financial literacy increases business performance, especially when resources are flexible, and entrepreneurs have easy access to financing. These findings are consistent with the majority of other research in the field, which implies a crucial relationship between financial literacy and positive financial outcomes. Furthermore, according to the authors, financially savvy entrepreneurs should seek flexible resources and access to financial capital in order to improve their firm´s success.

Studies like Domingos (2017), Eresia-Eke and Raath (2013), and Hussain et al. (2018) argue that managers frequently lack oversight and have limited competence in managing the financial aspects of their business. Sometimes even individuals in management positions do not know how to distinguish between an income statement and a balance sheet (Berman and Knight, 2006). Jemal (2019) argue that most SMEs do not properly record daily transactions and do not know how to prepare financial statements of the business such as income statements or balance sheets. This happens because they do not know how to keep such records formally.

Managers of firms tend to make improper, inadequate, and ineffective financial decisions because they lack personal financial knowledge, do not try to learn personal financial management, and face difficulties in financial transactions (Sudarmoyo and Tahir, 2021). For the authors, managers should know how to stay out of debt and take responsibility for the money they manage to ensure healthy enterprise performance.

Financial statements provide crucial information that can be used by managers to gain a deeper understanding of the management of the business and to aid decision-making that will assist the firm to reach its financial and operational objectives (Carraher and Auken, 2013). Decision-making without the awareness of the consequences can impair several aspects of the business, such as unreliable operations, inefficient marketing, financial difficulties and, in worst cases, business failure (McMahon, 2001; Timmons and Spinelli, 2004; Carraher and Auken, 2013).

Carraher and Auken (2013) investigated what factors influence SME managers' usage of financial statements and how comfortable they are with interpreting them. The authors found, first, that owners of higher-revenue businesses are more confident in their ability to understand financial statements. Secondly, owners are more likely to use financial statements when making decisions if the records are prepared by external experts. And lastly, higher education helps owners to build confidence and improves their decision-making capabilities. Improved financial management can help the company to stay in business and pursue profitable opportunities.

Understanding financial statement information is a prerequisite for making skilled financial decisions, and managers should use reliable financial statement information to analyse and create investment opportunities, collect information for business management, and operate effectively and efficiently (Shields, 2010).

In order to foster growth and expansion, managers must have confidence in their financial decisions (Tuffour et al., 2020). Managers who lack the necessary financial knowledge about their firms' finances will be unable to control their financial affairs. As a result, any managerial decision made in the business will have an impact on the performance of the company. Eresia-Eke and Raath (2013) add that the financial illiteracy of business owners can create dire consequences for the continued existence of the business, be a barrier to proper financial management, and as a result, business growth.

Molina-García et al. (2021) illustrate the positive effects of financial literacy on SMEs´ performance and access to capital, as well as on companies´ capital structure and innovation.

Financial literacy enables SME managers to better manage the financial side of their businesses, allowing them to organize their budgets, anticipate risks, prepare for emergencies, if necessary, contribute to the real economy, as well as managing saving plans and carry out strategic investment opportunities and also enhance business' financial practices (Grohmann et al., 2018; García-Pérez-de-Lema et al., 2021).

Among SME managers, financial literacy is an important resource for making financial decisions that favour SMEs' access to capital. A high level of financial literacy displayed by managers relieves financial constraints by mitigating information asymmetry and reducing monitoring costs, as well as giving SME managers better quality and better-prepared information to handle decision-makers, like bank creditors (García-Pérez-de-Lema et al., 2021). It also helps managers in the decision-making processes regarding the payment of accounts on time or managing debt, leading to a more fruitful and confident relationship with the lenders (Van Rooij et al., 2011).

Jemal (2019) pointed out that business financial outcomes are a product of financial decisions. These decisions depend on knowledge concerning the subject matter. The study discovered that the level of financial literacy of owners had a positive and considerable effect on the financial performance of medium-sized businesses. It used different variables such as budgeting literacy, debt management literacy, accounting literacy, and saving literacy.

The results showed, firstly, that most of the respondents had inadequate knowledge considering proper budgeting and that higher financial performance was correlated with having high budgeting literacy. Secondly, it revealed that the majority of respondents lacked debt management literacy and that debt management literacy is positively and thoroughly related to financial performance. Thirdly, it indicated that the majority of medium enterprises faced problems such as a lack of accounting knowledge. Furthermore, there was a positive relationship between accounting literacy and the financial performance of medium-sized businesses, as acquaintance and skills in bookkeeping impact business growth. Lastly, it revealed that the majority of respondents did not have a sufficient level of saving literacy. That, in turn, had a positive relationship with the financial performance of a business.

Jemal (2019) agrees with most of the studies in the field, in the sense that financial literacy levels are low among managers of SMEs (Mbarire and Ali, 2014; Tuffour et al., 2020; Fauziyah et al., 2022).

Companies with a greater level of financial literacy are more likely to be able to withstand risk and reduce risk exposure and risk probability through management preventive measures (Nitani et al., 2020).

Likewise, a huge part of literature agrees that financial literacy significantly determines financial risk tolerance. Samsuri et al. (2019), and Hermannson and Jonsson (2021) argue that the more financial knowledge someone has, the higher the risk tolerance, and that both financial literacy and financial interest are associated with higher risk tolerance.

One of the reasons that may lead to a person avoid investing is the lack of financial knowledge, so, risk tolerance can determine a manager's decision-making and may impact the way they handle their business.

Further, financial literacy reduces information constraints, which pushes companies to innovate more technologically and enhances them to intervene more actively in financial markets and their chances of getting financed (Bayrakdaroğlu and Şan, 2014; Hakim et al., 2018).

The biggest reason for SMEs' failure, according to Kotzé and Smit (2008), is the lack of financial literacy. Meaning that the lack of financial literacy and improper personal financial management leads to a high amount of debt and low levels of savings. As a result, fewer new businesses are being started, as personal savings are the primary source of finance for entrepreneurs to start and expand their businesses.

Family-owned SMEs have lower financial literacy than enterprises run by non-family members. Reid et al., (2002) and Molina-Garcia et al., (2021) assert that this is due to family business managers generally having lower levels of education than non-family business managers. Moreover, the authors also verify that the higher the family ownership, the lower the level of financial literacy. The importance of financial literacy for family SMEs is illustrated when a lack of it makes financing harder to obtain, influences the perception of the manager towards debt, provokes inadequate capital structure and, consequently, the failure of family SMEs (Sandhu et al., 2012).

Hussain et al. (2018) studied the relationship between financial literacy, access to finance and business growth among UK small- and medium-sized enterprises (SMEs). This work investigated whether financial literacy assisted SMEs in overcoming information asymmetry, reducing the need for collateral, optimising capital structure, and increasing access to finance. The authors contended that the lack or insufficient availability of adequate financial information limits debt providers' ability to properly evaluate risk, causing them to make an adverse lending decision. To address information asymmetry, lenders often demand collateral and charge higher fees.

Poor financial information preparation is one of the reasons provided by banks in the United Kingdom for the higher rejection rate of loan applications by SMEs (Hussain et al., 2018).

Financing plays an indispensable role in SMEs' chances of survival as its access allows businesses to invest strategically in the production factors necessary to develop competitive advantages and innovation, which will lead to business growth. However, SMEs often face financial restrictions in accessing the credit market, which leads to a stop in their development (García-Pérez-de-Lema et al., 2021). These authors add that SMEs with financially literate managers can increase technological innovation outcomes by improving expenses, income management and long-term planning, and also decrease financial constraints, which has an indirect effect on technological innovation outcomes.

Financial literacy enables SMEs to access external finance and makes more effective business decisions, resulting in improved results. As a result, there is a need for improved financial literacy for SME owners/managers to prepare appropriate, timely financial data that will enable lenders to analyse and make successful financial decisions (Carraher and Auken, 2013).

Fauziyah et al. (2022) observed that the financial literacy level of entrepreneurs of SMEs in a city in Indonesia was at a low/medium level because the entrepreneurs did not have enough financial knowledge that can help them develop rational and responsible financial behaviour. The authors then found connections between the degree of financial literacy and financial behaviour and various socioeconomic, demographic, and educational factors that affect financial literacy levels.

Eresia-Eke and Raath (2013), on the other hand, demonstrated that there is no relationship between SME owners' perceived financial literacy and business growth. This study investigated whether South African SME owners considered themselves financially literate, whether the SMEs showed signs of growth, and whether there was a connection between the SME owners' perception of their financial literacy and business growth.

According to this study's findings, the majority of the SME owners considered themselves to be financially literate, as several respondents had undergone some kind of financial training and/or education, and several respondents believed that their businesses were growing.

The study failed to establish a statistical correlation between business growth and the financial literacy of a business owner. However, the authors clarify that their research made no distinction between SMEs whose owners, even if not financially literate, employed financially literate people to aid in managing the operations of the organization.

To Eresia-Eke and Raath (2013) individuals with knowledge of financial management can mitigate the effects and consequences of financial mismanagement. By promoting employees´ financial intelligence and information transparency, organizations can improve their financial health, better position themselves for success in the long term, and mitigate these risks (Berman & Knight, 2013). However, for that to happen, financial transparency must also be present, and managers have to be transparent and open. Keegan (1974) underlines the importance of the free flow of information and argues that there should be no divisional boundaries between an organization.

Berman & Knight (2013) assert that leaders, managers, and employees, who are financially intelligent and use financial information to work, are more effective and efficient. Therefore, if employees learn as much as they can regarding the company´s finances to understand how their company is doing, they will be better prepared for what is next. Businesses that prepare financial statements internally, instead of doing it externally, have financially intelligent employees that know how to interpret financial statements. Having such employees should promote more interaction and communication between the owner and the employee, which may result in owners being more prepared with the usage of financial statements (Smallbone et al., 1993; Carraher and Auken, 2013).

2.4- The benefits of financial education for financial literacy in the workplace

There has been a substantial increase in the number of organizations providing financial education programmes to branch managers and their employees. Workplace financial education is one of the growing areas in employee benefits (Garman et al., 1999), which provides an excellent opportunity to assess the effects on employees' financial literacy, financial expectations, and satisfaction with the manager (Hira and Loibl, 2005). It can also increase employee engagement and satisfaction, as employees can feel a sense of loyalty to their job and employer.

Helman and Paladino (2004) found that nearly half of all employees (47 per cent) in the US received financial education materials or attended workshops on retirement planning and saving provided by the organization or the retirement plan provider.

Organizations can provide financial education programmes for a variety of purposes. (Garman et al., 1999) identify the reasons why companies offer financial education, namely, to increase participation in and contributions to 401(k) plans; to help workers improve their financial wellness; to help workers remove obstacles to fully funding their retirement plans; to increase employee loyalty and morale; to reduce workers' stress; to increase productivity.

Hira and Loibl (2005), Garman (1998), Luther et al. (1998), and Bernheim and Garrett (2003) agree with the results of this research, as in their studies, financial education proves to be efficient in the workplace as it benefits the organization overall. Despite the investment organizations make in financial education programs, good things will come in the end (Garman et al., 1999). It turns out to be a win-win situation for employers and employees.

Luther et al. (1998) argue that financial difficulties lead to stress, which in hand increases absenteeism, lower productivity, and increases interpersonal problems. Employees who receive financial education, on the other hand, can be more confident in their ability to manage their finances, leading to a reduction in financial stress.

Reich and Berman (2015) investigated whether the observed improvements of a financial education program were attributable to the course's success and tested the effectiveness of a financial literacy program for low-income people in a non-profit residential program. The findings revealed that participants who attended the financial literacy training had better financial knowledge and financial behaviour than the people who were on the wait-list control group. These findings coincide with the rest of the literature since financial education can help people improve their financial knowledge and enhance positive behaviour (Garman, 1998; Luther et al., 1998; Garman et al., 1999; Bernheim and Garrett, 2003; Hira and Loibl, 2005; Gine et al., 2013; Meier and Sprenger, 2013; Despard et al., 2021; Fauziyah et al., 2022).

Financial education programmes for SMEs are the most successful way to handle financial difficulties in managing a business (Fauziyah et al., 2022; Gine et al., 2013). By combining training, seminars/workshops, and courses with the necessary time assistance, people can improve their financial literacy, financial knowledge, and financial behaviour.

Employees who engage in workplace financial education are more likely to have higher levels of financial literacy (Hira and Loibl, 2005). Additionally, participants of financial education workshops who have improved their financial literacy are more likely to be confident in their future financial position and, as a result, to be comfortable and supportive of their workplace (Hira and Loibl, 2005).

Kim and Garman (2003) argue that financial education given to employees in the workplace gives workers confidence in managing their finances and improves their financial behaviours. After participating in the financial education and advice training, workers felt more in control of their finances, more self-confident in allocating money to attain their financial goals and making investment decisions and were more aware of the risk and return of investing. In addition, several workers also designed a financial strategy for their future, which included the development of a budget or spending plan, reducing personal debts, and timely payment of credit card bills.

Workplace financial education can potentially lead to positive outcomes for employees, including improved financial well-being, more effective financial decision-making, and increased engagement and satisfaction in the workplace (Hira and Loibl, 2005).

As the literature evidence (Garman et al., 1999; Hira and Loibl, 2005; Despard et al., 2021; Fauziyah et al., 2022), financial literacy is an important aspect that companies should pay more attention to, as its disregard might be costly. It can lead to various positive outcomes like improved financial literacy, financial behaviour, more effective financial decision-making, and increased engagement and satisfaction in the workplace (Hira and Loibl, 2005). Financial education programmes can aid the financial illiteracy problem and help the company overall, as it will be a win-win situation for both employers and employees.

3. Methodology and Data

3.1- Objective of the study and Research Hypotheses

In this dissertation, the main goals are:

i) to determine the levels of financial literacy among decision-makers/managers of SMEs in Portugal;

ii) to study the relationship between the financial performance of companies and the financial literacy levels of their managers/decision-makers.

Studies like ANZ (2008), Van Rooij et al., (2011) Atkinson and Messy (2012), Lusardi and Mitchell (2014), Mbarire and Ali (2014), Jemal (2019) reveal that the levels of financial literacy are low in high-income countries and even lower in middle and low-income countries and that factors such as gender, age, education, and sources of information also affect the levels of financial literacy.

Eresia-Eke and Raath (2013), Adomako & Danso (2014), Potrich et al. (2015), Reich and Berman (2015) and ALI and LI (2021) agree that financial literacy assists individuals in making better and more assertive decisions in their business and efficient decision-making and that financial illiteracy of business owners can be a barrier to proper financial management, and as a result, business growth. Kotzé and Smit (2008) account for the lack of financial literacy as the biggest reason for SMEs' failure.

Therefore, the following research hypotheses (H) were defined:

H1- “Male decision-makers present higher financial literacy levels than female”.

H2- “Middle-aged decision-makers have higher levels of financial literacy, than young and older decision-makers”.

H3- “Decision-makers with higher education levels have higher financial literacy than decision-makers with lower education levels”.

H4 – “There is a positive relationship between financial literacy and the financial performance of the companies”.

H5- “There is a positive relationship between the importance given to accounting and higher levels of financial literacy”.

H6- “There is a positive relationship between financial literacy and risk tolerance”.

3.2- Sample

The universe of the present study is the Portuguese SMEs, more specifically, their decision-makers. In this study, we consider as decision-makers the managers, directors, and also other positions within the company that can have decision-making power, both at the strategic and operational levels.

In 2021, there were in Portugal a total of 1.357.657 SMEs (PORDATA 2022), categorized as follows:

Table 1- Number of Portuguese SME

	Frequency	**Percentage**
Micro	1.305.100	96,1%
Small	45.036	3,3%
Medium	7.521	0,6%
Total	1.357.657	100%

Following the European Commission’s Recommendation 2003/361/CE, small and medium enterprises are classed based on these criteria:

- Medium enterprise – employs between 51 and 250 people and the annual turnover does not exceed 50 million euros;
- Small enterprise – employs between 11 and 50 people and the annual turnover does not exceed 10 million euros;

- Micro enterprise – employs less than 10 people and annual turnover does not exceed 2 million euros.

The research sample was collected from the Orbis database of the Bureau van Dijk, which has almost 324.000 Portuguese SMEs (after the application of appropriate filters to comply with SME criteria). In addition, a database was purchased comprising approximately 100.000 SMEs. This decision was motivated by the database's extensive array of Portuguese micro-enterprises, including its contact information, both email and phone number, which could be used to significantly increase the survey´s outreach. Usually, a greater outreach to the population aimed at studying results in more survey responses. So, with this in mind, the objective was to achieve the maximum number of responses possible for the study. However, there was no system in the university that this study could use to send the questionnaire on a mass scale to all of these companies. So instead, mail merge was used through Gmail and Outlook for two weeks, while reaching the daily quota of emails sent. The companies were also contacted by phone to reinforce the request sent by e-mail, in an attempt to obtain the maximum possible number of answers.

Another measure taken to attempt to increase the level of responses was contacting 27 business associations throughout the country, both by phone and email, to promote the divulgation of the questionnaire.

There was no preference for the geographical location of the companies nor the area of activity since the purpose of this study was for the sample to be general and diversified.

The sample of this study consists then of respondents from micro, small and medium companies. The company's performance was assessed based on three ratios: Return on Assets, Return on Equity and Net Profit Margin (also called Return on Sales Ratio), which will be described in more detail in the next section.

3.3- Data collection methods and research design methods

3.3.1- Questionnaire

The data collection technique used, as already mentioned, was a questionnaire survey targeting SME decision-makers.

As recommended by the literature (Major and Vieira, 2009) the questionnaire was previously validated with elements belonging to the study population. Therefore, a pre-test was conducted with five elements of the population under study, more precisely, five managers of SMEs located in the Minho region of Portugal. This was done to ensure that the questionnaire was free of any grammatical inaccuracies and construction flaws before it was made available to the general population.

The pre-test led to some minor corrections in the written part of questions 4 and 27, by incorporating some of the suggestions from the managers into the questionnaire.

In order to get a larger number of responses and especially, a greater representative sample, one of the goals of the research was for the questionnaire to be as short and straightforward as possible (no more than 10 minutes). The pre-test was completed in an average of 9 minutes.

The last significant contribution of the pre-test respondents was their perceptiveness to the questions asked. The anonymity of the survey helped the respondents feel safer and more in control because they might have been reluctant to give a negative impression of themselves or their business. This further demonstrated the need to maintain the questionnaire's anonymity.

Every survey question was mandatory, that is, the respondent was required to mark at least one option, depending on the type of response permitted (one option or several options), except for questions 16 and 17 (to answer one or the other depending on the type of accounting used).

The questionnaire (see Appendix A) is structured in three parts. The first section (questions 1 to 6) is about the characterization of the decision-makers. The questions address the profile of the respondent, using socio metric variables such as gender, age, level of education, position, and experience.

The second section (questions 7 to 16) aims to characterize the entity/company, with questions asking for information to determine the number of employees, sector of activity, and the company´s financial information such as the total value of assets, shareholder´s equity, revenue, and net income (used later to measure the company´s financial performance). As well as the entity´s level of internationalization, the type of accounting used, and the respective reasons to do so.

The third section (questions 17-29) addresses the financial literacy of the respondent. Namely, with questions to understand the main source of financial literacy, the respondent´s assessment compared to the rest of the population, followed by questions aimed at measuring the level of financial knowledge of the respondent (which correspond to our FL Index). Additionally, the questionnaire also understands the financial attitude component of the respondent through the perception of risk behaviour, whether respondents were saving, how they managed their savings and their respective investment choices.

Concerning the 8 questions that constitute this survey´s Financial Literacy Index (questions 19 to 26), they are targeting the financial knowledge component. Some of the questions are based on the work of Lusardi and Mitchell (2008, 2011), which address topics such as compounding interest rates, purchasing power and inflation, and knowledge about the stock market and risk diversification. The other questions test the knowledge of the decision-maker about topics related to the financial management and financial analysis of a company such as the importance of using accounting for management and decision-making in companies and the importance of planning a financial budget. In addition, the study targets the risk difference between "stocks" and "stock mutual funds", risk diversification, investment risks, and lastly understanding basic interest on mortgage loans.

The Financial Literacy Index measures the financial knowledge component as of financial literacy. The method for building this study´s Index mimics the system used in Atkinson and Messy (2012) and Domingos (2017), meaning that per each correct answer 1 point was attributed, and for wrong and I don´t know answers the respondent didn´t get any point. Therefore, the max score respondents could get on this questionnaire was 8, and the lowest score was 0. Like Atkinson and Messy (2012), this study considered High financial literacy as 6 points and above in 8 possible, and under 6 points as Low financial literacy.

3.3.2- Company's financial performance evaluation

A company's financial performance is crucial for its success and survival in the market. It provides insights into the company's overall health and profitability and is a key indicator of its ability to generate revenue, manage expenses, and create value for its shareholders. Studies have found that financial performance measures such as profitability, earnings per share, and return on equity can have a significant impact on a company's stock price (Jog & Srivastava, 2015; Giri & Velnampy, 2017).

Investors use financial performance data to evaluate the potential risks and returns of investing in a particular company, and so companies with strong financial performance are more likely to attract investment. They might also be seen as more stable and trustworthy, which can lead to higher levels of customer loyalty and satisfaction (Ertimur et al., 2011).

Additionally, financial performance can affect a company's ability to secure financing. Lenders and creditors often use financial performance data to assess whether a company has a good credit score, and therefore, companies with weaker financial performance may find it harder to secure loans or credit lines (Kim and Oh, 2019). In return, this can have implications for a company's ability to invest in growth and expansion.

Further, financial performance can also affect a company's ability to attract and retain employees. Companies with strong financial performance are more likely to offer competitive salaries, benefits, and other perks, which can help them attract and retain talented employees (Cappelli and Keller, 2013).

As such, companies must pay close attention to their financial performance and strive to improve it through effective financial management practices and proper financial performance evaluation.

Financial performance evaluation is crucial for a company's success and sustainability and helps investors make informed decisions about whether to invest in or do business with a company (Hribar and Yang, 2016).

The use of financial ratios is a commonly accepted method to evaluate a company's financial performance. Based on this analysis, decision-makers can select the best way to increase the company´s efficiency. In general, financial ratios evaluate the company´s ability to generate profit and create value for its owners. The higher the value of the profitability ratios, the better the financial performance of the company.

In this study, the financial performance of the companies was measured based on the three most used profitability indicators, namely, Return on Assets (ROA), Return on Equity (ROE) and Net Profit Margin. The information collected for analyzing the financial indicators is from the year 2021.

ROA indicates how well the company is performing by comparing the profitability in relation to its total assets. Therefore, the higher the ROA, the more efficiently the company has used its economic resources. For a given period, ROA is calculated by dividing a company's net income by the value of the company's total assets as follows:

$$ROA = \frac{Net\ Income}{Total\ Assets} \times 100 \quad (1)$$

The ROE ratio refers to the profitability of the company concerning equity, meaning that it measures the relationship between a company's profit and the investor's return. The formula is:

$$ROE = \frac{Net\ Income}{Total\ Equity} \times 100 \quad (2)$$

The Net Profit Margin or Return on Sales shows the percentage of revenue a company keeps after paying all the business expenses including interest and taxes. It is represented by the formula:

$$Net\ Profit\ Margin = \frac{Net\ Income}{Revenue} \times 100 \quad (3)$$

4. Empirical Results

4.1- Sample Characterisation

4.1.1- Decision-makers' characterisation

The sample characterisation is based on the analysis of the results of 71 answers to the questionnaire, which was carried out from August until October 2022.

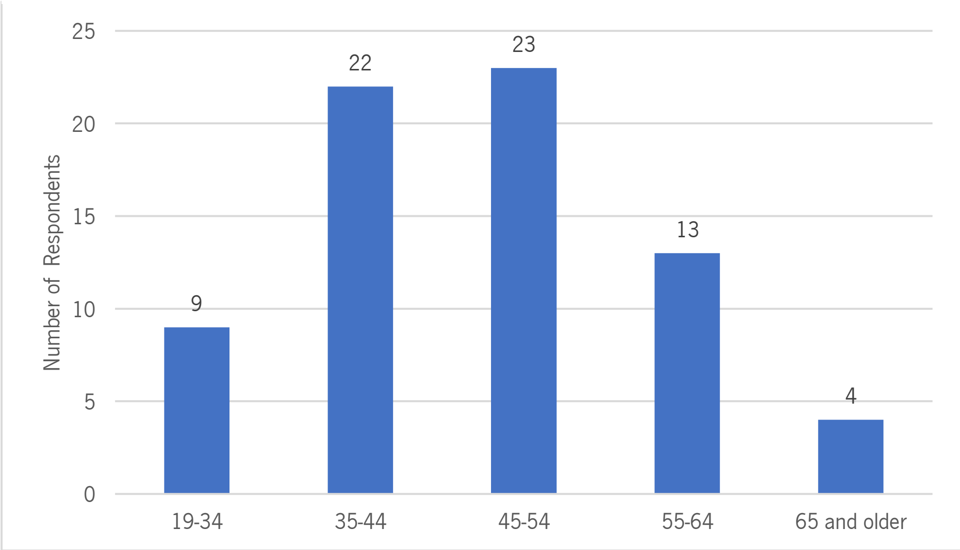
In the following tables, the descriptive statistics of the decision-makers of Portuguese SMEs are presented and analysed.

Table 2- Gender of the respondents

	Frequency	**Percentage**
Feminine	33	46,5%
Masculine	38	53.5%
Total	71	100%

As reported in Table 2 above, when it comes to the gender of the respondents of this survey, we can see that although there is a balance between men and women responding to the questionnaire, the percentage of male respondents (53,5%) is slightly higher than the percentage of female respondents (46,5%).

Figure 1- Age of respondents



In relation to age (see Figure 1 above), we can see that the age interval with the most respondents is between 45 and 54, corresponding to 32% of the total sample. It is closely followed by the interval of ages between 35 and 44 years old, with 31% of the respondents. Then, the interval 55-64 with 18%, followed by the 19-34 interval with 13%. Lastly, the interval with the least respondents was 65 and older, with only 6%.

Table 3- Education of the respondents

	Frequency	**Percentage**
9th Grade or equivalent	23	32,4%
12th grade or equivalent	23	32,4%
Bachelor´s graduate	15	21,1%
Post-graduation	3	4,2%
Master´s graduate	6	8,5%
Doctorate	1	1,4%
Total	71	100%

Regarding education (see Table 3 above), it is interesting to observe that a significant percentage of the respondents, don´t have higher education (64,8%). Even so, almost one quarter have a bachelor's degree and only one respondent had a doctorate. We can then conclude that the academic qualifications of the respondents in our sample are not very high. This can be potentially explained by the fact that some of the decision-makers that answered the questionnaire are actually the owners of the companies. Considering that we are dealing with SMEs this is somehow expected.

Table 4- Area of Education

	Frequency	Percentage
Economics/ Management/ Accounting/ Finance	9	12,7%
Engineering	1	1,4%
Law	2	2,8%
Social sciences	5	7%
Arts/Design/Architecture	1	1,4%
Communication	4	5,6%
I don´t have higher/specialized education	46	64,8%
More than one	3	4,2%
Total	71	100%

The data in Table 4 above, presents the distribution of respondents' educational backgrounds in different areas. The data highlights the diverse range of educational expertise among the survey participants. The largest category accounts, as mentioned before, for 64.8% of the respondents, and consists of individuals who reported not having higher or specialized educations as mentioned previously. The second specific area with the most respondents is, as expected, Economics / Management / Accounting / Finance, with 12,7%. It´s also interesting to point out that 3 respondents have more than one area of education.

Figure 2- Respondents' position in the company

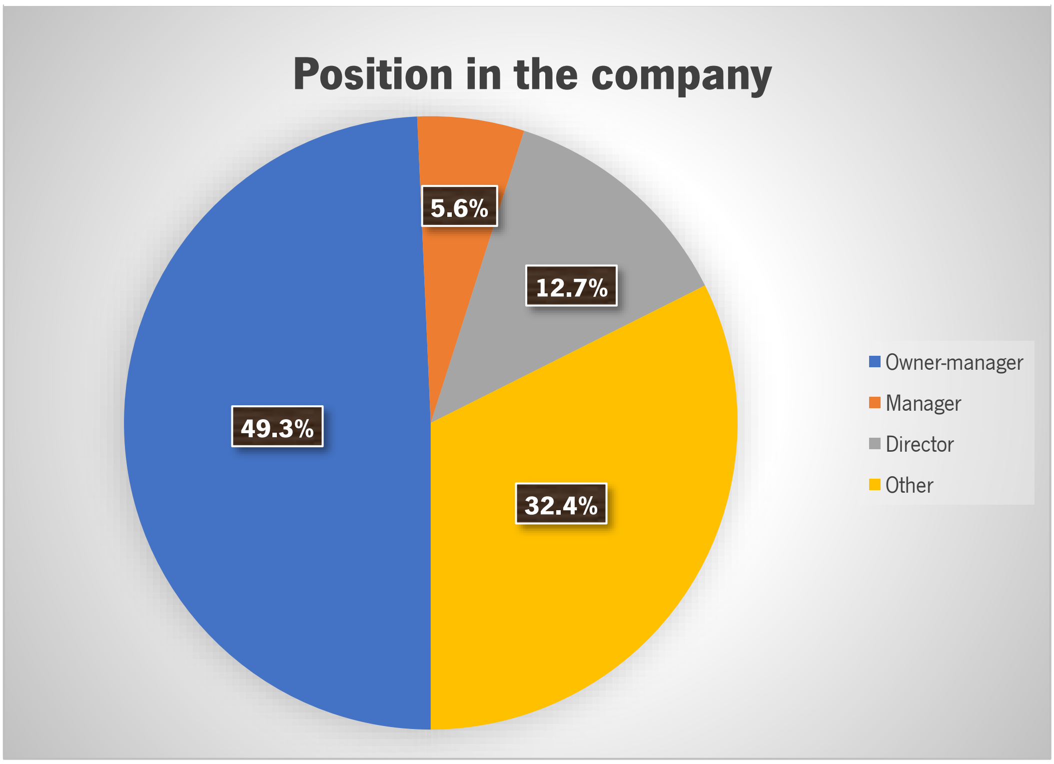


Figure 2 above confirms that an important part of the sample of this study is business owners, which is common in the context of SMEs where ownership and management are usually concentrated. The second most important category is the category of "Other" representing 32,4% of the respondents. This category includes individuals with some decision-making power within their company like accountants, administrative, and technical professionals. Directors (that were in charge of specific areas) represent 12,7% of the sample, and managers that did not own the company have a weight of 5,6% in the sample.

Table 5- Respondents´ number of years in the role

	Frequency	Percentage
Less than 2 years	11	15,5%
Between 3 to 5 years	8	11,3%
Between 6 to 10 years	16	22,5%
Between 11 to 20 years	18	25,4%

Table 5- Respondents´ number of years in the role (continuation)		
More than 21 years	18	25,4%
Total	71	100%

Table 5 above reports the number of years of experience that respondents have in their respective positions. There is a noticeable level of experience among the respondents. According to the data summarized in table 4 our data is bimodal with two peaks reported: “Between 11-20 years” and “More than 21 years”. Overall, we can see that more than half of the respondents (50,8%) have more than 10 years of experience in the decision-making role.

4.1.2- Companies' characterisation

In this subsection, the tables with the descriptive statistics for the companies are presented.

Table 6- Number of employees in the company		
	Frequency	**Percentage**
Under 10	36	50,7%
From 10 to 49	32	45,1%
50 or more	3	4,2%
Total	71	100%

As shown in Table 6 presented above, we can see that the majority of the companies in the sample have less than 10 employees (50.7%), meaning that a bit more than half of the companies in the survey are micro-enterprises. Moreover, 45,1% of the companies are small enterprises. Therefore, 95,8% of the companies that constitute the sample of the survey are micro or small enterprises. The remaining percentage, 4,2%, is composed of medium enterprises.

As observed in Table 7 below, we can see that the sample is well diversified in terms of activity sectors. All of the activity sectors listed in the survey are listed in Table 6, along with any other activity sectors that respondents contributed, and placed under "Other sectors". We can see a predominance of the manufacturing and processing sector (31%) followed by the wholesale and retail trade sector (23,9%).

Table 7- Company´s sector of activity

	Frequency	**Percentage**
Agriculture, livestock farming, hunting, forestry, and fishing	1	1,4%
Manufacturing and processing	22	31%
Electricity, gas, and water	1	1,4%
Construction	7	9,9%
Accommodation, restaurants and similar	4	5,6%
Consulting, scientific, technical, and similar	4	5,6%
Arts, entertainment, sports and recreational	1	1,4%
Wholesale and retail trade	17	23,9%
Transport and storage	3	4,2%
Human health and social support	2	2,8%
Other sectors	9	12,7%
Total	71	100%

Table 8- Degree of internationalization of the company		
	Frequency	**Percentage**
No	38	53,5%
Yes, to EU countries	16	22,5%
Yes, to non-EU countries	2	2,8%
Yes, both to EU and non-EU countries	15	21,1%
Total	71	100%

The results of Table 8, as seen above, show that more than half of the companies, 53,5%, do not sell outside of Portugal at all. From the survey, only two companies export solely to countries outside the EU. Sales to EU countries account for a considerable part of international sales (22,5%).

Table 9- The way accounting is dealt with in the company		
	Frequency	**Percentage**
Internally	14	19,7%
Externally	38	53,5%
Mixed	19	26,8%
Total	71	100%

As seen in Table 9 above, more than half of the companies use an external entity to deal with accounting (53,5%). These results agree with the assumptions about the way that Portuguese SMEs deal with accounting, namely, that the outsourcing of accounting services is a relatively common practice among a big percentage of Portuguese SMEs, particularly those with limited resources or expertise in accounting (Domingos, 2017).

According to the survey results, the main reasons for handling accounting externally (see Figure 3 below) are: to have access to knowledge/competencies that do not exist in the company; lower costs;

and no time for accounting activities in the company. In the "Other" option, it is worth mentioning that one of the motives several respondents wrote down for handling accounting externally, was that accounting/having an accountant is mandatory for tax purposes.

Figure 3- Reasons for using external accounting

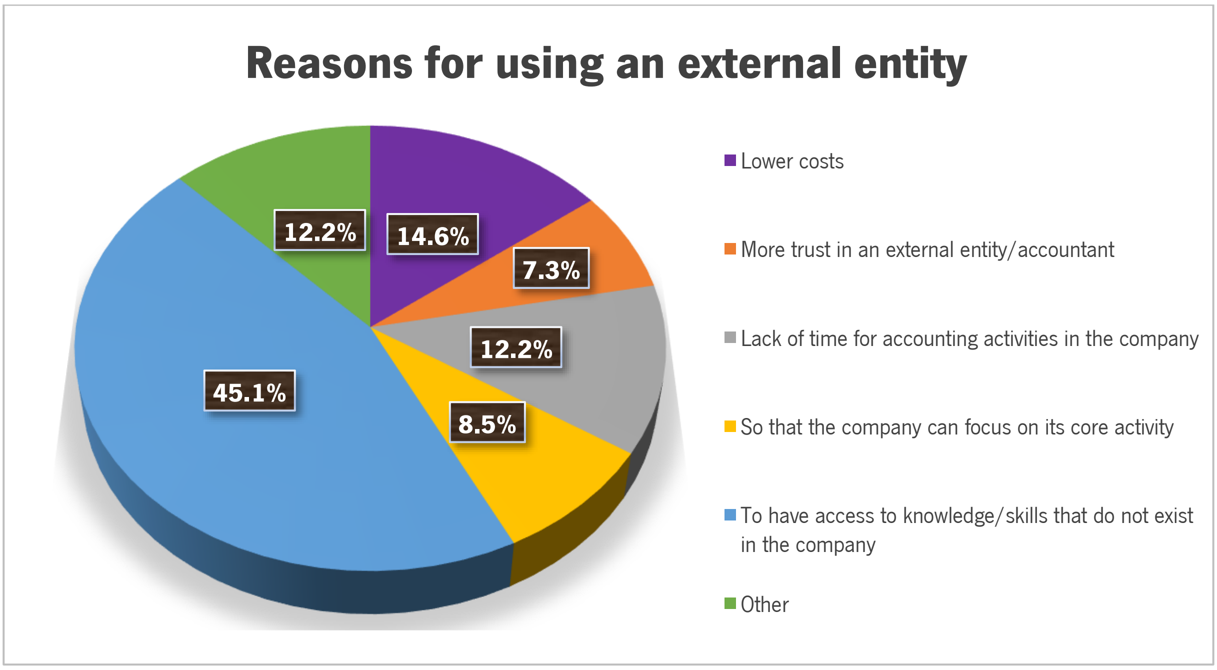
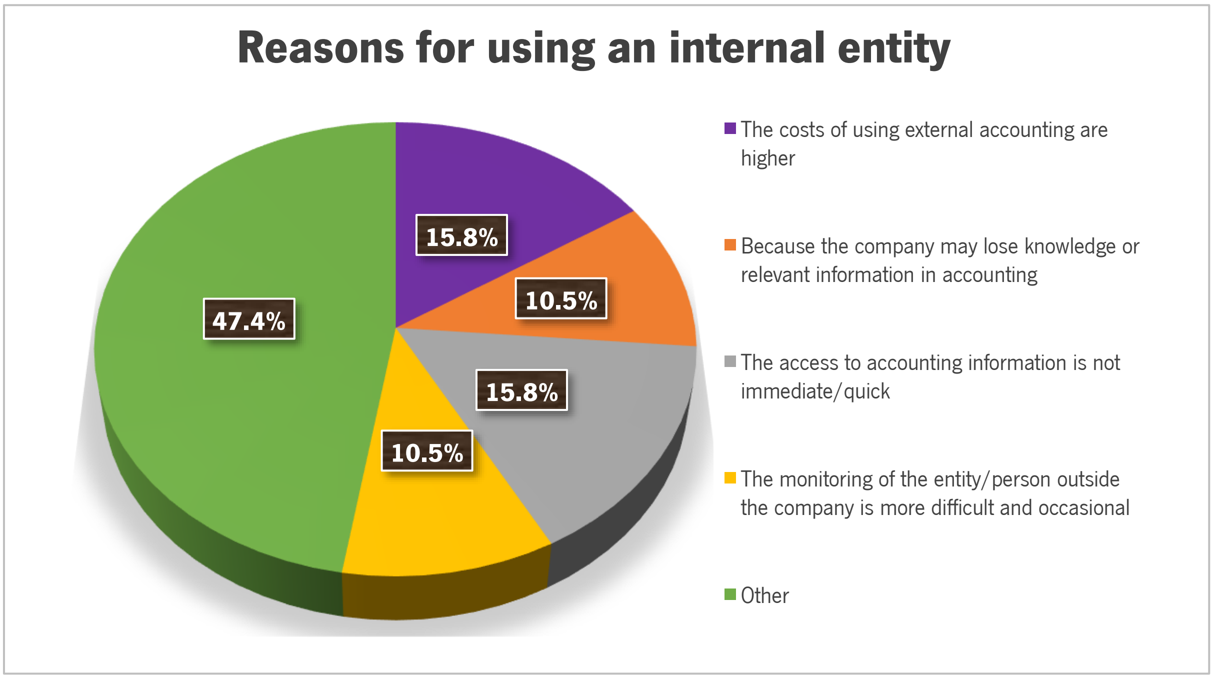


Figure 4- Reasons for using internal accounting



As for the reasons for handling accounting internally (see Figure 4 above), most respondents chose the option “Other”. In this option, respondents provided some reasons such as having already a person in charge of accounting and the large volume of internal work, in which having someone internally facilitates the work. The respondents also identified the higher costs of external accounting and the more difficult and occasional access to accounting information as additional reasons for preferring internal accounting.

4.2- Financial literacy results

One of the main aims of this investigation was to understand decision-makers' levels of financial literacy. According to the responses obtained in the survey, shown below in Table 10, work experience is the most common source of financial literacy. This result is significant because it indicates that if people gain financial knowledge from their jobs, then workplace financial education programmes might be an effective solution to increase this metric. The second and third most answered options were ''Academic training'' and “More than one”, with 15,5% and 11,3%, respectively. The “More than one” option consisted mainly of combining work experience and workshops/accounting courses, and work experience with academic training.

Table 10- Respondents´ main source of financial literacy

	Frequency	Percentage
Courses or workshops	3	4,2%
Self-taught	1	1,4%
Work experience	48	67,6%
Academic training	11	15,5%
More than one	8	11.3%
Total	71	100%

Table 11- Perception of respondents´ financial literacy level with the general Portuguese population		
	Frequency	**Percentage**
Much lower	1	1,4%
Lower	1	1,4%
On average	48	67,6%
Higher	19	26,8%
Much higher	2	2,8%
Total	71	100%

We can observe above in Table 11, that a substantial percentage of respondents, 67,6%, evaluated their financial literacy level as being on average with the general Portuguese population. The second highest answer was "Higher" with 26,8%. Interestingly, by crossing the survey results, we were able to identify that this answer ("Higher") comes mostly from people with higher education.

Table 12- Financial Literacy Index Score		
Score	**Frequency**	**Percentage**
0	0	0%
1	0	0%
2	2	2,8%
3	2	2,8%
4	2	2,8%
5	13	18,3%
6	25	35,2%
7	17	23,9%

Table 12- Financial Literacy Index Score (continuation)		
8	10	14,1%
Total	71	100%

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Figure 5- Financial Literacy Results

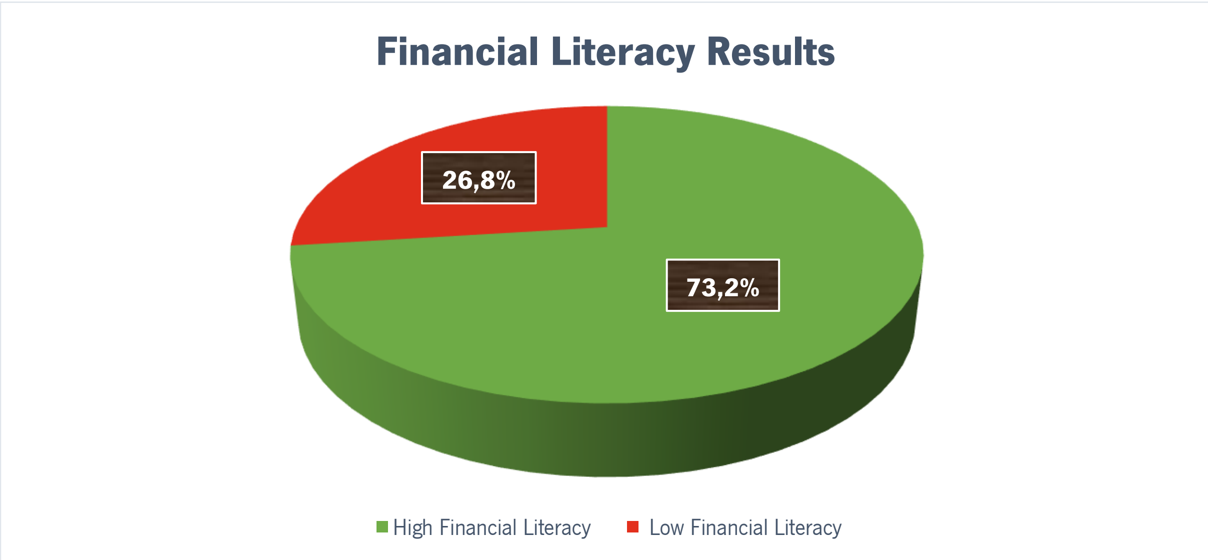

Table 13- Financial Literacy Index		
	Frequency	**Percentage**
High FL	52	73,2%
Low FL	19	26,8%
Total	71	100%

Now, let´s observe if the perceived levels of FL correspond to the respondent´s Index of Financial Literacy. The Financial Literacy Index, Table 13 above, which was built with the method previously mentioned in Section 3[2], looks inflated in relation to those found in the literature (Lusardi and

[2] It was calculated based on the score of questions 19 to 26 of the survey

Mitchel, 2011; Atkinson and Messy, 2012; Domingos 2017). This way, 73,2% of the respondents are considered to have a high FL, in terms of financial knowledge, with an index weighted average of 6,1. Nonetheless, only 10 respondents, 14,1%, managed to answer correctly to all the questions of the survey. Furthermore, 26,8% have a low financial literacy with a score under 6.

4.3- Financial Performance Results

Generally speaking, a ROA of 5% or lower might be considered low, above 5% good, and over 20% is considered great. For this study, we classified ROA into three categories: Low, Good, and Great.

However, it is important to keep in mind that the classification of these results differs from one industry to another, and the scale of a business and the operations performed also make a difference. For instance, industries that are capital-intensive and require a high value of fixed assets for operations will typically have a lower ROA since their large asset base will increase the denominator of the formula. Manufacturing companies, for example, require more assets than service and retail businesses, yet they also usually generate higher margins.

Table 14- ROA Results

	Frequency	Percentage
Under 5% (Low)	33	46,5%
5% to 20% (Good)	32	45,1%
Above 20% (Great)	6	8,5%
Total	71	100%

From Table 14 above, we can observe that the highest percentage of companies have a low ROA. This can suggest that the companies might not be generating a sufficient number of profits relative to the amount of assets they are utilizing, or that it is experiencing operational or financial challenges. If there is consistently a low ROA, it may suggest that the company is not competitive in its respective sector or that it is facing challenges in making profits from its assets. The companies with good and great ROA combined, however, have around 53,5% of the total results. This can indicate that the companies are using their assets efficiently and effectively to generate profits in their respective industries. The results can have different interpretations since there are also several industries present in the sample, and to make concrete assumptions about the results, we would need only to consider companies from the same industry.

Concerning ROE, it is generally assumed that a value between 15-20% is considered to be good. A value above 20% can indicate strong performance, while 10-15% is considered average. Under 10%, however, may suggest that the company is not using its assets as efficiently as it could be, and is considered low depending on the industry and the company's specific circumstances. So, for this study, ROE is classified into four categories: Low, Average, Good, and Great.

A good ROE level can vary across different industries. For instance, the retail industry tends to have lower ROE due to low-profit margins, high fixed costs, and intense competition. On the other hand, companies in the technology sector often have higher ROE due to their ability to generate substantial profits with fewer assets (Segal, 2022).

Table 15- ROE Results

	Frequency	**Percentage**
Under 10% (Low)	35	49,3%
10 to 15% (Average)	12	16,9%
15% to 20% (Good)	5	7%
Above 20% (Great)	19	26,8%
Total	71	100%

Table 15 above, reveals that a big majority of the companies (49,3%) have a low ROE. This can potentially suggest that the companies may not be using their assets efficiently and that they may be experiencing operational or financial challenges. Nonetheless, it's important to state that both a low and high ROE cannot be interpreted alone, as there may be other financial and non-financial aspects affecting the company's performance. It is also worth noting that the second biggest percentage (26,8%) corresponds to a great ROE, which suggests that those companies may be delivering strong financial returns, has strong financial health, and have a competitive advantage over their competitors. It can also imply that the company is reinvesting its profits into the business.

Regarding Net Profit Margin, as a general rule of thumb, a 10% margin is considered average, a 20% margin is considered high (or good), and a 5% margin is low. For this study, NPM is classified into three categories: Low, Average, and High.

However, what is considered a good Net Profit Margin (NPM) can vary depending on the industry and company size and can be impacted by other factors. For example, companies in the technology industry typically have higher profit margins than the ones in the retail sector due to several factors. Tech companies usually benefit from economies of scale, higher barriers to entry, and lower costs of goods sold, which contributes to high-profit margins while keeping prices competitive, resulting in higher profitability (Womack & Zhang, 2014).

Table 16- Net Profit Margin Results

	Frequency	**Percentage**
Under 10% (Low)	55	77,5%
10 to 20% (Average)	7	9,9%
Above 20% (High)	9	12,7%
Total	71	100%

The results seen above from Table 16 reveal that a significant percentage of the companies, 77,5%, have their Net Profit Margin under 10%. These results can have different meanings, namely, that the company may be experiencing financial mismanagement or has a low-profit margin business model, which, in turn, may indicate that it operates in an industry with high competition or low pricing power. Additionally, it can also mean that the company has high operating expenses or a high cost of goods sold, which is affecting its profitability. Moreover, one thing to remember is that several businesses in 2021 were still facing disruptions caused by the COVID-19 pandemic, which lead to decreased demand, supply chain disruptions, and increased operating costs (Devi et al., 2020).

On the other hand, the results also show that 12,7% of the companies had a Net Profit Margin above 20%, which generally may imply that the company has efficient operations and a strong pricing strategy that enables it to generally solid profits from its sales. It may also suggest that the company operates in a profitable industry with high demand or in an industry with low competition.

4.4- Hypotheses testing

In order to gain a deeper comprehension of the relationships and variables that may affect financial literacy and corporate performance, it is important to evaluate the research hypotheses outlined in the Methodology section. The analysis was carried out using, first, Microsoft Excel to build and treat the collected data, and JASP software for the creation of variables, production of descriptive statistics and hypothesis testing.

Table 17- Linear Regression testing Financial Literacy and Gender, Age, and Education

Variable	Coefficient	Standard Error	t	p
(Intercept)	4.270	0.725	5.889	< .001
Gender	-0.056	0.295	-0.188	0.851
Age	0.026	0.014	1.879	0.065
Education	0.509	0.124	4.102	< .001

Note: Financial literacy is the dependent variable

Table 17 above reports the statistical tests concerning H1, H2, and H3. For this purpose, a Linear Regression was estimated to further investigate the relationship between Financial Literacy as the dependent variable, and Gender, Age, and Education as the independent variables (H1, H2 and H3).

We can observe which variable significantly explains financial literacy. According to the regression results, the variables gender and age do not have a significant impact on the level of financial literacy, as p=0.851 and p=0.065, respectively. In fact, the value of these coefficients is not statistically different from zero (at a 5% significance level). Moreover, we see that the p-value of Education is <.001. This means that, in this study, education significantly predicts and has a positive effect on Financial Literacy. Meaning that the more educational levels one has, the higher the financial literacy level.

To assess the possible correlation between the level of financial literacy of the decision-makers and the financial performance of the companies (H4), a Spearman correlation was computed and analysed.

Table 18- Spearman Correlation between Financial Literacy and Financial Performance		
Variables		**Financial Literacy**
ROA	Spearman's rho p-value	0.321 0.006
ROE	Spearman's rho p-value	0.304 0.010
Net Profit Margin	Spearman's rho p-value	0.260 0.029

Note: Financial performance is measured by ROA, ROE, and Net Profit

Table 18 above reports the results obtained for the Spearman Correlation. Financial Performance was analysed using three alternative parameters: Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin/Return on Sales Ratio. As expected, a positive significant correlation, for a significance level of 5%, was identified between the financial performance and the level of financial literacy. This result is robust across the three alternative performance measures used, as the p values of ROA, ROE, and Net Profit Margin are 0.006, 0.010, and 0.029, respectively.

Table 19- Spearman Correlation between Financial Literacy and Importance given to Accounting		
Variable		**Financial Literacy**
Importance given to Accounting	Spearman's rho p-value	0.034 0.776

As Table 19 above shows, a Spearman correlation test was also conducted to test for the existence of a possible positive relationship between the importance given to accounting and financial literacy (H5). No statistically significant results were found between these two variables as p=0.776. Therefore, no relationship was identified between the Importance given to Accounting and Financial Literacy.

Table 20- Spearman Correlation between Financial Literacy and Risk Tolerance		
Variable		**Financial Literacy**
Risk Tolerance	Spearman's rho p-value	0.178 0.137

Finally, a Spearman correlation was applied to further test H6, that is, if there is a possible positive relation between Financial Literacy and Risk Tolerance. We observe in Table 20 above that p=0.137, meaning that no significant results were found. Hence, we conclude that there is no positive relationship between Financial Literacy and Risk Tolerance.

4.5- Discussion

The present study aimed to investigate the relationship between financial literacy and financial performance, as well as the potential effects of gender, age, and education on financial literacy. Additionally, the study examined a possible relationship between financial literacy and the importance given to accounting, as well as financial literacy and risk tolerance.

As for the methodology, the research sample was collected from the Orbis database of the Bureau van Dijk, which has almost 324.000 Portuguese SMEs. As well as a purchased database with around 100.000 SMEs. There was also contact with 27 business associations throughout the country, both by phone and email, to promote the divulgation of the questionnaire, so that the sample could be as big as possible.

Regarding the potential effects of gender and age on financial literacy, H1 and H2, respectively, the results indicated no significant differences based on these factors. This suggests that gender and age may not be important factors in determining financial literacy, even though the vast majority of literature (ANZ, 2008; Van Rooij et al., 2011; Atkinson and Messy, 2012) shows otherwise: men usually have more financial literacy than women and middle-aged people are more financially savvy than young and older people.

A possible explanation for the absence of statistically relevant results in these hypotheses may be the small sample size, which might not represent a broader study population. The difference in business reality from country to country also has to be considered, as Portugal may have a different organizational population than other countries with regard to the gender and age of its entrepreneurs and the way it is distributed by position.

For example, there may be more men responding to the questionnaire, but women may have higher positions. The characterization of the Portuguese business population, however, would have to be something that future literature needs to investigate further.

Another factor may also be the growing emancipation and entrepreneurship of women in the business world (Cardella et al., 2020), which may differ from the results of some studies from a few years ago.

As expected, a significant difference in financial literacy based on the educational level was found in the study (H3). In particular, participants with a Bachelor's degree had significantly higher levels of financial literacy than those who completed school until 9th grade or equivalent. These findings agree with the literature (Carraher and Auken, 2013; Mbarire and Ali, 2014; Jemal, 2019), and they suggest that higher levels of education may lead to greater financial literacy, highlighting the importance of education for this subject.

Nonetheless, this conclusion needs to be carefully thought out. The fact that no differences were found between participants with a Bachelor’s degree and those with a Master’s degree came as a surprise. But, given the small size of the Master´s group (n = 5), we should be conservative when drawing conclusions about this variable.

Regarding H4, this study found a statistically significant correlation between the three parameters of Financial Performance (ROA, ROE, and Net Profit Margin) and Financial Literacy.

These results suggest that individuals with higher financial literacy levels tend to have a better financial performance for their businesses. This may imply that those with higher financial literacy levels who have a strong understanding of financial concepts and decision-making may contribute to more effective management of resources and improved profitability, resulting in more favourable financial results.

The results of this study are in accordance with those from Adomako and Danso (2014) and Jemal (2019) regarding the positive effect of financial literacy on ROA and ROE components, as well as with those of ALI and LI (2021) that show a positive relation of financial literacy and financial performance measured by Net Profit Margin.

Concerning the possible relation between the importance given to accounting and financial literacy (H5), the study found no significant relationship. Here the hypothesis aimed to test whether individuals that valued accounting and might use financial statements for the decision-making process would have higher FL.

The literature considers that managers generally classify accounting information as important for making sound decisions, whether they are strategic or operational, and that the understanding that SME managers have of accounting has an impact on several aspects of the use of accounting as a management asset and for making the right decisions (Carraher & Van Auken, 2013; Domingos, 2017).

A possible reason for not finding a relationship for H5 can be that the data for this hypothesis comes from the 19th question of the survey: "Overall, on a scale of 1 to 5, where 1 is "strongly disagree" and 5 "is strongly agree", please state your degree of agreement with the statement: "The use of accounting information for decision making and the business management is crucial".

After deep analysis, we consider that this question was not well built, considering its goal. The way the question is phrased may suggest that accounting is important, creating a possible positive bias in the answer – participants may have felt drawn to answer positively. Besides, this was also a double question – participants were asked not only how important was accounting to decision-making, but also to business management.

We consider that both variables should be asked separately to have access to more information on how participants perceive accounting importance. A better question could have been: "Overall, on a scale of 1 to 5, where 1 is "Not important at all" and 5 is "Very important", please respond: " How important do you consider accounting information for decision-making?" and "How important do you consider accounting information for business management?".

Lastly, we tested the existence of a positive relationship between risk tolerance and financial literacy, and no significant results were found. The literature argues that higher financial knowledge is associated with higher risk tolerance (Lusardi and Mitchell, 2014; Samsuri et al., 2019; Hermannson & Jonsson, 2021).

This relationship is thought to occur because individuals with higher FL understand better the risks associated with different investment options and are therefore more prepared to take risks and withstand them.

A possible explanation for this hypothesis's positive relationship absence might be due to the small sample size or the fact that the survey question used in this variable was a self-perception of attitude towards risk. Another important aspect worth mentioning is the global conjecture of the period of results collection. During the results collection, there was high inflation throughout Europe caused by the energy crisis, supply chain disruptions, and the war in Ukraine (Guenette et al., 2022). If times were more stable, the respondents might have answered differently to the question and had a more risk-tolerant attitude. Crises can lead to increased risk aversion and loss aversion, particularly when there is a high degree of uncertainty and fear (Wirtz & Göttel, 2010).

5. Conclusion, limitations, and future research

This work had the objective of understanding the levels of financial literacy of SME decision-makers and perceiving how it impacts the financial performance of their companies. To accomplish that a questionnaire was designed and applied to gather information to enable us to assess the level of financial literacy of the respondents as well as the financial performance of their companies. Additionally, information on age, gender, education, accounting importance, and risk attitude was also gathered.

This dissertation has approached different themes within financial literacy and highlighted the importance of SME managers´ financial literacy for making sound financial decisions, having access to capital, business growth, and overall improved decision-making. It also highlighted the importance of financial education, financial intelligence, and information transparency to mitigate the lack of FL.

The study results showed that a great percentage of SME decision-makers have high financial literacy, in terms of financial knowledge. A positive significant relationship between the financial literacy level of the respondents and the financial performance of the company was also identified. This highlights the importance of financial literacy to make informed financial decisions, more effective management of resources, and improved profitability. Also, we did not find any relation concerning gender and age, however, we did identify a significant difference in education level, particularly between people with a BSc degree and those with 9th-grade or equivalent education. This result further emphasizes the importance of education to help with financial illiteracy. Finally, no significant relationship was found between financial literacy and accounting importance, as well as with risk tolerance.

The results of this study must be analysed with caution due to some important limitations. Firstly, it was limited in its sample size, and here, we highlight the difficulty of collecting a large number of responses, especially when we ask a company for its financial information and the company does not have this information in hand.

Secondly, the definition of decision-makers is too comprehensive and does not distinguish between a business owner and a regular employee having decision-making power. Here, we highlight the difficulty of getting answers from owners/managers since they are mostly busy.

Lastly, there were difficulties in building this study since there is a lack of studies about this theme, and even more concerning financial literacy in companies and the context of SME managers/decision-makers.

For future research, it would be interesting to explore further the financial literacy theme in organizations, more specifically, the financial literacy of SME managers in Portugal and globally.

It is also worth mentioning that during the writing process of this dissertation, Conselho Nacional de Supervisores Financeiros & Ministério da Economia e do Mar (2022) was conducted on a big scale concerning the FL of SME managers. This fact stresses the relevance of the theme and its potential for further research.

Finally, we emphasize how this work can be useful and produce value for the academic and business communities, as it might help to support government education policies, associations, and organizations that wish to improve financial literacy levels among companies and, overall, strengthen the economy.

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Appendix A- Questionnaire

The respondents have received the questionnaire in Portuguese since it´s their native language. This is the English version.

The impact of decision-maker´s financial literacy on the financial performance of companies

To all,

This questionnaire is part of the Master's thesis in Business and Management at the School of Economics and Management of the University of Minho, and its objective is to collect data on the financial literacy of managers/owners of Portuguese SMEs and the relationship between financial literacy and the financial performance of companies.

The collection of data in this questionnaire is strictly confidential, and the company or the manager/decision are not identified since the data is private and anonymous.

The sole purpose of the data collection is for the analysis of this investigation work, and your participation is very important!

If you would like more information about this study or to receive the results of the questionnaire, please contact us via email: questionariolitf@gmail.com.

Thank you for your indispensable collaboration!

Decision-Maker´s Characterization

1. Gender

- Male
- Female

2. Age

____

3. Level of Education

- Primary education until third cycle (9th Grade or equivalent)
- High school (12th grade or equivalent)
- Bachelor´s graduate
- Post-graduation
- Master´s graduate
- Doctorate
- Other: _________________

4. Area of Education

Tick all that apply

- Economics/Management/Accounting/Finance
- Engineering
- Mathematics
- Law

- Health and life sciences
- Social sciences
- Arts/Design/Architecture
- I don´t have higher education/specialized
- Other: _________________

5. Position in the company

- Owner-manager
- Manager
- Director
- Other: _________________

6. Number of years in the position indicated above:

- Less than 2 years
- Between 3 to 5 years
- Between 6 to 10 years
- Between 11 to 20 years
- More than 21 years

Entity´s Characterization

7. Total number of employees working for the company on 31.12.2021

- Under 10
- From 10 to 49
- 50 or more

8. Company´s sector of activity

- Agriculture, livestock farming, hunting, forestry, and fishing
- Extraction industry
- Manufacturing and processing
- Electricity, gas, and water
- Construction
- Wholesale and retail trade
- Transport and storage
- Accommodation, restaurants and similar
- Administrative and support services
- Consulting, scientific, technical, and similar
- Real estate
- Education
- Human health and social support
- Arts, entertainment, sports and recreational
- Other: ________________

9. What was the value of the company´s total assets as of 31.12.2021?

____

10. What was the value of the shareholder´s equity of the company´s as of 31.12.2021?

____

11. What was the value of the revenue of the company as of 31.12.2021?

____

12. What was the value of the net income of the company as of 31.12.2021?

____

13. Does the company sell internationally?

- Yes, both to EU and non-EU countries
- Yes, to EU countries
- Yes, to non-EU countries
- No

14. In which way is accounting made in your company?

- Internally (there is a department/person in the company)
- Externally (made by an entity/person outside the company)
- Mixed (there is an internal department/person, collaborating with an external entity/person)

15. If you answered that accounting is done <u>externally</u> or in a <u>mixed</u> way in the previous question, please indicate the reason or reasons for using an external entity/person for accounting services

Tick all that apply

- The costs of it are lower
- Trust in an external entity/accountant is greater
- Lack of time for accounting activities in the company
- So that the company can focus on its core activity
- To have access to knowledge/skills that do not exist in the company
- Other: ________________

16. If you answered that accounting is done internally, please indicate the reason or reasons for not using an external entity/person for accounting services

Tick all that apply

- The costs of using external accounting are higher
- Because the company may lose knowledge or relevant information in accounting
- Fear of excessive dependence on an external entity
- The access to accounting information is not immediate/quick
- The monitoring of the entity/person outside the company is more difficult and occasional
- Other: ________________

Decision-Maker´s Level of Financial Literacy

17. What is your main source of financial literacy?

- Academic training
- Courses or workshops
- Work experience
- Other: ________________

18. How would you rate your financial literacy when compared to the general Portuguese population?

- Much higher
- Higher
- On average
- Lower
- Much lower

19. Overall, on a scale of 1 to 5, where 1 is strongly disagree and 5 is strongly agree, please state your degree of agreement with the statement: "The use of accounting information for decision making and the business management is crucial".

- 1.Strongly disagree
- 2. Disagree
- 3. Neither agree nor disagree
- 4. Agree
- 5. Strongly agree

20. Please state your degree of agreement with the statement: "Planning and preparing the company's financial budget is important."

- 1.Strongly disagree
- 2. Disagree
- 3. Neither agree nor disagree
- 4. Agree
- 5. Strongly agree

21. Which accounting document most adequately reflects whether a company was profitable during a given period?

- P&L Statement/ Income Statement
- Balance Sheet
- Cash flow Statement
- I don´t know

22. Suppose you have €1000 in a savings account at a simple fixed interest rate of 2% per year. After 5 years, how much money will you have in the savings account?

- More than €1200
- Less than €1100
- Equal to €1,100
- I don´t know

23. Suppose that the interest rate on your savings account is 3% per year and the inflation rate is 4% per year. After 1 year how much will you be able to buy with the money in the account?

- More than today
- Less than today
- The same as today
- I don´t know

Indicate whether the following statements are true or false:

24. Buying a single company's stock usually provides a safer return than a stock mutual fund.

- True
- False
- I don´t know

25. An investment with a high return usually has a high risk associated with it.

- True
- False
- I don´t know

26. A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be lower.

- True
- False
- I don´t know

Attitude towards risk

27. Please indicate, on a scale of 1 to 5, where 1 is being very risk adverse and 5 is being very risk tolerant, how you would rate your attitude towards risk.

- Very risk adverse
- Risk adverse
- Risk-neutral
- Risk tolerant
- Very risk tolerant

28. Last year, what did you do with your savings?

- I left it on my bank account
- I deposited it in a savings account
- I bought investment products (stocks, bonds, mutual funds)
- I bought gold, land, property, art objects, etc.
- I invested it in cryptocurrencies
- I gave it to a personal manager to manage it for me
- I kept the money at home or in my wallet
- I didn´t save in the last year

29. If you had to invest now your savings in the following financial applications, which one would you choose?

- Bonds
- Real Estate Investment Funds
- Time/Term Deposits
- Investment Funds
- Stocks
- Cryptocurrency
- Other: ________________