



ASSOCIAÇÃO DE POLITÉCNICOS DO NORTE (APNOR)
INSTITUTO POLITÉCNICO DE BRAGANÇA

**“The impact of the level of financial literacy of managers,
particularly the financial manager, in the economic and financial
performance of SMEs, a comparison between Portugal and Russia”**

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Final Dissertation submitted to *Instituto Politécnico de Bragança*

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Management

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Evseeva Oksana Anatolevna

Bragança, july, 2017.



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Abstract

The aim of this study is to explore the relationship between the level of financial literacy of managers and entrepreneurs of small and medium sized enterprises (SMEs) and its economic and financial performance. As specific objectives, it is intended to (i) to determine the financial literacy index among managers and entrepreneurs of SMEs; (ii) to analyse the relationship between companies' performance and financial literacy level (FLL) of their owners/managers; and (iii) to compare the FLL of Portuguese and Russian SME's managers and entrepreneurs.

This research was conducted in the North of Portugal and some regions in Russian Federation for the period of March to May 2017. Secondary data for this research were gathered from SABI database (for Portuguese sample) and with the help of personal and business contacts of researchers. To achieve these objectives, it was adopted a quantitative design as research methodology. Collection of primary data (assessing the financial literacy level of SMEs' financial managers/entrepreneurs) was obtained through the use of a structured questionnaire, that is mostly similar to International Survey of Adult Financial Literacy Competencies from OECD in 2016. To measure the financial performance, it was collected secondary data from the financial documents of companies. The results did not support the expectations that there are some influences on Financial Literacy Level (FLL) of respondents from the variables, such as Gender, Age, Company' size, and Education level. This data' results suggest a moderate negative and statistically significant correlation between companies' performance (as measured by Return on Equity - ROE) and its owners' or managers' global FLL. It also found moderate negative and statistically significant correlation with financial inclusion and management of bank accounts dimension and ROE, as well as with financial understanding dimension. There was not found statistically significant differences between other performance indicators (return on assets and sales profitability) and global FLL. Moreover, there are no statistically difference between the two countries.

Keywords: Small and Medium Sized Enterprises, Financial Literacy Index, Company' Performance, Portugal, Russia

Resumo

O objetivo deste trabalho é estudar a relação entre o nível de literacia financeira dos gestores e empresários e o desempenho económico e financeiro das pequenas e médias empresas (PME). Como objetivos específicos, pretende-se (i) determinar o nível de literacia financeira dos gestores e empresários das PME; (ii) analisar a relação existente entre o desempenho das empresas e o nível de literacia financeira dos seus gestores/empresários; e (iii) comparar o nível de literacia financeira dos gestores/empresários Russos com os Portugueses bem como o desempenho financeiro destas empresas.

Esta pesquisa foi desenvolvida no norte de Portugal e em algumas regiões da Federação Russa, para o período de março a maio de 2017. Os dados secundários foram recolhidos da base de dados SABI (para a amostra Portuguesa) e com a ajuda de contactos de negócios e pessoais dos investigadores. Para alcançar os objetivos definidos, foi adotado uma metodologia quantitativa. A recolha de dados primários (para medir o nível de literacia financeira dos gestores/empresários) foi obtida através da aplicação de um questionário estruturado, baseado no relatório internacional de investigação sobre as competências de literacia financeira dos adultos da OCDE em 2016. Para medir o desempenho financeiro, foram recolhidos dados secundários dos documentos financeiros das empresas. Os resultados alcançados não validam as expectativas de relação entre o nível de literacia financeira dos inquiridos e variáveis como género, idade, dimensão da empresa e nível de educação. Os resultados indicam correlação negativa moderada e estatisticamente significativa entre a performance das empresas (medida pela rentabilidade dos capitais próprios – RCP) e o nível global de literacia financeira dos seus gestores ou empresários. Também se observou correlação negativa moderada e estatisticamente significativa com a dimensão da “inclusão financeira e gestão das contas bancárias”, bem como com a dimensão da “compreensão financeira” e a RCP. Não foram encontradas diferenças estatisticamente significativas entre os dois países.

Palavras-chave: Pequenas e médias empresas, índice de literacia financeira, desempenho das empresas, Portugal, Rússia

Реферат

Основная цель данной работы - исследовать отношения между уровнем финансовой грамотности менеджеров и владельцев малого и среднего бизнеса и экономической результативности компании.

В качестве конкретных целей предполагается: (i) изучить взаимосвязь между финансовой грамотностью и возрастом, полом и уровнем формального образования финансовых менеджеров МСП; (ii) изучить взаимосвязь между финансовой грамотностью среди финансовых менеджеров МСП и рентабельностью в качестве показателя эффективности деятельности предприятия в общей выборке и по странам, и (iii) уровни финансовой грамотности среди менеджеров и руководителей МСП Португалии и России.

Это исследование проводилось на севере Португалии и некоторых регионах Российской Федерации в период с марта по май. Данные для этого исследования были собраны из базы данных SABI и с помощью личных и деловых контактов исследователей. Сбор первичных данных (оценка уровня финансовой грамотности финансовых менеджеров МСП) был получен за счет использования структурированного вопросника, который в основном аналогичен Международному обзору компетенций в области финансовой грамотности взрослых от ОЭСР в 2016 году. Чтобы измерить финансовые показатели, были собраны вторичные данные из финансовых документов компаний. Полученные результаты не подтвердили предполагаемой взаимосвязи уровня финансовой грамотности и таких переменных, как Возраст, Размер компании, Пол, Уровень образования респондента. Результаты данных предполагают умеренную отрицательную и статистически значимую корреляцию между показателями компаний (рентабельность капитала - ROE) и уровнем финансовой грамотности менеджеров или руководителей. Также обнаруживается умеренная отрицательная и статистически значимая корреляция с финансовым ведением банковских счетов и собственного капитала. Также не были обнаружены значительные различия между двумя странами.

Ключевые слова: Малый и средний бизнес, Финансовая Грамотность, Эффективность деятельности компании, Португалия, Россия.

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Abbreviations and/or Acronyms

BSC- Balanced Scorecard

CAE- Classification of Economic Activities

FLI- Financial Literacy Level

GDP- Gross Domestic Product

GFLI-Global Financial Literacy Level

IQR- Interquartile Range

INFI- International Network on Financial Education

OECD- Organization for Economic Co-operation and Development

ROA- return on Assets

ROCE- Return on Capital Employed

ROE- Return on Equity

ROI- Return on Investment

SABI- Iberian Balance Sheet Analysis System

SBA- The Small Business Act

SME- Small and medium-sized enterprises

Std- Standard Deviation

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Introduction

An acute awareness of the need to improve financial literacy of people has become one of the main lessons of the current financial crisis. Knowing the basics of the financial economy allows people not only to avoid a number of mistakes and financial losses, but also to see new benefits and interesting opportunities, regardless of what position and in what area they work. For the business' owners, in our opinion, financial literacy may help to guarantee health and stable economic situation.

The importance of financial literacy has been already recognized by many researchers in the volume of dedicated research papers and policymakers by investing resources in financial education programs.

The trend of accessible financial markets and an enormous variety of financial services requires from people a better understanding of economic processes. Ignorance of financial literacy might be crucial on the existence key-factors, since it has influence on financial decision-making process (Lusardi & Mitchell, 2014). This research paper is aimed to investigate possible relations between financial literacy and performance of a company. The various variables might have an influence on financial knowledge, like age, gender, education level, therefore, it will be also covered in the investigation structure. The main research question is following:

- Can financial literacy level of a manager influence on the company' efficiency and performance?

And in order to have better understanding about probable influences, we have formed the following secondary questions:

- Is there any relationship between variables (Age, gender, education level, company' size) and financial literacy level?
- Is there any difference between Portugal and Russian Financial Literacy Level and companies' performance?

The present study is divided into 3 Chapters. The first chapter, which is the Literature review (Chapter 1), gives a brief overview of existing research papers and theoretical explanation of definition «Financial literacy» and 2 practical examples of assessing it among adults worldwide (Cases of Standard& Poor Survey and OECD Financial literacy competencies survey). It also concludes companies' performance evaluation techniques and financial ratios used in them, in order to have a better understanding how managers tend to evaluate their companies' efficiency. The first chapter ends with sub-chapter connecting these two components together with an aim to show possible benefits of implementing some financial literacy programs at a workplace.

The second part has a goal of explaining the main objectives of the study, the used methodology for achieving them and research variables in the sample. The data were obtained from SABI database (Iberian Balance Sheet Analysis System) for the Portuguese part and by personal and business contacts for Russian part. Statistical significance was analyzed through the use of SPSS Statistics software. Of the 62 subjects who completed the questionnaire, 29 present Portugal and 33 are from Russia. The level of financial literacy of the entrepreneurs is assessed using the questionnaire methodology, focusing on the three sections of financial literacy:

- A. Financial inclusion and management of bank accounts;
- B. Financial planning and company's cash management;
- C. Financial Understanding.

The methodology part also explains calculations for Financial Literacy Levels and evaluation of companies' performance. All results are presented in the next Chapter 3, which will give graphical analysis of responds and highlight key conclusions and assumptions according to each of them.

The dissertation finishes with remarkable conclusions, some limitations on the research and some suggestions for further research.

1. Literature Review

This chapter presents a literature review on financial literacy and company's performance measurement, as well as its correlation between the both subjects. It is divided in the following subchapters: "Financial Literacy", describing the importance and attention given to financial literacy with 2 practical examples of OECD and S&P Surveys; "Companies 'performance" explains variable approaches used in organizations to measure it, and the 3rd chapter "The relationship between managers' financial literacy and corporate financial performance" tends to explain benefits of implementing financial literacy education programs in a workplace.

1.1. Financial literacy

Understanding of basic financial concepts helps people to make day-to day life decisions, which can vary from buying a coffee and to taking a home on mortgage. Financially literate people have competency to decide about investments, savings, borrowing and more (Asaad, 2015). It is markedly important to have financial knowledge in times when complicated financial products are freely accessible on the market to a big number of customers. In many countries, government tries to expand access to financial services, thus the number of people with credit products will increase fast (Klapper, Lusardi & Van Oudheusden, 2014).

Financial literacy should be linked to the concept of financial intelligence. This is a set of skills that must be held by all those who want to run their businesses successfully and to be able to follow and understand the financial world. They must be able to read balance sheets and financial statements of companies and financial institutions and to understand their mutual relations and influences (Novo, 2012). Financial literacy can be described as the ability of consumers to make financial decisions in their own best short- and long-term interests. Ignoring financial basics may cost people high transaction fees,

bigger debts and fewer saving (Asaad, 2015). Meantime, there are many potential benefits of being financially literate. For example, it helps to better plan a job and savings for retirement period.

The concept has not always been described as financial literacy. Financial literacy is typically measured at the individual level and then aggregated by groups, such as high school students or low-income adults, to provide a macro view (Remund, 2010). Because of the changing economic environment financial literacy initiatives have received much attention (Asaad, 2015). Financial literacy is the concept in which individuals and households get the required education and skills to understand management of personal finances better. It is the set of knowledge and skills that one needs to financial decisions which can impact their financial prosperity positively. By financial literacy is meant a positive thinking on the need for financial planning, good understanding of the various financial services, knowledge of the various products, a fair idea of the risks and rewards in terms of usage of the services, a reasonable grasp of the concepts like interest rate, compounding, inflation, diversification etc. (Asaad, 2015).

Financial literacy is the ability to read, analyze, manage and write about personal financial conditions that affect material wellbeing. It includes an ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect every day financial decisions, including events in the general economy (Novo, 2012). It consists of various constructs. It has been discussed and defined in various ways in the literature. Huston (2010) proposed a model (Figure 1) that includes relationships between financial literacy, knowledge, education, behavior, and financial wellbeing. In this model, inputs into financial literacy are human capital and financial education. Other influences such as demographics, culture, and family influences are associated with financial behaviors.

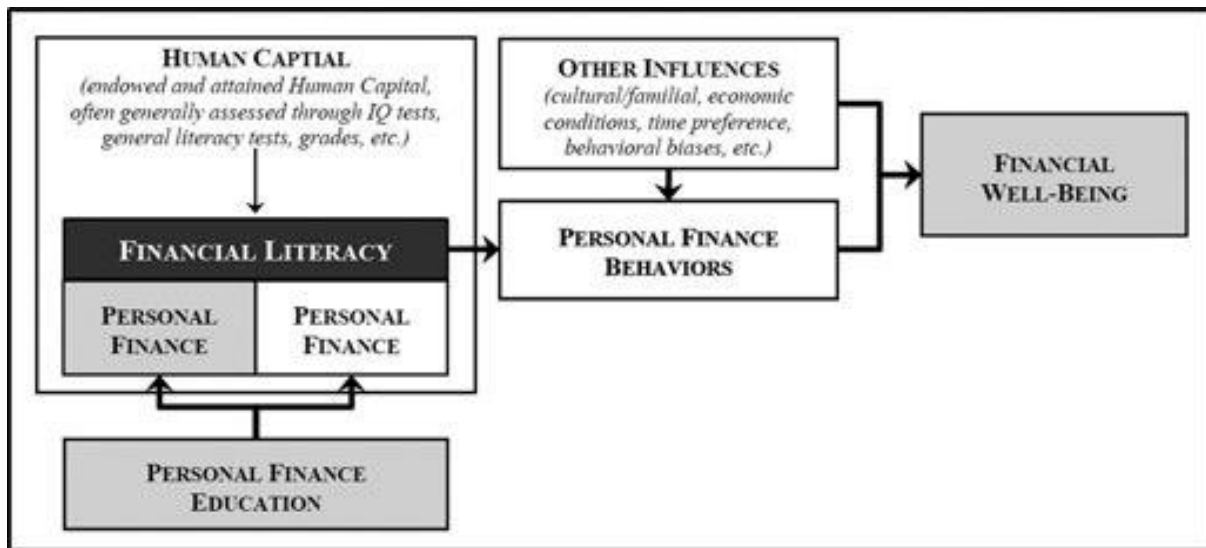


Figure 1. Relations among Financial Literacy, Knowledge, Education, Behavior and Well-Being.

Source: Huston (2010, p. 5)

Figure 1 shows the relationship among financial knowledge, education, literacy, behavior and well-being. Financial literacy consists of both knowledge and application of human capital specific to personal finance. The level of overall endowed and attained human capital influences a person's financial literacy. For example, if an individual struggle with arithmetic skills, this will certainly impact his/her financial literacy. However, available tools (e.g., calculators, computer software) can compensate for these deficiencies; thus, information directly related to successfully navigating personal finances is a more appropriate focus than numeracy skills for a financial literacy measure (Huston, 2010).

Financial literacy is a component of human capital that can be used in financial activities to increase expected lifetime utility from consumption (i.e., behaviors that enhance financial well-being). Other influences (such as behavioral/cognitive biases, self-control problems, family, peer, economic, community and institutional) can affect financial behaviors and financial well-being. A person who is financially literate (i.e., has the knowledge and the ability to apply the knowledge) may not exhibit predicted behaviors or increases in financial well-being because of these other influences (Huston, 2010).

Financial education is an input intended to increase a person's human capital, specifically financial knowledge and/or application (i.e., financial literacy). A well-designed financial literacy instrument that adequately captures personal finance knowledge and application can provide insight into how well financial education improves the human capital needed to behave appropriately to enhance financial well-being (Huston, 2010). In recent years, researchers have created many types of assessments aimed at measuring financial literacy and levels of financial knowledge. A lack of financial knowledge has been associated with behaviors that led to financial mistakes such as over borrowing, high interest rate mortgages, and limited saving and investment (Henager & Cude, 2016). There are large numbers of stakeholders including state governments, financial regulators, financial institutions; civil society, educationists and others are involved in spreading financial literacy. The recent economic downturn has magnified overall awareness of financial illiteracy and its impact on world economy. One response has been increased academic research focusing on financial literacy as well as renewed interest in financial education and related policy. Financial education is increasingly prevalent in high schools, colleges and workplaces (Henager & Cude, 2016). Fast evolving financial landscape provides an easier access to financial services to citizens, while more risks are appearing as well. Financial literacy has become a key life skill for individuals as well as micro and small businesses. It can range from purchasing a vehicle, constructing a house, getting the children married, and savings for retirement etc. Financial education can help strengthen financial literacy by increasing financial knowledge, skills and attitudes (Grifoni & Messy, 2012). What adults know about household finance is important because of the many personal financial responsibilities people assume over a lifetime. Adults must manage household budgets subject to income constraints, buy goods and services, monitor financial accounts, handle credit cards, save and

invest for a future event such as a child's college education or retirement, purchase insurance to reduce risk, pay taxes, and seek sound financial advice. The difficulty of knowing all that a person should know about personal finance in an ever-changing and more complex financial world is an enormous challenge for even the most educated adults, although the importance of some of this knowledge will vary based on phases of the life-cycle or personal circumstances. Yet, the consequences of not knowing even the basics about household financial matters carry significant costs. Consumers who fail to understand the concept of interest compounding spend more on transaction fees, run up bigger debts, and incur higher interest rates on loans; they also end up borrowing more and saving less money.

There are two essential elements of financial inclusion, one is access and the other is awareness. The acceptance of these two elements varies country to country. For developed countries with widespread financial infrastructure, the access to financial products/services is not a matter of concern. It is more of a financial literacy issue in that market players/consumers are required to be educated about the features of the available financial products/services, including their risks and returns (Singh, 2014).

There are many research papers and investigations (e.g., Borodich, Deplazes, Kardash, Kovzik, & Oshkosh, 2010; Lusardi & Mitchell, 2014; Lusardi, Mitchell & Curto, 2010; Klapper, Lusardi, & Van Oudheusden, 2014; Porto & Xiao, 2016; Su, Hsiao, & Chen, 2015) that are aimed to find out levels of financial literacy among adults all over the world.

1.1.1. Standard & Poor's Ratings Services Global Financial Literacy Survey Case

Since financial literacy affects financial behavior in many various ways, it is important to understand the extent of people's understanding of basic financial concepts. Standard & Poor's Ratings Services Global Financial Literacy Survey (S&P Global FinLit Survey) provides this information across a wide range of countries. It builds on early initiatives by the International Network on Financial Education (INFE) of the Organization for Economic Co-operation and Development (OECD), the World Bank's Financial Capability and Household Surveys, the Financial Literacy around the World (FLAT World) project, and numerous national survey initiatives that collect information on financial literacy (Klapper, Lusardi & Van Oudheusden, 2014). The information on financial literacy is based on questions added to the Gallup World Poll survey. More than 150,000 nationally representative and randomly selected adults in more than 140 economies were interviewed during the 2014 calendar year. The surveys were conducted face-to-face in economies where less than 80 percent of the population has access to a telephone or is the customary methodology. The target population consists of the entire population aged 15 and above, aside from prisoners and soldiers. Financial literacy was measured using questions assessing basic knowledge of four fundamental concepts in financial decision-making: knowledge of interest rates, interest compounding, inflation, and risk diversification.

A person defined as financially literate when he or she correctly answers at least 3 out of the four financial concepts. Based on this definition, 33 percent of adults worldwide are financially literate. This means that around 3.5 billion adults globally, most of them in developing economies, lack an understanding of basic financial concepts.

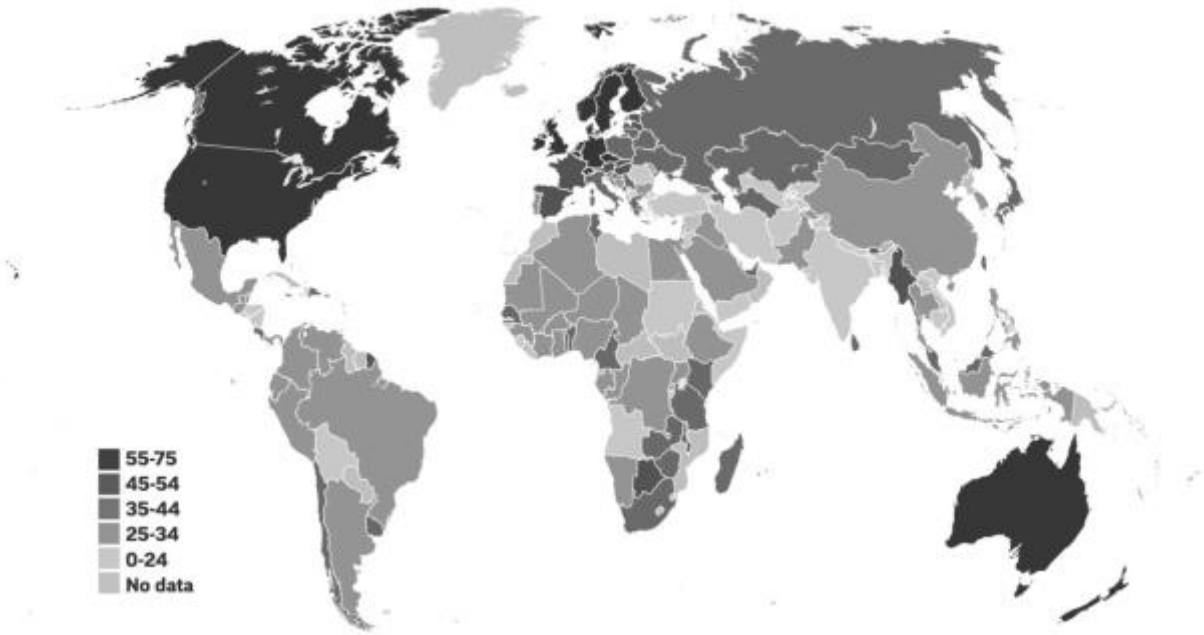


Figure 2. Global variations in financial literacy (% of adults who are financial literate).

Source: Standard & Poor’s Ratings Services (2014, p.7)

The countries with the highest financial literacy rates are Australia, Canada, Denmark, Finland, Germany, Israel, the Netherlands, Norway, Sweden, and the United Kingdom, where about 65 percent or more of adults are financially literate. On the other end of the spectrum, South Asia is home to countries with some of the lowest financial literacy scores, where only a quarter of adults - or fewer - are financially literate (See Figure 2) (Klapper, et al 2014). Not surprisingly, financial literacy rates differ enormously between the major advanced and emerging economies in the world. On average, 55 percent of adults in the major advanced economies – Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States – are financially literate (Figure 3). But even across these countries, financial literacy rates range widely, from 37 percent in Italy to 68 percent in Canada. In contrast, in the major emerging economies - the so-called BRICS (Brazil, the Russian Federation, India, China, and South Africa) - on average, 28 % of adults are financially literate. Disparities exist among these countries, too, with rates ranging from 24 % in India to 42 % in South Africa as can be seen in Figure 3.

Worldwide, just 1-in-3 adults show an understanding of basic financial concepts that means billions

of people are unprepared to deal with rapid changes in the financial landscape. Credit products, many of which carry high interest rates and complex terms, are becoming more readily available. Governments are pushing to increase financial inclusion by boosting access to bank accounts and other financial services but, unless people have the necessary financial skills, these opportunities can easily lead to high debt, mortgage defaults, or insolvency (Klapper, Lusardi & Van Oudheusden, 2014).

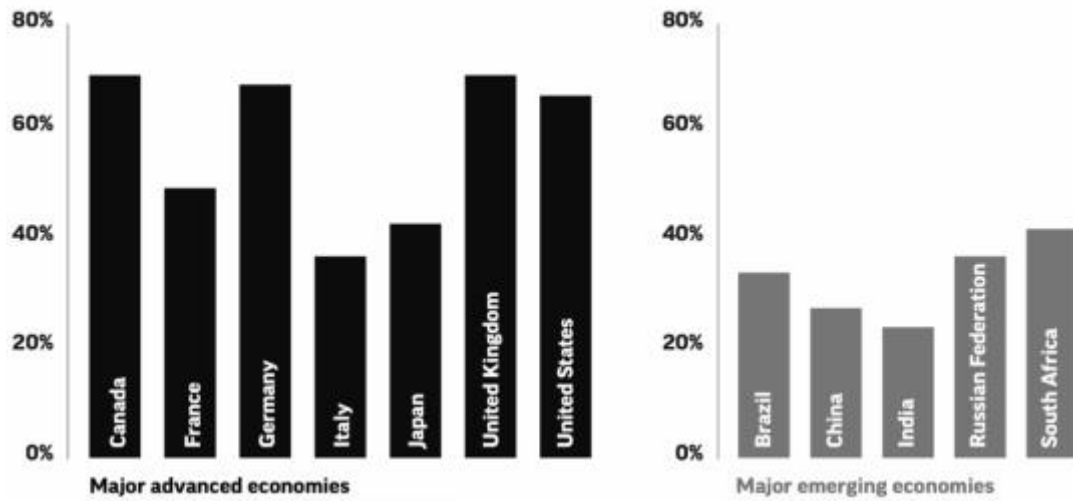


Figure 3. Wide variation in financial literacy around the world

Source: Standard & Poor's Ratings Services Global Financial Literacy Survey (2014, p.8)

1.1.2. OECD International survey of Adult financial literacy competencies

“The Organisation for Economic Co-operation and Development (OECD), an international organization founded in 1961 to stimulate economic progress and world trade. Current members are Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, South Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. One of the fundamental purposes of the OECD is to achieve the highest possible economic growth and employment and a rising standard of living in member countries; at the same time, it emphasizes maintaining financial stability” (Encyclopædia Britannica, 2010, para. 1)

The survey of financial literacy was conducted by OECD organization in 30 countries; respondents are people aged from 18 to 79, sample sizes ranges from 1,000 to 10,000 - 1000 is a minimum requirement in order to be able to facilitate comparative study (OECD, 2016). The results of survey showed that (OECD, 2016):

- In average, only 56 % of respondents across participating countries have achieved the

minimum target score. Adults particularly struggled with basic concepts on financial knowledge;

- 58% of participants could give correct answer on savings question;
- 42% are aware of the additional benefits of interest compounding on savings;
- Only about two in three adults – across OECD and all participating countries and economies – were aware that it is possible to reduce investment risk by buying a range of different stocks;
- Gender differences in financial knowledge are needed to be mentioned, with 61% of men who achieved the minimum target score compared with only 51% of women across participating countries and economies (OECD, 2016).

Improving financial literacy levels in our community is not, and cannot be, the responsibility of any one sector or organisation alone. It requires a whole community response with cross-sectorial support. The attainment of financial literacy for most people is a cumulative, lifelong process, not an event tied to a particular course of study. According to the OECD report (2016), programs should include the following principles:

- Financial education should begin in primary school;
- Financial education should be an integral part of the good governance of financial institutions;
- Governments and stakeholders should promote unbiased, fair and co-ordinated financial education (OECD, 2016).

When it comes to best practice, the OECD recommends that financial education should be clearly distinguished from commercial advertising. Financial education programs should focus on important life-planning aspects, such as basic savings, debt, insurance and pensions. The OECD says financial institutions should find ways to encourage clients to read and understand information, especially when related to long-term commitments. And it recommends that programs be oriented to building capacity, targeted at specific groups and personalised where appropriate (Klapper, Lusardi & Van Oudheusden, 2014).

1.2. Companies' performance

Enterprise performance evaluation helps entrepreneurs to define the boundaries of the ratio achieved by a company and costs for it (Pulakos, 2009). Based on this analysis, you select the best way to increase efficiency of the company. Evaluating the effectiveness of the enterprise - is a procedure that is performed to determine the value of the business (company) or its shares. Managers resort to such an action in different cases, therefore the question of the need to evaluate the effectiveness of the company rises before administering periodically. If the organization expects not only to survive on the market, but on a large profit too, management and the order of assessment activity firstly should consider

the strategic objectives and the companies potential. It is generally believed that a successful company - it is an economic activity, whose costs are low, but profit is high (Mišanková, 2013).

It is necessary to develop a complete strategic map in order to assess future prospects, considering not only material components in costs of the company, but also issues such as reputation, innovation, business projects (Berisha-Shaqiri & Berisha-Namani, 2015). The assessment of enterprise efficiency allows by using obtained data to draw competent conclusions which will help to find a balance in the work of all the systems of the organization, increase productivity, choose the most suitable high-performance equipment, increase the percentage of the occupied market share by expanding sales. In general, the use of this procedure opens the way for the company's successful development and builds confidence in the future. In a market economy, the efficiency of enterprises is influenced by various factors, which are classified according to certain characteristics. The factors influencing effective functioning of an enterprise (Lusardi & Mitchell, 2014) are as follows:

- Resource allocation: These include production factors (buildings, installations, equipment, tools, land, raw materials, fuel, labor, information, etc.);
- The factors providing a desirable level of economic and technical progress of the enterprise (scientific and technological progress, the organization of work and manufacture, training, innovation and investment, etc.);
- Factors that ensure commercial viability of industrial and economic activity of the enterprise (ability to conduct highly efficient commercial and logistical activities).

Effective performance measurement is key in ensuring that an organization's strategy is successfully implemented. It is about monitoring an organization's effectiveness in fulfilling its own predetermined goals or stakeholder requirements. A company must perform well in terms of cost, quality, flexibility, value and other dimensions (Downey, 2007). A performance measurement system that enables a company to meet these demands successfully is essential. It helps ensure better-informed and more effective decision making at both strategic and operational levels. Finding ideal concept for managing and measuring business performance is a complex problem and also experts represented by consulting firms, business managers or academics has been leading various discussions about it (Damjibhai, 2016). There is a conflict between the use of traditional indicators for measuring performance and modern indicators, based on value – management. Traditional approaches for measuring performance are mostly based on the primary company's goal, which is considered as profit maximization and for its expression large number of indicators is used, but they are not always compatible with each other. Traditional financial indicators can show just overall results, but they don't indicate in what area company should be better to accomplish its strategic goals (Mišanková, 2013). Performance measurement has evolved from purely financial performance measures such as profit, cash flow or the return on capital employed (ROCE). Today there is greater emphasis on non-financial and multi-dimensional performance measures to understand and manage the performance of the

organization to achieve its goals (Downey, 2007).

1.2.1. Balanced Scorecard as a performance measurement tool

The best-known performance measurement tool is the Balanced Scorecard (BSC), which is based on four distinct perspectives (financial, customer, internal process, and learning and growth). These perspectives are designed to cover the whole of the organization's activities both internally and externally, both current and future (Downey, 2007). "BSC is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals" (Wilsey, Perry, Montgomery & Rohm, 2013, p. 56). It was developed by Kaplan and Norton as a performance measurement framework that added strategic non-financial performance measures to traditional financial metrics to give managers and executives a more 'balanced' view of organizational performance (Wilsey, Perry, Montgomery & Rohm, 2013) as it disclosures in *Figure 4*.

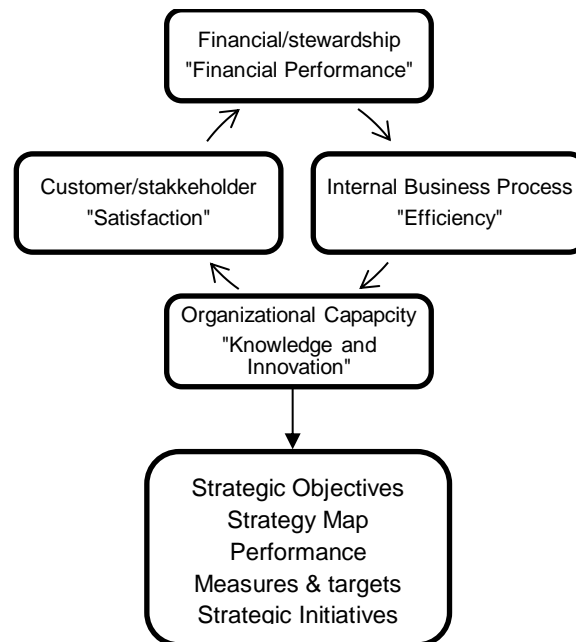


Figure 4. The Balanced Scorecard as a Strategic Management System.

Source: Kaplan and Norton, (1996, p. 39).

The BSC has evolved from its early use as a simple performance measurement framework to a full strategic planning and management system. The "new" BSC transforms an organization's strategic plan

from an attractive but passive document into the "marching orders" for the organization on a daily basis. It provides a framework that not only provides performance measurements, but also helps planners identify what should be done and measured. It enables executives to truly execute their strategies (Wilsey, Perry, Montgomery & Rohm, 2013).

"The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation" (Kaplan & Norton, 1996, p. 7). The BSC suggests that we view the organization from four perspectives, and to develop metrics, collect data and analyze it relative to each of these perspectives (Burkhart & Millen, 1989):

The Business Process Perspective

This perspective refers to internal business processes. Metrics based on this perspective allows the managers to know how well their business are running, and whether its products and services conform to customer requirements (the mission). "These metrics have to be carefully designed by those who know these processes most intimately; with our unique missions these are not something that can be developed by outside consultants" (Frattini, 2007, p. 257).

The Learning & Growth Perspective

This perspective includes employee training and corporate cultural attitudes related to both individual and corporate self-improvement. In a knowledge-worker organization, people - the only repository of knowledge - are the main resource. In the current climate of rapid technological change, it is becoming necessary for knowledge workers to be in a continuous learning mode. Metrics can be put into place to guide managers in focusing training funds where they can help the most. In any case, learning and growth constitute the essential foundation for success of any knowledge-worker organization. Kaplan and Norton (1996) emphasize that 'learning' is more than 'training'; it also includes things like mentors and tutors within the organization, as well as that ease of communication among workers that allows them to readily get help on a problem when it is needed.

The Financial Perspective

"Kaplan and Norton do not disregard the traditional need for financial data. Timely and accurate funding data will always be a priority, and managers will do whatever necessary to provide it. In fact, often there is more than enough handling and processing of financial data. With the implementation of a corporate database, it is hoped that more of the processing can be centralized and automated. But the point is that the current emphasis on financials leads to the "unbalanced" situation with regard to other perspectives" (English, 2011, p. 13)

The Customer Perspective

Recent management philosophy has shown an increasing realization of the importance of customer focus and customer satisfaction in any business. These are leading indicators: if customers are not satisfied, they will eventually find other suppliers that will meet their needs. Poor performance from this perspective is thus a leading indicator of future decline, even though the current financial picture may look good. In developing metrics for satisfaction, customers should be analyzed in terms of kinds of customers and the kinds of processes for which we are providing a product or service to those customer groups (Wilsey, Perry, Montgomery & Rohm, 2013).

1.2.2. Other tools used in performance measurement.

Performance Measurement gives an instrument to the manager to assess all aspects of the companies' operations – internal processes such as strategy implementing, decision making, resource planning and influences of external factors (Wongrassamee, Simmons & Gardiner, 2003). The main aim of using it is to improve productivity in the workplace and minimize costs of a firm (McDougall, Kelly, Hinks & Bititci, 2002). It may include approaches such as (Otley, 1999):

- ✓ Measuring innovation and learning (also referred to as intellectual capital);
- ✓ The six-dimensional performance matrix;
- ✓ Six Sigma;
- ✓ The performance prism;
- ✓ The European Foundation for Quality Management Excellence Model (EFQM);
- ✓ Strategy mapping.

Similar to the BSC, Fitzgerald (1991) created a 6-dimensional performance matrix, initially for service industries. Like the BSC, it applies both financial as well as non-financial measures. This model is also referred to as the results (financial and competitive dimensions) and determinants (quality of service, flexibility, resource utilization and innovation dimensions) framework, results are linked to internal business processes which are the determinants (Erdoğana, Erdoğan & Ömürbek, 2015).

As BSC or 6-dimensional performance matrix, the performance pyramid is a multidimensional model developed by McNair (1990). In comparison, the performance pyramid does apply performance measurement better to the chain of command, e.g. the lines of authority and responsibility, by which decisions are passed along, see Figure 5. Levels of hierarchy or scalar chain exist in order to cascade decisions, instructions, plans and objectives, often top-down within the organisation (Erdoğana, Erdoğan & Ömürbek, 2015).

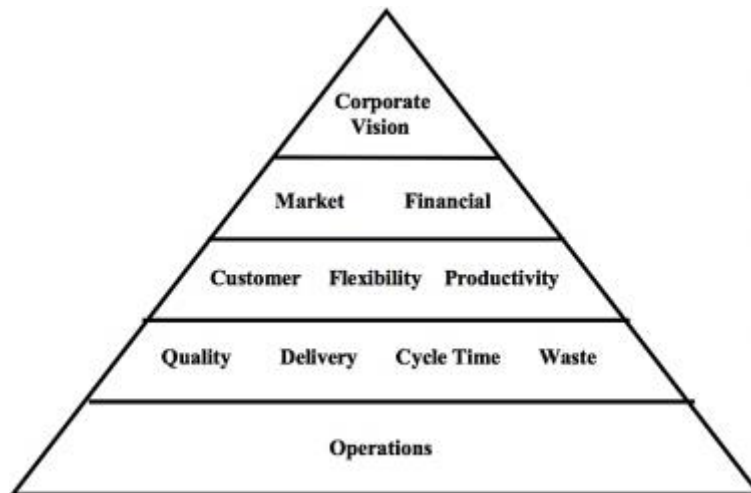


Figure 5. The Performance Pyramid

Source: Watts, McNair and Connolly (2012, p. 20).

Level 1: At the top of the organization is the corporate vision or mission through which the organization describes how it will achieve long-term success and competitive advantage.

Level 2: This focuses on the achievement of an organization's CSFs in terms of market-related measures and financial measures. The marketing and financial success of a proposal is the initial focus for the achievement of corporate vision.

Level 3: The marketing and financial strategies set at level 2 must be linked to the achievement of customer satisfaction, increased flexibility and high productivity at the next level. These guiding forces drive the strategic objectives of the organization.

Level 4: The status of the level 3 driving forces can be monitored using the lower level departmental indicators of quality, delivery, cycle time and waste.

This model (*Figure 5*) draws attention to the principle that performance measures should be appropriate for the interests and levels of management who receive them. Financial and economic measures are likely to be of importance chiefly to the heads of business divisions and the main board. Lower levels in the management will be controlling processes and hence will need non-financial measures such as quantities and times. (Erdoğan, Erdoğan & Ömürbek, 2015). Nevertheless, if the manager wants to deal with the assessment of a company's performance, it is necessary to understand and analyze properly financial statements by using accounting ratios and cash flow, figures from other companies or industry averages.

1.2.3. Basic Techniques of Financial Statement Analysis

To evaluate the financial and economic performance of a company, investors and creditors should analyze the financial statements of company. However, they should not analyze only one year but at least three to five years (Horngren, Harrison & Oliver, 2012). Ratios and percentages are the most common analytical measures obtained from financial statements. There are different ways in which these measures can be analyzed.

A. Percentage analysis

“Vertical analysis is the percentage analysis used to show the relationship of each component to the total within a single statement. In vertical analysis of the statement of financial position, each asset, liability item and shareholders’ equity item is stated as a percentage of the total assets, total liabilities and shareholders’ equity, respectively. Vertical analysis is useful in assessing relationships in a company’s financial condition and operations” (Warren & Reeve, 2004, p.663).

“Horizontal analysis is the percentage analysis of increases or decreases in related items in the comparative financial statements. The amount of each item on the most recent statement is compared with the related item on one or more earlier statements. Additional information may be required for evaluating the significance of the changes in the comparative figures; for example, a decrease in accounts receivable may be due to increasing efforts in debt collection” (Warren, Reeve & Duchac, 2013, p. 667).

B. Ratio analysis

Another method “(...) of comparing and investigating the relationships between different pieces of financial information” (Ross, Westerfield & Jordan, 2010, p.54) that is useful to compare companies as eliminates the size problem because the size effectively divides out. “Because a ratio is simply one number divided by another, and because there are so many accounting numbers out there, we could examine a huge number of possible ratios” (Ross, Westerfield & Jordan, 2010, p.54). By this way, we will just present some of the most commonly used ratios.

1) Profitability ratios

Profitability ratios measure the operating success of a company for a given time period. When the profit figure is expressed as a percentage of sales or capital employed, these ratios can be compared with those of previous years, or those from companies in the same industry. Evaluating company’ financial statements not only provides information about the ability of a firm to pay its credits, but also gives an idea and state of a firm’s performance and organizational success (Barnes, 1987). According to Dahmen and Rodríguez (2014), for the most optimal analysis of company performance there are seven basic ratios, which are described in Table 1.

Table 1. Seven Basic Financial Ratios.

Ratio	Description	Formula
1. Gross profit ratio	Fundamental metric of a business's financial performance	$\frac{\text{Sales} - \text{Cost of goods sold}}{\text{Sales}}$
2. Current ratio	Indicates how well debt due within the next 12 months can be paid	$\frac{\text{Current liabilities}}{\text{Current assets}}$
3. Debt ratio	Indicate how well all debt can be paid	$\frac{\text{Total liabilities}}{\text{Total assets}}$
4. Days in accounts receivable	Tells how many day there are between the day an invoice is issued and the day the payment is received	$365 / \frac{\text{Sales}}{\text{Average accounts receivable}}$
5. Days in accounts payable	Tells how many days the business is taking to pay its bills	$365 / \frac{\text{Cost of sales}}{\text{Average accounts payable}}$
6. Net profit ratio	The company's bottom line profitability	$\frac{\text{Net income}}{\text{Sales}}$
7. ROI (return on investment)	The company's bottom line profitability	$\frac{\text{Net income}}{\text{Owner's investment}}$

Source: Dahmen and Rodríguez, (2014, p. 3).

2) Liquidity ratios

Liquidity ratios aim to assess the company's ability to pay its obligations and to meet unexpected cash needs in the short-time perspective. A high level of liquidity is crucial for any company to survive in a market environment. (Van Den End & Kruidhof, 2013).

3) Investment Ratios

Investment ratios are mostly used by investors to determine "the health" of a company, whether it is a profitable company or not, and also to determine the return an investor might earn by purchasing that company' share (Cory, 2016):

- Earnings per share - This ratio represents the earnings made and available to shareholders during an accounting period. The trend in earnings per share over time is used to help assess the investment potential of a company's shares.
- Price/earnings ratio - This ratio provides a clear indication of the value placed by the capital market on a company's earnings and is prepared to pay for investors.
- Dividend yield - This ratio gives the percentage return (dividend) on the investment in one share. It is a crude measure of the return to shareholders, but it does ignore capital growth, which is often much higher than the return on dividends.

C. Analysis of Cash Flows

"A statement of cash flows identifies whether cash has increased or decreased from the previous year to the current year and also the sources and applications of cash. Free cash flow refers to the cash flow from operations minus dividends and capital expenditure. This gives a measure of a firm's ability to engage in long-term investment opportunities and its financial flexibility. The cash position of a company can be further analysed into the following (Ho, 2008, p. 4):

1. Cash flows from operating activities

Cash flows from operating activities represent the cash receipts from trade debtors and cash sales less the cash paid for inventory, salaries and other activities to maintain the operations.

2. Cash flows from investing activities

Investing activities are the acquisition and maintenance of investments by companies to sell products or to provide services; this includes the acquisition and disposal of investments and in non-current assets for operating a company. If a statement of cash flows shows considerable investment in property, plant and equipment and there are no significant disposals, an increase in investment represents an increase in capacity rather than the replacement of old assets and the company may have expanded.

3. Cash flows from financing activities

Financing activities are those through which a company acquires and manages its financial resources so as to pay to maintain its daily operations and to expand further. Provided that a return on the new investments in property, plant and equipment can generate returns that are in excess of the loan interest and dividend yield, then the shareholders' wealth is not reduced" (Ho, 2008, p. 4).

In spite of the difficulties, performance management is an essential tool for high performing organizations, and it is one of a manager's most important responsibilities, if not the most important responsibility. Furthermore, done correctly, performance management can result in numerous important outcomes for an organization, its managers and employees. Effective performance measurement is the

key to effective management in any organization. Benefits from an effective performance measurement system include and are not limited to the following (Pulakos, 2009):

1. Enhanced decision making and control: It is impossible to make the right decisions without a good understanding of an organization's performance. A multidimensional performance measurement framework means that decision support can be enhanced at all levels of the organization. This ranges from decisions concerning employee performance to strategic decision-making at board level.

2. Supported strategic planning and target setting: The ability to measure performance and progress gives meaning to the process of developing strategic plans and goals. An effective performance measurement system should emphasize the link from the corporate level to management and operational levels. In this way, decision-making and resulting actions and control are in line with strategy.

3. Improved communication: Involvement in setting targets and results reporting can enhance staff, stakeholder understanding, and support of strategies and decisions. It also provides a common language, which encourages interdepartmental knowledge sharing.

4. Accountability: Measuring and reporting performance gives decision makers a significant tool to achieve accountability at employee and organizational level. These relationships become clearer when outcomes and outputs are measured by a commonly accepted standard. For public sector organizations, this also includes government and public accountability for the public funds used).

1.3. Benefits of financial education at the workplace for corporate financial performance.

After considering the concepts of financial literacy and companies' performance, this sub-chapter is going to touch upon subject of connection and correlation between the both topics.

As it was discussed and proved with investigations' results, adults still lack personal financial knowledge. The data from OECD or S&P agencies shows the need to have more information and education for improving level of financial literacy. Workplace is one of the ideal places to do it. It is important not only for workers, but for employers and company at whole, because it may contribute to the productivity and effectiveness (Eniola & Entebang, 2015). Approaches to improving financial literacy include client services, community service, and general workforce outreach. Cakebread (2014) suggests strong financial literacy skills and knowledge can influence on a national economy. For individuals, it also can mean higher wealth and inclination to plan for retirement. But advantages are not only one-sided: providing employees with information to become financially knowledgeable will not only result in a healthier workforce, but also improve an employer's bottom line. According to the Adomako and Danso (2014, p.8), "financial literacy is an important major driver of firm performance and should be developed as an integral part of the entrepreneurial activities."

The workplace is the most opportune arena for financial education. Employee financial strength equates to company profits through increased productivity, retention, commitment, motivation, and morale (Bannon, Ford & Meltzer, 2014)

Both employers and employees are realizing its multiple benefits. These benefits of financial literacy education were recognized by consolidating information from several sources, including surveys, reports etc. The employers' benefits can be summarized as follows (Bannon, Ford & Meltzer, 2014):

- **Increased productivity:** Financially confident employees tend to be more productive. Absenteeism in the workplace can arise by unscheduled absences from employees who take a personal day due to financial issues.
- **Health insurance cost savings:** The "Debt Stress Index," developed by Paul J. Lavarkas of Ohio State in 2009, has been used in many surveys, including several Associated Press polls, to track the impact of worry about financial debt on health and well-being.
- **Increased retention and employee engagement:** Workers who have been provided financial literacy education have identified their employers as trustworthy sources of information. Employees report that they make better financial decisions after participating in financial education workshops.

On the other hand, the employees' benefits are summarized as follow (Bannon, Ford & Meltzer, 2014):

- **Improving decision making and increasing confidence:** It was observed that by increasing financial knowledge and confidence, employees gain a sense of control over their lives, enjoy higher standards of living.
- **Building assets and reduce debt:** Financial education provides employees with skills to maximize their savings, reduce credit debts and manage mortgage debt.
- **Retirement cost of living:** Workers who attended financial education workshops reported greater contributions to their retirement plan in comparison with those who did not attend.

Financial educational programs in the workplace have demonstrated significant success. Well-planned quality programs that emphasize the basics of personal finance do affect personal financial behaviour. Employees who participate in these programs will not only show higher levels of financial literacy; they also will highly value the education they receive (Bannon, Ford & Meltzer, 2014). For every manager arises a question after recognizing the need of financial programs in the workplace: How should they do it? (Cakebread, 2014). Here are some key practices that could be used, as suggested by (Bannon, Ford & Meltzer, 2014; Cakebread, 2014).

- Focusing on the basics: Start with working toward building the core skills that employees need to have regarding money and savings;
- Segmenting financial education based on employee groups: Since not everyone has the same needs at the same time, it would make more sense to divide programs with a group

diversified;

- Consistent work: Providing workers with constant financial education helps to clearly evaluate effectiveness of it;
- Encouraging behavior change: Supporting employees' initiative to change their working practices is helping for the future innovations and team working.

2. Methodology

In this chapter will be presented main aims of our research paper, the methodology used to achieve them, the way of collecting data and research variables in the planned sample, how to calculate Financial Literacy Index and main indicators for a company' performance evaluation.

2.1. Objective of the study and Research Hypotheses

In this investigation, our main goals are:

- i) to determine the financial literacy among managers and entrepreneurs of SMEs;
- ii) to test the relationship between companies' performance and financial literacy levels of their owners/managers;
- iii) to compare the level of financial literacy of Portuguese and Russian SME's managers and entrepreneurs.

Many researchers (e.g. Asaad, 2015; Dahmen, &, Rodriguez, 2014; Huston, 2010; Lusardi & Mitchell, 2014) have noticed the importance of financial literacy and its assessment. According to Lusardi and Scheresberg (2013) there is a correlation between level of financial literacy and high cost borrowers. Their results showed the most high-cost borrowers demonstrated very low financial literacy levels, very poor knowledge about basic financial concepts. In another related study, Lusardi and Mitchell (2014) found out similar low levels of financial literacy in countries with well-developed markets such as the United States, Germany, Australia, likewise in rapidly-changing markets. Therefore, the research hypotheses (RH) were defined as follows:

RH 1: "The median level of Financial Literacy Index of SME's entrepreneurs/managers is equal in all its dimensions."

RH 2: "The financial literacy index among Russian and Portuguese SME's

entrepreneurs/managers is below or equal to 50%.”

Since we have two different countries under the research, it is needed to compare results of FLI of both countries.

RH 2.1: “The financial literacy level of Russian SME’s entrepreneurs/managers is equal to the financial literacy level of Portuguese SME’s entrepreneurs/managers.”

Lusardi, Mitchell and Curto (2010) examined financial literacy among the young people and found that less than one-third of young adults maintain basic knowledge of financial concepts (interest rates, inflation and risk diversification).

RH 3: “The financial literacy level is equal in the five age groups in both countries (Russia and Portugal).”

According to Worthington (2006) when all other things are equal, the gender factor can have an impact on a financial literacy level. Putting this into hypothesis can give us the following assumption:

RH4: “Male respondents present higher financial literacy levels than female.”

It may be also possible to find some difference of results among managers and owners of different company’ size, so the following hypothesis must be tested:

RH 5: “There is a difference in financial literacy levels of managers depending on size of their company.”

Differences in financial knowledge by education variable were demonstrated in investigation by Lusardi and Mitchell (2014). It was especially poor for those respondents with low educational accomplishments.

RH 6: “There is a difference in financial literacy levels of business owners with a higher education degree than business owners without a higher education degree.”

The main question of this research about the relationship between companies’ success and its managers’ financial proficiency has been covered by many scientists and the latest investigation made in University of South Florida by Dahmen and Rodríguez (2014). They assessed 14 small enterprises and interviewed its owners in relation to financial statements and financial conditions. As a result, only one of the respondents expressed the clear understanding how to calculate overall profit for the company. “Four out of the seven companies experiencing financial difficulties suffered from too much debt, this case study finds a clear connection between lack of or inadequate financial literacy and financial difficulties experienced by entrepreneurs” (Dahmen & Rodríguez, 2014, p. 8).

RH 7: “There is a positive relation between the financial literacy levels of business owners and the performance of their firms.”

Due the fact of comparison analysis between two countries, it was also formed the following research hypothesis, in order to be able to examine in contrast:

RH 8: “The performance of Russian firms is equal of the performance of Portuguese firms, considering the level of financial literacy”.

2.2. Sample and variables under research

With the interest to determine how SME owners manage and run their financial activities, for Portuguese SME, the research sample was collected from SABI database, focusing on the textile industry, restaurants and accommodation industry in north region of Portugal. These areas were chosen due the companies' presence in the both countries, but then sample got diversified because of the difficulty of collecting data for Russian market. The database contained 671 textiles companies (for CAE¹ 13 and 14), 584 companies for Accommodation and 5293 Restaurants (CAE 55 and 56, respectively). From these companies where selected those that have had contact information (telephone number and e-mail to be contacted) – the subsample reduced to 297 SMEs in textile sector, 315 in Restaurants sector and to 216 for Accommodation' services. All pre-selected companies were contacted by sending e-mail with questionnaire and by phone to obtain the maximum number of answers. For the Russian part, the data was collected with the help of The Chamber of Commerce and Industry of the Pskov Region for Russian market and by personal and business contacts of researchers in Northwestern Federal District and Khanty-Mansi Autonomous Okrug of Russia. The choice of these regions is due the geographical location and concern about cross-country comparison of financial literacy levels among entrepreneurs and financial managers. In both situations, we have obtained sub-samples by convenience.

The share in GDP of small and medium enterprises, including microenterprises and individual entrepreneurs in Russia in 2015 was estimated at 19.9% according to Rosstat (Federal State Statistic Service) (Kuvshinova, 2017). The number of people employed in this sector in Russia from 2010 till 2015 increased by 1.5 million and amounted to 20.5 million according to the latest data on small and medium business (including individual entrepreneurs and their hired workers) which represents over 28% of all jobs on the market (Kuvshinova, 2017). Most of all, they are presented in the following activity fields:

¹ CAE (rev. 3) is the classification and grouping of the producing statistical units of goods and services, according to economic activity; - Organization, in a coordinate and coherent form of the economic-social statistical information for branch of economic activity, in different domains (production, job, energy, investment, etc.); - Statistical comparability at national, communitarian and world-wide level. The CAE Rev 3 table is prepared by the National Statistical Institute (NSI) and its application is national. It was approved by Deliberation N° 327 of Statistical Council, of 19 March 2007 and final publication by decree-law N° 381/2007, of 14 November. It started be on force on 01-01-2008.

trade and services, in manufacturing, construction and agriculture (Kalinin, 2015). For the Portuguese economy, according to The European Commission Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, SMEs account for more than two thirds of total value added (compared to an EU average of 57 %) and nearly four out of five jobs (compared to an EU average of about two out of three jobs) (SBA Fact Sheet, 2016). These statistics show the importance and the role of SME companies for the both economies, Portuguese and Russian. Therefore, the sample of our research consists of respondents from micro, small and medium sized firms. The company's performance serves as the main dependent variable, with the measurements of Return on Assets, Return on Equity and other indicators, which will be described in the next section; the most important independent variable for this investigation is financial literacy level, which has been measured with a scale from 1 to 5 depending on its Financial Literacy Index.

2.3. Data collection methods and research design methods

2.3.1. Questionnaire

In order to assess the financial literacy level of SME's managers and owners, it was conducted a questionnaire, which is mostly similar to International Survey of Adult Financial Literacy Competencies from OECD in 2016. The questionnaire (see Appendix A) consists of two parts. The first part intends to measure the level of financial literacy of manager or entrepreneur and the second part to characterize the respondents (managers or entrepreneurs), using socio metric variables (gender, age, level of education, and experience). Three major groups of questions (dimensions of financial literacy index) constitute the first part: financial inclusion and management of bank accounts (group A); financial planning and company's cash management (group B); and financial understanding and knowledge (group C). It was estimated that 30 minutes would be enough to complete the questionnaire. Although responses were not anonymous, because it was necessary to match the answers to the questionnaire and the companies' financial data, it was assured that no information would be transferred under any circumstances to third parties.

Financial inclusion and management of bank accounts group (Group A) includes 8 questions about banking services, entrepreneurs' awareness about banking functions and advantages of using them. The Group B - Financial planning and company's cash management, with 11 questions, tends to evaluate the importance of financial planning for a manager or entrepreneur, also to estimate investing capabilities of a company. The Group C - Financial understanding, contain 11 questions that aimed to check knowledge about financial concepts. This information will be used in order to test all hypotheses.

With the aim to evaluate the respondents' financial literacy, as suggested by Bank of Portugal (2010) and OECD (2016) for calculation of FLI, every answer to the survey questions was scored with a scale from +2 to -2 (where +2 reflects correct or the most appropriate answer, -2 reflects totally wrong or the

most inappropriate answer). However, not all of the questions were included, questions number 1.4, 1.7, 1.8, 1.14, 1.17, 1.19, 1.29 are aimed to compile descriptive information or not every responder has to answer them. Therefore, for each individual surveyed it is summed the score for each question that measures the FLI and divided by the number of questions answered. The Global Financial Literacy Index (GFLI) has a minimum score of -63 and a maximum score of 68 with 23 questions.

The next step was to transform the obtained results into the levels of financial literacy. The ranking of levels was scaled from 1 to 5, where the level 1 means very low level of financial literacy and 5 means very high level of financial literacy, according to the information in Table 2.

Table 2. *Global Financial Literacy Index (FLI) and corresponding ranking level.*

(Global) Financial Literacy Index (GFLI)	Ranking Level	Qualitative level
Between -63 and -36	1	Very low FLL*
Between -37 and -11	2	Low FLL
Between -10 and 16	3	Average FLL
Between 17 and 43	4	High FLL
Between 44 and 68	5	Very High FLL

Note: *FLL – Financial Literacy Level

In order to allow comparison among group of individuals and order researches around the world, the score of FLI is standardized in a scale of 0 to 100. The minimum score (-63) is equal to 0 and maximum (68) is 100. As a result, each individual score of GFLI is transformed in the scale 0 - 100, using

the formula: $\frac{(\text{original score} - \text{theoretical min})}{(\text{theoretical max} - \text{theoretical min})} \times 100$ (1).

For each of dimensions of FLI, that is the score for each surveyed per group of questions: for Group A, B and C, it was computed the partial FLI and transformed in a scale of 0-100, as presented in Table 3

Table 3. *Transforming FLI in standardized scale.*

Dimension	Description	Formula
GFLI	Global Financial Literacy Index	$\frac{\text{Score}(i)-(-63)}{68-(-63)} * 100$ (2)
FLIA	“Financial inclusion and management of bank accounts” dimension is composed by 5 questions with maximum score 9 and minimum -9;	$\frac{\text{Score}(i)-(-9)}{9-(-9)} * 100$ (3)
FLIB	“Financial understanding” dimension is composed by 8 questions with maximum score 23 and minimum -19;	$\frac{\text{Score}(i)-(-19)}{23-(-19)} * 100$ (4)
FLIC	“Financial planning and company’s cash management” dimension is composed by 10 questions with maximum score 36 and minimum -35.	$\frac{\text{Score}(i)-(-35)}{36-(-35)} * 100$ (5)

The descriptive statistic shows the transformation’ differences after implementing suggested methodology to Global Financial Literacy Index (see Table 4), for the whole sample and sub-samples by country.

Table 4. *Descriptive Statistics of the Original Index and the Global FLI for the whole sample and sub-samples by country.*

	Minimum	Maximum	Average	Median	Standard Deviation
Original Index	-30	40	13,31	17,5	18,13
Global FLI	25,19	78,63	58,25	61,45	13,8
Portugal					
Original Index	-30	37	12,96	18	18,09
Global FLI	25,19	76,34	57,98	61,83	13,81
Russia					
Original Index	-18	40	13,6	13	18,44
Global FLI	34,35	78,63	58,47	58,02	14,07

2.3.2. Company's performance evaluation

In our evaluation, we took some similar indicators, which are Return on Total Assets (ROA), Return on Total Equity (ROE) and Sales Profit. The formulas we used for each ratio are the following:

$$\text{ROA} = \frac{\text{Earnings before Taxes (EBT)}}{\text{Total assets}} \times 100 \quad (7)$$

$$\text{ROE} = \frac{\text{Earnings before Taxes}}{\text{Total Equity}} \times 100 \quad (8)$$

$$\text{Sales Profit} = \frac{\text{Net Income (EBT)}}{\text{Total sales}} \quad (9)$$

Every financial indicator was taken for 5 years' time horizon from 2011 to 2015, the currency used in calculations is the euro (€), and since all values for Russian companies are usually calculated in Russian rubles, we have converted them in euro using the average exchange rate EUR-RUB for those 5 years. In order to be able to test hypotheses, we have calculated averages for ROA, ROE, Sales Profit and Net Income indicators, because the Financial Literacy Index has been calculated only for the current year. We have also calculated descriptive statistics for each ratio and each year (Table 5).

From the Table 5 it is possible to see that the highest average ROA, per year, was reached in 2014 (mean= 2,48%; Std=8,64%) and lowest in 2012 (-0,044%; 6,766%). Nevertheless, the median was respectively 0,64% and 0,49%. However, the medians' values are comparably lower. This may be because the sample contains mostly micro –enterprises. The annual average value for all time horizon of ROA show a mean of 1,205% (6,462%) and the median is only 0,528%. Similar analysis can be done for other ratios and total assets. In all situations, the median values are much lower than mean. The distribution of these values is not normally distributed and they are skewed.

Table 5. Descriptive Statistics of Performance Ratios and Total Assets indicator

Ratio	Descriptive statistics	Annual Average, %	2015, %	2014, %	2013, %	2012, %	2011, %
ROA	Mean	1,205	1,050	2,476	2,118	-0,044	1,037
	Standard deviation	6,462	9,915	8,640	7,644	6,766	8,083
	Median	0,528	0,76	0,64	0,605	0,49	0,54
	Maximum	20,88	27,08	28,83	23,65	21,19	38,14
	Minimum	-23,109	-34,89	-24,536	-19,631	-27,577	-18,512
Ratio	Descriptive statistics	Annual Average, %	2015, %	2014, %	2013, %	2012, %	2011, %
ROE	Mean	6,78	0,25	4,72	9,65	10,58	6,79
	Standard deviation	29,471	46,694	35,955	53,520	76,210	23,754
	Median	0,78	0,92	0,90	0,64	0,64	0,74
	Maximum	145,11	118,74	110,30	378,47	575,61	119,51
	Minimum	-80,3084	-294,506	-215,443	-87,508	-79,581	-43,211
Ratio	Descriptive statistics	Annual Average, %	2015, %	2014, %	2013, %	2012, %	2011, %
Sales Profit	Mean	-16,31	3,20	-23,29	12,42	-7,63	1,06
	Standard deviation	128,795	103,481	201,549	66,742	46,546	23,279
	Median	0,692	0,707	0,698	0,698	0,687	0,678
	Maximum	85,607	617,841	88,770	503,437	13,121	89,666
	Minimum	-937,116	-356,232	-1548,181	-16,000	-337,764	-113,936
Indicator	Descriptive statistics	Annual Average, TH EUR*	2015, TH EUR	2014, TH EUR	2013, TH EUR	2012, TH EUR	2011, TH EUR
Total Assets	Mean	774,150	941,954	900,928	781,610	695,439	655,952
	Standard deviation	1572,47	1863,78	1816,36	1584,28	1413,53	1395,58
	Median	246,46	278,02	261,20	248,10	200,05	222,20
	Maximum	8253,98	9841,30	9523,80	8412,70	7302,67	8123,18
	Minimum	3,83	4,4	4,1	3,9	3,65	3,1

Note: * TH EUR, represents thousands of Euro; Annual Average is the average of the ratio or indicator for the time horizon under analysis (2011 to 2015).

3. Presentation of the Results

In this chapter is aimed to show the main key characteristics of the collected sample, analyse the results from the Questionnaire (Appendix 1) about Financial Knowledge and Attitudes of SME' managers and compute the Financial Literacy Index (and level). It intends also to test the research hypotheses and compare the results of the two countries' groups (Portugal and Russia).

3.1. Sample Characterisation

Sample characterisation is based on analysis of results of second part of the questionnaire. The survey was carried out during March until 26th of May 2017, using three main approaches: by email, by telephone and by personal visits. Although we have contacted in general more than 800 companies, due to a slow and disappointing response, potential participants were partly reached by personal contacts. It was attainable to get answers from 62 companies' managers/entrepreneurs in total, 33 respondents from Russia and 29 from Portugal. The companies, that took part in the survey' conduction, are located in the North region of Portugal and different regions in Russia. According to the Figure 6, Russian companies (about 53 %) present a little more than a half of all sample and almost the second half stays for the Portuguese firms.

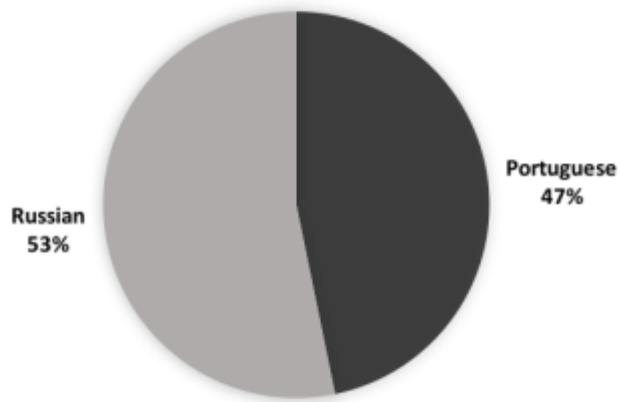


Figure 6. Distribution of the respondents by country.

In relation to enterprise' size category, based on the number of a company's employees, in our sample there are micro, small or medium-sized firms. The majority of the companies have no more than 10 employees, which refers to micro-enterprise group, then come small-sized companies and the smallest group in our sampling is medium-sized companies with maximum 250 workers (Figure 7). As the sample size is limited, the results presented in this investigation are not applicable for the general population (managers/entrepreneurs of SMEs) in these countries.

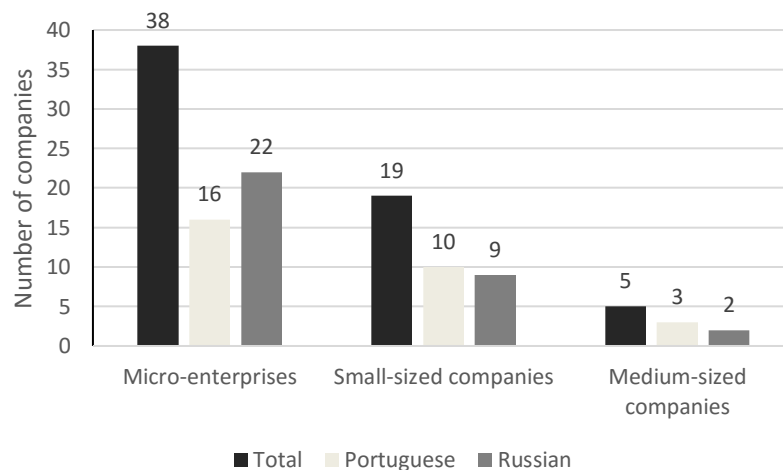


Figure 7. Companies' size distribution.

Main types of activity of the enterprises in our sample remain Manufacture of textiles and Retail trading, together they form more than 50%, Accommodation services are following them with 16 % out of 100%, as it can be verified in Table 6.

Table 6. Distribution in business activity of working sample.

Activity Code	Designation	Total		Russian Companies		Portuguese companies	
		n	%	n	%	n	%
1	Agriculture, farming of animals, hunting and forestry	3	5%	3	9%	0	0%
10	Manufacture of food products	1	2%	1	3%	0	0%
13	Manufacture of textiles	21	34%	1	3%	20	67%
18	Printing and reproduction of recorded media	1	2%	1	3%	0	0%
33	Repair, maintenance and installation of machinery and equipment	2	3%	2	6%	0	0%
35	Electricity, gas, steam, cold and hot water and cold air	1	2%	1	3%	0	0%
46	Wholesale trade (include commission trade), except of motor vehicles and motorcycles	1	2%	1	3%	0	0%
47	Retail trade, except of motor vehicles and motorcycles	13	21%	13	40%	0	0%
55	Accommodation	10	16%	2	6%	8	29%
56	Food and beverage service activities	5	8%	4	12%	1	4%
79	Travel agency, tour operator, reservation service and related activities	1	2%	1	3%	0	0%
90	Creative, arts, artistic and literary activities	1	2%	1	3%	0	0%
86	Human health activities	1	2%	1	3%	0	0%
96	Other personal service activities	1	2%	1	3%	0	0%
Total:		62	100%	33	100%	29	100%

More than the half of the respondents are men (36), which represents 58% of total sample, and 26 females (42%), as can be seen in Figure 8. In relation to countries, women are more presented in business activities in Russia than in Portugal.

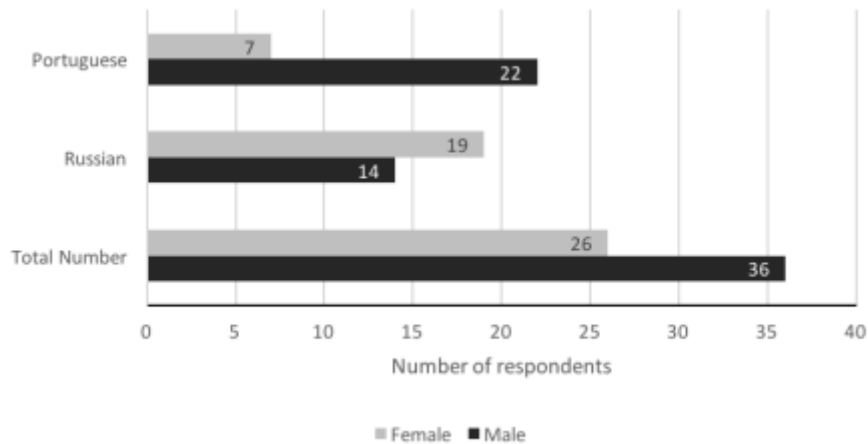


Figure 8. Distribution of respondents by gender.

In relation to age diversity, the most often answer was from 45 to 54 years old, which is 32% of the sample, then comes range with 22-34 years old business owners and managers (Figure 9). The following two groups have reached equal weights in sample size with 21 % each: 35-44 and 55-64 years old, the minority (only 3 %) was presented by 2 persons with age from 65 and older. In the both countries, the interval 45-54 years old contains the highest number of respondents.

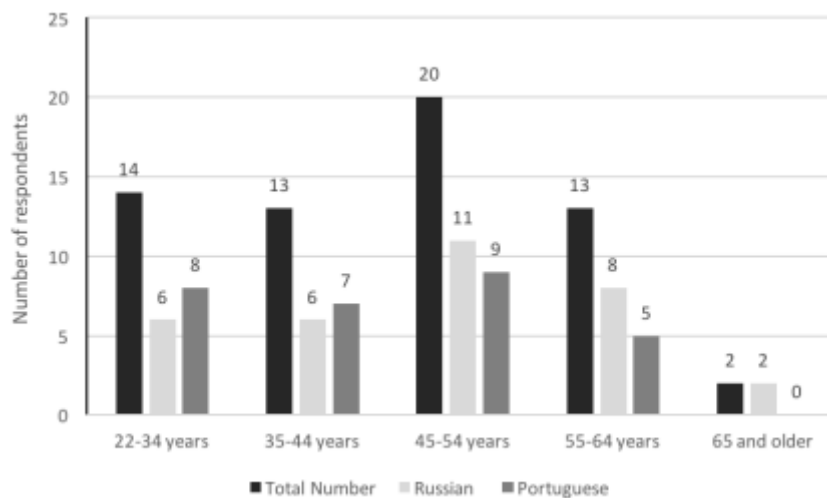


Figure 9. Distribution of respondents by age.

Concerning the academic qualifications, the biggest part of participants has showed Higher education level (more than 50%), next follows the group with only High School degree with 23 representatives, and the most basic education level is presented by 4 persons, that can be observed from Figure 10. There are 4 cases presented by Portuguese respondents with only Basic education level, in both countries the majority holds Higher education' degree.

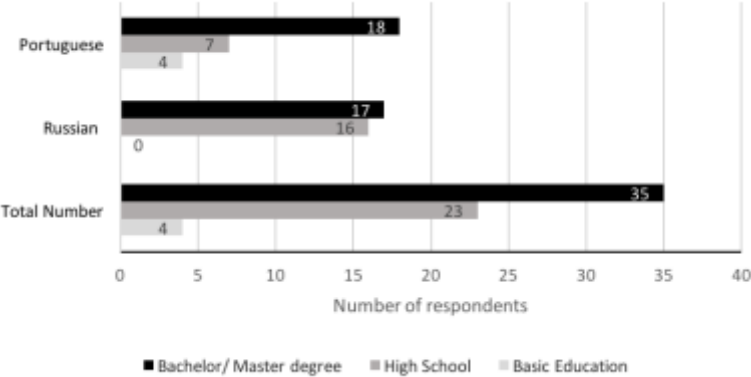


Figure 10. Education Level Range of SME owners and managers.

3.2. Descriptive analysis of results from Financial Literacy Questionnaire

The 62 business' owners or managers have answered to the questionnaire and their responses have helped to expand the analysis of financial knowledge and executives' perceptions about its importance. The following report will provide total overview of key results and conclusions made with descriptive statistical analysis. The most first question applied to respondents (see Appendix A) was about two main ways in which they do control the main bank account of the company. From Figure 11 it is clear that two favourite ways for such activities in both countries are by using Internet-banking services and by bank statements sent from a bank.

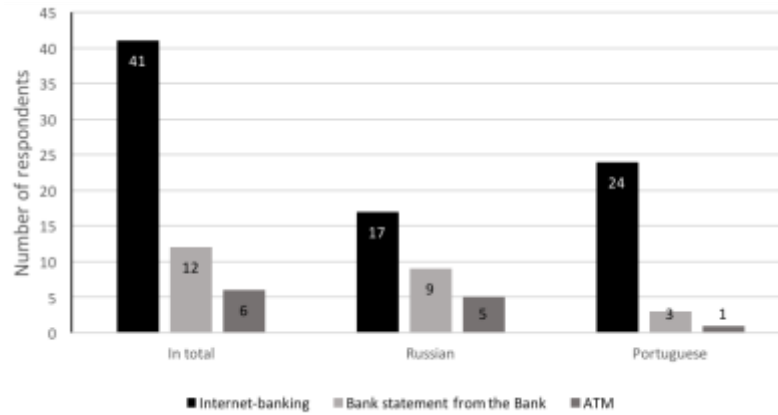


Figure 11. The most popular ways to control the companies' bank account.

By understanding main resources for managers to control bank account of their companies, it also has been crucial to explore the frequency of controlling made by responsible persons. As the most popular answer for this question was daily regulation (Figure 12), it is possible to conclude the majority of participants take this action as important.

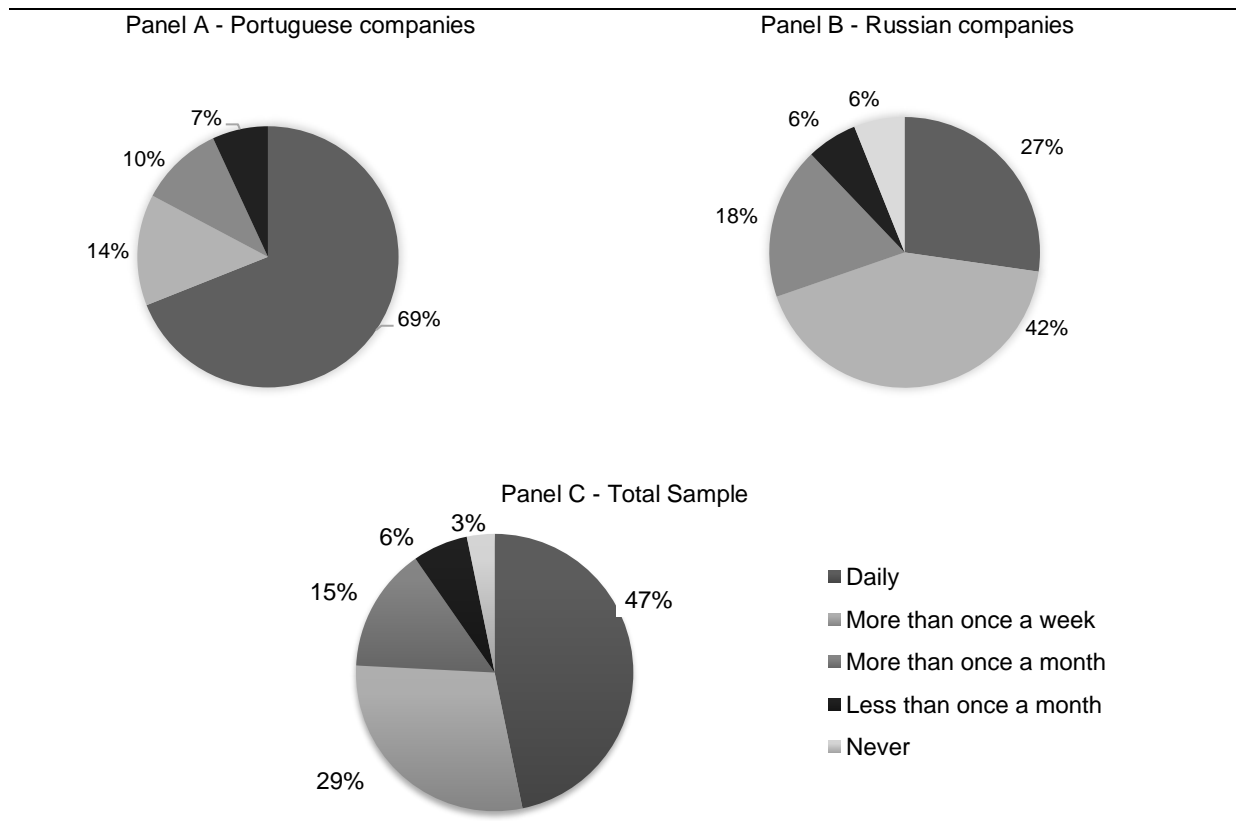


Figure 12. Frequency of controlling bank account of a company, for total sample and for sub-samples by country.

The significance of planning and preparation of budget was covered by many academic publications and researchers. One of those investigations was made by Silver, Pyke & Peterson (1998), where 253 small firms were asked about whether they prepare written future plans and if there is a relationship between planning and organizational performance. At present research, about 62% out of all responds find this activity as very important for the company (Figure 13).

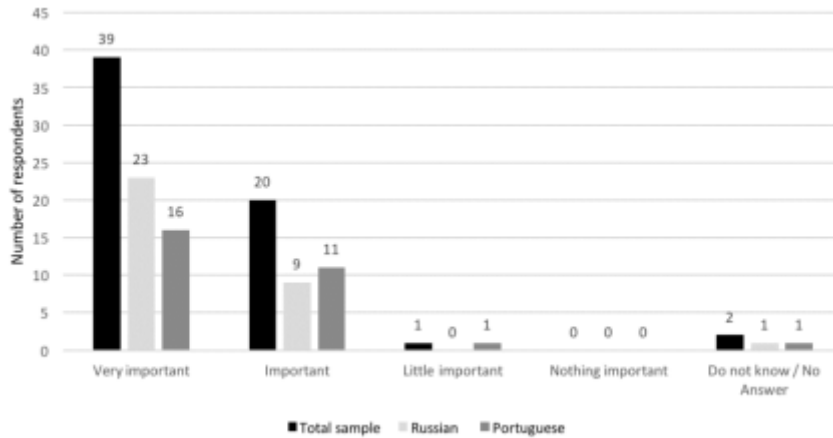


Figure 13. Importance of planning and preparation a company's budget.

Brinckmann, Grichnik and Kapsa (2010) intended to investigate the business planning and company' performance relationship and aimed to discover proof of increased effectiveness when a firm has a financial and strategic planning. According to their research paper, financial planning "can be a critical factor for the survival and growth of new firms; it also can help firms communicate their goals, strategies, and operational tasks to internal and external stakeholders" (Brinckmann, Grichnik & Kapsa, 2010, p.29). Considering this, we have also asked the frequency with which a manager makes financial planning for his company. From Figure 14 it can be observed, the 2 most often answers are weekly and monthly planning, that compiles more than 60 % out of the sampling group. There are 10 company cases that plan their finance every day and 7 respondents with a non-periodically frequency of finance preparing. These numbers may be considered as a good trend among enterprise' managers and owners since it has an influence on company's performance and on its future development.

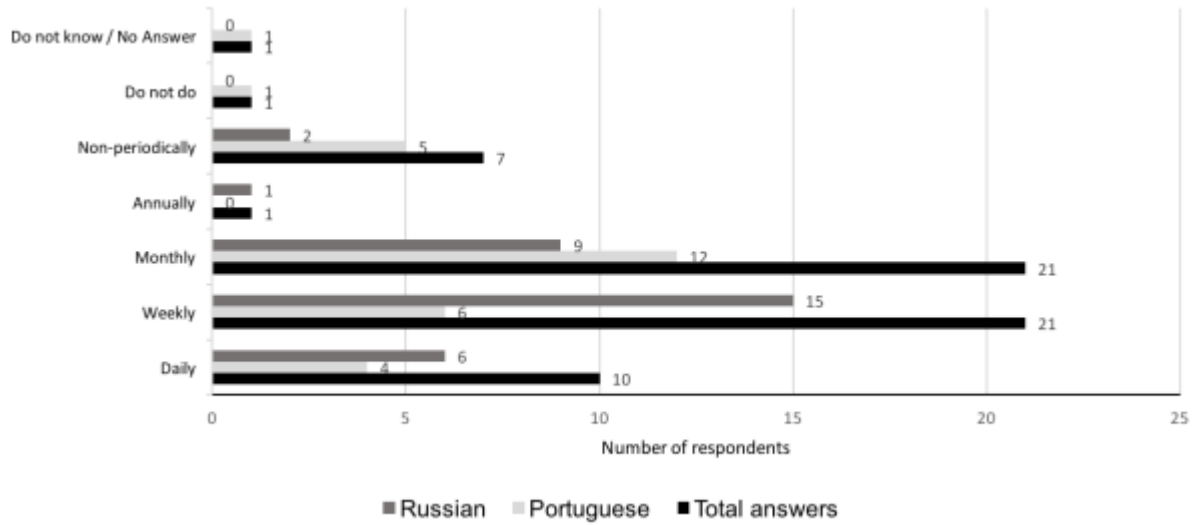


Figure 14.The frequency of financial planning for a company.

3.3. Results of Research hypotheses’ testing

To understand better possible relationships and factors influencing financial literacy levels and companies’ performance, it is needed to test research hypotheses mentioned in the Methodology chapter. To achieve this aim we have used SPSS Statistics software. To identify if it should apply a parametric or non-parametric statistical test, it is required to test the normality of sample distribution.

RH 1: “The median level of Financial Literacy Index of SME’s entrepreneurs/managers is equal in all its dimensions.”

To test the RH1, first it was analysed the distribution of GFLI and each its dimensions, presented in *Figure 15*. The boxplot shows that FLI dimension “Financial inclusion and management of bank accounts” (FLISA) has the highest median and seems to be symmetric, with an interquartile range (IQR) smaller than the other dimensions. The dimension “Financial planning and company’s cash management” (FLISB) is right-skewed and the IQR is higher than for others dimensions. GFLI (FLIST in the graph), as well as the dimension “Financial Understanding” (FLIS C), is left-skewed.

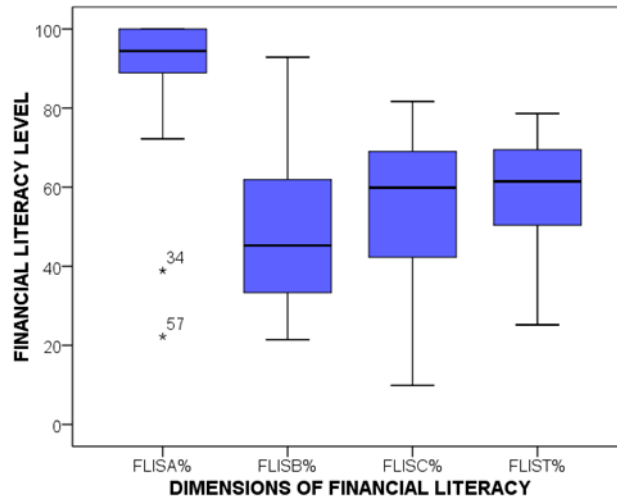


Figure 15. Boxplot of financial literacy index (as %) dimensions.

Then, to confirm that data is not normally distributed (Kolmogorov-Smirnov Test was used, since the sample is above 50, and significance lower than 5%). Because data is not normally distributed, the Friedman test was used to compare the level of the three financial literacy' dimensions. Because $p < .05$ in the Friedman Test, the null hypothesis is rejected and state significant differences in the 3 dimensions of financial literacy (Table 7). As it can be seen in Table 7, the highest mean is in FLISA dimension, which is indicative that financial managers and business' owners have more knowledge about those topics. After comes "Financial understanding" dimension and the lowest mean is presented by dimension C - "Financial planning and company's cash management".

Table 7. Results of Friedman Test to compare the dimensions of financial literacy level.

DIMENSIONS	n	Kolmogorov-Smirnov	Mean Rank	Friedman Test	Mean \pm Std. Deviation	Min – Max
FLISA%	62	KS = 0,244; $p < ,001^{***}$	2,95	$\chi^2=85,194$ d.f. = 2 $p < ,001^{***}$	90,41 \pm 13,16	22,22 – 100,00
FLISB%	62	KS = 0,121; $p = ,025^*$	1,44		49,58 \pm 19,35	21,43 – 92,86
FLISC%	62	KS = 0,131; $p < ,010^{**}$	1,61		55,22 \pm 18,85	9,86 – 81,69

Note: d.f. is degrees of freedom; *is statistically significant at 5%; ** is statistically significant at 1%; *** is statistically significant at 0.1%; Std. Deviation is Standard Deviation, Min is Minimum, Max is Maximum.

RH 2: "The financial literacy level among Russian and Portuguese managers/entrepreneurs of SME is below or equal to 50%."

The data is normally distributed (using Kolmogorov Test, p -value $> .05$ - seeTable 8). As data has a normal distribution, it was used the one sample T-test. From Table 8, the null hypothesis is rejected research hypothesis and conclude the existence of one financial literacy level among Russian and Portuguese managers/entrepreneurs of SME higher than 50%".

Table 8. One sample T- Test on FLL mean.

Kolmogorov-Smirnov	X ± S	Test Value	T Test
KS = 0.112			t=4.692
n=62	58.25 ± 13.84	50	d.f = 61
p=.052			p<.001 ***

Note: d.f. is degrees of freedom; *** is statistically significant at 1%; X is the mean and S is Standard Deviation

When it is analysed the SMEs' managers/entrepreneurs Financial Literacy Index by country, it can be observed on Figure 16 that IQR is smaller among Portuguese managers/entrepreneurs than Russian ones and it is left-skewed. The Russian data is right-skewed but has higher variability (IQR is larger). The median is higher for Portuguese managers/entrepreneurs than for Russian ones.

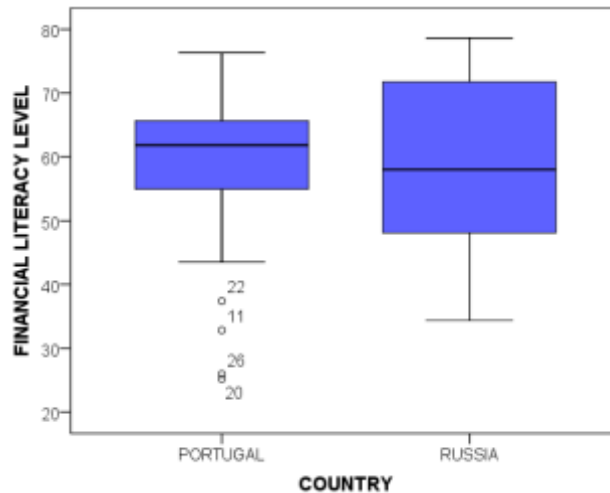


Figure 16. Boxplot of financial literacy level by country.

To test RH2.1: “The financial literacy level of Russian SME’s entrepreneurs/managers is equal to the financial literacy level of Portuguese SME’s entrepreneurs/managers.”, it was applied the Mann-Whitney test as presented in Table 9. According to Mann-Whitney test results, the null hypothesis cannot be rejected. Thus, there is no difference on FLL by country, therefore the RH2.1 is validated.

Table 9. Mann Whitney Test for compare the dimensions of financial literacy level by country

Country	n	Normality test	Mean Rank	Mann Whitney Test	Mean ± Std. Deviation	Min – Max
Portugal	29	SW = 0.886; p=.004 **	31.41	Z= -0.035	57.99 ± 13.82	25.19 – 76.34
Russia	33	KS = 0.116; p=.200	31.58	p=.972	58.48 ± 14.08	34.35 – 78.63

Note: d.f. is degrees of freedom; *is statistically significant at 5%; ** is statistically significant at 1%; *** is statistically significant at 0.1%; Std. Deviation is Standard Deviation; Min is Minimum; Max is Maximum; SW is Shapiro-Wilk Test; KS is Kolmogorov-Smirnov Test.

RH 3: “The financial literacy level is equal in the five age groups in both countries (Russia and Portugal).”

To test RH 3, it was used non-parametric test - Kruskal-Wallis Test, as at least one of the groups are not normally distributed and the results presented in Table 10.

Table 10. Results of Kruskal-Wallis Test for FLL comparison by age.

AGE	n	Shapiro – Wilk	Mean Rank	Kruskal-Wallis Test	Mean ± Std. Deviation	Min – Máx
22-34	14	SW = 0.977; p=.957	26.93	$\chi^2=3.340$ d.f = 4 p=.503	55.94 ± 12.17	35.88 – 77.86
35-44	13	SW = 0.928; p=.325	31.50		58.60 ± 13.92	25.95 – 76.34
45-54	20	SW = 0.871; p=.012*	36.90		61.60 ± 14.49	25.19 – 78.63
55-64	13	SW = 0.910; p=.182	27.65		55.14 ± 13.84	34.35 – 73.28
65-older	2	----	34.,50		58.78 ± 26.99	39.69 – 77.86

Note: d.f. is degrees of freedom; *is statistically significant at 5%; ** is statistically significant at 1%;*** is statistically significant at 0.1%; Std. Deviation is Standard Deviation; Min is Minimum;, Max is Maximum; SW is Shapiro-Wilk Test; KS is Kolmogorov-Smirnov Test.

From Table 10 it concludes $p>.05$, that means we don't reject of the null hypothesis and by consequence, there is no relationship between age and financial literacy level. In relation to graphic presentation of the results, it can be seen from the Boxplot presented in *Figure 17*. In opposite, the results from S&P Rating Services Survey (Klapper, Lusardi & Van Oudheusden, 2014) presented differences of FLL in relation to age variable, but that survey was done among general population, however in our research, we have specified group of respondents: managers/entrepreneurs of SMEs.

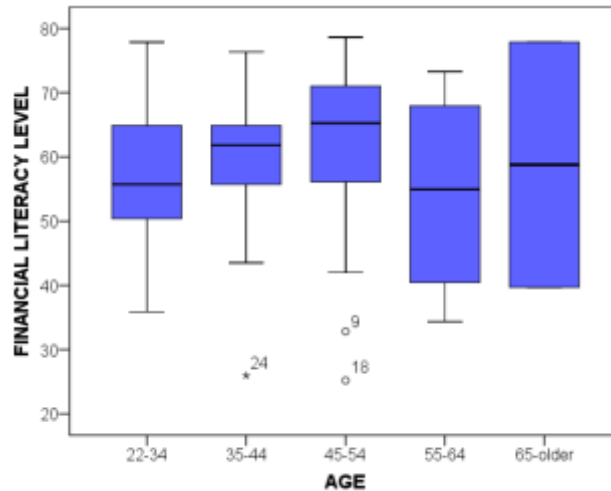


Figure 17. Boxplot of financial literacy level by age.

RH4: “Male respondents present higher financial literacy levels than female.”

For testing this hypothesis, it was used H_0 : “There is no difference between the female entrepreneur’s financial literacy level and male ones in both countries”. To do so, it was implemented the non-parametric test - Mann-Whitney Test and the results are showed in Table 11, the null hypothesis was not rejected, because $p > .05$, and remain with statement that there is a difference between females’ and males’ FLL. It concludes that there is no difference in relation to gender factor in Financial Literacy level (Table 11).

Table 11. Results of Mann-Whitney Test for FLL comparison by gender.

Gender	n	Normality test	Mean Rank	Mann Whitney Test	Mean \pm Std. Deviation	Min – Máx
Male	36	KS = 0.166; p=.013 *	33.33	Z= -0.942 p=.346	60.05 \pm 11.74	25.95 – 77.86
Female	26	SW = 0.937; p=.111	28.96		55.75 \pm 16.23	25.19 – 78.63

Note: d.f. is degrees of freedom; *is statistically significant at 5%; ** is statistically significant at 1%; *** is statistically significant at 0.1%; Std. Deviation is Standard Deviation; Min is Minimum; Max is Maximum; SW is Shapiro-Wilk Test; KS is Kolmogorov-Smirnov Test.

From *Figure 18*, it can be seen that distribution of FLL by men has an IQR smaller than by women and seems to be right-skewed. There are two outliers in males’ group as there are two cases with FLI below the quartile 1.

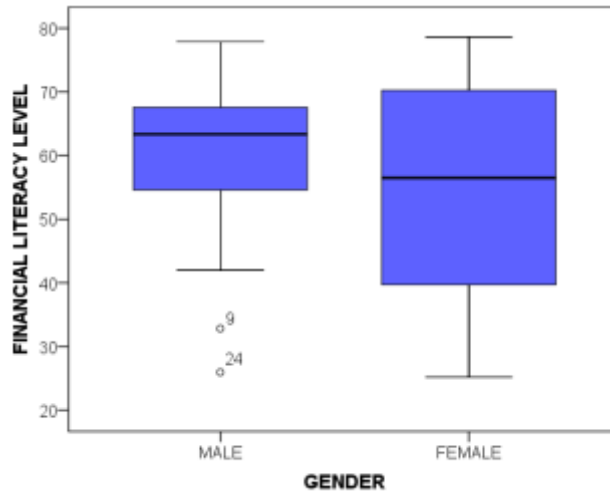


Figure 18.Boxplot of financial literacy level by gender.

RH 5: “There is a difference in financial literacy levels of managers depending on size of their company.”

The null hypothesis to be tested is H_0 : “There is no difference in financial literacy levels of managers depending on size of their company.” In order to analyse this hypothesis, we have tested the normality of groups’ distribution and applying the Kruskal-Wallis and Shapiro-Wilks tests. The results are presented in Table 12, as p-values are $> .05$, the variable is normally distributed in each group. Also, we tested the homogeneity of the variances, applying the Levene Statistic Test (Levene Statistics= .585, $df_1=2$, $df_2= 59$, $p\text{-value}=.561$), this assumption is not violated. However, as the total sample is lower than 80 and there are two groups with less than 27 observations, according to Pestana and Gageiro (2014, p. 1008), it is not recommended to apply ANOVA test. In this way, it was used the Kruskal-Wallis Test.

As $\chi^2 = .062$ with $p\text{-value}=.970 > .05$, the null hypothesis is not rejected and assume no difference between financial literacy levels of managers/entrepreneurs and size of their companies.

Table 12. *Kruskal-Wallis Test' results for comparison of managers/entrepreneurs' financial literacy level by companies' size.*

Size of Company	n	Normality Test	Mean Rank	Kruskal-Wallis Test	Mean ± Std. Deviation	Min – Máx
Micro-enterprise	38	KS = 0.139; p=.063	31,72	$\chi^2 = .062$ df=2 p=.970	58.40 ± 13.98	25.95 – 77.86
Small-sized	19	SW = 0.933; p=.198	31,55		57.89 ± 15.13	25.19 – 78.63
Medium-sized	5	SW = 0.892; p=.367	29,16		58.47 ± 9.11	47.33 – 67.94

Note: d.f. is degrees of freedom; Std. Deviation is Standard Deviation; Min is Minimum; Max is Maximum; SW is Shapiro-Wilk Test; KS is Kolmogorov-Smirnov Test.

There is also graphical interpretation of the results in *Figure 19*. The FLL for micro-enterprises and medium-sized ones seem to be left-skewed, while for small sized companies seems to be right-skewed and presents one outlier.

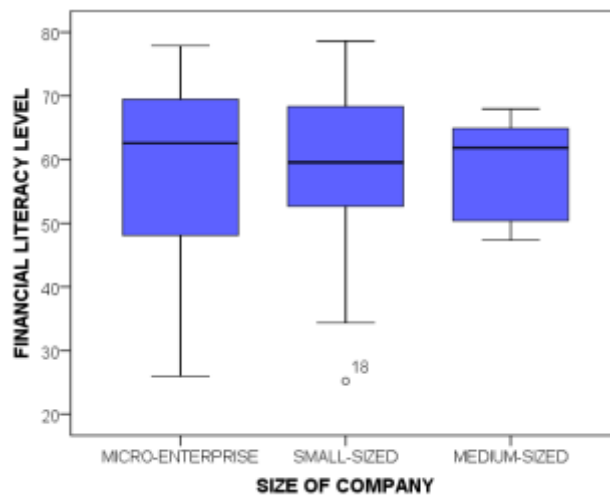


Figure 19. Boxplot of financial literacy level by company's size.

RH 6: “There is a difference in financial literacy levels of SMEs’ owners/managers with a higher education degree compared to SMEs’ owners/managers without a higher education degree.”

Related to RH6, the null hypothesis is H_0 : “There is no difference between the financial literacy level of SMEs’ owners/managers with higher education and the financial literacy level of SMEs’ owners/managers with no higher education degree”. In order to analyse this hypothesis, we have tested the normality of groups’ distribution and applying the Kruskal-Wallis and Shapiro-Wilks tests. as p-values are $> .05$, the variable is normally distributed in each group. Also, we tested the homogeneity of the variances, applying the Levene Statistic Test Levene Statistics= .688, df1=1, df2= 59, p-value=.507),

this assumption is not violated. this assumption is not violated. However, as the total sample is lower than 80 and there are two groups with less than 27 observations, according to Pestana and Gageiro (2014, p. 1008), as in the previous hypothesis, it is not recommended to apply ANOVA test. In this way, it was used the Kruskal-Wallis Test. The test results presented in Table 13 allow not rejecting the null hypothesis and conclude that there is no statistical significant difference on Financial Literacy Level according to the Education Level.

Table 13. *Kruskal-Wallis Test' results for comparison of financial literacy level by education level of respondents.*

Education	n	Normality Test	Mean Rank	Kruskal-Wallis Test	Mean ± Std. Deviation	Min – Max
Basic education	4	SW = 0.808; p=.119	25,00	$\chi^2 = 1,173$ df=2 p=.556	51.91 ± 17.68	25.95 – 65.65
High school	23	SW = 0.945; p=.226	25,65		56.42 ± 15.18	25.19 – 77.86
Bachelor/Master	35	KS* = 0.100; p=.200	33,46		60.17 ± 12.50	35.88 – 78.63

Note: d.f. is degrees of freedom; Std. Deviation is Standard Deviation; Min is Minimum; Max is Maximum; SW is Shapiro-Wilk Test; KS is Kolmogorov-Smirnov Test.

The **Error! Reference source not found.** shows how data is distributed by the Education degree of respondents and it can be seen, there is no significant differences of the FLI results among 3 groups (Basic education, High school and Bachelor/Master).

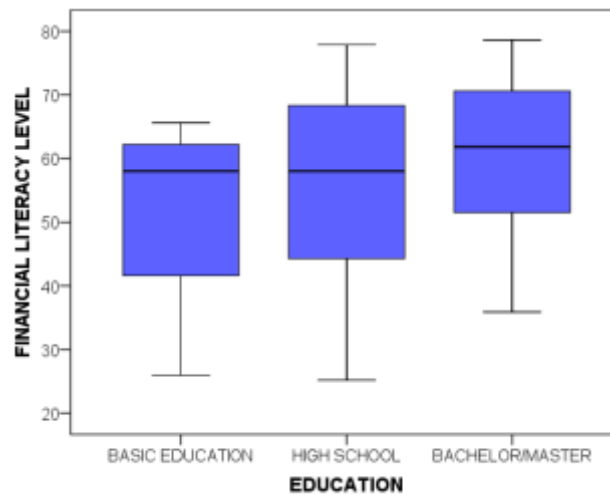


Figure 20. Boxplot of financial literacy level by education

RH 7: “There is a positive relation between the financial literacy levels of SME’s entrepreneurs/managers and performance of their firms”.

To test RH7 it was used Spearman’s correlation test in order to understand whether there is an association between Financial Literacy Levels’ dimensions and company’s performance indicators. It was considered the three profitability ratios mentioned in methodology chapter, more precisely it was considered the average observed, a positive correlation between Annual Average Sales Profit ratio and Dimension A – FLISA % (Financial inclusion and management of bank accounts), the correlation is weak ($R=0,227$) but statistically significant ($p=,038$) for 5% level of significance (see Table 14). This might be as an evidence that companies’ entrepreneurs/managers have understood bank ‘accounts operations in order to control their companies’ cash flows and improve Sales Profit. On reverse, it was observed a moderate negative relation ($R=-0,289$; $p=,017$) but statistically significant between FLISA dimension and annual average return on equity (ROE). The dimension B – FLISB% (financial planning and company’s cash management) has a moderate negative relation with ROE ($R=-0,387$; $p=,002$) and statistically significant. As well as the GFLI shows a moderate negative correlation with ROE ($R=-0,352$; $p=,005$).

Table 14. *Correlation between GFLI and its dimensions and performance indicators.*

Dimensions of FLI		ROAt	Sales Profit-t	ROEt
FLISA%	Correlation Coefficient	.079	.227*	-.289*
	Sig. (1-tailed)	.271	.038	.017
	n	62	62	54
FLISB%	Correlation Coefficient	.104	.102	-.387**
	Sig. (1-tailed)	.210	.215	.002
	n	62	62	54
FLISC%	Correlation Coefficient	-.028	-.012	-.120
	Sig. (1-tailed)	.415	.464	.193
	n	62	62	54
FLIST%	Correlation Coefficient	.041	.083	-.352**
	Sig. (1-tailed)	.375	.260	.005
	n	62	62	54

Note: *is statistically significant at 5%; ** is statistically significant at 1%; ROAt is Total Return on Assets; ROEt is Total Return on Equity, Sig. is Significance.

As it was not expected the relationship of GFLI and its dimensions with ROE is negative. Therefore, as it does not seem in accordance with traditional theory, or we do not find for now any reasonable

explanation, this puzzling result should be analysed more carefully and tested with a bigger sample and other ratios of Du Pont System to explain ROE and FLI.

Analysing the RH 8: “The performance of Russian firms is equal of the performance of Portuguese firms, considering the level of financial literacy”, the Figure 21 presents the boxplot for each performance ratio under research.

According to Figure 21, Russian data seem to have several outliers and Portuguese ROA is right-skewed and present some outliers. However, the median seems to be similar (around zero %).

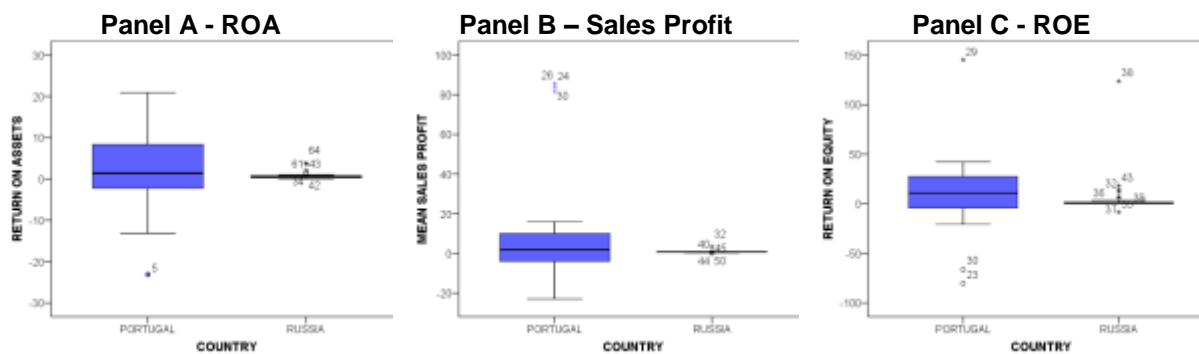


Figure 21. Boxplot for annual average ROA (panel A), Sales Profit (panel B) and ROE (panel C), by country.

Applying the Mann-Whitney test to compare companies' performance by country, it was found no statistically difference, as observed on Table 15. The results for the ROA indicators testing for the both countries have presented no differences in relation to the country variable, although it might seem to be in Mean Rank indexes. For the Sales Profit, as it can be viewed in Table 15, both countries' samples are not normally distributed ($p < .001$) and there is no significant difference between them. In case with Return on Equity results, it also might seem to be different in Portugal and Russia, but according to the made test' results ($Z = -1.127$, $p = .260$) there are no differences.

Table 15. Mann Whitney Test for compare the performance firms by country.

Performance ratio	Country	n	Shapiro-Wilk Test	Mean Rank	Mann Whitney Test	Mean \pm Std. Deviation	Min – Máx
ROA	Portugal	29	SW = 0.975; $p=.714$	33.59	Z= -0.835 $p=.393$	1.69 \pm 9.48	-23.11 – 20.88
	Russia	33	SW = 0.667; $p<.001$ ***	29.67		0.78 \pm 0.89	0.00 – 3.87
Sales Profit	Portugal	29	SW = 0.693; $p<.001$ ***	33.67	Z= -1.270 $p=.204$	9.58 \pm 28.27	-22.95 – 85.61
	Russia	33	SW = 0.380; $p<.001$ ***	27.91		0.72 \pm 0.50	0.37 – 3.40
ROE	Portugal	29	SW = 0.810; $p<.001$ **	30.52	Z= -1.127 $p=.260$	10.28 \pm 43.26	-80.31 – 145.10
	Russia	33	SW = 0.307; $p<.001$ ***	25.58		5.87 \pm 21.66	-8.55 – 123.65

Note: d.f. is degrees of freedom; *is statistically significant at 5%; ** is statistically significant at 1%;*** is statistically significant at 0.1%; Std. Deviation is Standard Deviation; Min is Minimum, Max is Maximum; SW is Shapiro-Wilk Test; KS is Kolmogorov-Smirnov Test.

Conclusions, Limitations and Future Research Lines

The present work has three main objectives: to determine the financial literacy level for SME's Manager and Entrepreneurs; test the dependence of Financial Literacy levels on several variables, that may have some influence on its outcome and verify whether there is correlation between economic results of a company' functioning and its manager/ owner' financial literacy level, comparing the two countries.

This dissertation has highlighted the general attitudes of managers/entrepreneurs about the importance of controlling a firm's bank account, it's indicated the priorities of planning processes and budget' preparation within SME in the both countries, Portugal and Russia. In relation to the results of entrepreneurs' FLI, generally speaking, it is unexpectedly high and there is no big difference among countries' variable. The analysis did not confirm any significant differences of FLI' results between the five age groups in both countries, nor in relation to a company' size differentiation.

Surprisingly, the analysis did not identify any differences between formal education level, which means the availability of Higher Education degree doesn't always guarantee the Financial Knowledge. Although it was proposed by Worthington (2006), the evidence to differences of FLI results among male and female respondents, we have not found any differences in relation to gender variable.

We aware that our research may have limitation related to the sample size. This fact highlights evidence of the difficulty of collecting data on questionnaires and financial statements from firms, although we were also contacting companies' owners and financial managers by using personal and working contacts.

Nevertheless, we believe our work could be a starting point for the future broader research paper. Our research could be a useful aid for the government policies and educational programs for increasing FLI among entrepreneurs. We propose that further research should be focusing on determination of the results' improvements after implementing Educational Programs for SME' owners in order to estimate its 'efficiency in relation to companies' performance indicators. Our results are encouraging and should be validated by a larger sample size. It might be even more practicable, if the sample will be formed by interested companies, that have its own enthusiasm in the research' participation.

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Appendix A- Questionnaire

Each country' respondents have received their native language questionnaire. Here is the English version.

I - Level of Financial Literacy of the Manager / Entrepreneur

A) Financial inclusion and management of bank accounts

- 1.1 What are the two main ways in which you control the movements and the balance of the company's main deposit account? (use the number 1 to represent the most used and number 2, the second used)

Bank statement sent by the Bank	<input type="checkbox"/>
ATM	<input type="checkbox"/>
Internet	<input type="checkbox"/>
Usually I do not have this concern	<input type="checkbox"/>
Other. Which one? _____	<input type="checkbox"/>

- 1.2 How often do you control the movements and balance of the main bank account of the company (execute bank reconciliation)?

Daily	<input type="checkbox"/>
More than once a week	<input type="checkbox"/>
More than once a month	<input type="checkbox"/>
Less than once a month	<input type="checkbox"/>
Rarely	<input type="checkbox"/>
Never	<input type="checkbox"/>
Do not answer	<input type="checkbox"/>

1.3 Banks currently have Internet services, called e-banking, which allows you to manage your company's bank account (s). Indicate how often you use the service.

Almost every day	<input type="checkbox"/>	Skip to Q.1.5
Daily	<input type="checkbox"/>	Skip to Q.1.5
At least once a week	<input type="checkbox"/>	Skip to Q.1.5
At least once every fortnight	<input type="checkbox"/>	Skip to Q.1.5
At least once per month	<input type="checkbox"/>	Skip to Q.1.5
Less than once a month	<input type="checkbox"/>	Skip to Q.1.5
I have knowledge but I do not use	<input type="checkbox"/>	Answer to Q.1.4
I'm not aware	<input type="checkbox"/>	Answer to Q.1.4

1.4 If in the previous question you answered that you do not use the e-banking service, indicate, in your opinion, the three main reasons for not using it. List them in ascending order.

I do not have regular internet access	<input type="checkbox"/>
I have difficulty dealing with technology	<input type="checkbox"/>
I do not trust security	<input type="checkbox"/>
I prefer the personal contact / counter	<input type="checkbox"/>
I prefer to use the ATM and cash machines	<input type="checkbox"/>
Another. Please specify which _____	<input type="checkbox"/>
Do not Know / No Answer	<input type="checkbox"/>

1.5 Do you know the commissions that your bank(s) charge for the current or checking account(s) of your company?

Yes.	<input type="checkbox"/>
Yes, approximately.	<input type="checkbox"/>
No.	<input type="checkbox"/>

1.6 The main company's current account or other account allows the use of bank overdraft.

Yes	<input type="checkbox"/>	
No	<input type="checkbox"/>	Skip to Q.1.8
Do not Know	<input type="checkbox"/>	Skip to Q.1.9

1.7 How often do you use bank overdrafts in your company's bank account?

Several times throughout the month	<input type="checkbox"/>
At the end of the month, very often	<input type="checkbox"/>
At the end of the month, infrequently	<input type="checkbox"/>
Rarely uses	<input type="checkbox"/>
I never use	<input type="checkbox"/>

1.8 Do you know the interest rates and / or commissions that the bank applies it to bank overdrafts in your company's bank account?

Yes.	<input type="checkbox"/>
Yes, approximately.	<input type="checkbox"/>
No.	<input type="checkbox"/>

B) Financial planning and company's cash management

1.9 Please, indicate the degree of importance you assign to the planning and preparation of your company's financial budget.

Very important	<input type="checkbox"/>
Important	<input type="checkbox"/>
Little important	<input type="checkbox"/>
Nothing important	<input type="checkbox"/>
Do not know / No Answer	<input type="checkbox"/>

1.10 Indicate the frequency with which makes financial planning of your company (forecasting of cash flows).

Daily	<input type="checkbox"/>
Weekly	<input type="checkbox"/>
Monthly	<input type="checkbox"/>
Annually	<input type="checkbox"/>
Non-periodically	<input type="checkbox"/>
Do not do	<input type="checkbox"/>
Do not know / No Answer	<input type="checkbox"/>

1.11 Does your company make short-term investments by temporarily investing cash surpluses?

Yes, regularly	<input type="checkbox"/>
Yes, irregularly	<input type="checkbox"/>
No	<input type="checkbox"/>
No answer	<input type="checkbox"/>

1.12 For the following financial products, please indicate the ones you use to manage the temporary cash surplus, indicating their frequency using the 1 - always scale; 2 - many times; 3 - sometimes; 4 - rarely; 5 - Never (if you do not know the product, fill in column NS).

	1	2	3	4	5	NS
Term deposits						
Stocks (shares)						
Bonds						
<i>Hot Money</i>						
Other products offered by your bank						

1.13 Indicate how often your company uses bank credit (loans) to finance investments and acquisitions of goods.

Always Oftentimes Sometimes Rarely Never

1.14 To which entity (s) have you obtained this loan (s) for the company?

From your usual bank	
From the company that sold the product or service	
From companies specializing in credit (consumer)	
From another bank	
Others. Which one? _____	

1.15 What is the main reason for choosing this/these entity(s)?

Amount of annuity	
Interest Rate	
Interest rate with all loan charges (APR)	
Repayment term	
I went to the company's usual bank	
I followed the bank's publicity	
Convenience of getting loan from supplier	
Others. Which one? _____	

1.16 Have you changed the terms of any of your company's loans to the bank on your own initiative?

Yes.	
No.	
No Answer.	

1.17 What has changed in your contract (s).

Spread Reduction	<input type="checkbox"/>
Extension of loan term	<input type="checkbox"/>
Change in the interest rate regime (fixed / variable)	<input type="checkbox"/>
Consolidation of credits	<input type="checkbox"/>
Others. Which one? _____	<input type="checkbox"/>

1.18 Have you already borrowed a loan to pay for another loan from your company?

Yes, several times	<input type="checkbox"/>
Yes, sometimes	<input type="checkbox"/>
No	<input type="checkbox"/>

1.19 If, in question 1.13, you have answered 'never', indicate the reason for not resorting to bank loans.

The company only invests when it has self-financing or own funds	<input type="checkbox"/>
The company does not meet the conditions to access credit	<input type="checkbox"/>
The requirements of banks are high	<input type="checkbox"/>
Borrowing costs are very high	<input type="checkbox"/>
Other. Which one? _____	<input type="checkbox"/>

C) Financial Understanding

1.20 Do you know how the Bank defines the spread in loans, for example in mortgage loans?

It depends on the relationship between the loan amount and the house value	<input type="checkbox"/>
Depends on hiring other products	<input type="checkbox"/>
It depends on having always paid on time your loans	<input type="checkbox"/>
It depends exclusively on your ability to negotiate and convince the bank that you are a good customer	<input type="checkbox"/>
Other. Which one? _____	<input type="checkbox"/>
I do not know / do not answer	<input type="checkbox"/>

1.21 Imagine that you have to wait a year to receive a VAT refund of 5000 €. In one year's time, will you be able to buy/ spend?

More	<input type="checkbox"/>
The same amount	<input type="checkbox"/>
Less than I could buy today	<input type="checkbox"/>
I don't know	<input type="checkbox"/>

1.22 High inflation means that the cost of living is increasing rapidly.

True	<input type="checkbox"/>
False	<input type="checkbox"/>
I don't know	<input type="checkbox"/>

1.23 It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares.

True	<input type="checkbox"/>
False	<input type="checkbox"/>
I don't know	<input type="checkbox"/>

1.24 If a time deposit has an interest rate of 3% and inflation is 4%, do you think that you have made a positive return on your savings?

True	<input type="checkbox"/>
False	<input type="checkbox"/>
I don't know	<input type="checkbox"/>

1.25 If you make an application of € 1000, for a period of three years, in which you do not add or withdraw capital during this period, in a simple so-called interest rate, with a guaranteed interest rate of 2% per year, the amount you expect to get at the end of the application period, ignoring taxes and other charges is

Less than €1020	<input type="checkbox"/>
More than €1020 and less than €1060	<input type="checkbox"/>
More than €1060	<input type="checkbox"/>
Exactly €60	<input type="checkbox"/>
Exactly €1060	<input type="checkbox"/>
I do not know.	<input type="checkbox"/>

1.26 Suppose you can buy a good at constant monthly instalments, paying € 100 a month for 8 months. If, after five months, you intend to settle the debt with the supplier, with the annual nominal compounded interest rate of 12%, what is the settled amount to be?

More than €300	<input type="checkbox"/>
€300	<input type="checkbox"/>
€297,04	<input type="checkbox"/>
Less than €290	<input type="checkbox"/>
I do not know	<input type="checkbox"/>

1.27 Your company today granted a loan of € 2500 to one of its employees, who pays after two months the same amount. If the monthly effective interest rate is 1%, a rate that remunerates the short-term investments of the company, in compound interest,

The company earns at least € 50	
The company agreed to the 0% interest rate, with a potential loss of at least € 50	
The company agreed to the 0% interest rate, having a potential loss of less than € 50	
Do not know	

1.28 Rate on a scale 1 to 3 the following investments by degree of risk relative to recover the money invested (1 - low risk, 2 - medium risk; 3 - high risk; If you do not know the answer may fill in column NS)

	1	2	3	NS
Shares				
Bonds				
Savings certificates				
Fixed income mutual funds				
Variable-income mutual funds				
Stock Funds				
Bank deposits				
Structured financial products with guaranteed capital				
Structured financial products with no guaranteed capital				

1.29 How would you rate your knowledge on financial matters compared to other managers or adult individuals?

Much superior	
Relatively superior	
In average	
Relatively lower	
Much lower	
I do not know	

1.30 What financial statement most accurately shows whether a company was profitable in a given period?

Statement of Cash Flows Balance Sheet	
Income Statement	
Statement of Financial Position	
I don't know	

II – Characterization of manager / entrepreneur

2.1. Gender: Male Female

2.2. Age:

Less than 21 years old	<input type="checkbox"/>
22 to 34 years	<input type="checkbox"/>
35 to 44 years	<input type="checkbox"/>
45 to 54 years	<input type="checkbox"/>
55 to 64 years	<input type="checkbox"/>
65 years or more	<input type="checkbox"/>

2.3. Indicate your level of education.

Basic education	<input type="checkbox"/>
High school	<input type="checkbox"/>
Graduation (Bachelor/Master)	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>

2.4. Please, indicate your training area.

Economics / Management	<input type="checkbox"/>
Engineering	<input type="checkbox"/>
Health and Life sciences	<input type="checkbox"/>
Law	<input type="checkbox"/>
Arts / Architecture	<input type="checkbox"/>
Humanities	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>

2.5. Indicate the number of years of experience in the following situations:

	Labor market	As Manager	As entrepreneur
Less than a year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1 to 3 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 to 6 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 to 10 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 to 20 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More than 20 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.6. Indicate for the following areas if you have already attended training courses (column A) and if you are interested in attending (column B):

	A	B		A	B
Financial Accountancy			Financial management		
Management Accountancy			Investment analysis		
Management control			Planning and budgeting		
Taxation			Strategy		
Marketing			Human resource Management		
Operations and logistics management			Other: _____		
I attended not / do not intend			Other: _____		

2.7. Please indicate your position in the company _____

2.8. We kindly ask you to fill the last two lines with the Name and a phone number of your company. We assure you this information will not be transferred under any circumstances to third parties or be published (this is just for survey control).

Name of company _____

Phone number _____

END!

Thank you again for your collaboration.