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LUIZA TETI MAYER

UNCOVERING THE MANAGERIAL ACCOUNTING NEEDS OF SMALL COMPANIES' ENTREPRENEURS: A contribution to the reduction of enterprise mortality

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Master thesis presented to the Graduate Programme in Accounting Sciences from the Federal University of Pernambuco – UFPE, as a partial requirement to obtain the title of Master in Accounting Sciences.

Research area: Accounting information for internal users.

Advisor: Prof. Dr. Luiz Carlos Marques dos Anjos

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ABSTRACT

This research aims to uncover the main managerial accounting needs of small enterprises' entrepreneurs, in order to contribute to the reduction of the mortality rate of their companies. In order to achieve this objective, we developed two connected papers. The first paper investigates the perception of small business owners on the usefulness of managerial and financial accounting information provided by accountants. Data were collected through a survey applied on a sample of 130 small entrepreneurs within the metropolitan region of Recife, a city located at northeast of Brazil. The results show that accountants provide business owners mostly with information and services related to taxes and legal compliance, with little or no participation in the provision of managerial information to enhance performance and control. At the same time, we noticed that there is a demand on the part of the owners and managers to have managerial and financial accounting information. The main limitation of this study is the size of the sample, which may compromise the representativeness and the generalisation of the results. The second paper presents an overview and an analysis of the production costs structure of small enterprises from the state of Pernambuco. Data were collected through a survey applied on a sample of 35 small formal and informal enterprises within the state of Pernambuco. The results show that the companies of our sample do not calculate depreciation costs, as well as the owners do not consider these costs for the pricing strategy. In addition, since most of the companies are informal and are operated from the owner's home, we also noticed that they do not control electricity costs. One of the limitations of this study is the sample size and the fact that the participants were selected by convenience. Thus, not being possible to generalise the results.

Key words: Accounting information. Small enterprises. Internal control. Production costs.

RESUMO

Esta pesquisa visa descobrir as principais necessidades de contabilidade gerencial dos empresários de pequenas empresas, a fim de contribuir para a redução da taxa de mortalidade de suas empresas. Para alcançar este objetivo, desenvolvemos dois trabalhos interligados. O primeiro trabalho investiga a percepção dos pequenos empresários sobre a utilidade das informações contábeis gerenciais e financeiras fornecidas pelos contadores. Os dados foram coletados através de uma pesquisa aplicada em uma amostra de 130 pequenos empresários da região metropolitana de Recife, cidade localizada no nordeste do Brasil. Os resultados mostram que os contadores fornecem aos proprietários de empresas, em sua maioria, informações e serviços relacionados a impostos e cumprimento legal, com pouca ou nenhuma participação no fornecimento de informações gerenciais para melhorar o desempenho e controle. Ao mesmo tempo, percebemos que há uma demanda por parte dos proprietários e gerentes para ter informações contábeis gerenciais e financeiras. A principal limitação deste estudo é o tamanho da amostra, o que pode comprometer a representatividade e a generalização dos resultados. O segundo trabalho apresenta uma visão geral e uma análise da estrutura de custos de produção das pequenas empresas do estado de Pernambuco. Os dados foram coletados através de um levantamento aplicado em uma amostra de 35 pequenas empresas formais e informais dentro do estado de Pernambuco. Os resultados mostram que as empresas da nossa amostra não calculam os custos de depreciação, assim como os proprietários não consideram esses custos para a estratégia de preços. Além disso, como a maioria das empresas são informais e são operadas a partir da casa do proprietário, também notamos que elas não controlam os custos de eletricidade. Uma das limitações deste estudo é o tamanho da amostra e o fato de que os participantes foram selecionados por conveniência. Assim, não sendo possível generalizar os resultados.

Palavras-chave: Informações contábeis. Pequenas empresas. Controle interno. Custos de produção.

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1 INTRODUCTION

This research aims to uncover the main managerial accounting needs of small and medium enterprises' entrepreneurs, in order to contribute to the reduction of the mortality rate of their companies.

Small and medium businesses are very diverse, especially concerning capital structure, company size, access to external finance, management style, or numbers of employees (Gupta et al., 2015). The two largest economies in the European Union – the United Kingdom and Germany – have a total of 99.7% (UK) and 99.5% (GER) of SMEs, which account for 53% (UK) and 62.5% (GER) of employments (Eurostat, 2017). In turn, 96% of British companies are formed only by microenterprises (UK Parliament, 2016). Figure 1 – Small and medium enterprises per 1,000 people shows the distribution of small and medium enterprises in countries (Kushnir et al., 2010). In addition, these small enterprises are responsible for supplying approximately half of European Union's jobs (Eurostat, 2017). Figure 2 – Number of people employed compares the total employment and employment by small and medium enterprises among continents (Kushnir et al., 2010). On the other hand, corporate mortality tends to decline in size and reported a mortality rate of 20% in 2015 for companies established in 2014 – with Sweden, Greece and UK having the higher survival rate (Eurostat, 2017).

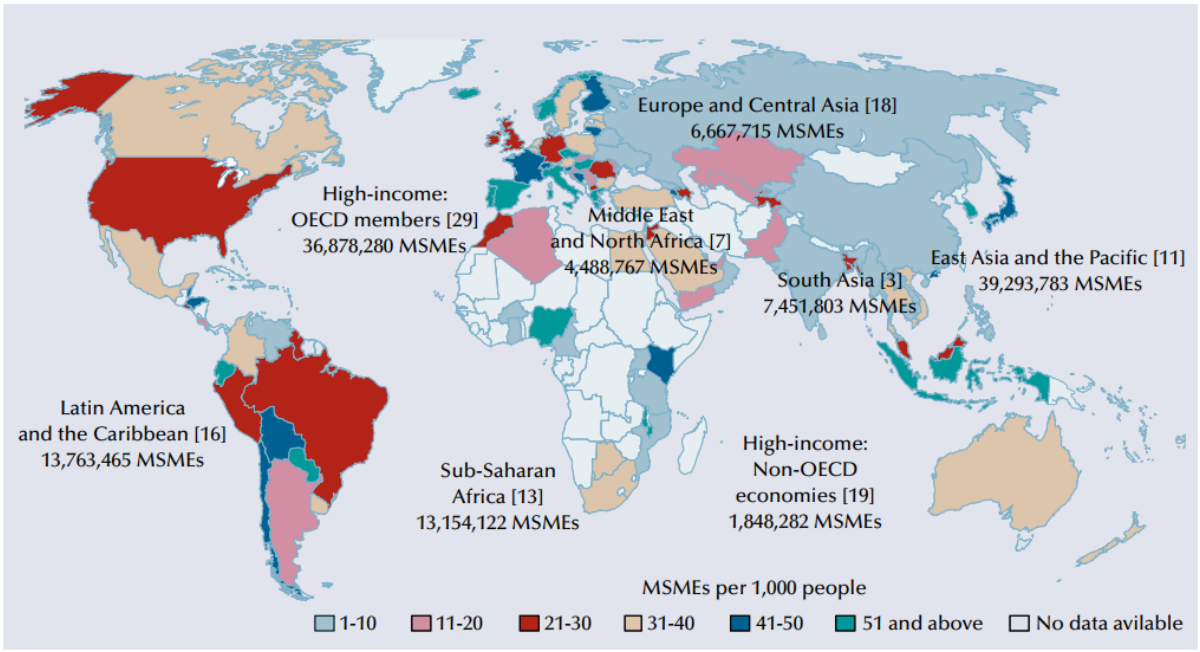

Figure 1 – Small and medium enterprises per 1,000 people[1]

[1] Source: Kushnir et al. (2010).

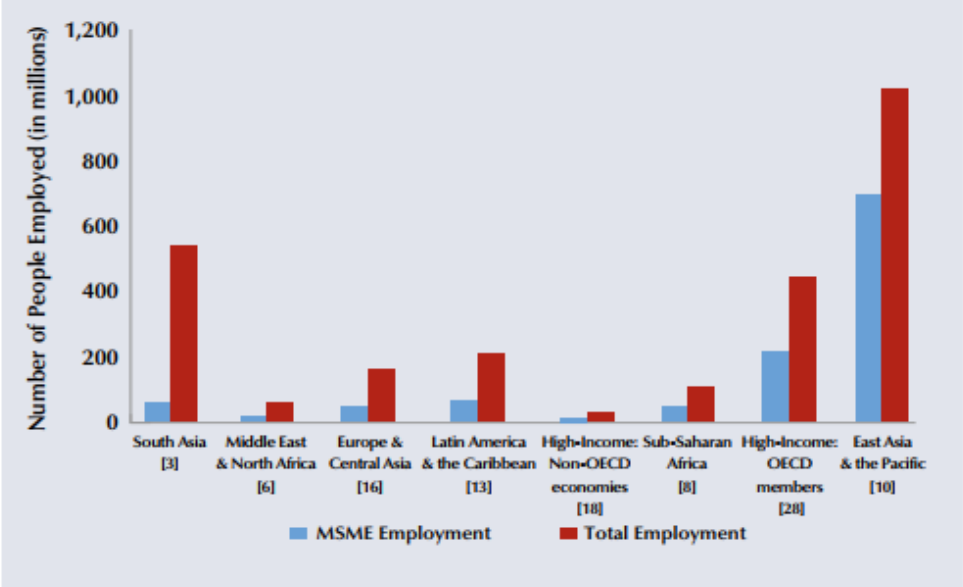

Figure 2 - Number of people employed[2]

SMEs are considered the backbone of the global economy, as well as being of greater relevance to the recovery from the 2008-2009 global financial crisis and in maintaining strong sustainable societies (Eurostat, 2019a; Gupta et al., 2015; Samujh, 2011). On the other hand, Batini et al. (2010) confirms that these companies contribute to the economic performance varying on the nation's wealth – usually wealthier nations have a large and organised sector for SMEs, with fewer informal businesses than underdeveloped nations. Still, the informal sector results in a higher level of economic activity and there is considerable overlap between both of these sectors (Batini et al., 2010).

It is possible to notice the importance of these companies also in Brazil, where micro and small businesses are estimated to be approximately 12.4 million of the existing companies in 2017 and are also responsible for 27% of national gross domestic product (GDP) in 2011. Thus, we can see the importance of these businesses for the generation of employment, being responsible for more than 17 million employees with a formal contract and thus owning a 54% national share in the generation of jobs during the year of 2015. The Brazilian Northeast region has the second largest concentration of micro and small enterprises (MPEs), holding 18% of these ventures in September 2017 (SEBRAE, 2017). Despite the available data, the Brazilian Micro and Small Business Support Service (SEBRAE) estimated a national mortality rate of approximately 23% for companies with two years of operation, for those established in 2012

[2] Source: Kushnir et al. (2010).

(Sebrae, 2017). Only in Pernambuco, the two-year mortality rate of these companies is approximately 24%, for those established in 2012 (Sebrae, 2016).

Nevertheless, small enterprises are still affected by bankruptcy and failure (Carter & van Auken, 2006). Some studies point size and resource indicators, such as having employees, a good amount of starting capital, and an educated owner, are correlated with SMEs' survival; and, when it comes to successful closing, being young and having no start-up capital, were also prevalent factors (Headd, 2003). When it comes to unsuccessful closing, Carter and van Auken (2006) explain that bankruptcy and failure are still a relevant issue affecting SMEs, regardless of their contributions to economic vitality. Even so, Carter and van Auken (2006) found in their survey that bankruptcy is usually caused by lack of knowledge, inaccessibility to debt, and the economic climate.

Glancey et al. (1998), when talking about small businesses success (or rather businesses survival), suggest that entrepreneurs in small business service companies are frequently highly qualified individuals with previous managerial experience, who are pulled into entrepreneurship by positive motivations such as spotting a market opportunity or a desire for autonomy over decision making. However, in Brazil, Sebrae (2016) identified a set of indicators contributing to the survival and mortality of small and medium enterprises, which were: (1) situation before opening (type of occupation of the entrepreneur, experience in the area, motivation to open the business); (2) business planning; (3) business management; and (4) training of owners in business management. Hence, differently than in Europe, Brazilian studies show that most of the small business owners are individuals who have a complete high school education, not having a highly qualified education (Lopes et al., 2014; Anjos, 2009; Caneca, 2008; Miranda et al., 2008; Leite, 2004). We can admit that the mortality rate is often associated to poor management of the enterprise, which is considered the main responsible for the index, as well as the mixture of the personal patrimony of the owners with their companies and the lack of a dedicated accounting system, compromising its maintenance and investment capacity (Brasil, 2018).

Kitching et al. (2015) state that most of the studies about small enterprises put greater focus on the costs, constraints and burdens imposed by rigid financial reporting regulations, rarely considering whether such regulation could benefit them in some way. However, regulation allowing small businesses to present a smaller amount of financial information may indirectly restrict their performance (Kitching et al., 2015). From the foregoing, it can be understood that the obligations to evidence certain financial information imposed by legislation is connected to the impact on organisational performance: if it is not mandatory to deepen the

entity's accounts, many companies neglect the existence of additional information that is necessary, however non-obligatory, thus affecting its operational performance. Hayes (1977) perceives the role of managerial accounting in business as a provision of information for decision-making, being a critical aspect when used in the performance evaluation.

Therefore, we intend to uncover the main managerial accounting needs of small and medium enterprises' entrepreneurs, in order to contribute to the reduction of the mortality rate of their companies. To do so, we analyse the main managerial needs of small companies' entrepreneurs, as well as the production structure of these companies, providing an insight into business operations of Brazilian small enterprises, with a focus on managerial and financial accounting information for control purposes.

First, we investigate the perception of small business' owners about the usefulness of managerial and financial information received from accountants. We collected the necessary information for this research through a survey applied on a sample of 130 small entrepreneurs within the metropolitan region of Recife, a city located at northeast of Brazil. We analysed the information using non-parametric tests, such as chi-squared, Mann Whitney U test, and Kruskal-Wallis test.

Second, we present an overview and to analyse the costs production structure of small enterprises. We collected the necessary information for this research through personally conducted interviews with 35 small entrepreneurs within the state of Pernambuco, Brazil. We analysed the information using non-parametric tests and data regression.

Finally, we present our final considerations regarding this work.

2 USAGE OF MANAGERIAL AND FINANCIAL ACCOUNTING INFORMATION BY SMALL BRAZILIAN ENTERPRISES

2.1 Introduction

This research aims to investigate the perception of small business owners on the usefulness of managerial and financial accounting information provided by accountants.

Even though there is a significant variance in the definition of small and medium enterprises among countries, there is no doubt of their importance to global economy (Gupta et al., 2015; Kushnir et al., 2010). Kushnir et al. (2010) affirms that the overwhelming majority of formal small and medium enterprises globally are micro enterprises, with 83% of all micro, small and medium enterprises in this category.

Statistics shows that Latin America and the Caribbean have more micro, small and medium companies per 1,000 people than non-OECD high-income economies (Kushnir et al., 2010). In Brazil, small businesses were estimated at approximately 12.4 million companies existing in September 2017, responsible for a 27% share of the national GDP in 2011 and of 54% of formal employment in 2015 (SEBRAE, 2017).

Despite the relevance of these small businesses, the Brazilian Micro and Small Business Support Service (SEBRAE) estimated a national mortality rate of approximately 23% for companies established in 2012 (SEBRAE, 2017). Some factors are connected to business survival, such as having a qualified education, previous managerial experience, situation before opening (type of occupation of the entrepreneur, experience in the area, motivation to open the business), business planning, business management, and owners trained in business management (SEBRAE, 2016; Lopes et al., 2014; Anjos, 2009; Caneca, 2008; Miranda et al., 2008; Leite, 2004; Glancey et al., 1998). On the other hand, business mortality is often associated to poor management of the enterprise, as well as the mixture of the personal patrimony of the owners with their companies, and the lack of a dedicated accounting system, compromising its maintenance and investment capacity (Brasil, 2018). Therefore, this study will focus on clarifying for the third factor (business management) cited by SEBRAE by means of seeking managerial and financial accounting information that will facilitate the entrepreneur to manage his company.

According to various studies, Management Control Systems (MCS) adoptions are important, often being beneficial choices by a company's management. Like all investments, MCS also have risks, since companies often fail to measure its costs and benefits adequately, and adoptions often fail or take years to bring benefits. However, a well-established MCS improves organisational performance, especially when it comes to innovation (Leybi, 2018;

Davila & Foster, 2007; Ittner & Larcker, 2003; Simons, 1995; Anderson, 1995; Argyris & Kaplan, 1994). Simons' (1995) levers of control framework examines the enabling and controlling uses of MCS in facilitating environmental innovation strategy, for example. This framework is proposed in order to facilitate the formulation and implementation of organisational strategies and capabilities. Furthermore, MCS can facilitate decision-making and provide support to the objectives of access and exploration of market opportunities and resources by emerging economy companies in a faster and more efficient way (O'Connor et al., 2011; Baiman, 1982).

Therefore, this research aims to investigate the perception of small business owners about the usefulness of managerial and financial accounting information received from accountants. In order to do so, we first applied a survey to the owners of small enterprises within the metropolitan region of Recife (capital of the state of Pernambuco); afterwards, we analysed the results using descriptive statistics and non-parametric tests; finally, we categorized by sector and size the main financial and managerial information used.

2.2 Literature Review

2.2.1 Internal Control

Seminal authors conceptualize internal control as the understanding that it is all the organisation's instruments for surveillance, supervision and verification that allow for predicting, observing, directing or governing events within the company and that produce reflections in its patrimony (Garrison et al., 2013; Atkinson et al., 2008; Anthony & Govindarajan, 2002).

According to Roehl-Anderson and Bragg (2000), the organisation's internal control can be divided into control environment, external factors, accounting systems and control procedures. The control environment of a company is the corporate environment in which accounting, and other, controls exist and on which the financial statements are prepared. The second is any organisational aspects that can affect it, but that are out of the control range of the firm. The third is the accounting system and it needs to encompass the principles, methods, procedures, and records. Finally, the control procedures, which include adequate segregation of functions, records and procedures for transaction authorization. Thus, for internal control to be done properly, accounting transactions must have a clear flow so that weaknesses can be studied by the controller's team, and any issues relating to the control of these transactions should be documented.

Pfister (2009) expounds that in the last decades the accounting and finance orientation of internal control has been developed in a governance and business perspective. In the beginning, internal control was traditionally limited to the system that auditors test as part of their assurance on the reliability of financial reporting. Nowadays, the recent perspective takes a more holistic approach, with more importance to operational effectiveness and efficiency, and compliance with laws, regulation, and internal policies (Pfister, 2009). In this manner, we can understand internal control as a series of actions integrated with business activities and conducted throughout the organisational units and functions (Pfister, 2009).

Literature suggests five steps in maintaining a company's control: (1) planning; (2) execute; (3) monitor or measure the current level of system performance; (4) to evaluate; and (5) correcting. Thus, the management accountants should help a company stay in control, identify when the process is out of control, and support the company's learning (Garrison et al., 2013; Atkinson et al., 2008; Anthony & Govindarajan, 2002).

Eisenhardt (1985) explains that control can be accomplished through two interrelated strategies, namely performance evaluation or minimizing the divergence of preferences among organisational members. The latter gives more importance to people policies, so that the members of the organisation help achieving the organisation objectives once they understand and internalise them. On the other hand, the first relates to the cybernetic process of monitoring and rewarding performance, by emphasizing the information aspects of control.

Robinson and Pearce (1983: 203) demonstrates that both formal and non-formal strategic planners gave similar priority "on (1) scanning the environment, (2) identifying distinct competencies, (3) aligning organisational structure, (4) deploying internal resources, and (5) monitoring/controlling implementation in the respective strategic planning processes". Still, informal planners only disagreed when it came to goal setting, since it was done with less formal written procedures (Robinson & Pearce, 1983). Notwithstanding the success of the informal planners, this does not mean that less planning is advised (Robinson & Pearce, 1983).

Roper (1999) developed a framework for the relationships between the performance of small businesses and owner-managers' characteristics, firms' operating environment, and their strategic and organisational choices. Regarding the management and control aspect, Roper (1999) investigated whether the owner-manager had taken steps to increase his/her ownership and control over the enterprise and found that a third of the sample centralised power, whilst a fifth centralised ownership. We asked the owners participating in the survey how the control in their firm was done, if by themselves or if they hired a professional for this specific purpose. Thus, we present the first hypothesis of this research:

H1a: There is a difference between the expected and the observed frequencies of the answers regarding control methods within business activities.

H1b: There is a difference between the expected and the observed frequencies of the answers regarding control methods within size-class.

Chia (1995) studied the effects of a combination of control subsystems on managerial performance in companies from Singapore and, thus, providing insights into the possible configurations of the internal control subsystems factors that could affect managerial performance in an organisation. It was seen that a high degree of decentralization promotes a high information processing capability, since more managers are involved in making decisions (Chia, 1995). Hence, the organisational designer needs to be aware that any changes in one of the control subsystems may necessitate compensating changes in other control subsystems, in order to promote higher performance in the organisation.

These results are explained by Freel (2000), because by delegating or dispersing power the manager gives an opportunity for imaginative solutions; on the other hand, concentrated power inhibits flexibility. Still, the little existing evidence points to greater formality of control within the most innovative small and medium companies (Freel, 2000). His research gathered information regarding some control variables – for example, team-briefings, which is likely to be to inform the staff of a new program and objectives and to monitor progress; just-in-time production systems, which is an explicit inventory/stock control system; and business process reengineering. In this manner, Freel (2000) found that all sample firms use formal, control based, managerial and communication techniques, and, when it comes to environment uncertainty, close relationships with customers and internal control procedures represent rational responses on the part of the firm. Thus, we investigate the financial and managerial information used by the owners.

H2a: There is a difference between the expected and the observed frequencies of the use of financial and managerial information within business activity.

H2b: There is a difference between the expected and the observed frequencies of the use of financial and managerial information within size-class.

In addition, Robinson and Pearce (1984) explains that planning was usually not present in SMEs. However, when planning was present in SMEs, it was unstructured, irregular, and

uncomprehensive (Robinson & Pearce, 1984). This was due to often managers' lack of time to plan, not having sufficient knowledge of many planning information sources and how they should be used, lack of certain specialized expertise, and lack of trust and being hesitant to share their strategic planning with employees or outside consultants. Given this statement, we thought relevant to investigate what the business owners' main challenges to control are and if they would be willing to pay more to obtain information that would implement internal control from a management accountant.

H3a: There is a difference between the expected and the observed frequencies of the control challenges within business activity.
H3b: There is a difference between the expected and the observed frequencies of the control challenges within size-class.

H4a: There is a difference between the expected and the observed frequencies in the perception of the value of financial and managerial information within business activity.
H4b: There is a difference between the expected and the observed frequencies in the perception of the value of financial and managerial information within size-class.

Pfister (2009) adopts Simons (1995) definition for management control systems, although explaining that control in general endorses both formal and informal mechanisms. Along these lines, researches show that informal means are predominant to information acquisition in small enterprises, although some use formal systems even if it is not in every area of the firm (Perren & Grant, 2000). In this way, the acceptance of management systems can be associated with information flows and stakeholders' requirements (Howorth & Westhead, 2003).

2.2.2 Management Control Systems

In order to ensure that the organisation achieves the desired results, it is necessary to have devices that are operative, or a set of methods and tools, in order to control the organisation and keep it on the correct path (Atkinson et al., 2008; Anthony & Govindarajan, 2002). This set of methods or tools are known as Management Control Systems (MCS). Management control most common definition is the means for assuring that organisational objectives are achieved (Anthony, 1965). Simons (1990) argues that the function of management control described in accounting literature has changed little since Anthony's definition, indicating that during the 1960s and 1970s researchers generally relied on the work of Anthony and others, trying to

develop a better way to design and use formal systems to help organisations implement their strategies and goals.

Simons (1990, 1995) defends that management control systems are not only important for the implementation of the strategy but also for the formation of strategies, recognizing that these systems are more than restriction and monitoring devices, but rather formal procedures and systems that use information to maintain or change patterns in organisational activity (Simons, 1995; Simons, 1990; Simons, 1987). On the other hand, Chenhall (2003) believes that the concepts of MCS have evolved from being acknowledged as passive tools to embrace a broader scope of information, such as external information related to markets, customers, competitors, non-financial information related to production processes, predictive information and a broad array of decision support mechanisms, and informal personal and social controls.

Having in mind the organisational reality, a system can be conceptualized as a pre-established procedure to execute an activity or a set of activities, which are usually repetitive (Anthony & Govindarajan, 2002). However, it is not necessarily a formal system, since many administrative measures are unsystematic, due to the executives regularly using their own judgments to make a decision (Anthony & Govindarajan, 2002).

In such a manner, managerial control is the process by which executives influence other members of the organisation to obey the strategies adopted, which fits between strategy formulation and task control (Garrison et al., 2013; Atkinson et al., 2008; Anthony & Govindarajan, 2002). It includes various activities, for example planning what the organisation should do, coordinating the activities of various parts of the organisation, communicating information, evaluating whether to make a decision or what decision to make, and influence people to change their behaviour (Garrison et al., 2013; Atkinson et al., 2008; Anthony & Govindarajan, 2002). Thus, it is up to management accountants to help a company stay in control, identify when the process is out of control, and support the company's learning (Garrison et al., 2013; Atkinson et al., 2008; Anthony & Govindarajan, 2002).

Chenhall & Morris (1995), when discussing management accounting systems (MAS), explain that the use of formal control systems can be beneficial to the generation and implementation of effective strategies within organisations. Some studies also defend that its design (of a management accounting system), as well as the design of an organisational structure, are actually inseparable and interdependent (Otley, 2016; Hopwood, 1974).

Bryson (1996) declares that, during the recession encountered by the UK in the 1990s, it was the ability of small business service enterprises to prosper, which highlighted them from other service enterprises in general. This happened mainly due to pressure growth amongst

clients for businesses to improve their performance and competitiveness in a difficult market place, as well as the expansion of its activities (Bryson, 1996). This situation was supported as well by Glancey et al. (1998), stating that when it comes to small business enterprises success – in this case, success is defined as survival –, the foundation is actually the robustness to endure periods of economic instability.

In this context, some studies suggest that the success of small business service enterprises is related to particular strategic decisions, which, in its turn, are linked to the growth methods adopted, encompassing networking and subcontracting practices (Glancey et al., 1998; Kirby & Dylan, 1997; Bryson, 1996). Likewise, several researches approach the key strategic decision methods endorsed by successful small businesses in general, such as strategic planning, the delegation of managerial responsibility, the willingness to use external finance, the level of workforce training, the ability to adjust to market crisis, among others (Glancey et al., 1998; Smallbone et al. 1995; Storey, 1994; Atkinson & Meager, 1994; Smallbone et al. 1993; Hall, 1989; Dunkelberg et al., 1987; Casson, 1982).

Sandino (2007) studied the management control systems (MCS) that U.S. retailers firms introduce when they first invest in controls and identified four categories of initial MCS: (1) Basic MCS, adopted to collect information for planning, setting standards, and establishing the basic operations of the company; (2) Cost MCS, focused on enhancing operating efficiencies and minimizing costs; (3) Revenue MCS, introduced to foster growth and be responsive to customers; and, lastly, (4) Risk MCS, focused on reducing risks and protecting asset integrity. Thus, the choice among these categories reflects the company's strategy, and, when the choice is well suited, the company perform better than others (Sandino, 2007).

MCS are also beneficial when it comes to environment uncertainty, which has increased over the years, given the emergence of the global economy, more extensive competition, or even by organisations' attempt to control all aspects of the value chain within one overall organisation (Otley, 2016). In such a manner, uncertainty has been shown to be associated with a more flexible style of control that is open and externally focused (Otley, 2016). In this case, if a company is established in an environment with a high uncertainty level it will require flexible and adaptable systems to manage activities when unexpected events occur (Otley, 2016).

Galbraith (1973) exposes this idea by explaining that, before performing a given task, when the said task is well understood, the activity can be pre-planned; au contraire, then more knowledge is acquired during its execution, along with changes in resource allocations, schedules, and priorities. Even so, Freel (2000: 34) declares that SMEs have "unique

behavioural advantages associated with their ability to react and adapt to changing market conditions", despite having constraints to innovate caused by limited internal resources.

In this manner, Chong (1996) clarifies that the amount of management accounting information used for decision-making is going to depend on the manager's uncertainty perception and is going to assist the managers on defining their tasks. Several studies also elucidate the role of Management Accounting Systems (MAS) information under conditions of uncertainty, which is a subsystem within the organisation's control system and it will act as a mechanism of information exchange and enabling the obtainment and processing of additional information about the tasks (Chong, 1996; Chia, 1995; Galbraith, 1977; Hopwood, 1974; Galbraith, 1973). Besides, Lal and Hassel (1997: 260) declare: "Different individuals prefer different information depending on the degree of uncertainty they face", this being important when assessing usefulness of information, like non-conventional MAS information.

Furthermore, researchers advocate adding estimates of the likelihood of future events occurring to the MAS, in order to assist the managers on price making, and inventory control, and as a control facilitator in general, since those systems, besides mitigating challenges caused by the environmental uncertainty, also enhance the control in uncertain situations by focusing information on the origins of uncertainties. As a deduction, a company's managerial performance is positively affected by MAS (Chia, 1995; Chenhall & Morris, 1986; Simon, 1954).

Cassia et al. (2005) analysed if organisation configurations and management accounting systems change simultaneously in small enterprises. In their results, they noticed that the evolution of the organisational configurations is not always coherent with the relevance assumed by management accounting systems. Despite this fact, a large of group of the sample displayed a simple organisational configuration and a well-developed management accounting system, being interpreted as an intermediate stage of growth towards more complex forms of organisation (Cassia et al., 2005).

2.3 Data collection and research methods

This research aims to investigate the perception of small business owners of the usefulness of information received from accountants. In order to achieve the research objective, data were collected using a survey. The questionnaire was elaborated accordingly to the ones proposed and used by Caneca (2008), Miranda et al. (2008), Umbelino (2008), Leite (2004) and Collis & Jarvis (2002), and it was adapted to this particular research towards a better gathering of the information needed (cf. Appendix A – Questionnaire 1).

The questionnaire consisted of three sections and 16 objective questions. The first section asked about general characteristics of the enterprises. It included questions about the primary activity of the business, age of the business, number of subsidiaries, size (micro, small or medium), number of employees, and the owner's evaluation of the business. The second section, gathered more sophisticate information on financial control; how is the latter done and which obstacles are faced, as well as the accountant's role in providing such information. Lastly, the third section of the questionnaire gathered data on managerial control; which ones are used, what is the accountant's participation, and if the accountant would provide such information, how much more would the owner be willing to pay for the service. As it can be seen, the questionnaire did not deal with sensitive information.

Data collection occurred in three semesters, starting in January 2018 and ending in June 2019. The initial sample was composed of 141 micro, small, and medium enterprises. Due to the modest number of medium enterprises, the final sample was composed of 130 micro and small enterprises established in the metropolitan region of Recife, the capital of the state of Pernambuco.

The participants were chosen by convenience, both in terms of geographical location and of the researchers' personal knowledge. Thus, it is a non-probabilistic sample. Due to this aspect, the results cannot be generalized, since it is not a representative sample of the population. Moreover, according to Sebrae (2019b), in 2014, micro and small enterprises accounted for 30,230 only in the city of Recife.

The survey was applied in person by the researchers with the owners or managers of the enterprises, done with the utmost respect for anonymity and ensuring it to the participants, and assuring that the questionnaire does not require any sensitive information. Therefore, it was possible to obtain answers to most of the questions and to use all the questionnaires for the study, as well as making it viable to obtain complementary information from the respondents. The full questionnaire can be found in Appendix A – Questionnaire 1.

The separation by size was done following the annual turnover: up to R$ 360,000 for micro enterprises and between R$ 360,000 and R$ 4,800,000 for small enterprises (Sebrae, 2019a). Regarding the enterprises' activity, according to Sebrae (2018b) and Eurostat (2019), they are separated into industry and construction, trade or service provider. This segregation was done in order to better investigate the financial and managerial control behaviour of the participating companies.

For a better perspective on the sample components, Figure 3 shows the proportion of business activity within size as a stacked bar graph. We can observe that the most expressive

group of the sample, regarding size, are the micro enterprises, being 70% of the sample. In addition, when it comes to activity, 58.5% of the companies participating in the survey were in the trade activity.

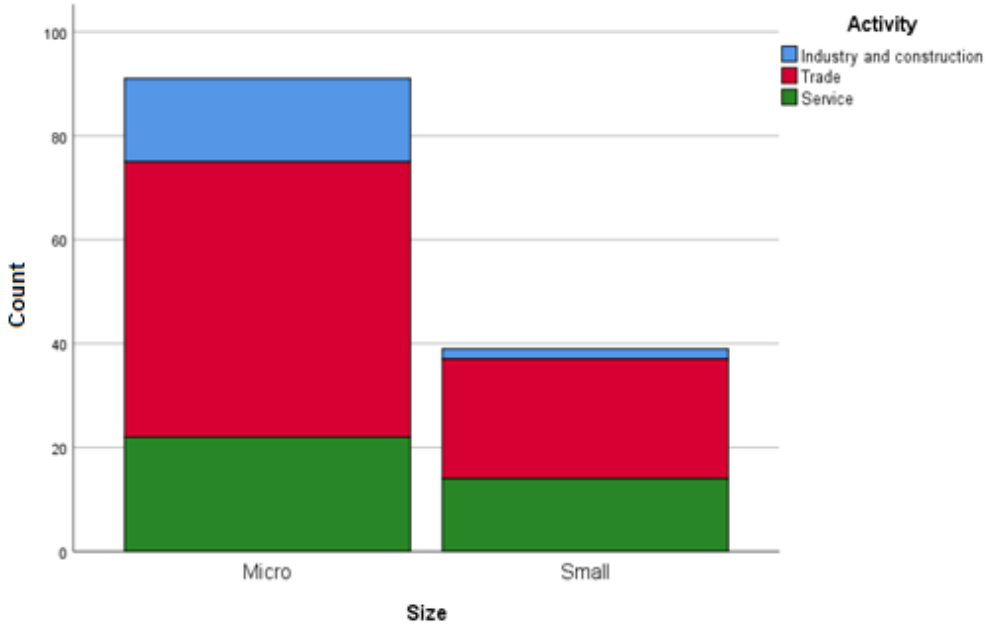

Figure 3 - Sample

The data analysis consisted of descriptive statistics applied throughout the three parts of the questionnaire, as well as an analysis segregating the data according to the enterprise's size and its activity. Non-parametric tests were applied, at a 95% level of significance, in order to identify differences among the frequency of answers given by types of control separated by business activity and size-class.

Furthermore, when we analyse data according to business activity, we applied the Kruskal-Wallis test in order to investigate if the use of financial and managerial information within business activity have the same average. When we analyse data according to size-class, Fisher's exact test was used when relevant and the Mann-Whitney U test was applied. In this case, the test gives insight on differences and similarities between the averages of the use of financial and managerial information within size-class.

2.4 Findings

2.4.1 Findings by business activity

First, we thought appropriate to investigate how the financial control is done in the enterprises and the influence of the accountant in this type of control. Figure 4 discloses how the financial control is done in the companies, as well as the frequencies and percentages separated by activity and answer. We applied the Kruskal-Wallis test for this analysis. Given the results of the test, we can reject the null hypothesis, comprehending that at least one of the answers among activities present a different median than the others.

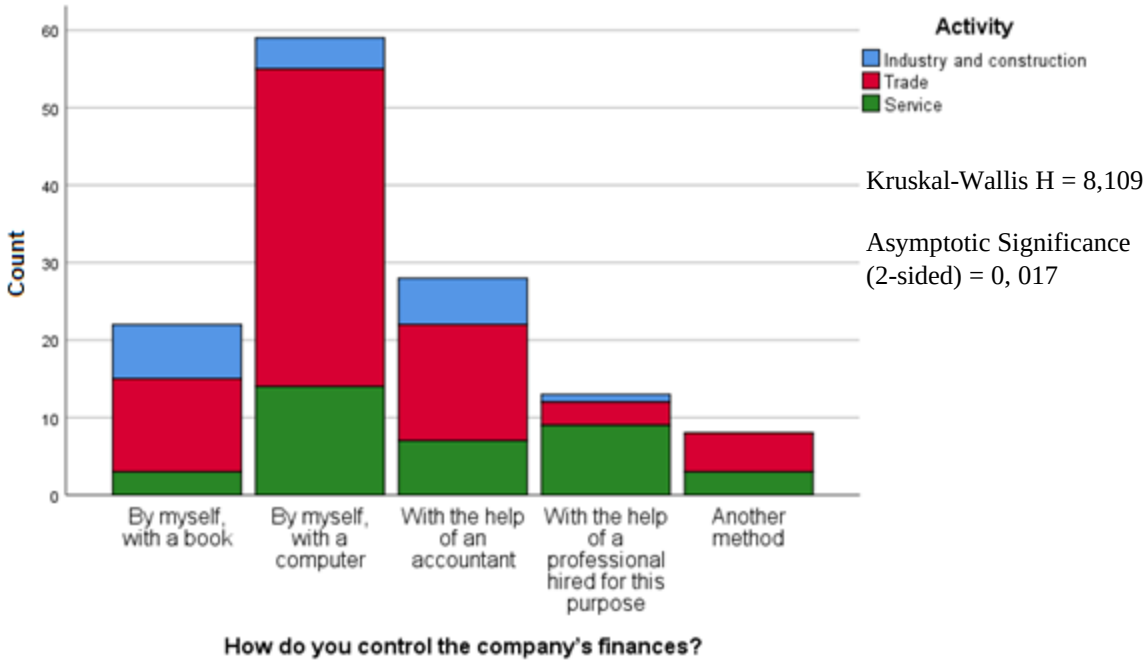

Figure 4 - How the financial control is done according to business activity

Hence, in general the most common way of controlling the finances is done by the owner, with the use of a computer. More specifically, this is also the most common method for both trade and service activities. On the other hand, in the industry and construction activity was predominant for the owner to do the control with a book. In general, the least reported answer was the use of other methods not specified by the survey. Although, analysing specifically by activity, we can see that this is the least reported answer within service activity only, as well as the owner controlling with the use of a book. When it comes to industry and construction and trade activities, the least reported answer was hiring a professional to do the control.

Since most of the companies have their financial control done by the owner themselves, it is relevant to understand the main difficulties encountered in the control process. Figure 5

displays the main difficulties reported by companies in controlling their finances. We applied the Kruskal-Wallis test for our analysis. In general, the owners reported as the main difficulty to control the finances not having enough time to do so. More specifically, owners of most companies of the industry and construction activity reported the control as being intuitive and very informal as the main difficulty. On the other hand, the least reported answer in general was other difficulties not approached by the survey, such as business complexity, controlling the accounts receivables, or separating the individual and the business assets, according to owners' reports.

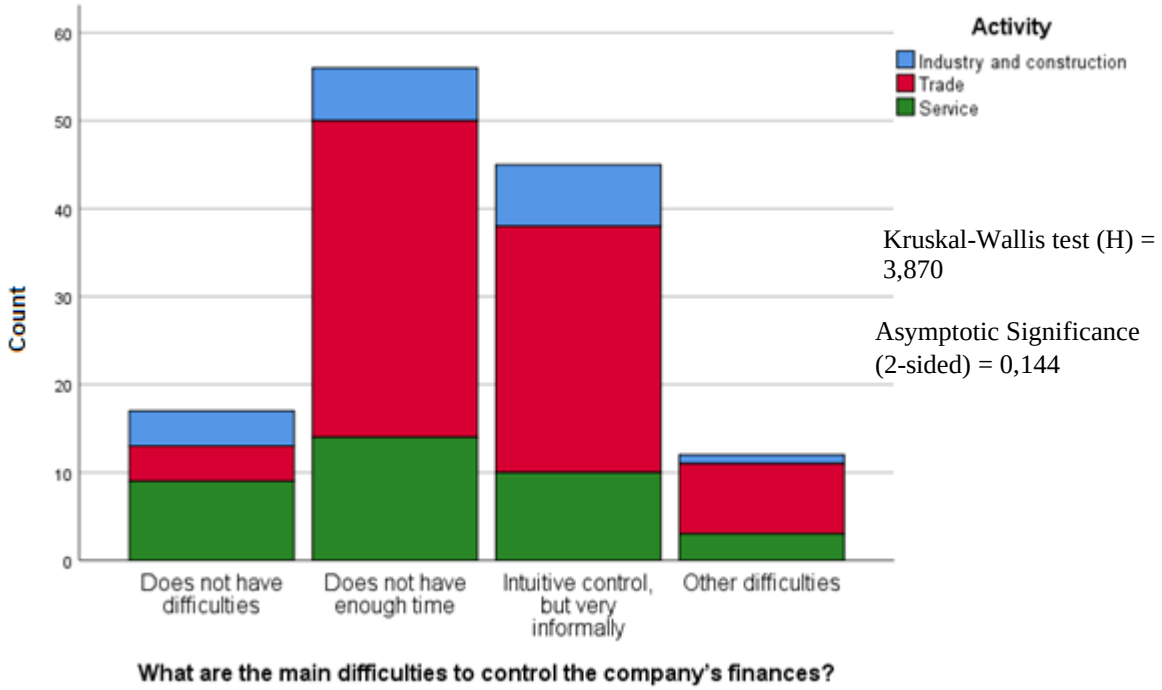

Figure 5 - Main difficulties in controlling the finances disclosed by business activity

Thus, our next step was to investigate if the companies hire an accountant or an accounting firm. Figure 6 shows the answers given by the owner separated by activity. We can see that almost 80% of the companies participating hire an accountant. We see a predominance of hiring accountants among companies in the trade activity, being 57.3% of the total of companies with accountants. However, we could not find a significant relation between having an accountant and the business activity. Through Kruskal Wallis test, we cannot reject the null hypothesis, inferring that there is no difference between the frequencies of hiring accountants among business activity.

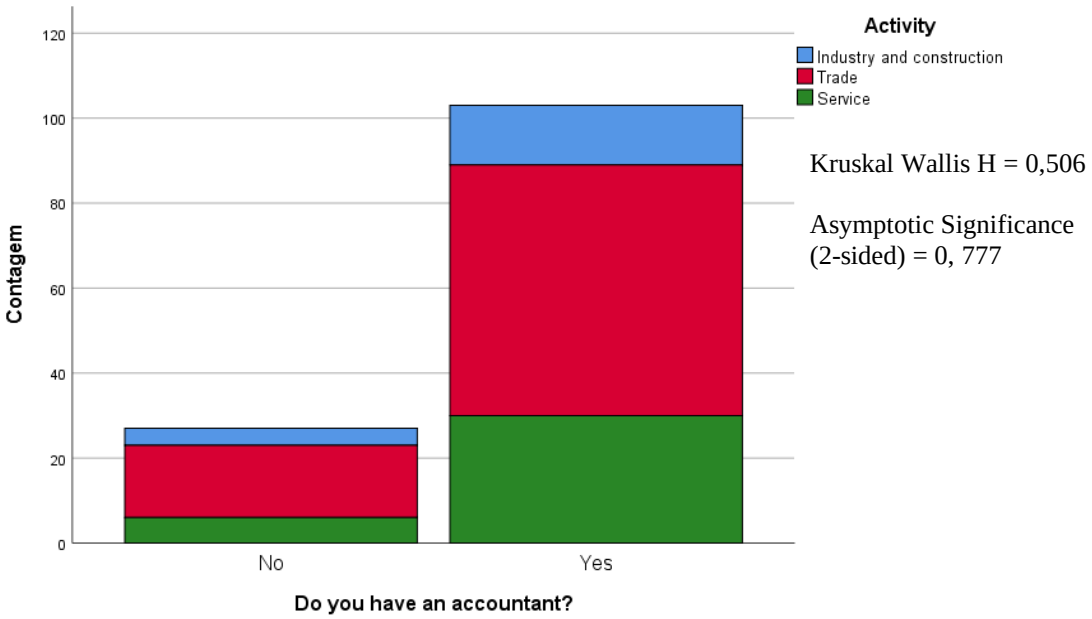

Figure 6 - Hiring accountant according to business activity

Furthermore, in order to comprehend the control process of the small enterprises, we investigated which financial and managerial information are used, as well as the accountant's influence in providing them. After applying the Kruskal Wallis test, we found no differences among the averages of profit, loan decision-making, investment decision-making, control of loan payment, employees' payroll, taxes and social charges, inventory control, pricing, report of sales, profitability reports, depreciation and amortization, and performance index. Thus, regarding the processing of these information, we cannot reject the null hypothesis. Figures 7 to 10 show the proportions of the frequencies of answers on each financial and managerial information used by the companies. The differences are significant, according to the results of the Kruskal-Wallis test, which means that there is a difference between the averages observed and expected for this information. All of this information has their highest frequencies as being processed without the help of the accountant among the three business activities.

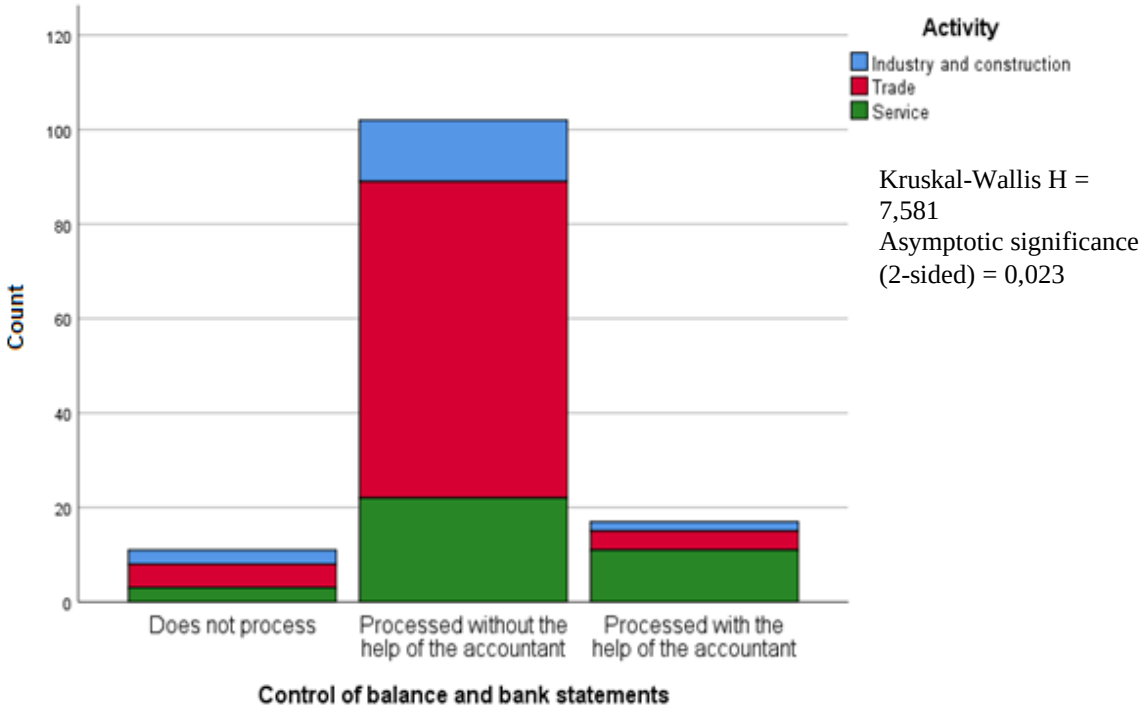

Figure 7 - Frequency of the usage of control of balance and bank statements according to business activity

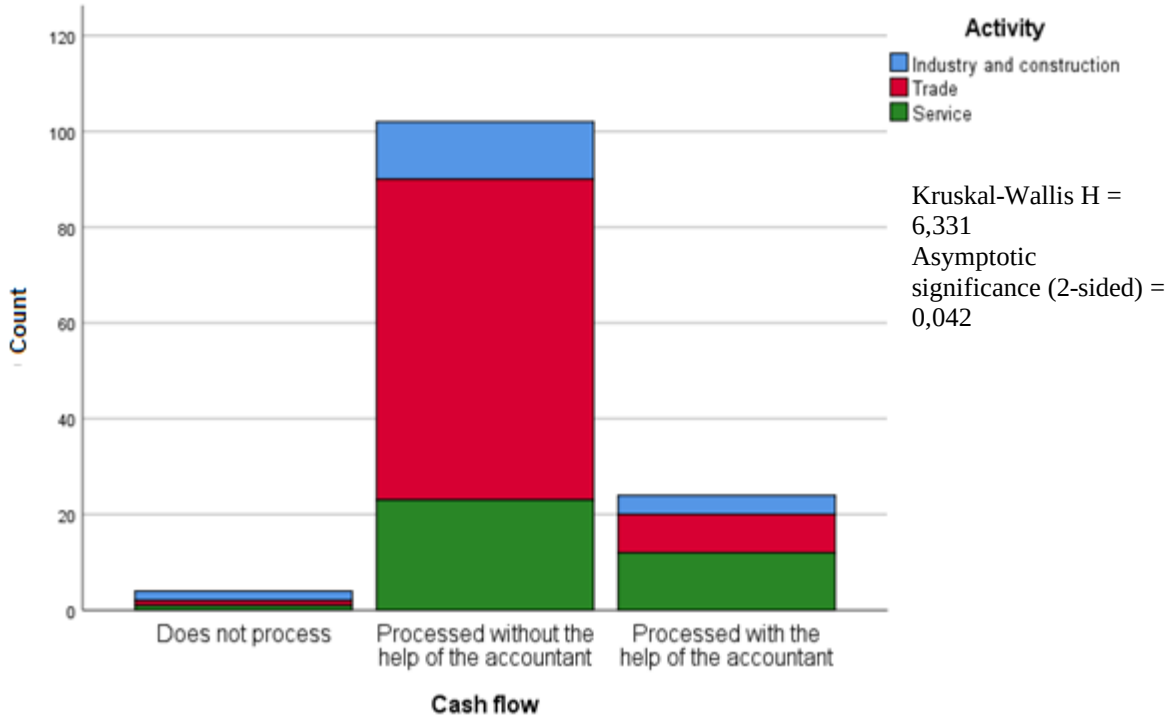

Figure 8 - Frequency of the usage of cash flow information according to business activity

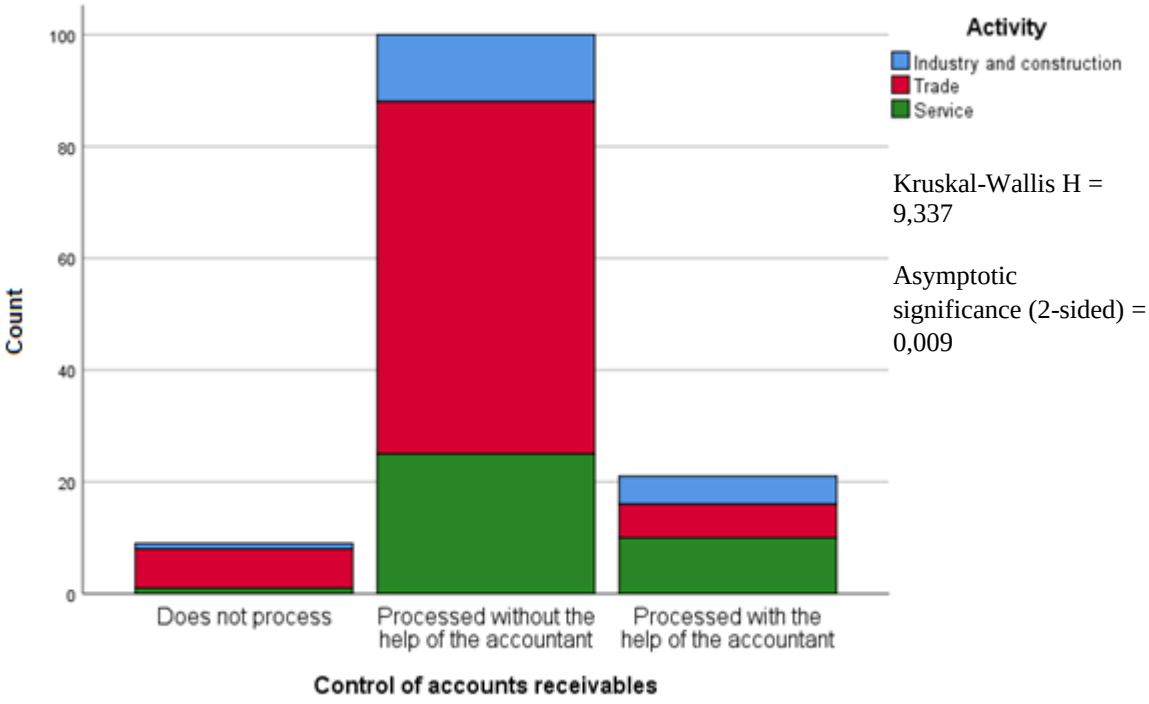

Figure 9 - Frequency of the usage of control of accounts receivables according to business activity

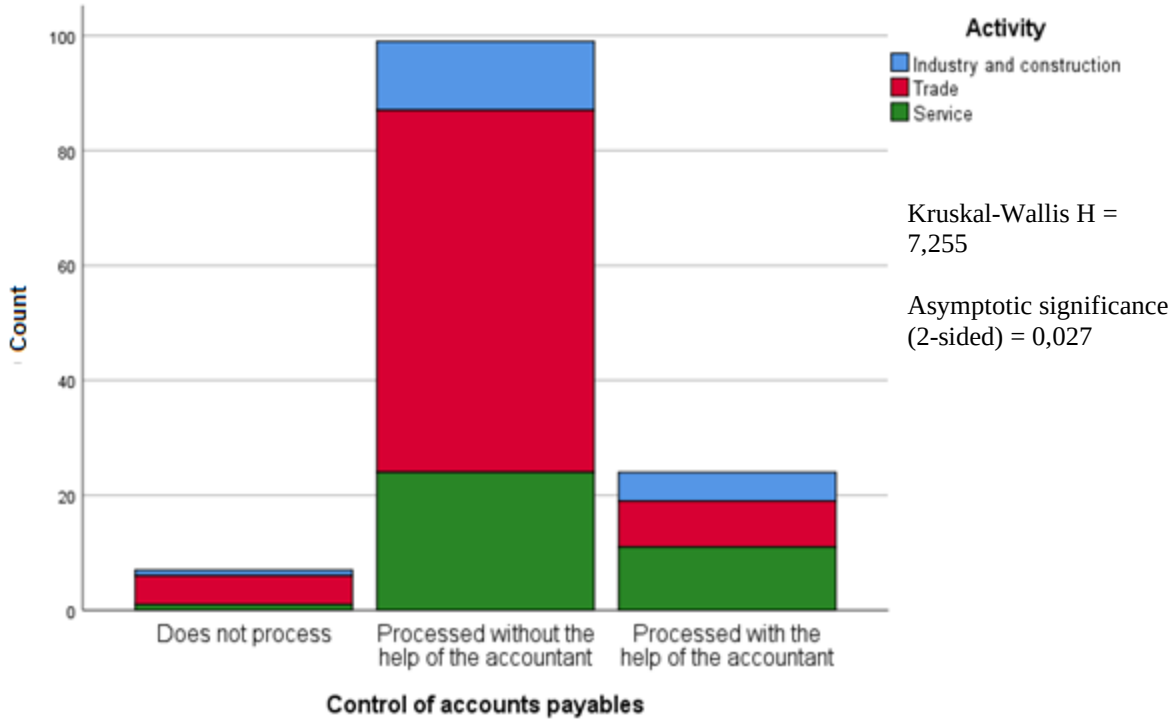

Figure 10 - Frequency of the usage of control of accounts payables according to business activity

Figure 11 discloses how much more the owner would be willing to pay the accountant for having information that would allow for a better control and performance of the company. In general, most of the participants answered that they would be willing to pay up to 20% more for the accountant in exchange to having information that would allow a better control and enhance performance. We applied the Kruskal-Wallis test, which shows that there is no difference among the averages, therefore accepting the null hypothesis.

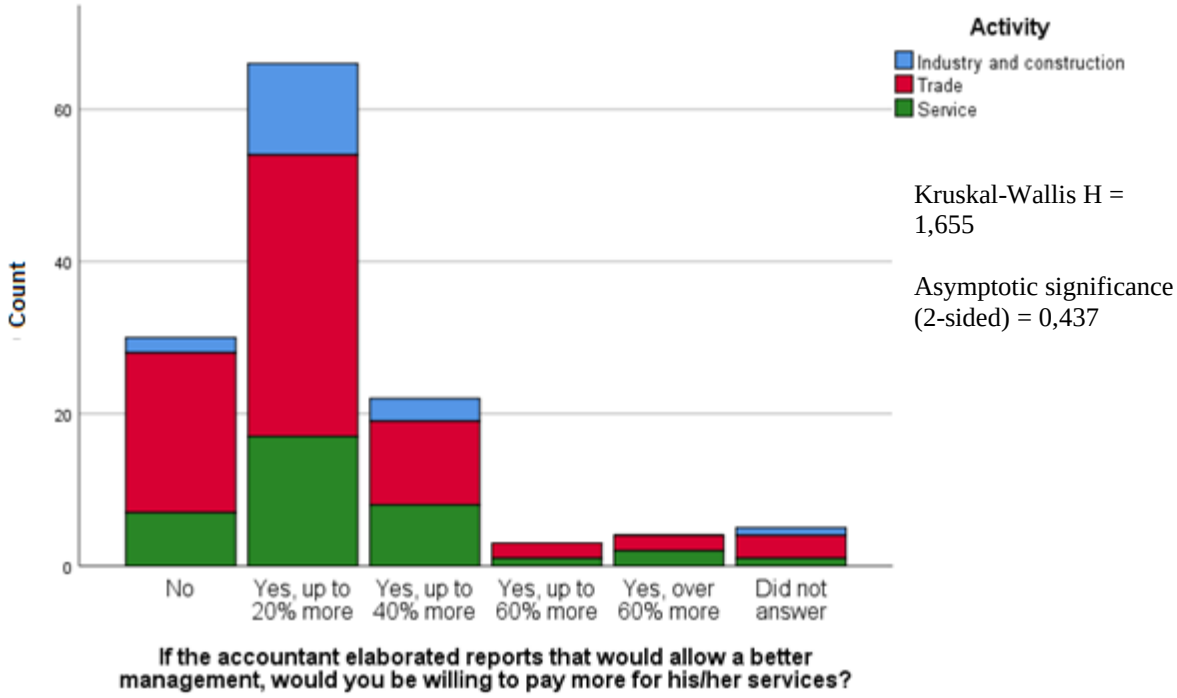

Figure 11 - How much more would be willing to pay according to business activity

2.4.2 Findings by enterprises' size

Following the same path of the previous subsection, we first investigated how the owners control their enterprise's finances and the accountant's influence when controlling. Figure 12 discloses information about the financial control, along with its frequencies and percentages, allowing to investigate the influence of the accountant and how financial control is done. According to the results by business activity, when it comes to size the most common way of controlling the finances is done by the owner himself, with the use of a computer. In addition, the second most reported answer for both size-class was that the financial control was done with the help of the accountant. On the other hand, small companies reported doing the financial control using a book the least. As well as the result by the Kruskal-Wallis test within business activity, it is possible to reject the null hypothesis, meaning that there are also discrepancies

among the frequencies of the observed and expected results on how financial control is done within size-class.

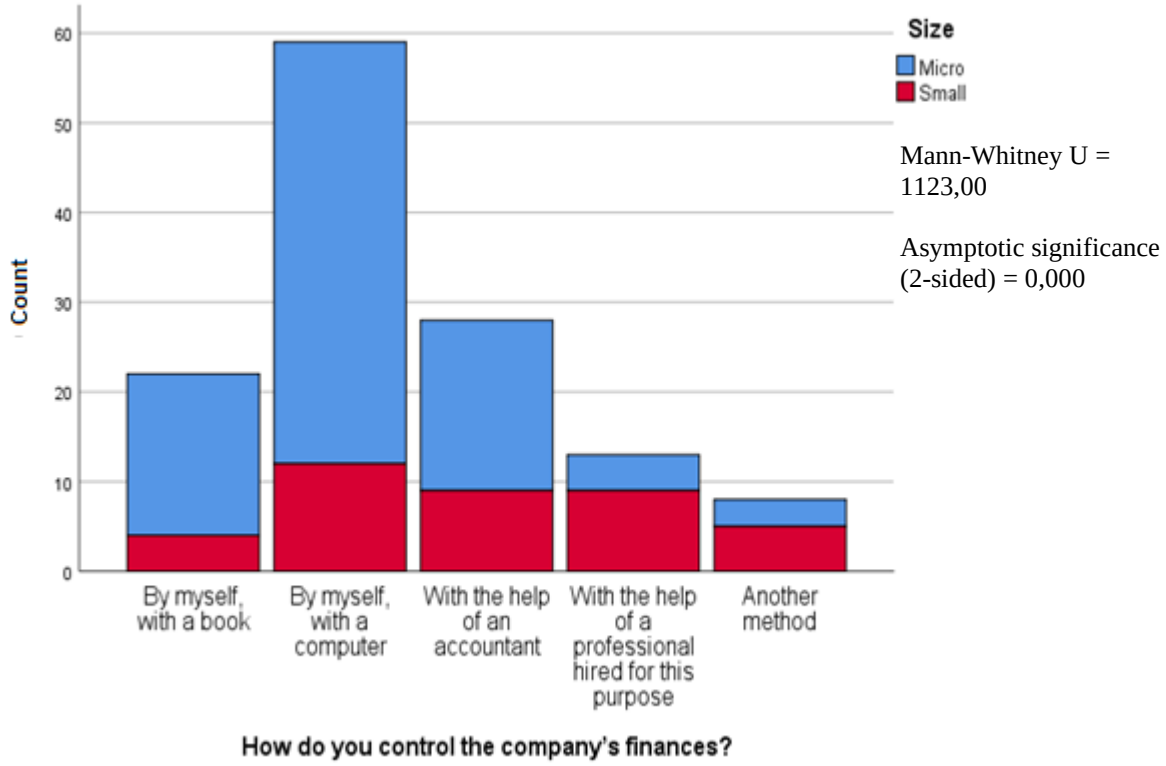

Figure 12 - How the financial control is done according to size-class

Our next step was then to comprehend the main difficulties encountered when the owner does the control process, since most of the companies have their financial control done by the owners themselves. Thus, Figure 13 informs the main difficulties reported according to the size to control their finances. In this case, the most reported difficulty by the owners in general was not having enough time to do the control, similarly to the answers given within business activity. At the same time, almost the same number of owners of micro enterprises disclosed difficulties regarding the control being intuitive and very informal. Differently than the result by the Kruskal-Wallis test within business activity, it is possible to reject the null hypothesis, meaning that there are differences among the frequencies of the observed and expected results on the main difficulties to control the finances reported within size-class.

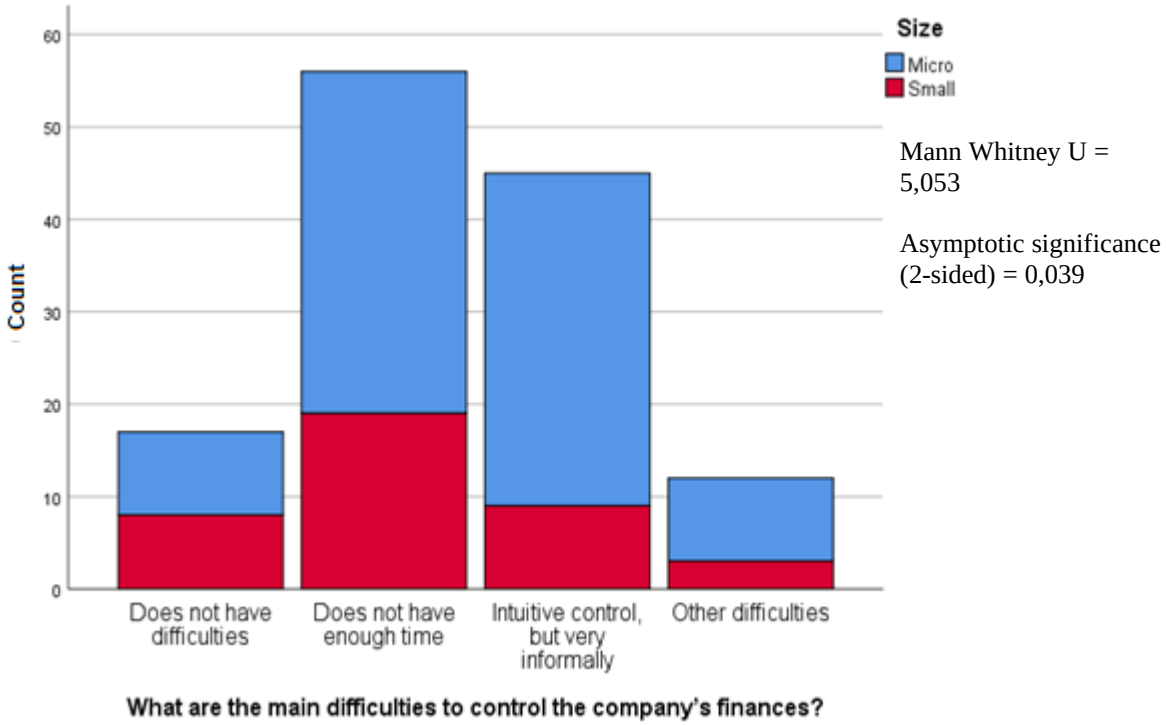

Figure 13 - Main difficulties in controlling the finances disclosed by size-class

Our next step was to investigate if the companies hire an accountant or an accounting firm. Therefore, Figure 14 shows that almost 80% of the companies participating hire an accountant. We also see a predominance of hiring accountants among micro enterprises. Another interesting result is that only two small enterprises do not have an accountant overseeing their finances. Contrary to business activity, Pearson's chi-squared test was used, as well as the Fisher's exact test. We can see that the null hypothesis can be rejected, meaning that there are substantial differences among the observed frequencies when it comes to size-class. Thus, if a company is either micro or small, this is going to influence its perception on hiring an accountant, regardless of the business activity.

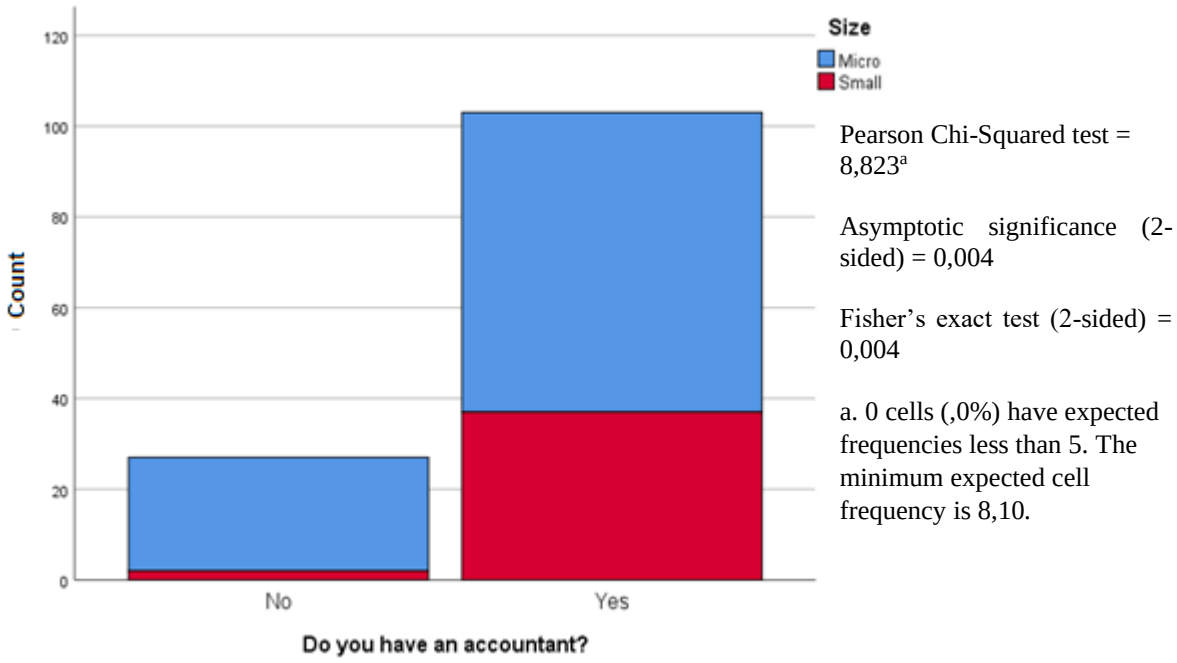

Figure 14 - Hiring accountant according to size-class

Following the same path as the analysis done in relation to business activity, we analysed the financial and managerial information used according to size-class. We applied Mann-Whitney U test to answers given in reference to size-class regarding financial and managerial information. Furthermore, this test provided that there were no discrepancies among the frequencies observed and expected as to the processing procedures of information related to cash flow, bank loans decision-making, investments decision-making, control of bank loans' payments, taxes and social charges, pricing, control of accounts payables, and depreciation or amortization. reports on sales and on most profitable products, and performance index. Thus, in the case of these information, we accept the null hypothesis.

The results for the statistically relevant information are shown in Figures 15 to 22. Information regarding the control of balance and bank statements, profit, inventory control, reports on sales, reports on product's profitability, and control of accounts receivables (cf. Figures 15, 16, 18, 19, 20, and 21) are usually processed without the accountant. On the other hand, information related to employee payroll (cf. Figure 17) are substantially processed with the help of the accountant. Regarding performance index (cf. Figure 22), we can that the minority of the sample processes this information with the help of the accountant. The majority of the sample either processes this information without the help of the accountant or not at all. Still, the majority of the micro companies does not process this information.

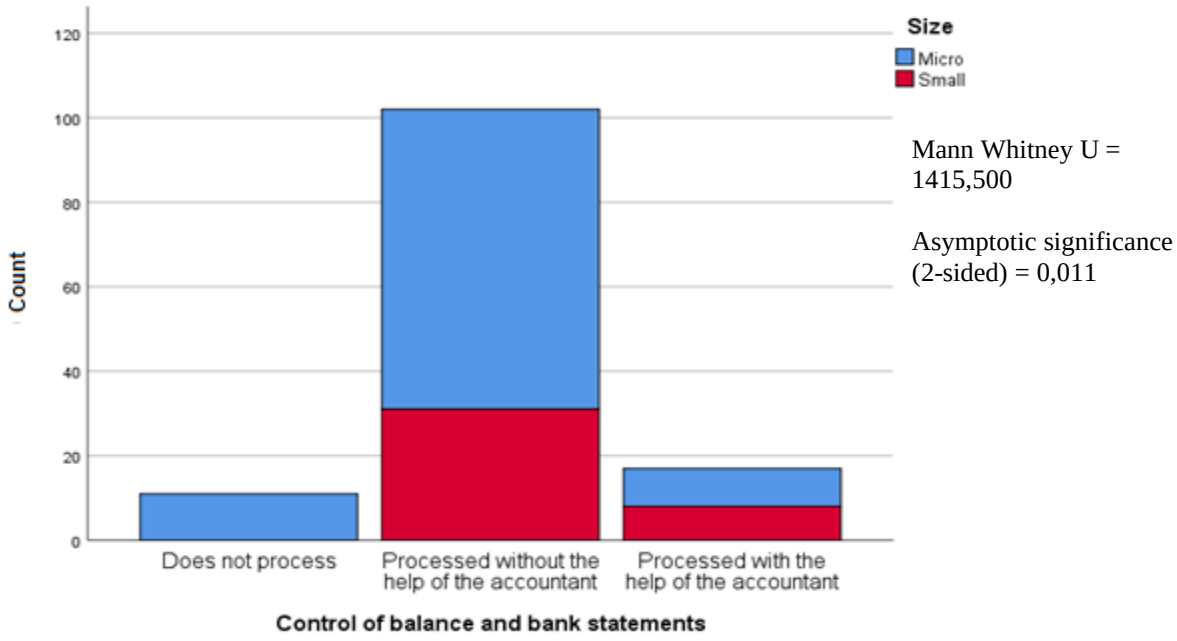

Figure 15 - Frequency of the usage of control of balance and bank statements according to size-class

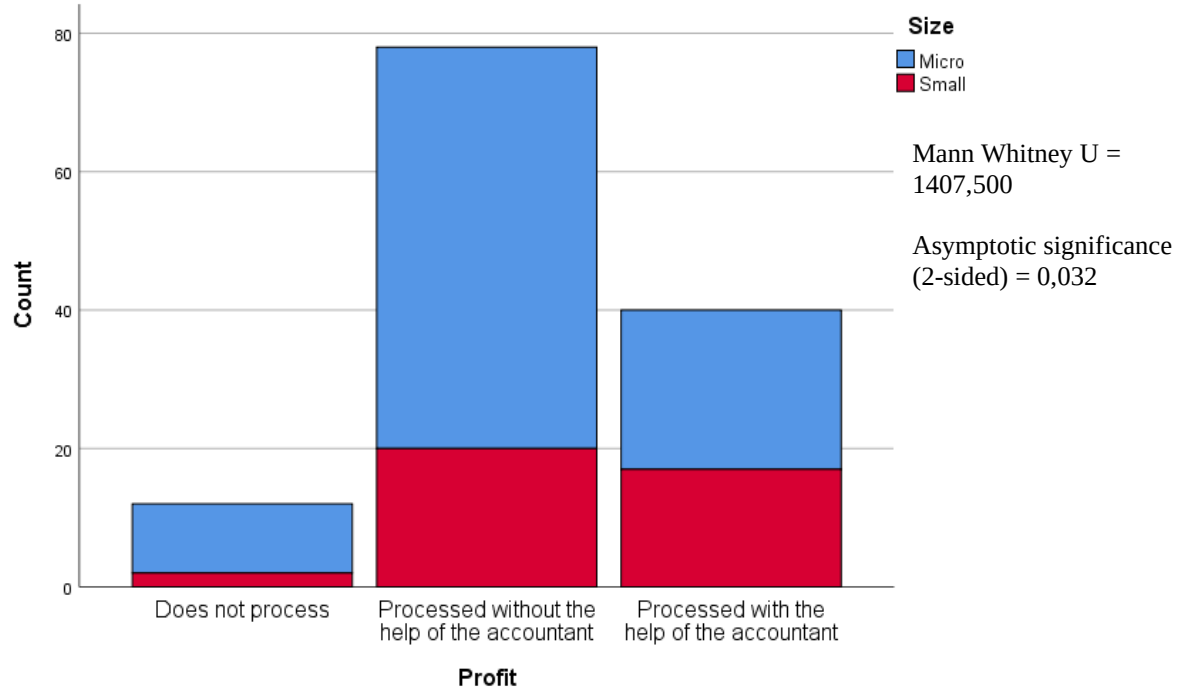

Figure 16 - Frequency of the usage of profit information according to size-class

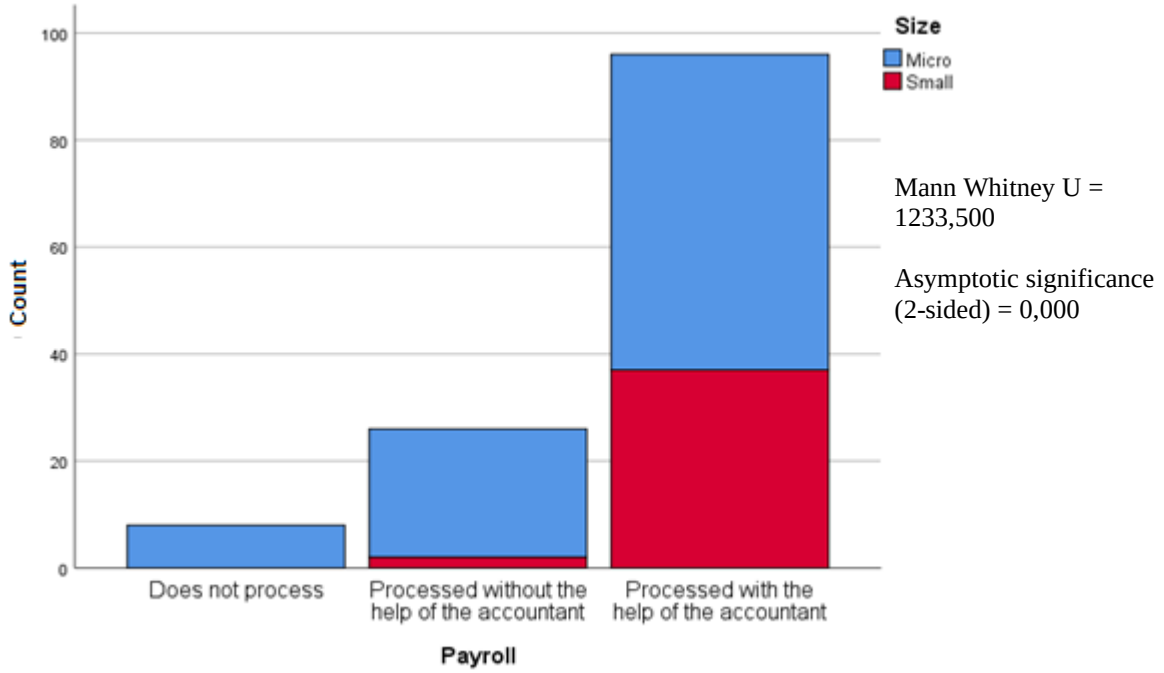

Figure 17 - Frequency of the usage of payroll information according to size-class

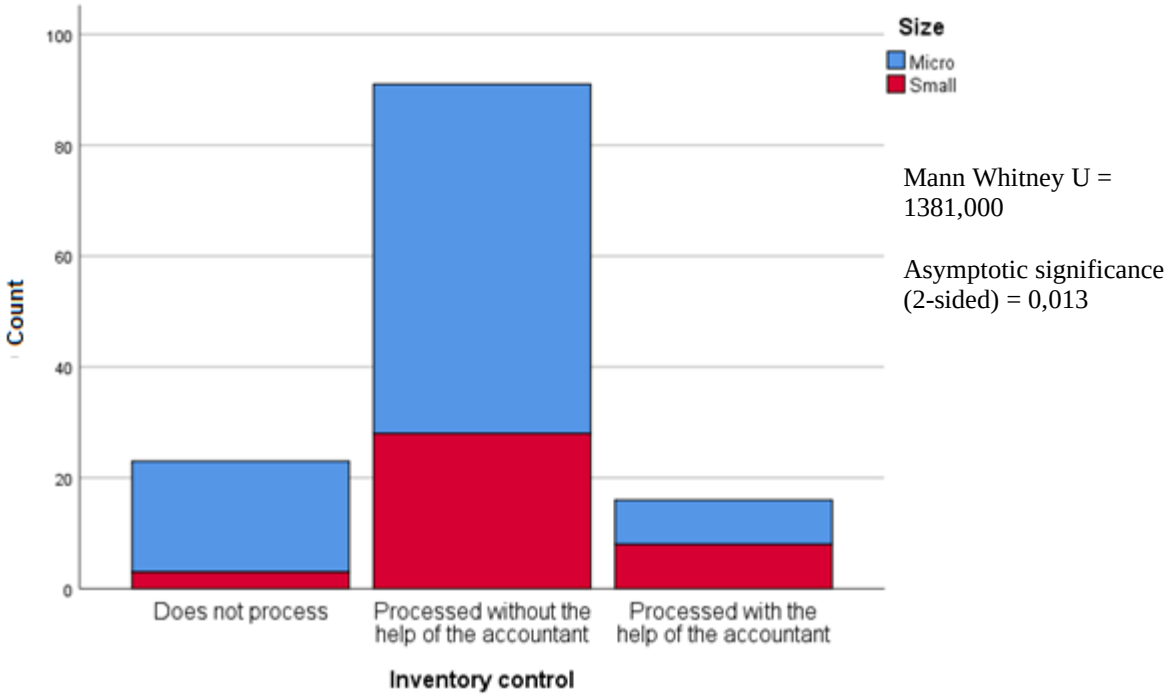

Figure 18 - Frequency of the usage of inventory control information according to size-class

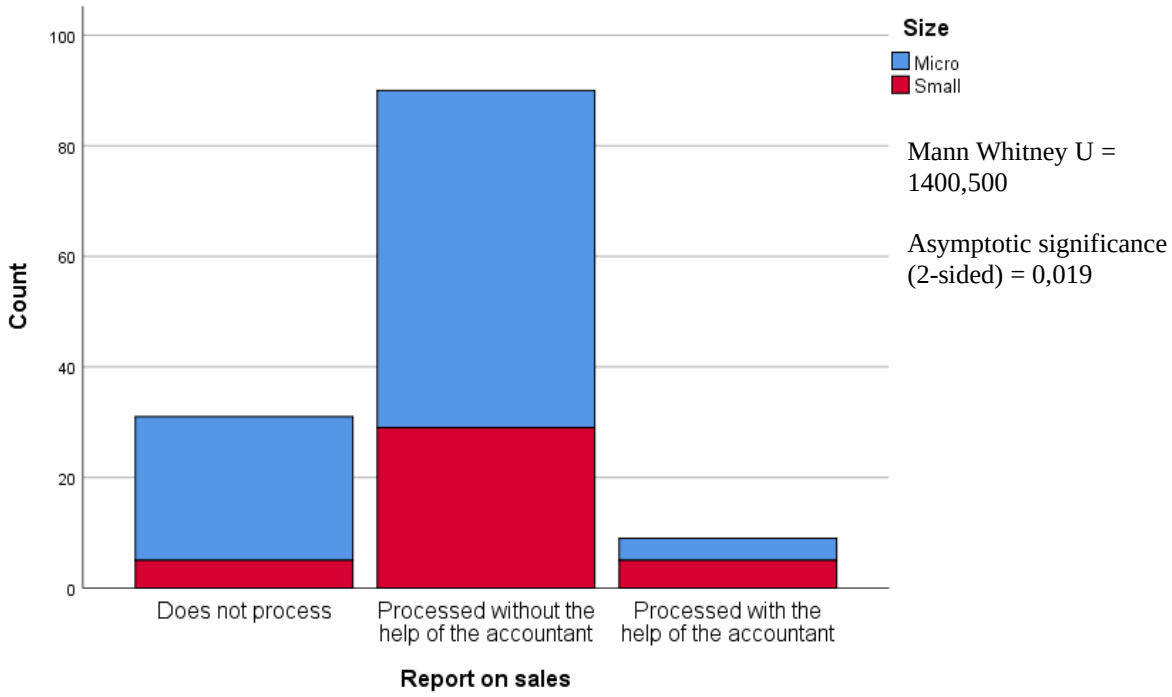

Figure 19 - Frequency of the usage of sales reports according to size-class

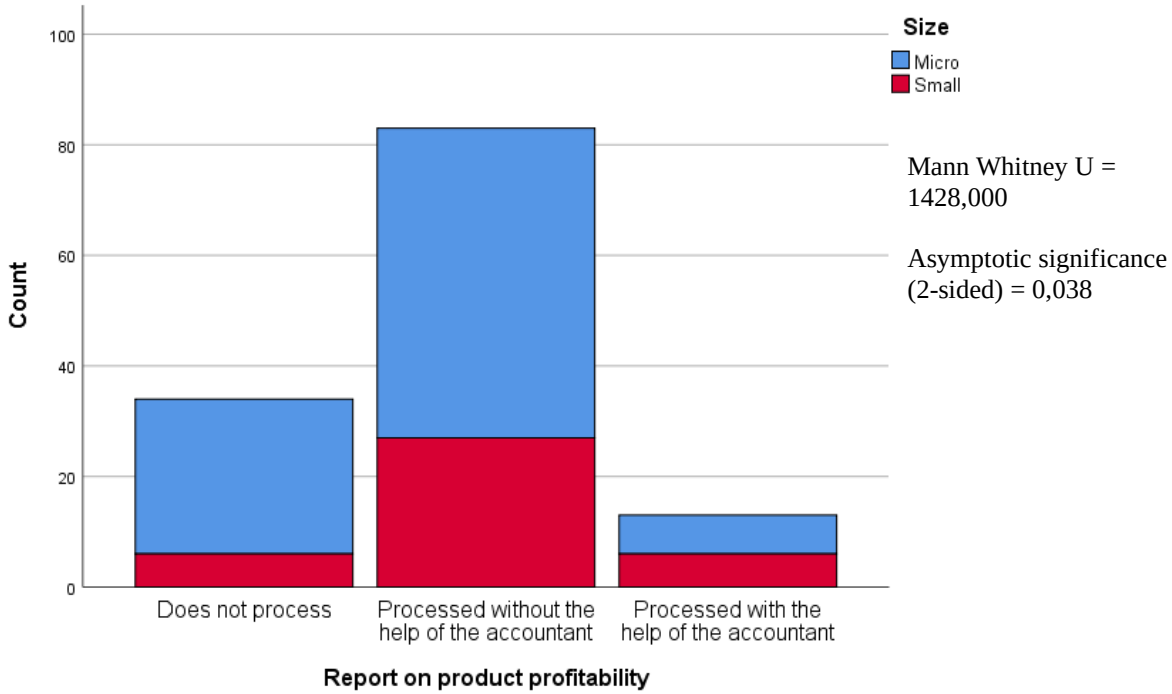

Figure 20 - Frequency of the usage of profitability reports according to size-class

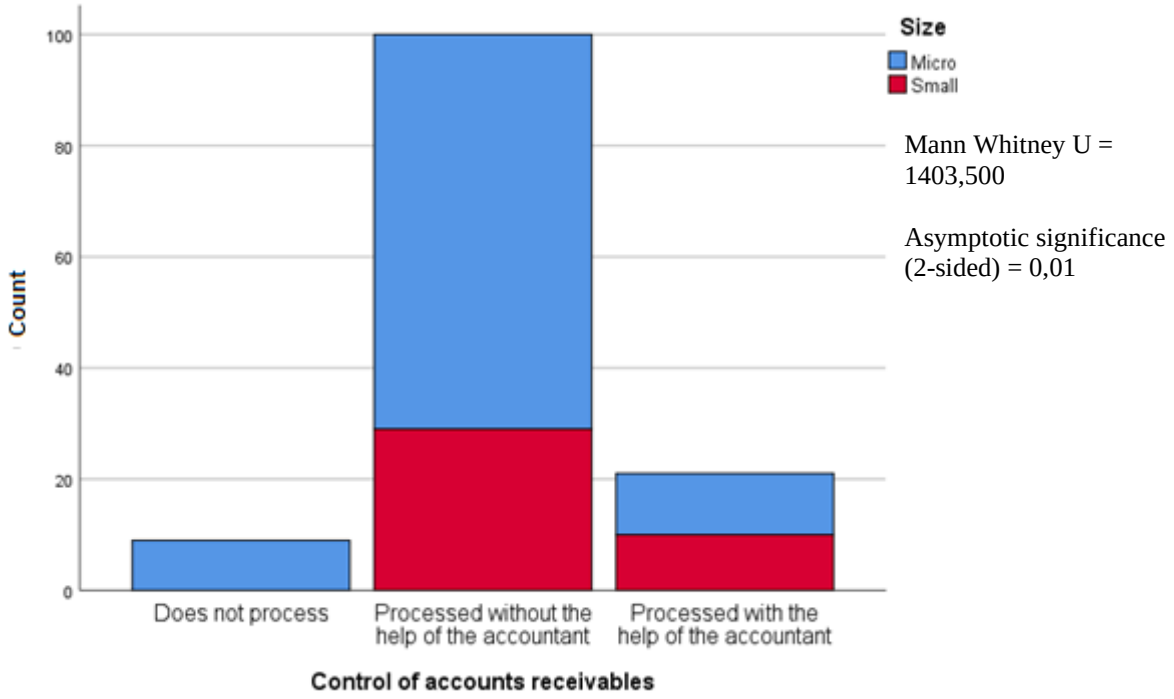

Figure 21 - Frequency of the usage of control of accounts receivables according to size-class

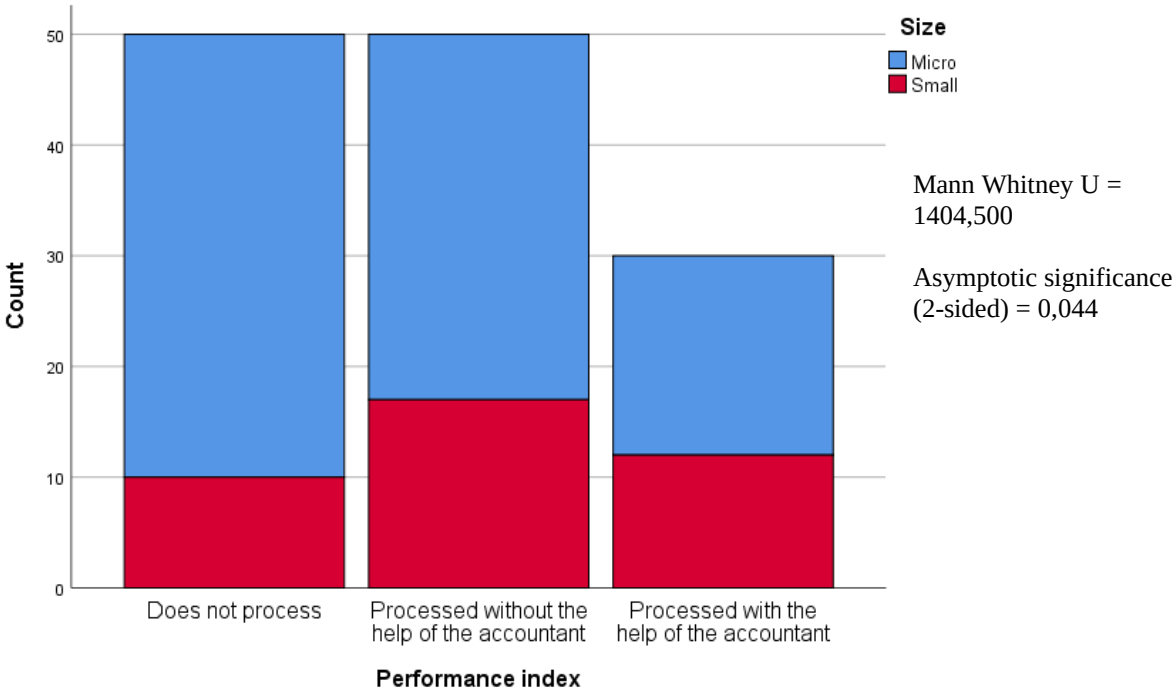

Figure 22 - Frequency of the usage of performance index according to size-class

Figure 23 discloses how much more the owner would be willing to pay for the accountant in exchange for having information that would allow a better control and enhance the

performance of the company. In the same way as with the business activity, most of the participants answered that they would be willing to pay up to 20% more. In addition, in second place the business' owners responded to not be willing to pay more for this service. We applied Mann-Whitney U test for this analysis. In this case, we can accept the null hypothesis, that is, there is no difference between the averages of how much more the owner would be willing to pay for the accountant's service among size-class.

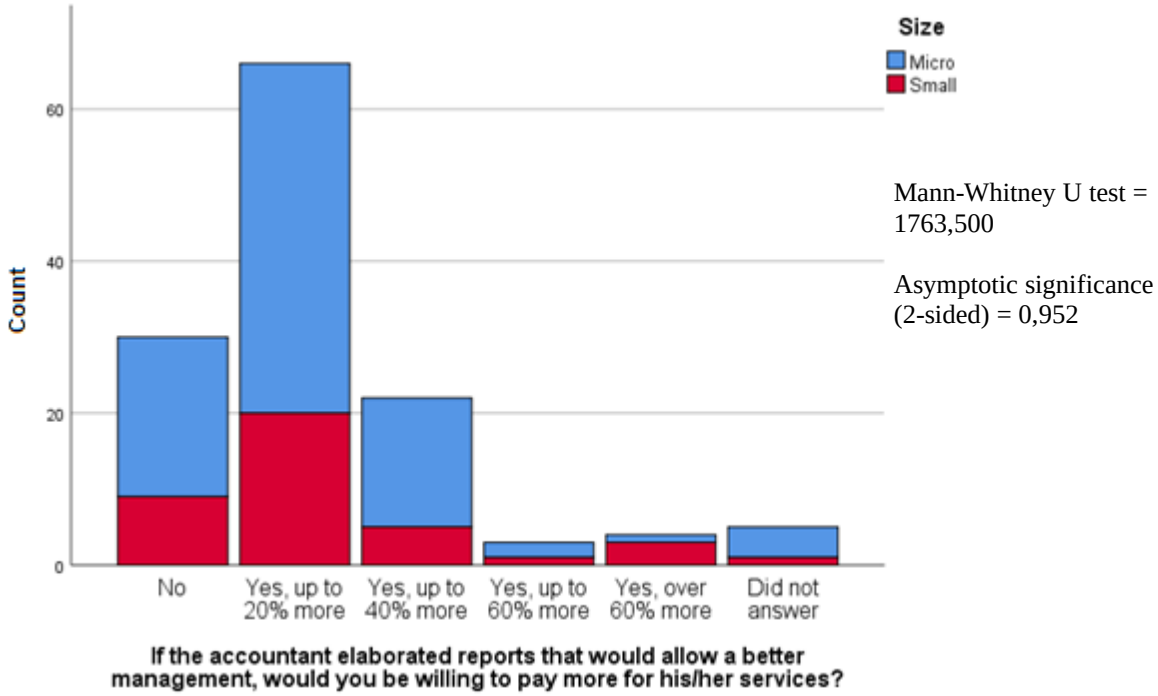

Figure 23 - How much more would be willing to pay according to size-class

2.5 Discussion

We asked how the financial control is done inside the companies. By the findings, we can see that in general the financial control is usually done by the owner themselves with a computer. However, when analysing separated by business activity, we can see that in the industry and construction it is more frequent to have the financial control done by the owners themselves with a book, while in trade and service activities the financial control is done more commonly with a computer. Meanwhile, we did not see a preference of method among size-class. For both classes, most of the owners choose to do the control by themselves with a computer. In both cases, the non-parametric tests were significant, meaning that the business activity and the size have an influence in how the financial control is done inside a company.

Some researchers analysed also how the financial information was processed within micro, small, and medium enterprises (Miranda et al., 2008; Caneca, 2008; Leite, 2004). These researchers had similar results to ours, with the control being done predominantly by the owners themselves with the use of a computer. Sian and Roberts (2009) found that 50.4% of the respondents used a computerised accounting system. Nevertheless, Miranda et al. (2008) pointed that over 45% of the respondents are still processing the financial information without a computer. These results are important because we can still notice that, even with the stage of and easy access to technology and over ten years after these researches, a large number of SME choose yet to do the control very informally.

When asked about what are the main difficulties encountered when controlling, in general the owners reported not having enough time to do so. When analysing specifically by business activity, we found this answer among trade and service. Industry and construction, however, reported the control as being very intuitive and informal as the main difficulty. Between size-class, both micro and small enterprises reported not having enough time as main difficulty, although the number of micro enterprises that reported not enough time and intuitive and informal control is almost the same. The Kruskal-Wallis test and the Mann-Whitney U test have a non-significant p-value, meaning that the business activity or the size-class have no influence in the difficulties perceived by the owner.

Our findings are similar to Samujh's (2011), when studying the perceptions of micro-business operators in New Zealand about the support they need to survive and to be successful. Samujh (2011) found that all interviewees referred to problems specifically related to lack of time, rather than of time management. In addition, the interviewees commented on having to work much longer hours than expected to achieve normal productivity (Samujh, 2011).

Most of the enterprises of the sample reported hiring an accountant or accounting firm. The p-value for the Kruskal-Wallis test showed non-significant, meaning that the type of business activity has no influence on hiring of accountants or accounting firms. On the other hand, the Pearson Chi-Squared test showed a significant p-value, meaning that the size-class actually has an influence on the enterprise hiring an accountant or accounting firm. Sian and Roberts (2009) showed that 57.2% of small business used external accountants or bookkeepers, mainly to produce financial statements, to provide tax or VAT information or even to run the accounting system. Although these accountants provided some additional information, being either verbal or written explanation or analysis of the accounts (Sian & Roberts, 2009).

The processing of information regarding profit, loans decision-making, investment decision-making, loan payment, taxes and social charges, pricing, report on sales, report on

products profitability, and performance index were tested with the Kruskal-Wallis test and the Mann-Whitney test. Regarding business activity and size-class, the processing of these information showed a non-significant p-value, meaning that being either a micro or a small enterprise, or being in the industry and construction, trade or service activity, have no influence over the processing of these information. Our results differ from Collis and Jarvis (2002) regarding profit, since the authors found that almost 87% of the small enterprises of their sample prepare this account. At the same time, our results are similar regarding performance index, since this information is also not widely used (Collis & Jarvis, 2002). Sian and Roberts (2009) also found that nearly all small enterprises interviewed for their research produce a balance sheet and an accruals-based income statement.

Most companies disclosed processing information related to control of balance and bank statements and accounts receivables without an accountant. The Kruskal-Wallis test and the Mann-Whitney U test showed a significant p-value, meaning that business activity and size-class influences the processing of these information.

When it comes to business activity, the Kruskal-Wallis test showed a significant p-value regarding the processing of cash flow and accounts payables. This means that the business activity holds an influence over how this information are processed. In general, most of the enterprises participating in the survey reported that this information is usually processed without the accountant.

The processing of information regarding payroll, inventory, and depreciation and amortization showed a significant p-value between size-class. This means that being either a micro or small enterprise holds an influence on processing this information. We noticed that most of the enterprises reported not processing information regarding depreciation and amortization. But when analysing specifically, most of micro enterprises disclosed not processing, while most of small firms process the information with the help of an accountant. Meanwhile, most of the companies reported processing information related to inventory control, although not depending in the accountant to do so. This situation changes when it comes to payroll information, since most of the firms disclosed using an accountant to process the information.

Lyra (2003), when studying the economic results of the investment decisions in quality of the accounting service companies, categorized the accounting services' offers, discriminating three main services categories: (1) fiscal, for example tax assessment activities; (2) accounting, with financial and equity statements; (3) personnel, for example payroll and social charges. Nunes and Serrasqueiro (2004) explained that managers who process financial

and managerial accounting information by themselves give a greater importance to this information in the decision-making process. On the other hand, when accounting is not done internally, its main purpose becomes legal and fiscal (Nunes & Serrasqueiro, 2004).

This situation is corroborated by Miranda et al. (2008), since they noticed that to most of the micro, small and medium enterprises' owners, the accountant is only a provider of services related to taxes and social charges, besides not being the only professional specialized in producing information for control and performance evaluation. Our results were also similar to Collis and Jarvis (2002), since a majority of firms in their sample use management information regarding balance sheet, bank reconciliation statement, and cash flow statement.

Umbelino (2008) and Caneca (2008) also investigated the processing of managerial and accounting information among micro, small and medium firms and both studies found that the participation of the accountant in providing such information is low in most of them. Caneca (2008) noticed that the accountant services are most for providing information regarding payroll, and taxes and social charges. Differently than our findings, Caneca (2008) did not find any statistical significance between the processing of financial information and size-class.

In the same way, Bernardes and Miranda (2011), when discussing the behaviour of managers of four micro and small enterprises, and how they use economic and financial information, found that all the interviewees answered that the external accountant carries out the tax part. In addition, three of the interviewees stated that the manager himself performs the companies' progress analysis, and one of the companies does not make any kind of analysis. Meanwhile three of the managers analyse cash flow and daily bank reconciliation, but only one company participating has a control system interconnected with the bank and follows the business plan (Bernardes & Miranda, 2011).

Silva et al. (2010), when researching how accounting information is used by micro and small enterprises, found that the information that is most frequently provided are income statement, balance sheet and bank reconciliation. They highlight the fact that the most frequently provided information are related to effective values. On the other hand, demonstrations with a predictive nature, such as cash flow projection and cash flow statements, are available for a small number of managers, approximately 22% and 34% of managers participating (Silva et al., 2010).

Miranda et al. (2008) asked some accountants why they do not produce managerial information to assist managers. The accountants participating claimed that they could not provide such reports because the managers are not willing to share the companies' information. However, most of the managers stated that they would be willing to open the information of

their enterprise to the accountant, if he produced reports that would help to enhance business management (Miranda et al., 2008; Caneca, 2008). Thus, we can notice that managers know the importance of managerial and financial accounting information to business management, but still the accountants' and accounting firms' services are mostly related to payroll, taxes and social charges. Bellow in Table 1 – Summary of the findings, we can see which hypothesis were accepted within business activity and size-class, in order to facilitate comparisons.

Table 1 - Summary of the findings

Accounting Information	Business Activity	Size-class
Control of balance and bank statements	✓	✓
Cash generated by the business	✓	✗
Profit generated by the business	✗	✓
Information to decide on bank loans	✗	✗
Information to decide on new investments	✗	✗
Control of loan payments	✗	✗
Employees payroll	✗	✓
Taxes and social charges	✗	✗
Inventory control	✗	✓
Sales price formation	✗	✓
Product sales report	✗	✓
Most profitable products report	✗	✗
Control of accounts receivables	✓	✓
Control of accounts payables	✓	✗
Depreciation/Amortization	✗	✗
Performance index	✗	✓

Thus, we decided to investigate if the owners were willing to pay more to the accountants in exchange for information that would enhance business management and performance. Thus, most firms disclosed that they would be willing to pay up to 20% more. The Kruskal-Wallis test and the Mann-Whitney U test showed a non-significant ρ-value, meaning that there are no differences among the averages between business activity and size-class. Thus, business activity and size-class have no influence on how the owner perceives the value of these services.

Robinson and Pearce (1984) identified that owners and managers of small enterprises are interested in planning, but they require specific recommendations on how to gain maximum payoff from the allocation of already constrained time and human resources to strategic and operational planning activities. Other researchers showed similar results to our findings, that the manager would be willing to pay up to 20% more to the accountant in exchange of financial and managerial information that would enhance management and performance (Miranda et al., 2008; Caneca, 2008).

In addition, we asked the participants whether the accountant would be maintained if the government simplified the tax legislation, in a way that the owners could calculate the tax themselves. Regarding this aspect, our findings were similar to Caneca's (2008) study, since the majority of the participants stated that they would still hire their accountant (57,26% - 71 of 124 participants). We also asked if the owners would be willing to pay more in order to receive reports that would allow for a better business management (cf. Table 1 – Analysis of whether the accountant would be retained by entrepreneurs if the government simplified tax legislation and if they would pay more for managerial and financial reports). In this case, the majority answered that they would be willing to pay up to 20% more (53,23% - 66 of 124 participants). We can notice that the owners perceive the importance of the accountant and of the managerial and financial information provided by them, since they would still hire the accountant and would pay up to 20% more to receive managerial and financial reports (54,54% - 36 of 66 participants). Despite of these results, the number of participants that affirmed that they would not maintain the accountant if the government simplified the tax legislation and that would be willing to pay up to 20% more for managerial and financial reports (45,45% - 30 of 66 participants) are very close to the amount of owners that would still hire the accountant (54,54% - 36 of 66 participants). Therefore, we can notice that if the government simplifies the tax legislation, the accountants would lose 45% of their clients. On the other hand, if the accountants start providing managerial and financial reports, they would be able to keep these clients and they would receive up to 20% more for their services. Six participants did not answer one of these questions, thus being excluded from this analysis. For this analysis, we segregated our positive answers into one variable and applied Fisher's exact test and Pearson chi-square test. However, both tests reported a not significant ρ-value, meaning that we cannot reject the null hypothesis. Thus, we understand that there is no difference between the proportions for if the company's owner would be willing to pay more for the accountant's services among values for it, they would still hire the accountant in case of the government simplifying the tax legislation.

Table 2 - Analysis of whether the accountant would be retained by entrepreneurs if the government simplified tax legislation and if it would pay more for managerial and financial reports

		If the government simplified the legislation for the taxes, payroll and social charges, in a way that you would be able to calculate and pay it yourself, would you maintain your accountant		
		No	Yes	Total
If the accountant elaborated reports that would allow a better management, would you be willing to pay more by his/her services?	No	13	17	30
	Yes, up to 20% more	30	36	66
	Yes, up to 40% more	8	13	21
	Yes, up to 60% more	1	2	3
	Yes, over 60% more	1	3	4
Total		53	71	124

2.6 Conclusion

This research aimed to investigate the perception of small business owners of the usefulness of information received from accountants. We understand that small and medium enterprises are the backbone of global economy and are very diverse, but these enterprises are still largely affected by bankruptcy (Gupta et al., 2015; Carter & van Auken, 2006; Headd, 2003).

We can understand internal control as a series of actions integrated with business activities and conducted throughout the organisational units and functions (Pfister, 2009). One of the steps in maintaining internal control is planning, which was not present in some small and medium enterprises or it was unstructured, irregular, and uncomprehensive. That happens due to managers not having enough time to plan, not having sufficient knowledge of many planning information sources and how they should be used, lack certain specialized expertise, lack trust and are hesitant to share their strategic planning with employees or outside consultants (Robinson & Pearce, 1984).

Management Control Systems are beneficial when it comes to environment uncertainty and the amount of management accounting information used for decision-making is going to depend on the manager's uncertainty perception and is going to assist the managers on defining their tasks (Otley, 2016; Chong, 1996). We argue that management control systems do not necessarily need to be formalized. As informal as it may be, management control systems are highly important to companies, independent of its size-class or business activity. Furthermore,

this research provides insight into accounting information used by small companies for controlling purposes.

We elaborated a questionnaire based on existing literature, which consisted of three sections and 16 objective questions. The first section asked about the characteristics of the enterprises in a more general fashion; the second, gathered more sophisticate information on financial control; the third section gathered data on managerial control (Miranda et al., 2008; Caneca, 2008; Umbelino, 2008; Leite, 2004; Collis & Jarvis, 2002). Data collection occurred in three semesters, starting in the first semester of the year 2018 and ending in the first semester of 2019. The final sample is formed by 130 micro and small enterprises established in the metropolitan region of Recife. To analyse the answers, we applied non-parametric statistics, such as Pearson Chi-Squared test, Fisher's exact test, Kruskal-Wallis test and Mann-Whitney U test.

Our findings are similar to other several researches (Moreira et al., 2013; Samujh, 2011; Silva et al., 2010; Bernardes & Miranda, 2010; Sian & Roberts, 2009; Miranda et al., 2008; Caneca, 2008; Umbelino, 2008; Nunes & Serrasqueiro, 2004; Lyra, 2003; Collis & Jarvis, 2002). When analysing the results, it is possible to see that the owner himself, with the use of a computer, mostly does the control. The non-parametric tests showed a significant difference among the answers between size-class and business activity. Thus, the way to control is differently perceived by the owner depending on the enterprise's business activity or its size-class.

In business activity and size-class, the main difficulty in maintaining and doing the control is due to the owner not having enough time to do so, although the non-parametric statistics did not show a significant p-value, meaning that within business activity and size-class the frequencies and averages of answers are the same. A well-established management control system is known to provide a better operational performance and business sustainability. Therefore, this study provides knowledge on which information are mostly used by micro and small firms for controlling purposes and the role of the accountant in providing such information.

When we analysed the processing of managerial and financial accounting information, we notice that the accountant is still perceived as a service provider for tax and legal purposes. We also noticed that the owners and managers know the relevance of managerial and financial information for enhancing business performance, since they process most of this information by themselves and are willing to pay more for accountants in exchange of such information. In addition, our results show that, if the government simplifies the tax legislation in a way that the

entrepreneurs are able to calculate the tax amount themselves, they would lose a fair number of clients. On the other hand, if the accountants start providing information for management enhancement and decision-making, they would be able to retain those clients.

One of the limitations of this study is the sample size and the fact that the participants were selected by convenience. Thus, it is not possible to generalise the results. In this manner, the conclusions are only valid for the sample. Another limitation is related to the difficulty of access to certain information, since some owners were not willing to answer the survey. However, with this in mind, this study still gives novel insight into business operations of micro and small enterprises in the metropolitan area of Recife. In addition, the number of enterprises surveyed allow us to use this data as indicative of the perception of micro and small owners in relation to managerial and financial information for control and business performance enhancement.

The limitations of this study offer direction for future research. The expansion of the sample and the generalisability of results already provide a deeper understanding of control mechanisms in micro and small enterprises. A qualitative approach could be taken, with greater openness to discussion during interviews. In addition, a deeper investigation confronting the use of managerial and financial information used by managers with those provided by accountants and accounting firms could give a more realistic picture about the usefulness of the services offered by accountants.

3 STRUCTURE OF THE PRODUCTION COSTS IN SMALL BRAZILIAN ENTERPRISES

3.1 Introduction

This research aims to present an overview and to analyse the production costs structure of small Brazilian enterprises.

Small and medium Brazilian enterprises are estimated at 12.4 million existing companies and also responsible for a 27% share in the national GDP of 2011 (SEBRAE, 2017). In addition, these companies are responsible for more than 17 million employments with a formal contract and for 54% participation in generating formal jobs in the country during the year of 2015 (SEBRAE, 2017). The Brazilian Northeast region is in second place in the concentration of micro and small companies, holding 18% of these enterprises in September 2017 (SEBRAE, 2017). Despite these data, there is a national mortality rate of 23% for companies within two years of operation. Only in Pernambuco, a state in the Northeast region of Brazil, the mortality rate is 24% for companies within two years of operation (SEBRAE, 2016).

Usually in emerging economies, such as Brazil, informal small and medium enterprises often outnumber formal small and medium enterprises (Kushnir et al., 2010). Kushnir et al. (2010) comment about India, where there were fewer than 1.6 million registered small and medium enterprises and 26 million unregistered ones in 2007. This means about 17 unregistered small and medium-sized enterprises for every registered one (Kushnir et al., 2010). In Brazil, the total number of private sector employees without a signed work permit reached 11.7 million people, in July 2019 (IBGE, 2019a, 2019b). Another factor related to informality are the self-employed, who reached the number of 24.2 million people in July 2019 (IBGE, 2019a, 2019b). On the other hand, economies with higher income per capita display a tendency to have more formal small and medium enterprises per 1,000 people (Kushnir et al., 2010).

Family-owned companies are usually founded by the patriarch, with the objective of meeting the financial needs. In Brazil, family-owned companies represent over 90% of Brazilian business. Its main characteristic is ownership and management in the hands of two or more members of the same family, at the same time as they participate in the company's operational activities (SEBRAE, 2019a, 2019b). This particular characteristic is often considered as a strategy to reduce costs and of obtaining a committed employee, since family members will not demand the rigour of the law with regard to wages and working-time limits, and will devote the maximum effort for the family to prosper through the enterprise (SEBRAE, 2019a, 2019b).

Internal control is conceptualised as the understanding that it is all the organisation's instruments for surveillance, supervision and verification that allow for predicting, observing, directing or governing events within the company and that produce reflections in its patrimony (Garrison et al., 2013; Atkinson et al., 2008; Anthony & Govindarajan, 2002). Internal control systems can be represented by all the approved policies and procedures used by the management in order to achieve an effective business management (Dumitrascu & Savulescu, 2012).

Cost accounting systems have generally three functional areas: the collection of raw data, the processing of this data in accordance with a costing methodology, and the reporting of the resulting information to management in the most useful format (Bragg, 2012). In addition, cost calculations have been used for centuries as the basis for planning, decision making and control (Boyns & Edwards, 2007). This is explained due to, in order to make informed decisions, managers rely on cost management and they need to have access to different supportive and useful financial information from cost accounting systems (Kulmala et al., 2002).

For data collection, we interviewed small entrepreneurs established and in operation within the municipalities of Pernambuco State. Data collection started in 2015 and ended in 2018. Information regarding the structure of the company and its activities were gathered, as well as information on the production and marketing process. As for the accounting and control systems, we investigated how the activities and results are controlled and which type of systems are used to do so. This includes an analysis of the costs systems and methods, performance measurement, decisions of investment and mix of products, and other management control tools. We aim that the results of this research help to uncover the main managerial accounting needs of micro and medium companies' entrepreneurs, in order to contribute to the reduction of the mortality rate of their companies.

Therefore, this research aims to present an overview and to analyse the production costs structure of small Brazilian enterprises. In order to do so, we review the literature regarding internal control and cost accounting systems, which proved essential to reach the purpose of this research. For data collection, we interviewed owners of small businesses in operation that are established in the state of Pernambuco. We analysed our sample using descriptive statistics and data regression. Then, we present our results and categorize the costs structure by business activity. Finally, we discuss conclusions and limits of the study.

3.2 Cost accounting systems

Bragg (2012) explains that cost accounting systems have generally three functional areas: the collection of raw data, the processing of this data in accordance with a costing methodology,

and the reporting of the resulting information to management in the most useful format. As cost systems, we have job costing, process costing, standard costing, direct costing, throughput accounting, activity-based costing and target costing (Bragg, 2012).

Boyns and Edwards (2007) note that cost calculations have been used for centuries as the basis for planning, decision making and control. In addition, Anderson (2007) highlights that to adequately characterize the production function and the related cost function of the company, it is needed to take into consideration the managers' motivations, skills, and constraints in managing costs in conjunction with demand. In this case, Anderson (2007) defines strategic cost management as a deliberate decision making that aims to align the company's cost structure with its strategy and optimizing the enactment of the strategy. Anderson (2007: 482) argues that "the need for firms to adopt a new approach to managing costs coincides with a need for management accounting scholars to expand the scope of cost management research".

Target costing is considered the most proactive methodology, since it involves the direct intervention of the cost accounting staff in the product design process, with the express intent of creating products that meet preset cost and gross margin goals (Bragg, 2012). This methodology is also considered as a strategic weapon, giving competitive advantage to companies that adopted it (Ansari et al., 2007).

Several studies present the benefits that activity-based costing (ABC) implementation brings in enhancing organisational performance, productivity, and profitability (Askarani & Yazdifar, 2012; Baykasoglu & Kaplanoglu, 2008; Qian & Ben-Arieh, 2008; Ben-Arieh & Qian, 2003). The ABC method is more accurate in associating overhead costs with specific activities, which in turn can be assigned to product costs (Bragg, 2012).

Cugini et al. (2013) identified the features that cost accounting systems should have in order to capture the particular structure of the production process of rail a medium-sized, privately owned passenger railway enterprise. In this case, Cugini et al. (2013) show the necessity of integrating the ABC system with an accounting innovation that can represent the resources consumed by the various elements of the infrastructure that support the provision of services.

Wouters and Stecher (2017) described the development of a costing system in a medium sized company, aiming to better understand issues related to data availability and the need for updating when designing product-costing systems. Wouters and Stecher (2017) presented a time-driven activity-based costing, which was based on actual machine times per business order. This information was available in real time, for each business order every day, based on completed and still in progress business orders.

Lopez et al. (2013) identified the shortcomings of traditional cost accounting techniques in lean companies and analysed the validity and convenience of value stream costing as a tool in a company with some concepts of lean manufacturing. Traditional costing aims at capturing the cost of materials, labour and every resource directly within the value stream with little or no allocation, whereas value stream costing is able to model the processes on the shop floor while it simplifies the accounting process (compared to traditional costing and ABC), still gives cost information as relevant as ABC, and its techniques encourage continuous improvement since they reflect operational improvements (Lopez et al., 2013). As disadvantages, Lopez et al. (2013) clarifies that it requires a completely lean company and that it only offers a rough estimation of the cost of the product, besides being less accurate than other costing systems, such as ABC, and treating all items as equal might not work well for long-term performance measurement and decisions.

Martins et al. (2013) proposed a costing system for the maritime transport regulator and the seaport administrations in Portugal. Martins et al. (2013) identified problems in getting the appropriate cost information, since it was scarce and highly diverse. The set of tables proposed facilitates the harmonisation of the content and the way internal accounting basic information is made available, since it seemed essential to fundament the values computed for several services costs, on the basis of which the tariffs must then be established (Martins et al., 2013).

In order to make informed decisions, managers rely on cost management and they need to have access to different supportive and useful financial information from cost accounting systems (Kulmala et al., 2002). These systems are able to provide important knowledge for managers to make informed decisions on the strategic level, as well as on the operational level (Kulmala et al., 2002).

Given the literature review and the companies characteristics, we established the following hypothesis to be tested referring to production costs:

H1: There is a difference in the means of factor family business.

H2: There is a difference in the means of factor formal business.

H3: There is a difference in the means of factor business activity.

H4: There is an interaction between the factors family business and formal business.

H5: There is an interaction between the factors family business and business activity.

H6: There is an interaction between formal business and business activity.

H7: There is an interaction between the factors family business, formality, and business activity.

3.3 Data collection and research methods

The sample included the owners of small businesses in operation that are established in the state of Pernambuco. Small enterprises are required to be a real company, for example a small factory, such as factories producing ice cream, truffles, and handicrafts, among others. To get a conclusive sample, we did not require the companies to be formalised. In this way, the interviews were conducted in person with the owners of the enterprises. The sample is composed by 35 small enterprises, which were chosen using the criterion of convenience, taking into account the geographical location and also the personal knowledge that could facilitate access to the enterprise. Consequently, it is not possible to generalise the results. However, with this in mind, this study still offers a novel insight into the business operations of microenterprises located in the state of Pernambuco.

This is considered a field with ample possibilities for research and improvement, in which there is also a high potential for impact, since it focuses on local companies whose people involved, entrepreneurs, and the population of the area are likely to benefit from the results found – the former improving the business and the latter with the development of the region. This study seeks to deepen the discussion and knowledge about small enterprises of the state of Pernambuco, verifying the adequate accounting information already used for the management of the company, and thus disclosing this information in a systematic way aiming to assist owners in managing their business. In this way, it is expected that this research will have an impact in reducing the mortality rate small enterprises, in generating employment, in the promotion of the economy with the increase of production, and in the development of the region.

The necessary accounting information were collected through personally conducted interviews involving operating small entrepreneurs established in municipalities in the state of Pernambuco. The questionnaire was divided into three sections (cf. Figure 24 - Structure of the questionnaire). The first section is related to knowing the company, such as size, number of employees, among others. The second gathers information about whether some form of control

is adopted by it, such as cash or inventory control. The third section discriminates the productive process of the company, what activities are developed, if there are difficulties in its development, the resources and inputs needed for production, if there is knowledge of direct and indirect and fixed and variable costs, the criteria used to define their prices, among other questions involving the production process. The full questionnaire can be found in Appendix B – Questionnarie 2. This research has a transverse nature, with data collection between 2015 and 2019.

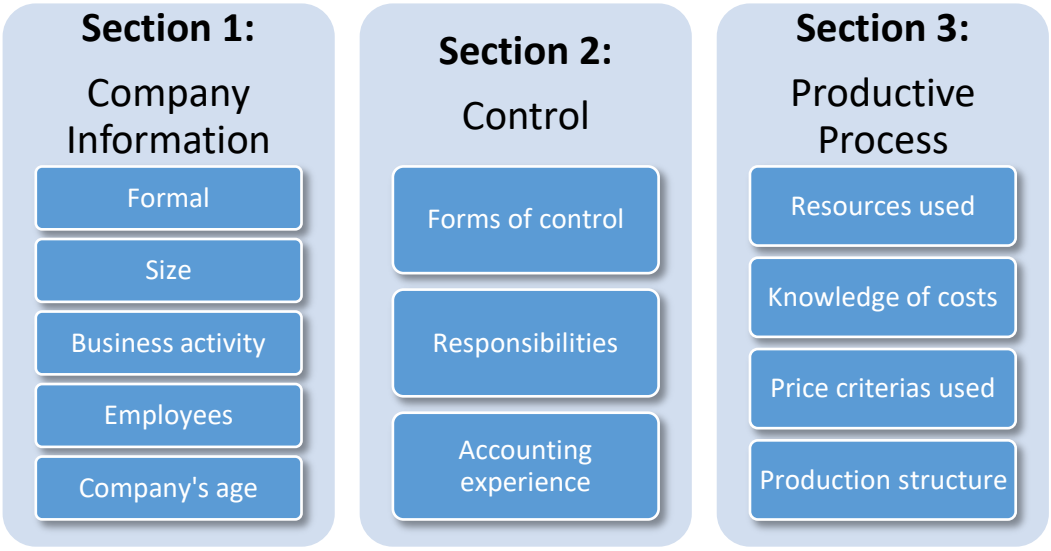

Figure 24 - Structure of the questionnaire

From these materials, we analyse the costs incurred and other tools used regarding the management control of the entity. Thus, the information will be mapped. The companies will be separated according to the sector in which the company is inserted, aiming to clarify about the management of small enterprises, as well as highlighting their strengths and weaknesses to achieve a more adequate control. The separation by business activity was done according to SEBRAE (2018b) and the European Commission (2019), the enterprises are separated into industry and construction, trade or service provider. Thereby we intend to improve management and reduce mortality. Next, an accessible implementation structure of controls will be proposed for the types of business analysed in the research.

Data was collected through interviews conducted in person, which were formulated taking into account the literature and, therefore, covering issues related to the types of control adopted by the small enterprise and the costs incurred in the production process. For the formulation of these questions, an extensive study was needed on internal control and cost

accounting, thus enabling the elaboration of clear and specific questions for the collection of the necessary data. Because it is a study conducted exclusively in national territory, the interviews were conducted in Portuguese, and consequently no translation was required. The questions developed for the interview were based on surveys previously performed (Miranda et al., 2008; Caneca, 2008; Umbelino, 2008; Collis & Jarvis, 2002). Subsequently, pre-tests were carried out, to take into account the understanding and considerations made by these first participants. Thus, it was possible to improve the interview, by increasing its quality by making it clearer and more objective and with concise and unambiguous questions.

This research used semi-structured interviews to obtain the data, since it was based on key questions and some topics to be addressed depending on the organisational context and the flow of the conversation. For this study, we did not use structured interviews, which use questionnaires based on a predetermined and standardized set of questions, usually with pre-coded answers (Saunders et al., 2016). A semi-structured interview was chosen because it allows for the deepening of the reality experienced within the target companies of the research through open questions. The interviews were conducted in person with the owner of the company, privately and with approximately fifteen minutes in length. It was decided to write down the answers given, rather than recording them, in order to make the interview more comfortable for the interviewee.

Ensuring confidentiality and anonymity means that no harm should result from participating in the research (Saunders et al., 2016). Therefore, at the time of the interview, the purpose of the study was explained to the participants, leaving explicit the type of research, the information and access needed, as well as clarifying the relevance of the study and possible future benefits. In this way, the research participants were assured of the anonymity of the research and that the data revealed by them will not be disclosed, since the company name is known to the researcher. The questions during the interview do not deal with sensitive information. As a result, participants were assured that the survey conducted would not deal with sensitive data. Interviews were conducted in a reserved place, accomplishing the protection and secrecy of the disclosed information and assuring anonymity to the owner. Therefore, it is possible to affirm that during data collection all ethical procedures were respected.

Data analysis consisted of descriptive statistics and data regression, specifically a three-way ANOVA test and simple linear regression (cf. Equation 1 – Simple linear regression).

Equation 1 – Simple linear regression

$$Y(j) = \beta 0 \pm \beta 1 \times X1 \pm \beta 2 \times X2 \pm \beta 3 \times X3 + \epsilon$$

where

- Y(j) = dependent variable, that is, the production costs of each *j* company;
- X1 = independent variable, that is, if the company is a family business or not;
- X2 = independent variable, that is, if the company is formal or not;
- X3 = independent variable, that is, the business activity of the company;
- Ɛ = error.

We also analysed data through a qualitative method, in order to carry out the mapping of the costs incurred and the tools used as managerial control. In addition, this mapping will be specified according to the business activity, thus enabling a general and deep analysis per group in order to assist the owners in business management.

3.4 Findings

In order to present an overview and to analyse the production costs structure of small Brazilian enterprises, we divided this section into three steps. The first step presents our sample, along with descriptive statistics of the businesses' characteristics and some non-parametric tests, such as Fisher's exact test. The second step presents our findings regarding data regression and three-way ANOVA tests. Finally, in the last step we map the production costs incurred divided by business activity.

3.4.1 Descriptive statistics and non-parametric tests

Our sample was formed by 35 enterprises, of which 31 (86,1%) were family businesses and 24 are not formal companies (66,7%) (cf. Figure 25 – Sample and Figure 27 - Formal company according to business activity). In addition, most of the companies of the sample had industry and construction as their main business activity (cf. Figure 26 – Business activity of the sample and Figure 27 - Formal company according to business activity). We applied Fisher's Exact Test to analyse if being a formal business does not vary as a function of business being the main source of income (cf. Table 2 – Fisher's Exact Test for formal business and main income). The ρ-value shows that we can reject the null hypothesis, thus we conclude that there is a difference between the averages of being a formal business and the averages of the business being the main source of income for the family.

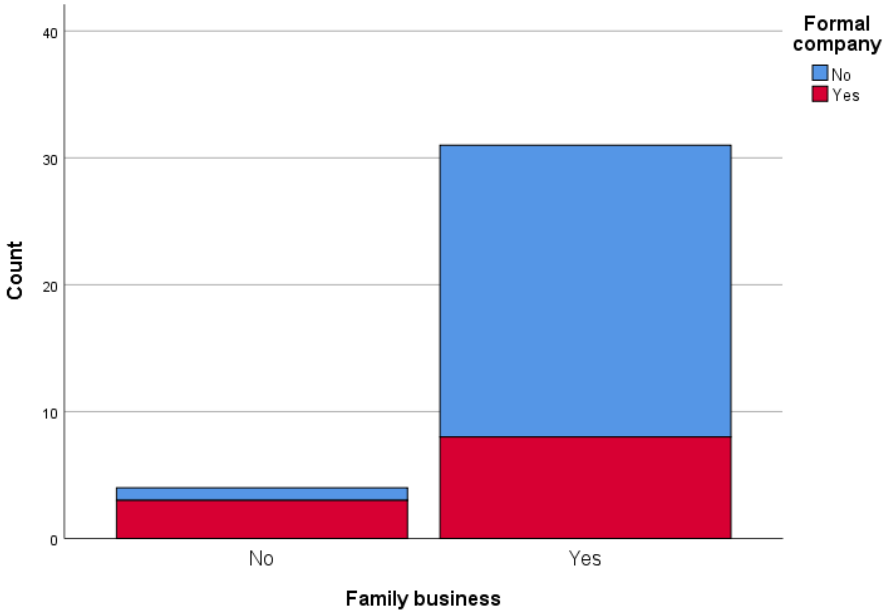

Figure 25 - Sample

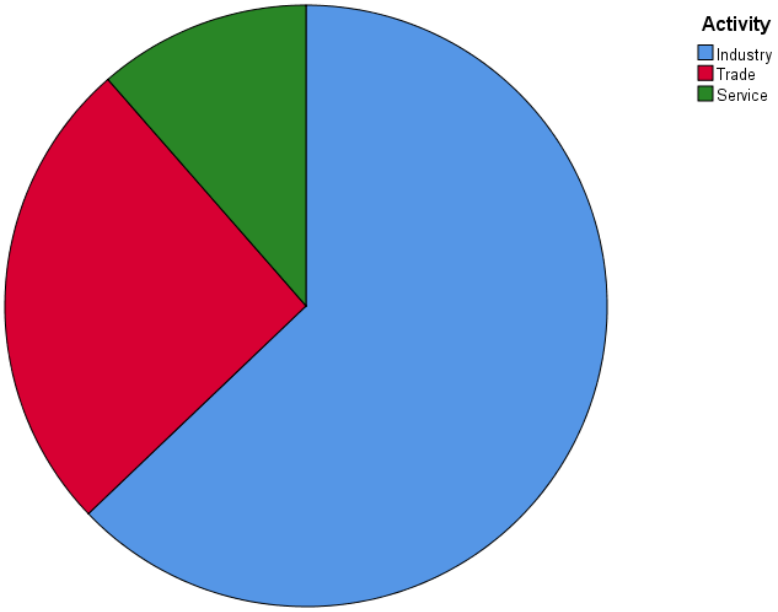

Figure 26 - Sample according to business activity

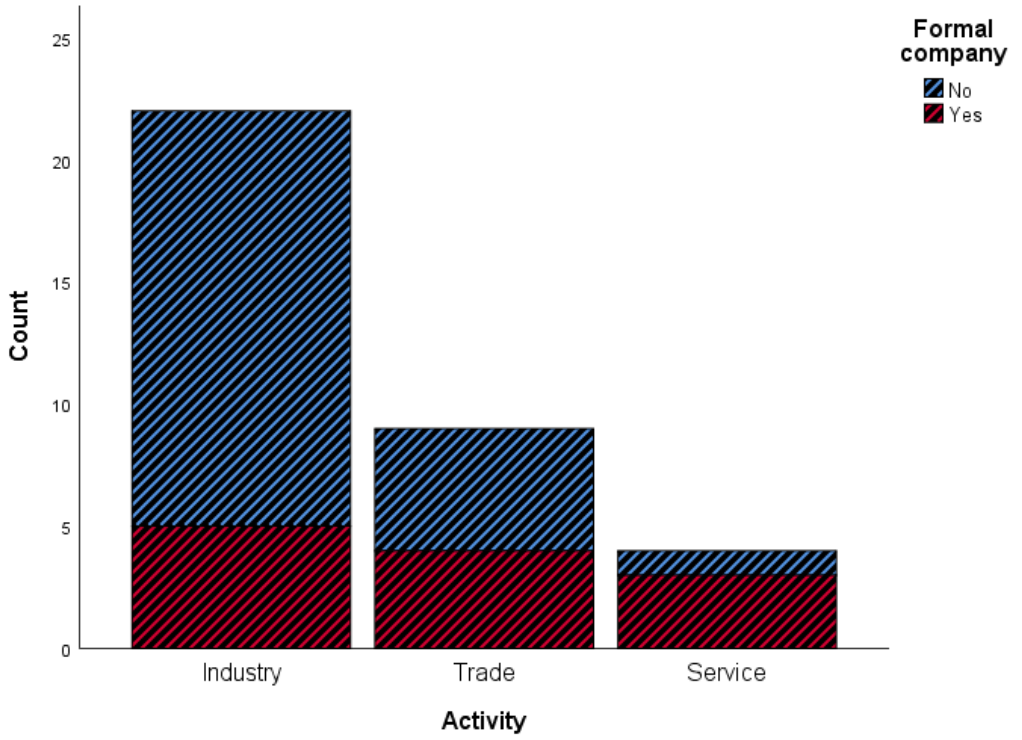

Figure 27 - Formal company according to business activity

Table 3 – Fisher's Exact Test for formal business and main income

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	13,577[a]	1	0,000		
Continuity Correction[b]	11,078	1	0,001		
Likelihood Ratio	15,205	1	0,000		
Fisher's Exact Test				0,000	0,000
Linear-by-Linear Association	13,189	1	0,000		
N of Valid Cases	35				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,83.

b. Computed only for a 2x2 table

Then, we present the descriptive statistics regarding the sample (cf. Table 3 – Descriptive statistics). The average age of the companies is almost 8 years, offering in average 4 different products with a monthly production of 1593 products. Some of the companies do not present raw materials – that occurs when the company is a service provider. In addition, since most of the companies are informal and a family business, they do not have costs with labour. When it comes to costs and expenses regarding electricity, depreciation, equipment maintenance, and

rent, most of the companies do not control these costs. In addition, we present a bar graph to visualise the total amount of the costs of the companies of the sample (cf. Figure 27 – Production costs).

Table 4 - Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Age	35	2	23	7,91	5,164	26,669
Total production	33	15	12038	1592,52	2177,455	4741310,758
Types of products	35	1	19	3,80	3,462	11,988
Raw materials	35	0	62150,00	6923,0246	15958,39489	254670367,594
Labour	35	0	79749,71	3310,3151	13443,12163	180717519,143
Electricity	35	0	2500,00	282,6129	508,88427	258963,203
Depreciation	35	0	23848,56	753,2523	4020,87328	16167421,910
Equipment maintenance	35	0	2500,00	81,4286	422,89022	178836,134
Rent	35	0	3200,00	150,0000	572,78987	328088,235
Contribution Margin	35	75,00	311725,29	17063,9289	54450,88571	2964898954,295
Profit	35	50,00	287876,73	15777,4669	50627,30733	2563124247,090
Valid N (listwise)	33					

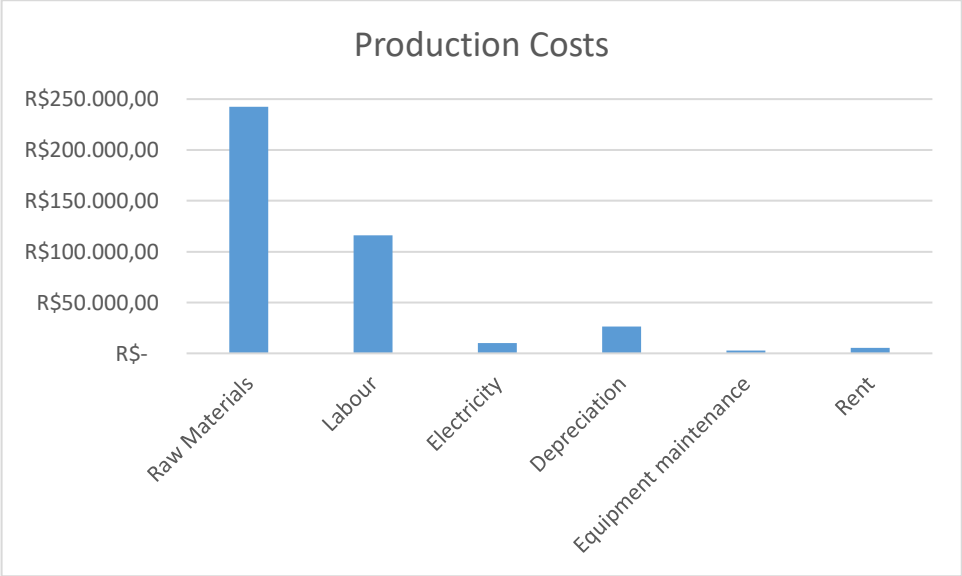

Figure 28 - Production costs

3.4.2 Three-way ANOVA and data regression

Next, we applied the Kolmogorov-Smirnov Test to see if the costs variables (raw materials, labour, and electricity) can reasonably be thought to have come from a population having the theoretical distribution (cf. Table 4 – Kolmogorov-Smirnov Test). The ρ-value shows that we cannot reject H_0, the null hypothesis, that is that the observed data are from a population having the theoretical distribution. Therefore, we can consider that the variables come from a population having the theoretical distribution.

Table 5 - Kolmogorov-Smirnov Test

		Family business	Formal company	Activity	Age	Raw materials	Labour	Electricity	Profit
N		35	35	35	35	35	35	35	35
Normal Parameters[a,b]	Mean	0,89	0,31	0,49	7,91	6923,025	3310,3151	282,6129	15777,467
	Std. Deviation	0,323	0,471	0,702	5,164	15958,395	13443,122	508,88427	50627,307
Most Extreme Differences	Absolute	0,524	0,433	0,384	0,199	0,409	0,453	0,289	0,383
	Positive	0,362	0,433	0,384	0,199	0,409	0,453	0,266	0,383
	Negative	-0,524	-0,252	-0,244	-0,142	-0,332	-0,403	-0,289	-0,378
Test Statistic		0,524	0,433	0,384	0,199	0,409	0,453	0,289	0,383
Asymp. Sig. (2-tailed)		0,000[c]	0,000[c]	0,000[c]	0,001[c]	0,000[c]	0,000[c]	0,000[c]	0,000[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

In approximation, we can consider our sample to be normally distributed. We applied a linear regression to estimate the coefficients of the linear equation, involving family business, formality and business activity, that best predict the value of the costs. First, we applied Levene's test for homogeneity of variances. The resulting ρ-value of Levene's tests was less than the significance level ($\alpha = 0.05$), thus the null hypothesis of equal variances is rejected and it is concluded that there is a difference between the variances in the population. We corrected this problem by applying *log10* to the cost variables.

Costs regarding equipment maintenance and rent, the linear regression displayed a non-significant ρ-value for family business, formality of the company and business activity. Thus, we understand that these variables do not influence maintenance and rent costs. In our sample, differently than the other variables, formality showed a significant ρ-value for all the other costs incurred, specifically raw materials, labour, electricity and depreciation (cf. Table 5 – Linear regression result for raw materials, Figure 28 – Linear regression for raw materials, Table 6 – Linear regression result for labour, Figure 29 – Linear regression for labour, Table 7 – Linear

regression result for electricity, Figure 30 – Linear regression for electricity, Table 8 – Linear regression result for depreciation, and Figure 31 – Linear regression for depreciation). We also tested if the time of existence of the business has any effect on the production costs. However, none of the linear regression showed a significant ρ-value.

Table 6 - Linear regression result for raw materials

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,551[a]	0,304	0,232	0,84054	1,870

a. Predictors: (Constant), Activity, Family business, Formal company

b. Dependent Variable: Log10Raw_mat

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2,734	0,502		5,444	0,000		
	Family business	-0,105	0,507	-0,036	-0,207	0,838	0,782	1,279
	Formal company	1,033	0,392	0,487	2,636	0,013	0,702	1,423
	Activity	0,171	0,247	0,118	0,694	0,493	0,827	1,210

a. Dependent Variable: Log10Raw_mat

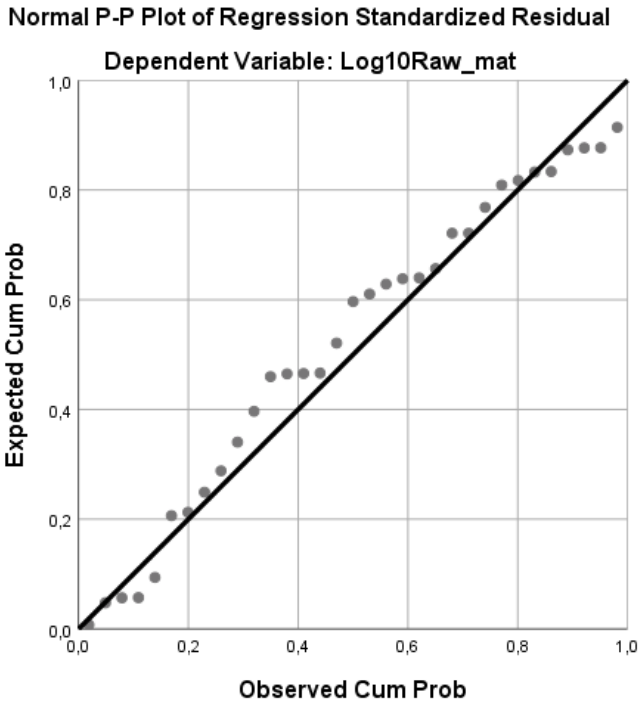

Figure 29 - Linear regression for raw materials

Table 7 - Linear regression result for labour

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,500[a]	0,250	0,157	0,68422	2,406

a. Predictors: (Constant), Activity, Family business, Formal company

b. Dependent Variable: Log10Labour

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2,464	0,404		6,095	0,000		
	Family business	0,112	0,410	0,054	0,274	0,786	0,812	1,231
	Formal company	0,747	0,311	0,499	2,398	0,025	0,723	1,384
	Activity	0,035	0,203	0,035	0,175	0,863	0,768	1,303

a. Dependent Variable: Log10Labour

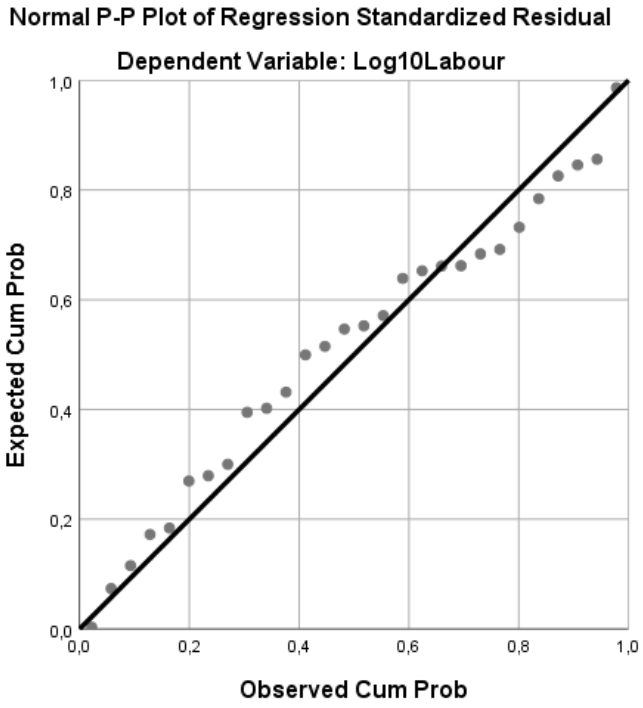

Figure 30 - Linear regression for labour

Table 8 - Linear regression result for electricity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,644[a]	0,414	0,344	0,44735	1,859

a. Predictors: (Constant), Activity, Family business, Formal company

b. Dependent Variable: Log10Electricity

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2,102	0,267		7,861	0,000		
	Family business	-0,199	0,268	-0,126	-,742	0,465	0,807	1,238
	Formal company	0,590	0,207	0,503	2,853	0,009	0,755	1,325
	Activity	0,186	0,144	0,212	1,292	0,208	0,872	1,146

a. Dependent Variable: Log10Electricity

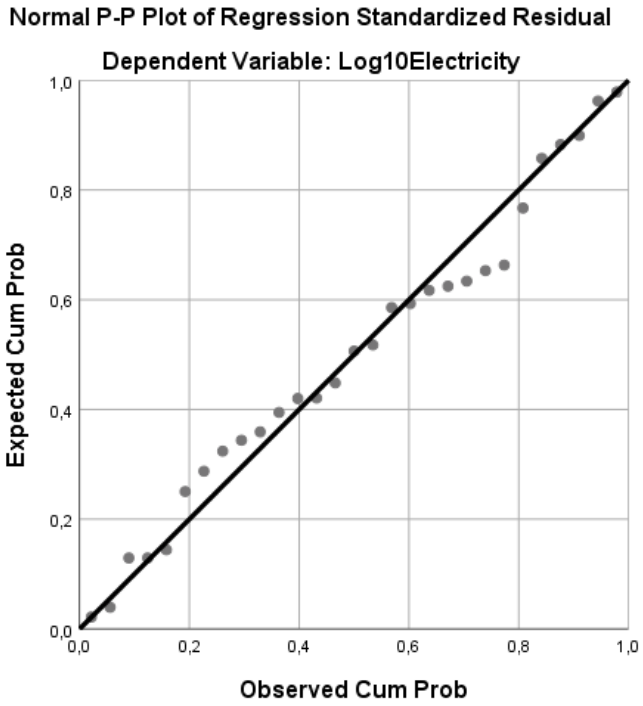

Figure 31 - Linear regression for electricity

Table 9 - Linear regression result for depreciation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,766[a]	0,587	0,531	0,59186	1,461

a. Predictors: (Constant), Activity, Family business, Formal company

b. Dependent Variable: Log10Depreciation

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF

1	(Constant)	0,927	0,395		2,350	0,028		
	Family business	0,268	0,407	0,101	0,657	0,518	0,796	1,256
	Formal company	1,298	0,296	0,679	4,385	0,000	0,782	1,279
	Activity	0,306	0,185	0,249	1,656	0,112	0,830	1,204

a. Dependent Variable: Log10Depreciation

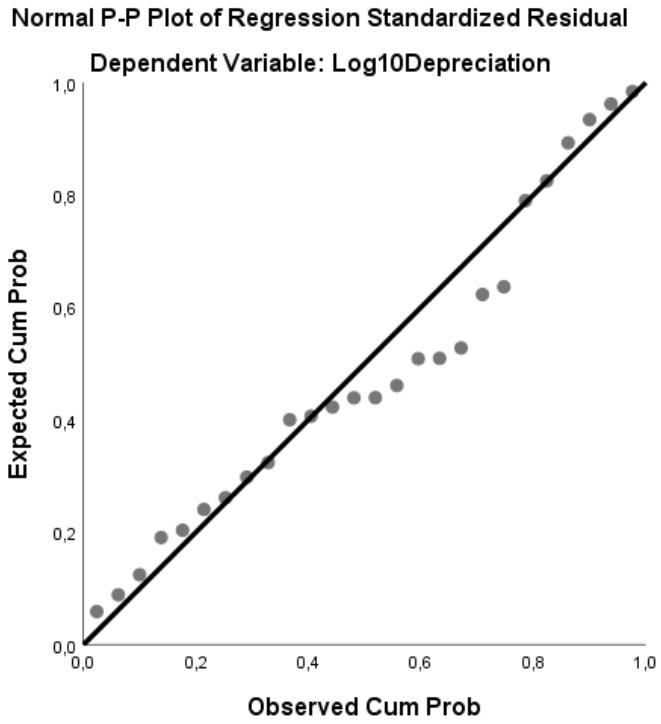

Figure 32 - Linear regression for depreciation

In addition, our next step was to analyse if there is an interaction between information regarding being a family business, formal company and its business activity and the costs incurred (raw materials, labour, electricity, amortization, equipment maintenance, and rent). For that, we performed a three-way ANOVA test for each cost, a total of six different tests. We corrected the non-homogeneity problem by applying *log10* to the cost variables.

The factors tested (family business, formality and business activity) did not show a significant ρ-value for production costs regarding equipment maintenance and rent. On the other hand, production costs regarding raw material showed that there is a statistically significant effect only from business activity, without a statistically significant three-way interaction effect. When it comes to costs regarding depreciation, only the formality of the company resulted in a significant ρ-value. Regarding electricity costs, being a family business,

formal or business activity alone showed no effect on these costs, as well as no statistically significant three-way interaction effect. However, the interaction between being a formal company and its business activity showed a statistically significant two-way interaction effect on electricity costs. Meanwhile, the information tested, as well as their interaction, have no effect at costs regarding labour, equipment maintenance or rent (cf. Table 9 – Three-way ANOVA Tests).

Table 10 - Three-way ANOVA Tests

Dependent Variable: Log10Raw_materials

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	16,979[a]	8	2,122	4,088	0,003
Intercept	121,278	1	121,278	233,577	0,000
Family_bus	0,012	1	0,012	0,022	0,882
Formal	1,120	1	1,120	2,158	0,155
Activity	3,616	2	1,808	3,482	0,047
Family_bus * Formal	0,366	1	0,366	0,704	0,410
Family_bus * Activity	0,177	1	0,177	0,341	0,565
Formal * Activity	2,763	2	1,382	2,661	0,090
Family_bus * Formal * Activity	0,000	0	.	.	.
Error	12,461	24	0,519		
Total	325,666	33			
Corrected Total	29,440	32			

a. R Squared = ,577 (Adjusted R Squared = 0,436)

Dependent Variable: Log10Electricity

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5,355[a]	8	0,669	4,199	0,004
Intercept	58,207	1	58,207	365,146	0,000
Family_bus	0,100	1	0,100	0,626	0,438
Formal	0,076	1	0,076	0,474	0,499
Activity	0,225	2	0,112	0,705	0,506
Family_bus * Formal	0,387	1	0,387	2,430	0,135
Family_bus * Activity	0,213	1	0,213	1,333	0,262
Formal * Activity	1,542	2	0,771	4,837	0,019
Family_bus * Formal * Activity	0,000	0	.	.	.
Error	3,188	20	0,159		
Total	147,722	29			

Corrected Total	8,543	28			

a. R Squared = ,627 (Adjusted R Squared = 0,478)

Dependent Variable: Log10Depreciation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	12,005[a]	7	1,715	4,636	0,004
Intercept	36,009	1	36,009	97,335	0,000
Family_bus	0,177	1	0,177	0,478	0,498
Formal	3,710	1	3,710	10,028	0,005
Activity	1,438	2	0,719	1,943	0,172
Family_bus * Formal	2,691E-8	1	2,691E-8	0,000	1,000
Family_bus * Activity	0,000	0	.	.	.
Formal * Activity	0,443	2	0,221	0,598	0,560
Family_bus * Formal * Activity	0,000	0	.	.	.
Error	6,659	18	0,370		
Total	88,812	26			
Corrected Total	18,664	25			

a. R Squared = ,643 (Adjusted R Squared = 0,504)

Through the results of the linear regression, we decided to do a ROC curve of the production costs, taking into consideration the formality of the company, since this was the only characteristic that showed relevant to the costs (cf. Figure 32 – ROC Curve). The ROC curve showed a significant ρ-value for costs regarding labour, electricity, and depreciation (cf. Table 10 – Area under the curve).

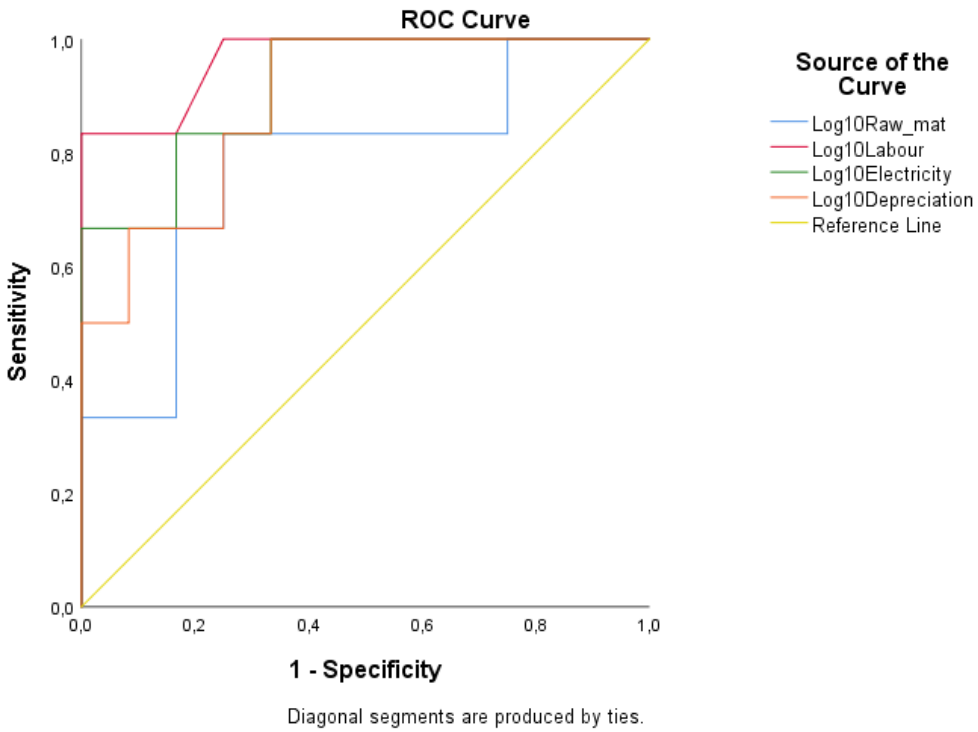

Figure 33 - ROC curve

Table 11 - Area under the curve

Test Result Variable(s)	Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
				Lower Bound	Upper Bound
Log10Raw_mat	0,778	0,125	0,061	0,534	1,000
Log10Labour	0,965	0,041	0,002	0,885	1,000
Log10Electricity	0,917	0,068	0,005	0,783	1,000
Log10Depreciation	0,889	0,078	0,009	0,736	1,000

The test result variable(s): Log10Labour has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

Since formality resulted in a significant ρ-value for most of the production costs, we decided to investigate if time of existence of the company has any influence in the owner's decision to formalise the company. We decided to do this test due to some owners commenting that the next step would be to formalise their company, if the business continued to prosper. We used the logistic regression model to test if being a formal company depends on its time of existence. However, the logit ρ-value for age resulted as non-significant. Thus, we can

understand that the time of existence of the company does not influence in a company being formal or not.

3.4.3 Mapping of the production costs according to business activity

After the statistical analysis, we mapped the production costs incurred according to the business activity of the companies (cf. Figure 34 – Production costs for industry and construction, Figure 35 – Production costs for trade, and Figure 36 – Production costs for service provider). We can notice that costs regarding equipment maintenance were only incurred in companies from the industry and construction activity (Figure 34 – Production costs for industry and construction). On the other hand, costs regarding rent were not found in service provider companies.

	DIRECT COSTS	INDIRECT COSTS
FIXED COSTS	Electricity; Equipment maintenance	Depreciation; Rent
VARIABLE COSTS	Raw materials; Labour	

Figure 34 - Production costs for industry and construction

	DIRECT COSTS	INDIRECT COSTS
FIXED COSTS	Electricity	Depreciation; Rent
VARIABLE COSTS	Raw materials; Labour	

Figure 35 - Production costs for trade

	DIRECT COSTS	INDIRECT COSTS
FIXED COSTS	Electricity	Depreciation
VARIABLE COSTS	Raw materials; Labour	

Figure 36 - Production costs for service provider

After mapping the production costs according to the business activity of the company, we created a new nominal variable with a dichotomous classification for the costs incurred (0 when the cost is not incurred and 1 when it is). Our next step was then to apply a non-parametric test to analyse if the mean ranks of the business activity groups are the same. We can see that none of the production costs incurred have a statistically significant ρ-value. Thus, we can accept the null hypothesis that the mean ranks of the business activity groups are the same (cf. Table 11 – Kruskal-Wallis test).

Table 12 - Kruskal-Wallis test

	Raw materials nominal	Labour nominal	Electricity nominal	Depreciation nominal	Equipment maintenance nominal	Rent nominal
Kruskal-Wallis H	4,450	2,110	3,362	2,241	1,884	5,646
df	2	2	2	2	2	2
Asymp. Sig.	0,108	0,348	0,186	0,326	0,390	0,059

a. Kruskal Wallis Test

b. Grouping Variable: Activity

3.5 Discussion

It is known that small enterprises close their business for certain reasons, one of them being poor quality management. Therefore, this research has a strong theoretical and practical basis for its development and we expect that the results will provide support to clarify about the small businesses of Pernambuco with a possible improvement to management. The main objective of the study is to identify and map the costs of the enterprises analysed and the accounting information used by them in their management control. We intend, therefore, that the disclosure of this information will help the users in the management and with decision-making, as well as providing knowledge about the situation of their companies. This knowledge

will prevent business mortality and, consequently, increase the survival rate of small businesses in Pernambuco, reduce the unemployment rate and increase the economy and productivity of the state.

Therefore, we aimed to present an overview and to analyse the production costs structure of small Brazilian enterprises. We applied non-parametric statistics tests and data regression in order to analyse the information gathered through the questionnaire (cf. Appendix B). Afterwards, we were able to map the costs according to business activity (industry and construction, trade, and service provider).

Our sample is formed by 35 small enterprises. Almost all the companies of our sample are family business (86,1%) and the majority is informal companies (66,7%) (cf. Figure 2 – Sample). In addition, most of the companies of the sample have industry and construction as their main business activity (cf. Figure 3 – Business activity of the sample). According to Figure 4 - Formal company according to business activity, we can notice that most of the companies in the industry and construction activity are formed by informal companies. This situation can be explained due to the fact that informal small and medium companies are predominant in developing countries (Kushnir et al., 2010).

Since most of our companies are family business and informal companies, we thought appropriate to analyse if being a formal business does not vary as a function of the business being the main source of income for the family. For this analysis we used non-parametric statistics, specifically Fisher's Exact test (cf. Table 2 – Fisher's Exact Test for formal business and main income). The ρ-value of this test shows that we can reject the null hypothesis, thus we conclude that there is a difference between the averages of being a formal business and the averages of the business being the main source of income for the family. We can see that most of the informal companies of our sample are not the main source of income of the family, whereas most of the formal companies are considered as the main source of income (Figure 34 - Formal companies vs Main source of income).

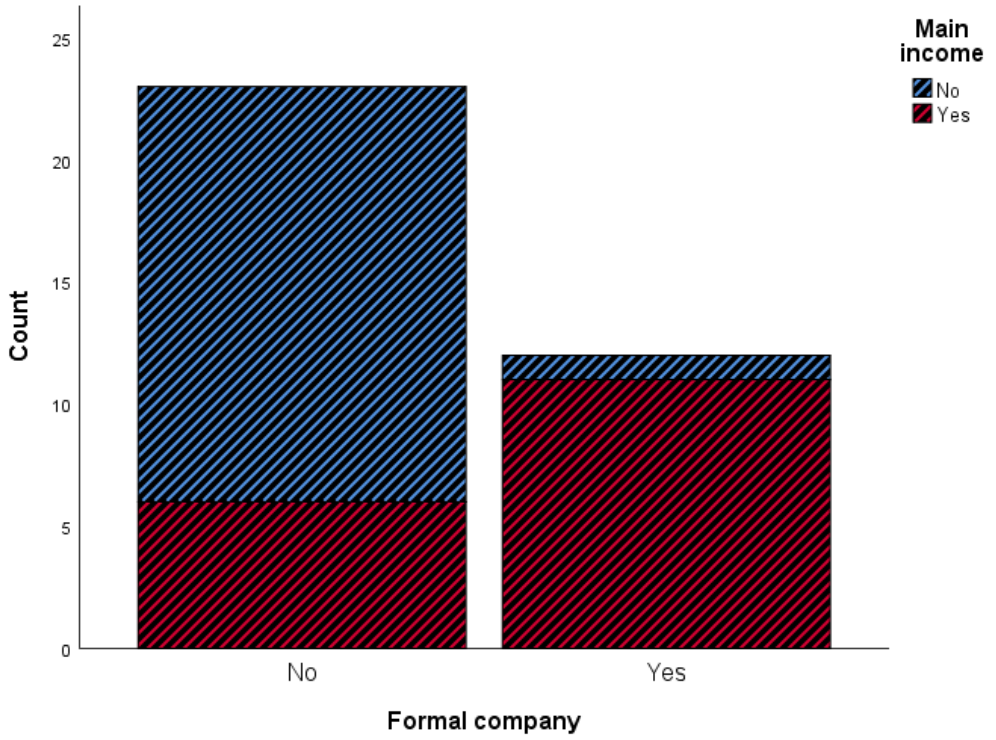

Figure 37 - Formal companies vs Main source of income

In Table 3 – Descriptive statistics, we can notice that the average time of existence of the companies is of almost 8 years, offering in average 4 different products with an average monthly production of 1593 products. Some of the companies in our sample do not present raw materials – that occurs when the company is a service provider, in most of the cases. In addition, since most of the companies are a family business, they do not have costs with labour, which constitutes as a strategy to reduce costs. Costs regarding rent are also not that common in our sample. This can be explained due to the fact that most of the companies in our sample are formed by informal companies, thus their production is mainly done at the owner's house, without the need to have a proper place. When it comes to costs production regarding electricity, depreciation, and equipment maintenance, most of the companies do not control these costs. In addition, we present a bar graph to visualise the total amount of the production costs of the companies of the sample (cf. Figure 27 – Production costs).

After presenting the descriptive statistics of our sample, we decided to do a simple linear regression in order to analyse if the fact of being a family business, a formal company and its business activity have any influence on the production costs (raw materials, labour, electricity, depreciation, equipment maintenance, and rent) of the company. According to the results of linear regression, the independent variables family business and business activity showed a non-significant ρ-value for all production costs tested. It was expected, however, that family

business would be statistically significant and having a negative relation to labour costs. This result goes against the general understanding that being a family business is a strategy to reduce labour costs, since it means that the family members will work harder and have a greater interest in the business to prosper. Meanwhile, costs regarding equipment maintenance and rent did not show a significant ρ-value for any of the independent variables tested.

In addition, formality of the company resulted in a significant ρ-value for production costs regarding raw materials, labour, electricity, and depreciation (cf. Table 5 – Linear regression result for raw materials, Figure 28 – Linear regression for raw materials, Table 6 – Linear regression result for labour, Figure 29 – Linear regression for labour, Table 7 – Linear regression result for electricity, Figure 30 – Linear regression for electricity, Table 8 – Linear regression result for depreciation, and Figure 31 – Linear regression for depreciation). Regarding formality of the company, we can reject the null hypothesis ($\beta_1 = 0$), due to a significant ρ-value. Therefore, being a formal company is important to explain the variations on the production costs. Formality of the company showed a positive correlation with the production costs regarding raw materials, labour, electricity, and depreciation, which means that the formality of the company increases these production costs. This can be explained due to the fact that, when the company is formal, they have to start tending to legal purposes and increasing types of control, as informal as they might be.

Data were obtained through semi-structured interviews based on key questions and some topics to be addressed depending on the organisational context and the flow of the conversation. We chose this method because it allows for the deepening of the reality experienced within the target companies of the research through open questions. In this case, some of the informal companies' owners commented that their next step would be to formalise their company, if the business continued to prosper. Due to the results of the simple linear regression, that is, formality of the company having a positive impact on the production costs, we decided to investigate if time of existence of the company has any influence in the owner's decision to formalise the company. For this analysis, we used the logistic regression model. However, the logit ρ-value for age resulted as non-significant. Thus, we can understand that the time of existence of the company does not influence in a company being formal. Kushnir et al. (2010) explain that formality of small and medium enterprises is associated to measures of barriers to company entry and exit, such as the minimum capital requirement and the recovery rate in case of bankruptcy.

The factors tested (family business, formality and business activity) did not show a significant ρ-value for production costs regarding equipment maintenance and rent. On the

other hand, production costs regarding raw material showed that there is a statistically significant effect only from business activity, without a statistically significant three-way interaction effect. When it comes to costs regarding depreciation, only the formality of the company resulted in a significant ρ-value. Regarding electricity costs, being a family business, formal or business activity alone showed no effect on these costs, as well as no statistically significant three-way interaction effect. However, the interaction between being a formal company and its business activity showed a statistically significant two-way interaction effect on electricity costs. Meanwhile, the information tested, as well as their interaction, have no effect at costs regarding labour, equipment maintenance or rent (cf. Table 9 – Three-way ANOVA Tests).

Regarding *H1: There is a difference in the means of factor family business*, we can reject this hypothesis – thus, we accept the null hypothesis that all the family business groups have equal mean score for the production costs. However, regarding *H2: There is a difference in the means of factor formal business*, we can accept this hypothesis regarding depreciation costs. This means that there is a statistically significant difference in mean depreciation costs between formal and informal companies. Formal companies have higher depreciation costs. Regarding *H3: There is a difference in the means of factor business activity*, we can reject the null hypothesis and accept the alternative hypothesis when it comes to raw materials costs. This means that there is a statistically significant difference in mean raw materials costs between business activity groups (industry and construction, trade, and service provider). The costs for raw materials are highest in industry and construction.

When we analysed two factors interaction, we can reject the alternate hypothesis *H4: There is an interaction between the factors family business and formal business* and *H5: There is an interaction between the factors family business and business activity*. This means that there is no statistically significant interaction of these factors in mean production costs. However, we can accept *H6: There is an interaction between formal business and business activity*, when it comes to production costs regarding labour and electricity. This means that there is a statistically significant interaction of formality of the company and its business activity in mean labour and electricity costs.

Even though we can confirm an interaction between the factors formality of the company and business activity, we can reject *H7: There is an interaction between the factors family business, formality, and business activity* and accept the null hypothesis. This means that there is no interaction between these three factors on production costs.

Based on the results found in data regression, we did a ROC curve of the production costs that resulted in a statistically significant ρ-value for formality of the company. Therefore, we constructed a ROC curve of production costs regarding raw materials, labour, electricity, and depreciation (cf. Figure 33 – ROC Curve). By analysing the area under the curve. we can notice that production costs regarding labour and electricity show an excellent accuracy, while production costs regarding depreciation has a good accuracy. Production costs regarding raw materials is the only cost that can be considered with a fair accuracy (cf. Table 10 – Area under the curve). Thus, we can notice that formality performed more accurately in labour and electricity costs compared to depreciation and raw materials costs.

Our next step was to map the production costs incurred according to business activity of the companies. Regarding equipment maintenance, we noticed that this cost was only found in companies from the industry and construction activity (cf. Figure 34 – Production costs for industry and construction). Meanwhile, we did not find rent costs among service provider companies of our sample (Figure 36 – Production costs for service provider). This can be explained due to the fact that all the companies in our sample that operate as service providers are family business. Thus, we can understand that these companies do not have rent costs, since they operate from the owner's home.

Based on the interviews and access to the companies' production chain, we noticed that the companies of our sample do not calculate depreciation costs, as well as the owners do not consider these costs for the pricing strategy. Mostly, they base their prices according to market offer. In addition, since most of the companies are informal and are operated from the owner's home, we also noticed that they do not control electricity costs. However, when the owner does control electricity costs, they consider it as a direct and fixed cost. In reality, we know that this is not accurate and it is possibly not like that. This situation can be explained precisely due to a lack of control.

After mapping the production costs according to the business activity of the company, we applied a non-parametric test, specifically Kruskal-Wallis test, to analyse if the mean ranks of the business activity groups are the same. We can see that none of the production costs incurred have a statistically significant ρ-value. Thus, we can accept the null hypothesis that the mean ranks of the business activity groups are the same (cf. Table 11 – Kruskal-Wallis test). This means that there is no difference on the production costs incurred among companies of the industry and construction, trade, and service provider business activity.

3.6 Conclusion

This research aimed to present an overview and to analyse the production costs structure of small Brazilian enterprises. We understand that small enterprises are the backbone of global economy and are very diverse, but these enterprises are still largely affected by bankruptcy (Gupta et al., 2015; Carter & van Auken, 2006; Headd, 2003). Usually in emerging economies, such as Brazil, informal small and medium enterprises often outnumber formal small and medium enterprises (Kushnir et al., 2010). In Brazil, the total number of private sector employees without a signed work permit (informal jobs) reached 11.7 million people, in July 2019 (IBGE, 2019a, 2019b). In addition, another factor related to informality is self-employment. In July 2019, people who are self-employed reached the number of 24.2 million (IBGE, 2019a, 2019b).

We can understand internal control as a series of actions integrated with business activities and conducted throughout the organisational units and functions (Pfister, 2009). One of the steps in maintaining internal control is planning, which was not present in some small and medium enterprises or it was unstructured, irregular, and uncomprehensive. That happens due to managers not having enough time to plan, not having sufficient knowledge of many planning information sources and how they should be used, lack certain specialized expertise, lack trust and are hesitant to share their strategic planning with employees or outside consultants (Robinson & Pearce, 1984).

Bragg (2012) explains that cost accounting systems have generally three functional areas: the collection of raw data, the processing of this data in accordance with a costing methodology, and the reporting of the resulting information to management in the most useful format. Cost calculations have been used for centuries as the basis for planning, decision making and control (Boyns & Edwards, 2007).

Our sample consisted of 35 small enterprises, being the majority informal family business from the industry and construction business activity. We gathered the necessary information through personally conducted interviews involving working small entrepreneurs established in municipalities in the state of Pernambuco. We presented descriptive statistics of the information gathered. In addition to that, we applied a linear regression to analyse if the production costs can be explained by the information gathered (family business, formality, and business activity). We also applied a three-way ANOVA to investigate if there is an interaction between being family business, a formal company, and business activity for how much production costs are incurred in small enterprises. Finally, we mapped the production costs incurred within

business activity groups and applied Kruskal-Wallis test to analyse if the mean ranks of the groups are the same.

From our findings, we notice that most of the informal companies of our sample are not the main source of income of the family, whereas most of the formal companies are considered as the main source of income.

Regarding the companies' characteristics and the production costs, we notice that family business showed a non-significant ρ-value for labour costs. It was expected, however, that this characteristic would be statistically significant with a negative relation to labour costs. This result goes against the knowledge that being a family business is a strategy to reduce labour costs, since it means that the family members will work harder and have a greater interest in the business to prosper. In addition, formality of the company resulted in a significant ρ-value for production costs regarding raw materials, labour, electricity, and depreciation, with a positive correlation – meaning that being a formal company increases these production costs. This can be explained due to the fact that, when the company is formal, they have to tend to legal purposes and increase types of control, as informal as they might be.

Our findings from the three-way ANOVA show a statistically significant effect from business activity in raw materials costs. Meanwhile, being a formal company has a statistically significant effect on depreciation costs. Finally, the interaction between being a formal company and its business activity showed a statistically significant two-way interaction effect on electricity costs.

Equipment maintenance costs were only found in companies from the industry and construction activity. Meanwhile, we did not find rent costs among service provider companies of our sample. This can be explained due to the fact that all the companies in our sample that operate as service providers are family business. Thus, we can understand that these companies do not have rent costs, since they operate from the owner's home.

Based on the interviews and access to the companies' production chain, we noticed that the companies of our sample do not calculate depreciation costs, as well as the owners do not consider these costs for the pricing strategy. Mostly, they base their prices according to market offer. In addition, since most of the companies are informal and are operated from the owner's home, we also noticed that they do not control electricity costs. However, when the owner does control electricity costs, they consider it as a direct and fixed cost. In reality, we know that this is not accurate and it is possibly not like that. This situation can be explained precisely due to a lack of control.

One of the limitations of this study is the sample size and the fact that the participants were selected by convenience. Thus, it is not possible to generalise the results. Therefore, the conclusions are only valid for the sample. Another limitation is related to the difficulty of access to certain information. However, with this in mind, this study still gives novel insight into business operations of small formal and informal companies in the state of Pernambuco. In addition, the number of enterprises surveyed allow us to use this data as indicative of the production costs behaviour in small formal and informal companies, as well as the factors that influence these costs.

The limitations of this study offer direction for future research. The expansion of the sample and the generalisability of results already provide a deeper understanding of the production costs behaviour in small formal and informal Brazilian enterprises. Expanding the analysis to medium enterprises as well and comparing with large companies could provide greater insight as to production costs behaviour. In addition, adding other variables to the analysis, such as previous business management experience or accounting knowledge, could be tested as a factor influencing production costs behaviour.

4 CONCLUSION

This research aimed to uncover the main managerial accounting needs of small and medium enterprises' entrepreneurs, in order to contribute to the reduction of the mortality rate of their companies.

In Brazil, small and medium enterprises were estimated at approximately 12.4 million existing companies in September 2017 and also responsible for a 27% share in the national GDP of 2011. We can see the relevance of these enterprises for the generation of employment, being responsible for more than 17 million employments with a formal contract and for 54% participation in generating formal jobs in the country during the year of 2015 (SEBRAE, 2017). Despite these data, SEBRAE (2017) estimated a national mortality rate of approximately 23% for companies with two years of operation, for those established in 2012. The Northeast region is in second place in the concentration of micro and small companies, holding 18% of these enterprises in September 2017 (SEBRAE, 2017). Only in Pernambuco, the mortality rate for these companies is approximately 24% after two years of operation, for those established in 2012 (SEBRAE, 2016).

Informal small and medium enterprises often outnumber formal small and medium enterprises in emerging economies (Kushnir et al., 2010). In Brazil, 41.4% of the employed population is in informality, the highest proportion since 2016 (IBGE, 2019a). Another factor related to informality are the self-employed, who reached the number of 24.2 million people in July 2019 (IBGE, 2019a, 2019b).

Family-owned companies are usually founded by the patriarch, with the objective of meeting the financial needs. In Brazil, family-owned companies represent over 90% of Brazilian business. Its main characteristic is ownership and management in the hands of two or more members of the same family, at the same time as they participate in the company's operational activities (SEBRAE, 2019a, 2019b).

We can understand internal control as a series of actions integrated with business activities and conducted throughout the organisational units and functions (Pfister, 2009). One of the steps in maintaining internal control is planning, which was not present in some small and medium enterprises or it was unstructured, irregular, and uncomprehensive. That happens due to managers not having enough time to plan, not having sufficient knowledge of many planning information sources and how they should be used, lack certain specialized expertise, lack trust and are hesitant to share their strategic planning with employees or outside consultants (Robinson & Pearce, 1984).

Management Control Systems are beneficial when it comes to environment uncertainty and the amount of management accounting information used for decision-making is going to depend on the manager's uncertainty perception and is going to assist the managers on defining their tasks (Otley, 2016; Chong, 1996). We argue that management control systems do not necessarily need to be formalized. As informal as it may be, management control systems are highly important to companies, independent of its size-class or business activity. Furthermore, this research provides insight into accounting information used by small companies for controlling purposes.

Bragg (2012) explains that usually cost accounting systems have the collection of raw data, the processing of this data in accordance with a costing methodology, and the reporting of the resulting information to management in the most useful format as functional areas. In addition, cost calculations have been used for centuries as the basis for planning, decision making and control (Boyns & Edwards, 2007). This is explained due to, in order to make informed decisions, managers rely on cost management and they need to have access to different supportive and useful financial information from cost accounting systems (Kulmala et al., 2002).

This research aimed to uncover the main managerial accounting needs of small and medium enterprises' entrepreneurs, in order to contribute to the reduction of the mortality rate of their companies. In order to achieve this objective, we elaborated two distinct and connected papers.

In the first paper, we aimed to investigate the perception of small business owners on the usefulness of managerial and financial accounting information provided by accountants. We elaborated a questionnaire based on existing literature, which consisted of three sections and 16 objective questions. The first section asked about the characteristics of the enterprises in a more general fashion; the second, gathered more sophisticate information on financial control; the third section gathered data on managerial control (Miranda et al., 2008; Caneca, 2008; Umbelino, 2008; Leite, 2004; Collis & Jarvis, 2002). Data collection occurred in three semesters, starting in the first semester of the year 2018 and ending in the first semester of 2019. The final sample is formed by 130 micro and small enterprises established in the metropolitan region of Recife. To analyse the answers, we applied Pearson Chi-Squared test, Fisher's exact test, Kruskal-Wallis test and Mann-Whitney U test.

Our findings are similar to other several researches (Moreira et al., 2013; Samujh, 2011; Silva et al., 2010; Bernardes & Miranda, 2010; Sian & Roberts, 2009; Miranda et al., 2008; Caneca, 2008; Umbelino, 2008; Nunes & Serrasqueiro, 2004; Lyra, 2003; Collis & Jarvis,

2002). When analysing the results, it is possible to see that the owner himself, with the use of a computer, mostly does the control. The non-parametric tests showed a significant difference among the answers between size-class and business activity. Thus, the way to control is differently perceived by the owner depending on the enterprise's business activity or its size-class. In business activity and size-class, the main difficulty in maintaining and doing the control is due to the owner not having enough time to do so, although the non-parametric statistics did not show a significant p-value, meaning that within business activity and size-class the frequencies and averages of answers are the same. A well-established management control system is known to provide a better operational performance and business sustainability. Therefore, this study provides knowledge on which information are mostly used by micro and small firms for controlling purposes and the role of the accountant in providing such information. When we analysed the processing of managerial and financial accounting information, we notice that the accountant is still perceived as a service provider for tax and legal purposes. We also noticed that the owners and managers know the relevance of managerial and financial information for enhancing business performance, since they process most of this information by themselves and are willing to pay more for accountants in exchange of such information.

As for the second paper, we aimed to present an overview and to analyse the production costs structure of small Brazilian enterprises. We gathered the necessary information through personally conducted interviews involving working small entrepreneurs established in municipalities in the state of Pernambuco. Our sample consisted of 35 small enterprises, being the majority informal family business from the industry and construction business activity. We presented descriptive statistics of the information gathered and applied non-parametric statistics. In addition to that, we analysed if the production costs can be explained by the information gathered (family business, formality, and business activity) through a simple linear regression. We also applied a three-way ANOVA to investigate if there is an interaction between being a family business, a formal company, and its business activity in the production costs incurred in small enterprises. Finally, we mapped the production costs incurred within business activity groups and applied Kruskal-Wallis test to analyse if the mean ranks of the groups are the same.

From our findings, we notice that most of the informal companies of our sample are not the main source of income of the family, whereas most of the formal companies are considered as the main source of income. Regarding the companies' characteristics and the production costs, we notice that family business showed a non-significant ρ-value for labour costs. It was

expected, however, that this characteristic would be statistically significant with a negative relation to labour costs. This result goes against the knowledge that being a family business is a strategy to reduce labour costs, since it means that the family members will work harder and have a greater interest in the business to prosper. In addition, formality of the company resulted in a significant ρ-value for production costs regarding raw materials, labour, electricity, and depreciation, with a positive correlation – meaning that being a formal company increases these production costs. This can be explained due to the fact that, when the company is formal, they have to tend to legal purposes and increase types of control, as informal as they might be. Our findings from the three-way ANOVA show a statistically significant effect from business activity in raw materials costs. Meanwhile, being a formal company has a statistically significant effect on depreciation costs. Finally, the interaction between being a formal company and its business activity showed a statistically significant two-way interaction effect on electricity costs. Equipment maintenance costs were only found in companies from the industry and construction activity. Meanwhile, we did not find rent costs among service provider companies of our sample. This can be explained due to the fact that all the companies in our sample that operate as service providers are family business. Thus, we can understand that these companies do not have rent costs, since they operate from the owner's home.

Based on the interviews and access to the companies' production chain, we noticed that the companies of our sample do not calculate depreciation costs, as well as the owners do not consider these costs for the pricing strategy. Mostly, they base their prices according to market offer. In addition, since most of the companies are informal and are operated from the owner's home, we also noticed that they do not control electricity costs. However, when the owner does control electricity costs, they consider it as a direct and fixed cost. In reality, we know that this is not accurate and it is possibly not like that. This situation can be explained precisely due to a lack of control.

One of the limitations of this study is the sample size and the fact that the participants were selected by convenience. Thus, it is not possible to generalise the results. In this manner, the conclusions are only valid for the samples. The expansion of the sample and the generalisability of results already provide a deeper understanding of control mechanisms and costs structure in small enterprises. Another limitation is related to the difficulty of access to certain information, since some owners were not willing to participate in the surveys. However, with this in mind, this study still gives novel insight into business operations of small enterprises in the state of Pernambuco. In addition, a longitudinal study would bring a deeper knowledge of the business evolution. This means to do a follow-up study with the companies participating

in the research, in order to investigate the evolution of their control mechanisms and of their production costs incurred.

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APPENDIX A – QUESTIONNAIRE 1

Business activity: ( ) Industry ( ) Commerce ( ) Service

1. How long have you been an entrepreneur? _____
2. How long has this company been working? _____
3. Is this company a sole proprietorship or does it have subsidiaries?
   ( ) Sole proprietorship ( ) Does it have subsidiaries (How many? _____)
4. What is the enterprise's size? ( ) Micro ( ) Small ( ) Medium
5. Besides the owner, how many employees work in the enterprise? _____
6. How do you evaluate your company regarding the competition?
   ( ) Considerably behind other companies
   ( ) A little behind other companies
   ( ) In average
   ( ) A little beyond other companies
   ( ) Considerably beyond other companies
7. How do you know if business are going well?
   ( ) By the amount of sales
   ( ) By the cash flow
   ( ) By the profit
   ( ) Based in information given by the accountant
   ( ) Another method
8. How do you calculate the monthly withdrawal?
   ( ) Through the generated cash
   ( ) Through the profit
   ( ) I do not have a specific method
   ( ) Based in information given by the accountant

( ) Another method

9. How do you control the company's finances?
   ( ) By myself, in a notebook
   ( ) By myself, with a computer
   ( ) With the help of an accountant
   ( ) With the help of a professional hired for this purpose
   ( ) Another method

10. What are the main difficulties to control the company's finances?
   ( ) Does not have difficulties
   ( ) Does not have enough time
   ( ) Intuitive control, but very informally
   ( ) Other difficulties

11. Whom would you hire to produce information that would help in operational control and performance evaluation of the company?
   ( ) Engineer ( ) Economist ( ) Accountant ( ) Lawyer
   ( ) Other professional: _____

12. Do you think that lack of financial control is an obstruction to the growth of your company?
   ( ) Yes ( ) No

13. Do you have an accountant?
   ( ) Yes ( ) No

14. If the government simplified the legislation for the taxes, payroll and social charges, in a way that you would be able to calculate and pay it yourself, would you maintain your accountant?
   ( ) Yes ( ) No

15. How are processed the following information?

INFORMATIONS	Processed with the help of the accountant	Processed without the help of the accountant	Does not process
Control of balance and bank statements			
Cash generated by the business			
Profit generated by the business			
Information to decide on bank loans			
Information to decide on new investments			
Control of loan payments			
Employees payroll			
Taxes and social charges			
Inventory control			
Sales price formation			
Product sales report			
Most profitable products report			
Control of accounts receivables			
Control of accounts payables			
Depreciation/Amortization			
Performance index			

16. If the accountant elaborated reports that would allow a better management, would you be willing to pay more for their services?

( ) No ( ) Yes, up to 20% more ( ) Yes, up to 40% more

( ) Yes, up to 60% more ( ) Yes, over 60% more

APPENDIX B – QUESTIONNAIRE 2

1. Firm information

- Name of the firm:
- Type of firm:
- Address:
- Owner(s):
- Time of existence:
- Firm size:
- Family business:
- Number of employees:

2. Control information:

- Do you have any form of control; for example, cash, stock, debt or suppliers?
- Do you have someone responsible for the firm's data, other than the owner?
- Do you believe that you need any more control in your firm?
- Do you have any accounting knowledge (owner(s) or employee)?

3. General information regarding business process and management

- What are the main activities developed by the firm?
- What are the main difficulties encountered in the development of these activities?
- Are there any outsourced activities? If so, what activities and what is the form of remuneration?
- Is there any kind of cost control? If so, what does it consist of?
- What are the resources needed in the production process of each product or service?

- What are the direct and indirect costs?
- What are the fixed and variable costs?
- Description of the productive process:
- What inputs are used in the production and how much of each input is used to manufacture the products?
- Equipment needed in the production process:
- What is the average monthly production?
- Is there seasonality? If so, which?
- What is the selling price? How is the price defined?
- Are employees paid in fixed monthly amount, per hour or per task?
- What materials are involved in the preparation and production of the products or services?
- How are the firm's purchases made? Are there any fixed suppliers?
- Is there any type of time and/or material consumption control in your department?
- What materials are involved in the preparation and production of the products or services done in your department?
- What are the firm's service departments, and how are they organised?
- What are the firm's operational departments, and how are they organised?
- How many employees does the firm have in each department?