CORPORATE GOVERNANCE AND GLOBAL MANAGEMENT ACCOUNTING PRINCIPLES IN PUBLIC COMPANIES IN BRAZIL

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Abstract

Objective: The objective of this research is to verify the relations of Corporate Governance with the Global Management Accounting Principles (GMAP) of public companies in Brazil.
Methods: This is a descriptive study with a quantitative approach. With a sample of 311 companies that traded shares in Brasil, Bolsa and Balcão (Brazil Stock Exchange and Over-the-Counter Market - B3), data were collected from Comdinheiro, reference forms, companies' website, the Brazilian Securities and Exchange Commission (CVM) and B[3], management reports, annual reports, financial statements and sustainability reports, ranging from 2010 to 2016. In relation to the dependent variable, indexes were constructed to represent the GMAP (IGMAP). The explanatory variables were represented by the dimensions: Board of Directors, Ownership Structure and Control and Executive Compensation.
Results and discussions: The results show that in the dimension of the Board of Directors, companies from the Novo Mercado (New Market) are the ones that best represent the analyzed relationships, given that independence and meetings positively explain the GMAP. The age of directors and the accumulation of positions of president and CEO have a negative influence on the GMAP. In addition, the Ownership Structure had a negative impact on the GMAP, although only companies in the Level 2 segment and with little representative coefficient. In addition, fixed remuneration also explains the GMAP, this for all segments of governance.
Contributions: The study's findings contribute to the debate on the relevance of Corporate Governance practices associated with Management Accounting, since governance requires reports with adequate internal practices, especially for the survival of companies operating in competitive markets.

Keywords: Corporate Governance; Global Management Accounting Principles; Management.

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1 INTRODUCTION

Throughout the twentieth century, global businesses and economic developments were followed by corporate failures, leading to a discussion of the separation of ownership and management, which is why conflicts of interest between owners and managers influence business decision-making (Jensen & Meckling, 1976; Bosse & Phillips, 2014). In this perspective, the determinations of recommendations to assist in these conflicts depend on certain procedures that address an adequate relationship between creditors, minority shareholders, controllers and managers. To these mechanisms of control and monitoring, the Agency Theory defines Corporate Governance (Jensen & Meckling, 1976; Bosse & Phillips, 2014).

A key feature of Corporate Governance is the disclosure of financial statements, so the implementation of International Financial Reporting Standards (IFRS) emphasizes enabling the accountants to meet the requirements of preparing and making these statements available, as it Increments the need to train managers to meet new business reporting requirements. As part of this procedure, it is assumed that managers should also carry out the internal process with functions focused on Management Accounting in an efficient manner and in accordance with internationally recognized best practices. That is, there is interest in establishing a set of principles for the management of internal activities of organizations, being an alternative for improving management (Borker, 2016a; Borker, 2016b).

The claim to institute such standards or principles includes the analysis of the company's profitability and reporting, decision support, and a variety of activities for the strategic, tactical, and operational planning and budgeting process (Borker, 2016a). Thus, in 2014 a joint venture formed by the American Institute of Certified Public Accountants (AICPA) and the Chartered Institute of Management Accountants (CIMA) prepared a publication project that introduced the Global Management Accounting Principles (GMAP) through Chartered Global Management Accountant® (CGMA).

One of the objectives of the principles is to be a guide for companies to be successful, since Managerial Accounting needs support in solving organizational issues and executing strategies (Cgma, 2014). Therefore, we emphasized four principles, and each one is presented in detail in the literature review, they are: communication provides ideas that influence, information is relevant, the impact on value is analyzed, and resource and relationship management (Stewardship) builds trust.

Thus, there is evidence in international research on the relationship between Corporate Governance and Managerial Accounting (Seal, 2006; Wang & Huynh, 2014; Rahnama & Jalili, 2015; Arunruangsirilert & Chonglerttham, 2017; Massicotte & Henri, 2020). Since Corporate Governance structures can have an impact on the management of business performed by Management Accounting, governance is formed by information that also serves as a support for management accounting systems (Wang & Huynh, 2014). In this regard, the Corporate Governance practices highlighted in the study are the Board of Directors, the Ownership and Control Structure and Executive Compensation.

As an example, Ratnatunga and Alam (2011) investigated the role of the Board of Directors in the Business Strategy, examining a company with a successful public record of governance, and have Strategic Accounting Management processes in a high-risk industry. The analysis by Ratnatunga and Alam (2011), therefore, describes that boards should go beyond the minimum requirements of governance regulatory legislation and assume ultimate responsibility for implementing company strategy and performance, demonstrating that a more strategic governance role provides the counter management a way back to senior management, using the routines of management accounting to socialize advice and avoid opportunism that may arise.

In view of the above, the general objective of the research is to verify the relations of Corporate Governance with the GMAP of public companies in Brazil. Considering that for Seal (2006), many practices associated with Corporate Governance should be associated to Management Accounting, since good Corporate Governance requires reports with adequate internal practices. Thus, although the differentiation between Financial Accounting and Management Accounting has a useful educational and academic function, it cannot always be maintained in the practice of Business Accounting (Seal, 2006).

2 THEORETICAL FRAMEWORK

2.1 Global Management Accounting Principles

The levels of global competition intensify the challenges of managers to the pursuit of managerial accounting with strategic information for decision-making. In response to this concern, a number of new management techniques have emerged. For traditional management, there is cost analysis and performance measures based on profit, focusing on internal company concerns and financial orientations. On the other hand, contemporary management accounting techniques combine financial and non-financial information with a strategic focus, for example, in the design of activity-based costs, performance measurement systems and benchmarking techniques (Chenhall & Langfield-Smith, 1998; Fernando Grande & Beuren, 2011).

The GMAP were created to be a guide of good practices for organizations in benchmarking, improving the systems of Management Accounting (Cgma, 2014). In Brazil, Espejo and Daciê (2016) made considerations regarding the expectations of adopting the GMAP for better disclosure of Management Accounting, improving performance and generating and creating value. Moreover, Pazetto, Santos and Beuren (2019), when analyzing Brazilian research that adopted Management Accounting as their scope, affirm that the topics of discussion started to have a greater scope, in which it was given as an example in 2016, at the 3rd Meeting of Professors of Management Accounting/Management Control, at the Faculty of Economics, Administration and Accounting of the University of São Paulo, the debates focused on the GMAP.

The following studies on GMAP at the international level also stand out: Gmińska and Jaworski (2015); Borker (2016a); Borker (2016b), Gray and Irons (2016) and Oyewo (2020). In view of this, the GMAP contribute to the implementation of Management Accounting systems in business practice, facilitating the maturation of science with regard to accounting in its practical dimension by the accounting manager (Gmińska & Jaworski, 2015). The accounting manager is a relevant professional for communicating insights with the company, due to the selection of information for a variety of strategic and operational decisions, he or she is responsible for playing a role of manager of organizational resources, being a key analyst in accountability, with credibility with stakeholders (Borker, 2016a; Borker, 2016b).

Borker (2016a) presents an analysis of the GMAP about its potential to evolve into a set of international accounting standards. In this conception, the following similarities between IFRS and GMAP are addressed:

• Both IFRS and GMAP share professionalism, with independent professionals, capable of making judgments within the professional domains of each;

• Both IFRS and GMAP share flexibility, creativity is required for each professional, for adjusting a variety of problems, as well as the solutions they must find;

• Both IFRS and GMAP share optimism about conservatism. That is because management strives to find innovative solutions and add value to the organization and stakeholders. Thus, there is a requirement for trust and a positive vision about problem solving and organizational improvement;

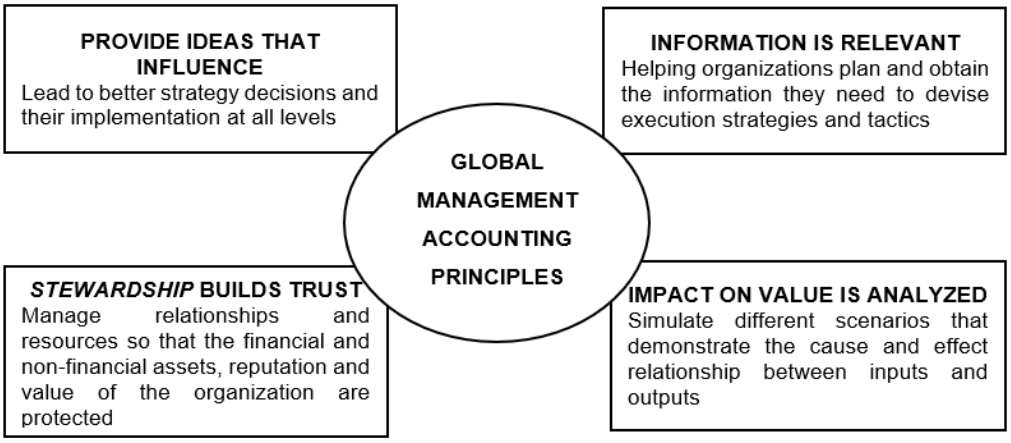
• Both IFRS and GMAP share transparency. That is, should be able to communicate clearly and opening the appropriate information for management and stakeholders;

• Finally, both IFRS and GMAP place the protection of the organization's resources as a priority, with integrity and ethics.

Borker (2016b) discussed cultural and accounting values based on Gray (1988) on the acceptance of GMAP in 12 countries (Australia, Brazil, China, Egypt, Germany, India, Japan, Nigeria, Portugal, Russia, Turkey and the United States). The author presented as results that both cultural and accounting values can influence the adoption of GMAP in a differentiated way for each country.

Gray and Irons (2016) presented a framework of competencies of the principles in four areas of knowledge (technical, business, people and leadership skills), as well as three personal qualities (ethics, integrity and professionalism) applied to managers in the United States. As a result, it was found that cost accounting was the weakest area. This factor implies the relevance of the contributions of the adoption of GMAP to improve communication and management of companies. From the discussions carried out so far, the GMAP determined by CGMA (2014) is highlighted in Figure 1 below:

Figure 1: Global Management Accounting Principles



Source: CGMA (2014).

According to CGMA (2014), the GMAP are applied to the key activities of the functions assigned to Management Accounting, while each practice is not applied by Management Accounting in isolation, with knowledge and information sharing in all areas, with an integrated team, which perform their duties collaboratively. Therefore, it is important to highlight the following 14 main areas of management accounting: CGT (2014): Cost of transformation and management, External reports, Financial strategy, Internal control, Investment evaluation, Budget control and management, Decision on price, discount and product, Project management, Compliance and regulatory compliance, Resource management, Risk management, Strategic tax management, Treasury and cash management, and Internal audit.

2.2 Corporate Governance

One of the purposes of governance is to reduce agency problems, so the county's position in relation to other companies is considered as one of the origins of cultural-cognitive legitimacy, since the market recognizes that there are relationships between the best companies' results and the decision-making of executives (Junwei, Guiqin & Ping, 2011; Darmadi, 2011). In this context, the Board of Directors, the Ownership and Control Structure and Executive Compensation are fundamental elements of internal corporate governance, being discussed in the following topics.

2.2.1 Board of Directors

The Board of Directors is the main component of governance. This is why, acting as a maximum body in setting company guidelines, should take into account the integrity, accountability of the organization, including board supervision and guidance (Akpan & Amran, 2014; Mccahery, Sautner & Starks, 2016). Consequently, the Board of Directors forms a private group with different information needs and uses information from Management Accounting that reflects its strategic-based advisory role, notably to oversee the implementation of the strategy (Massicotte & Henri, 2020).

Regarding the characteristics of the Board of Directors, the size of the board is a factorthat may be useful for management advice: however, previous studies are inconclusive. There is research pointing that the high number of advisers can provoke internal conflicts (Ujunwa, 2012). On the other hand, the small board may not be as effective in monitoring senior executives and managers of publicly held companies, as they are more complex and in need of advice (Coles, Daniel & Naveen, 2008).

In addition, there are increasing attempts to promote equality between employees and managers in the workplace. However, the relationships identified between women in the Board and the performance of the company (by way of example) show results that are sometimes positive, according to Carter, Simkins and Simpson (2003), while negative relationships can also be verified (Darmadi, 2011). These negative relationships justify the limited number of women in the Board occupying leadership positions, which is why this relationship is expected in the study (Carli & Eagly 2001; Akpan & Amran, 2014).

The independence of the Board of Directors is another feature recommended by governance, due to the fact that a more independent board can be effective in monitoring management (Gaur, Bathula & Singh, 2015). The independent advisor must meet certain requirements, such as; being free from any relationship with the company, not being a partner or executive during the three years prior to the appointment, among other things (Akpan & Amran, 2014, Levit & Malenko, 2016).

The Chairman/CEO refers to the importance of the non-duality of the professional who performs the function of CEO and the chairman of the board. In view of the fact that, according to the Agency Theory, the distinction between the functions of those positions should address the reduction of agency conflicts. At the same time, it can better supervise executives' actions, due to the reduction of more complex activities (Qin, 2012; Gaur, Bathula & Singh, 2015).

In addition, age represents experience and risk propensities, so a board of young professionals can help with risk tactics, as they are less risk-averse, with high levels of diversification (Darmadi, 2011). As an example, Darmadi (2011) has identified in his analyzes that the proportion of young people in the Board is positively related to performance, with evidence that younger professionals in boardrooms are associated with better financial performance.

In analyzing the database of a sample of minutes of Board meetings of eleven companies to which the Israeli government holds a stake, Schwartz-Ziv and Weisbach (2013) identified managerial models in which boards play a direct role in company management. As an example, the minutes indicated the following managerial roles: the Boards requested to receive more information and updates on the issues discussed at the meetings, in order to take initiatives regarding the issues addressed. Faced with the research by Schwartz-Ziv and Weisbach (2013), positive relations are expected with the number of meetings promoted by the Board of Directors.

2.2.2 Property Structure and Control

Smith (1989), in addressing the separation of ownership and control, highlighted the costs that can be incurred if the manager does not take into account the owners' wishes (Berle & Means, 1932; Jensen & Meckling, 1976). In this context, there are two classes of shares, common (with voting rights) and preferred (non-voting) shares. The Ownership and Control Structure has become a growing issue, especially in countries where there is a high concentration of shares among a few investors, dominating the decision-making process, as well as benefiting the expropriation of the wealth of minority shareholders, such as occurs in Brazil (Caixe & Krauter, 2013).

The constitution of the Structure of Ownership and Control is due to economic aspects, to cultural, geographic factors and to social and political ties. (Leech & Leahy, 1991), as well as by the characteristics and desires of the owners and managers, the educational and professional level, language, kinship, market forces, aversion to uncertainty and Corporate Governance structures. Thus, La Porta, Lopez-De-Silanes, Shleifer and Vishny (1999) have identified in their studies that in countries with weak shareholder protection, even those in the open market, tend to have controlling shareholders. Sometimes this shareholder is the state; but often it is a family, usually the founder of the company, consequently large organizations have problems of separation of ownership and control.

Knowing that GMAP provide greater security to the competitive performance of companies in the globalized market and, consequently, greater economic and financial results, relations between GMAP and Ownership Structure and Control Structure are expected. Given that the structure of publicly held companies is based on the separation between ownership and control, constituting the company's Corporate Governance model. That said, the Property Structure (common and preferred) is a control instrument that allows the alignment of interests between principals and agents. As well as, in the Control Structure (ordinary) the right to vote at General Meetings is granted for the decision making of the company (Correia, Amaral & Louvet, 2011).

2.2.3 Remuneration of Executives

Remuneration of Executives is an issue that has been a focus in the academic world, with emphasis on fixed (for the internal ease of the job and salary system, and external through the research of salaries in other companies) and variable remuneration (such as options, bonuses and profit sharing), as well as highlighting the relevance of long-term remuneration for the alignment function interests. This is because, the remuneration contract is considered an effective method for both shareholders and managers to obtain benefits, in addition to reducing agency costs (Junwei, Guiqin & Ping, 2011; Zhang, Tang & Lin, 2016).

There are also performance contributions in determining the Remuneration of Executives (Zhang, Tang & Lin, 2016). Because shareholder returns may be related to managers' efforts, it is more difficult for the manager to assert that the performance in the company is low if the companies in the same industry

perform well, thus, by the Agency Theory, by including a measure of performance in the remuneration, this facilitates for the control of the owners (Conyon, 1997).

Aguiar, Teixeira, Nossa and Gonzaga (2012), when investigating whether there is a relationship between the presence of managerial incentives and the practices of Management Accounting, have identified that the annual budget, analysis by accountability center and performance evaluation are associated with the presence of systems in the sample companies. Similarly, Silva, Silva, Santos and Gonçalves (2019) highlight the management incentive systems as relevant tools for management control, through which they are used as mechanisms for rewards and/or punishments to the results of performance evaluation.

3 DEVELOPMENT OF RESEARCH HYPOTHESIS

In a contemporary view, management accountants must submit reports with information oriented to value creation and strategy (Massicotte & Henri, 2020). Since events in the business world, such as high competition, product diversity, sophisticated customers and complex cost structure, are pressing companies to reinvigorate their business strategies to align with environmental trends and market sentiments, that is, Management Accounting must undergo refinements from time to time if they are to support management effectively (Oyewo, 2020).

Understanding the dimensions of Corporate Governance, such as the characteristics of the Board of Directors, the Ownership and Control Structure and Executive Compensation, with their recommendations for companies to be successful, based on Arunruangsirilert and Chonglerttham (2017), there is empirical evidence that the attributes of Corporate Governance significantly affect Strategic Accounting Management, providing security and compliance for the business operation (Wang & Huynh, 2014; Mccahery, Sautner & Starks, 2016; Alfraih, 2016; Massicotte & Henri, 2020).

Rahnama and Jalili (2015) found that there is a relationship between a Corporate Governance index built with the Management Accounting system and the performance of companies listed on the Tehran stock exchange. This result confirms the research by Wang and Huynh (2014), who in turn showed that companies that meet the Corporate Governance criteria play a moderating and monitoring role in the effectiveness of Management Accounting. Rahnama and Jalili (2015) emphasize the following suggestion based on the results obtained: it is recommended that companies improve their Corporate Governance to highlight the monitoring and transparency aspect and thereby help them to implement Management Accounting systems.

The present research is based on the assumption that Corporate Governance, represented here by the Board of Directors, the Ownership and Control Structure and Executive Compensation, has relations with the GMAP, as they support Management Accounting, with organizational management for the development and execution of corporate strategy. Thus, in order to investigate the explanatory factors of the GMAP, twelve research hypotheses were formulated, based on works of a similar nature.

In order to define the hypotheses that seek to verify the relationships between the dimension of the Board of Directors and the GMAP, the first six research hypotheses are presented, in which they assume that the size of the council, the gender of the president, independence and the number of meetings positively influence adherence to the GMAP. This is justified by the fact that when it comes to publicly traded companies the negotiations are more complex, which could require advice from a larger Board (Coles, Daniel & Naveen, 2008), as well as even the gender diversity in the Board can improve the value of the company, there is a limited number of women on the Board of Directors occupying management

positions (Carli & Eagly, 2001), in addition the independence and meetings of the Board can positively affect Strategic Accounting Management and therefore the management control systems (Seal, 2006; Rahnama & Jalili, 2015; Mccahery, Sautner & Starks, 2016; Alfraih, 2016).

Furthermore, it assumes that the Chairman/CEO and the age of the meeting directors negatively influence adherence to the GMAP, because the non-duality of the role of CEO and Chairman of the Board can reduce conflicts of interest, as well as reduce complex activities on the Board, that would provide effectiveness in monitoring the attributions of top executives, and therefore managers (Qin, 2012; Gaur, Bathula & Singh, 2015). As well as, the expected age relation is justified in the research by Darmadi (2011), in which the proportion of young people on the Council was positively related to performance, which was emphasized by several indicators that composed the GMAP.

H1: Companies with a larger Board of Directors have greater adherence to the Global Management Accounting Principles.

H2: Companies that have a man as chairman of the Board of Directors show greater adherence to the Global Management Accounting Principles.

H3: Companies that have a Board of Directors made up of a large number of independent members show greater adherence to the Global Management Accounting Principles.

H4: When the company's CEO is simultaneously Chairman, adherence to the Global Management Accounting Principles decreases.

H5: The age of the members of the Board of Directors negatively influences adherence to the Global Management Accounting Principles.

H6: The greater the number of meetings of the Board of Directors, the greater the adherence to the Global Management Accounting Principles.

Starting from the assumption that the GMAP combine systems of measurement of financial and non-financial performance, with respect to the Control Property Structure, it is emphasized that having the Agency Theory as the theoretical foundation, in the view of Jensen and Meckling (1976) the concentration of ownership can be beneficial to the performance of companies due to the greater efficiency of large investors in monitoring agency problems. Although there are empirical studies that analyze the relationship between ownership control and companies' value and performance, divergent results are identified. Therefore, the following research hypotheses regarding ownership and control are shown below.

H7: Companies that have a higher concentration of ownership show greater adherence to the Global Management Accounting Principles.

H8: Companies that have a greater concentration of control show greater adherence to the Global Management Accounting Principles.

To define the hypotheses in order to verify the relationship between Executive Compensation and the GMAP, the last three hypotheses of the study are emphasized. The option to analyze the executive board is justified because its function involves questioning and challenging top management, that is, the directors must consult or at least request different forms of financial and non-financial information to facilitate their work (Massicotte & Henri, 2020). There are surveys in Brazil that indicate that management incentive systems tend to use executive performance evaluation indicators and the total and variable remuneration to align operational objectives and non-financial performance, aiming at the perpetuity of the business in the market, factors that are described in the GMAP (Aguiar, et al. 2012; Silva, et al. 2019).

H9: There is a positive relationship between the total compensation of the executive board and adherence to the Global Management Accounting Principles.

H10: There is a positive relationship between the fixed compensation of the executive board and adherence to the Global Management Accounting Principles.

H11: There is a positive relationship between the variable compensation of the executive board and adherence to the Global Management Accounting Principles.

4 METHODOLOGICAL PROCEDURES

This is a descriptive study with a quantitative approach. In order to analyze the relationship between Corporate Governance and GMAP, the study period was from 2010 to 2016. The choice of the period from 2010 was due to the change in the Brazilian accounting standard to the international standard of the IFRS, with the advent of the Law Nº 11.638/2007, since the disclosure of the GMAP occurred through the practice of IFRS, while the international literature describes that the convergence of accounting and corporate standards to the IFRS standard has facilitated the integration between management and financial accounting (Borker, 2016a).

In addition, data on GMAP were collected through the reference forms, corporate website, CVM and Brasil, Bolsa e Balcão (B3), management reports, annual report, standardized financial statements and sustainability reports. The variables of Corporate Governance and control were collected from the Comdinheiro database.

The population is composed of all the publicly traded companies that traded their shares in Brasil, Bolsa e Balcão (B3). With regard to the sample, the companies that traded their shares were selected, i.e. they were classified as active in the stock market in 2016. In addition, the sample is unbalanced, since there are companies that did not start their activities at the beginning of the sample period, as well as missing data or missing data regarding the explanatory and control variables, even if companies with too little information during the study period were excluded, in order not to bias the results of the survey. Thus, a total final sample of 311 companies was obtained, as described in Table 1:

Table 1: Sample of selected companies for analysis of GMAP and Corporate Governance

Criteria	Number of Companies	%
Companies listed in Brasil, Bolsa e Balcão (B3)	445	100.00
Companies inactive in 2016 or with excessive absence of information in the study period	134	30.11
Final Sample	311	69.89

Source: Research data.

4.1 Dependent Variable

To represent the GMAP, an index was built for each company in the sample, and each year analyzed (2010 to 2016). Therefore, according to the CGMA document (2014), four indicators were selected for each principle, totaling 16 indicators. As an analysis treatment, the variables were collected from different sources, with each selected document being the last one released by each company (for each year), in order to reconcile the information with the Comdinheiro database, whose update date is the 12/31 of each year. Thus, having as criterion the Terms/Keywords inserted in the context of the explanation of

the indicators and their respective practical applications, the variables are dummies, because for each item identified in the different reports of the companies, it is assigned a value of 1, and 0, otherwise, as described in Table 2:

Table 2: Checklist for the Global Management Accounting Principles

Items	Indicators	Practical Application	Source	Terms/Keywords
Principle 1 - Communication provides ideas that influence				
01	Features reports that explain the company's strategy	Applies to all practice areas	Management report; Reference Form	Strategy
02	Displays all reports on time	External Reports	CVM website	Delinquent Companies
03	Presents business plans or models	Applies to all practice areas	Reference Form; Brasil, Bolsa e Balcão (B3)	Business plan; Business model
04	It uses communication channels (digital, social and mobile media)	External Reports	Company website	Social network; App
Principle 2 - The information is relevant				
05	Displays reports that explain the company's performance	Applies to all practice areas	Management report; Reference Form; Standardized financial statements	Performance
06	Presents financial information (Return on Investment or Economic Value Added)	Control and budget management; Investment valuation	Reference Form; Management report	Return on investment; Economic Value Added; EVA
07	Presents non-financial information (Present Value, Strategic Planning or Balanced Scorecard)	Control and budget management; Investment valuation	Reference Form; Standardized financial statements	Present value; Strategic planning; Balanced Scorecard
08	Describes the procedures of Corporate Governance	Applies to all practice areas	Reference Form	Corporate Governance Practices
Principle 3 - The impact on value is analyzed				
09	Practice Risk-Based Management	Risk management	Reference Form	Risk management; Risk management; risk
10	The organization analyzes and reports its overall impact on the economy, society and the environment	Applies to all practice areas	Reference Form; Sustainability report	Economic development; economy; Society; Community; Environment
11	The organization's product or service mix is analyzed to show the sales value	Decision on price, discount and product	Reference Form; Annual or sustainability report	Mix; Product mix; Mix of services; Products; New products
12	Planning, resource allocation, or reporting activities are aligned to generate value for the organization	Internal control	Reference Form; Management report; Annual or sustainability report	Planning; allocation of resources; Application of resources; Implementation of resources; reports
Principle 4 - Management of resources and relationships (stewardship) builds trust				
13	Presents reports describing internal control	Internal control	Reference Form; Brasil, Bolsa e Balcão (B3)	Management practices; Internal control; Internal controls
14	Presents reports describing internal audit procedures	Internal Audit	Reference Form; Brasil, Bolsa e Balcão (B3)'s website	Internal audit procedures
15	Presents sustainability reports or integrated	Internal control; Investment valuation	Annual Report / Sustainability Reports	Sustainability report
16	The organization's values are declared and available to all interested parties (stakeholders) internal and external	Applies to all practice areas	The company's website; Annual or sustainability report	Mission; View; Company value; premises; Guidelines; Competencies

Source: CGMA (2014). Note: "Applies to all Practice Areas" refers to the 14 key practice areas of the Management Accounting function described on page 7.

The methodology for determining items 6 (financial information) and 7 (non-financial information) of the second principle, was defined according to the evolutionary stages of the Management Accounting artifacts, and the choice of each indicator was made easier by the external reports. In this context, the explanation of the evolutionary stages (Chenhall & Langfield-Smith, 1998; Fernando Grande & Beuren, 2011) follows: first stage, refers to the determination of costs and financial controls (e.g. Return on investment); second stage, refers to the provision of information for management control (e.g. Present value); third stage, refers to the observation of resource wastes through process analysis and resource management technologies (e.g. Strategic Planning and Balanced Scorecard); and, fourth stage, refers to the creation of value through the effective use of resources (e.g. Economic Value Added).

It is important to note that the CGMA document (2014) portrays other subjects such as: tax management, treasury and cash management, human resources, information technology, transformation and

management costs, etc. These indicators were not selected to compose the IGMAP because they were not information available in the external reports, methodology emphasized in the present research.

4.2 Independent Variables

Through Comdinheiro, we collected data related to the Board of Directors, Ownership and Control Structure, Executive Compensation and Control variables, explained in Table 3:

Table 3: Indicators referring to the Board of Directors, Structure of Ownership and Control, Remuneration of Executives and Control Variables

Dimensions	Indicators	Acronyms	Definition	Expected relationships	References
Board of Directors	Size of the Board	SIZ	Total number of council members	(+)	Coles, Daniel and Naveen (2008)
	Gender of the president	GEN	Value 1 is assigned if male and 0 otherwise	(+)	Darmadi (2011); Akpan & Amran, (2014)
	Independence	IND	The relationship between the number of independent members and the size of the council	(+)	Arunruangsirilert and Chonglerttham (2017)
	Chairman/CEO	CHA	Assigned value 1 when chairperson is CEO and 0, otherwise	(-)	Qin (2012); Gaur, Bathula and Singh (2015)
	Age	AGE	Annual average age of the directors of the administration	(-)	Darmadi (2011)
	Meetings	MEE	Total number of board meetings in the year	(+)	Schwartz-Ziv and Weisbach (2013)
Structure of Ownership and Control	Property Structure	PS	Annual average of the total percentage of total shares of the largest shareholder (common and preferred)	(+)	La Porta et al., (1999); Caixe and Krauter (2013); Correia, Amaral and Louvet (2011)
	Control Structure	CS	Percentage of common shares of the largest shareholder (with voting rights)	(+)	La Porta et al., (1999); Correia, Amaral and Louvet (2011)
Remuneration of Executives	Log total remuneration (average, in BRL)	LogRT	Natural Logarithm of the Total Remuneration of the Executive Board	(+)	Junwei, Guiqin and Ping (2011); Zhang,Tang and Lin (2016)
	Log fixed remuneration (average, in BRL)	LogRF	Natural Logarithm of the Fixed Remuneration of the Executive Board	(+)	Junwei, Guiqin and Ping (2011); Zhang,Tang and Lin (2016)
	Log variable remuneration (average, in BRL)	LogRV	Natural Logarithm of Variable Remuneration of the Executive Board	(+)	Aguiar et al. (2012); Zhang,Tang and Lin (2016)
Control Variables	Total active log	LogAT	Natural Logarithm of Total Assets	(+)	O'Boyle, Pollack and Rutherford (2012)
	Return on equity	ROE	Ratio of net income to shareholders' equity	(+)	Kharatyan, Lopes and Nunes (2017)
	Leverage	LEV	Relation between total liabilities (current and noncurrent liabilities) by total assets	(+)	O'boyle, Pollack & Rutherford, 2012

Source: Authors' own elaboration (2017).

The GMAP should be applied in the practice of Management Accounting and in turn in organizational performance management (Cgma, 2014). In this sense, as a control variable to verify the relations between Corporate Governance and GMAP, we selected Return on Equity (ROE), since companies with higher ROE usually have competitive advantages over their competitors (Kharatyan, Lopes & Nunes, 2017).

Management manages the entity in order for the company to attract capital and third parties to generate sustainable wealth for its stakeholders, so in competitive markets, managers must take actions aimed at the proper use of financial leverage (Cgma, 2014). In this context, due to the choice of the sample being companies that trade in open market, that is, large companies, the total assets log was selected in

this research, as well as the leverage to represent the size of the company, since larger companies tend to are more leveraged (O'boyle, Pollack & Rutherford, 2012).

4.3 Statistical procedure

Based on Tsalavoutas, Evans and Smith (2010), the GMAP index shows the sum of the information made available by the company divided by the total amount of information that should have been disclosed, as presented in Equation 1:

$$IGMAP = \Sigma^{n}_{i=1} xi / \Sigma^{m}_{j=1} xj \qquad (1)$$

Where:

IGMAP is the Index for GMAP; xi is the total of items made available by the company (value assignment "1"); and xj is the total of items that should have been made available by the company.

In order to identify if there are statistical differences between companies in the Traditional segments, Level 1 of governance, Level 2 of governance and New Market in terms of iGMAP, the Kruskal-Wallis mean difference test was performed, a non-parametric method used to verify K independent samples (k> 2) are from populations with similar medians. That is, the indicators were categorized in order to verify if there are differences between IGMAP of each subgroup of companies, which are emphasized by their listing segments.

4.4 Estimation of the econometric model

The technique to verify the relations between the Governance and the IGMAP is given in a panel. In addition, the sample was subdivided for each segment (Traditional, Level 1, Level 2 and New Market). The Hausman, Chow and LM Breusch-Pagan tests were used to select the most suitable sample analysis model for each segment. In addition, the basic assumptions of regression analysis were performed: degree of multicollinearity (VIF test), absence of autocorrelation (Woodridge test) and heteroscedasticity (Wald test).

In this way, in Equation 2, the model used to be estimated is presented:

$$IGMAP = \alpha + \beta_1 SIZ + \beta_2 GEN + \beta_3 IND + \beta_4 CHA + \beta_5 AGE + \beta_6 MEE + \beta_7 PS + \beta_8 CS + \beta_9 LogRT + \beta_{10} LogRF + \beta_{11} LogRV + \beta_{12} LogAT + \beta_{13} ROE + \beta_{14} LEV + \varepsilon \qquad (2)$$

At where:

IGMAP is the Index for GMAP; SIZ is the size of the board; GEN is the gender of chairperson; IND is Independence; CHA is Chairman/CEO; AGE is Age; MEE is Meetings; PS is Property Structure; CS is Control Structure; LogRT is Log Total Pay; LogRF is Fixed remuneration Log; LogRV is Log variable remuneration; LogAT is Total Active Log; ROE is Return on Equity; ALA is Leverage

5 ANALYSIS OF RESULTS

5.1 Descriptive analysis of results

In Table 4, referring to the IGMAP and Corporate Governance data for the period ranging from 2010 to 2016, the mean, median and standard deviation of the total sample that compose the survey are

described, as well as the means of the indicators per Corporate Governance segment. As a result, of the total sample, there is an average of 64.65% (IGMAP) of managerial information based on GMAP, whereas when analyzed by listing segment, companies that are in Level 1, Level 2 and New Market, they present better percentage of the IGMAP (over 70%) when compared to the traditional segment (48.86%).

As a result, it is suggested that companies listed in the differentiated levels of Corporate Governance seek to improve managerial disclosures through external reports, as well as to confirm with Mccahery, Sautner and Starks (2016), Rahnama and Jalili (2015), Alfraih (2016), Arunruangsirilert and Chonglerttham (2017) and Massicotte and Henri (2020) for affirming that Corporate Governance impacts on Strategic Accounting Management (Cgma, 2014). Massicotte and Henri (2020), for example, emphasize that board members must understand the importance and relevance of obtaining varied information from management accounting and bring together the different practices to fulfill their strategic role, maximizing the company's value for the various stakeholders.

In the Board of Directors dimension, the companies in the total sample have an average of 7 members (6.9244) in the board, taking into account the parameters recommended by Brasil, Bolsa e Balcão (B3). Moreover, on average each listing segment (Traditional, Level 1, Level 2 and New Market) has more than five board members.

Regarding the gender variable of the Chairman of the Board, it can be seen that 97.34% of the total sample is male, and 90% more than the Corporate Governance segment. This result corroborates Carli and Eagly (2001) and Akpan and Amran (2014), when affirming that although there have been advances in the insertion of women to be a prominent position in large companies since the 1990s, more than 55% of these women are not yet in leadership positions.

Regarding the independence of the Board of Directors, of the total sample on average 18.68% are independent in relation to the total number of directors. When analyzed by segments of listings, the Traditional (5.49%) and Level 1 (9.25%) levels have low independence percentages. However, Level 2 (27.94%) and New Market (33.35%) show a high percentage of independence of the Board of Directors, being in accordance with the guidelines of the Corporate Governance segments of Brasil, Bolsa e Balcão (B3), in which companies that adhere to Level 2 and the New Market must have at least 20% independent members with a unified term of up to 2 years.

In the variable Chairman/CEO it is verified that on average, 16.54% the president of the board occupies the position of CEO. When analyzing by segment of listing the highest percentage is attributed to companies of the Traditional Level (30.21%) and in the other levels of Corporate Governance the percentage does not reach 8%. This result corroborates Qin (2012) and Gaur, Bathula and Singh (2015) when affirming the relevance of the non-accumulation of the evidenced positions, having as justification the Agency Theory, that is, for the reduction of conflicts of interest and reduction of responsibilities with complex activities.

Regarding the age of the counselors, the average is 55 years (55,4822) when analyzed by the total sample. When checking by listing segment, the average age is over 50 years, with the youngest being on the average in the New Market (53,4631) and the average of the older ones adhering to the Traditional level (57,2373). It is noteworthy that in Darmadi's (2011) view, younger professionals in the Board of Directors can provide a better financial performance of the company, because they are better able to diversify risk.

Regarding the number of meetings of the board, the average is 9 meetings (8.7563) when emphasizing the entire period of analysis (2010 to 2016). When verifying this variable per year, it is noticed that of the total of the sample there is an increase in the number of meetings each year analyzed, as well as,

by checking for Corporate Governance segment, Level 1, Level 2 and New Market present on average 10 more meetings per year, while companies listed in the Traditional segment have an average of 5 meetings each year.

For the Property and Control Structure dimension, on average the percentage of common shares of the largest voting shareholder (57.62%) is greater than the total percentage of total shares of the largest shareholder, that is, that they issue common and preferred shares (52.32%). On a yearly basis, the Control Structure variable remains greater than the Property Structure in the 4 governance segments analyzed, even though there is a fall in the disparity between ownership and control, especially in New Market companies.

In the Executive Remuneration dimension, the values in Table 4 are the natural logarithms of the average total, fixed and variable remuneration of the Executive Board. When analyzing by governance segments the allocation of the fixed remuneration is greater than the variable for the 4 segments. That is, the remuneration through incentive programs, such as options, bonuses and profit sharing are smaller when compared to determination of remuneration effected in a fixed way, although in previous research, management systems and the performance evaluation are associated with incentives from administrators (Aguiar et al., 2012; Silva, et al., 2019).

Table 4 - Descriptive Statistics of the IGMAP and Corporate Governance (2010 to 2016)

Indicators	General Sample			Segments of Corporate Governance (Medium)			
	Mean	Medium	Standard deviation	Traditional	Level 1	Level 2	New Market
IGMAP	0.6465	0.6875	0.2237	0.4886	0.7828	0.7813	0.7603
Size of the board	6.9244	7.0000	2.7495	5.8371	9.1020	8.5038	7.3559
Gender of the president	0.9734	1.0000	0.1608	0.9591	0.9881	0.9819	0.9841
Independence	0.1868	0.1429	0.2089	0.0549	0.0925	0.2794	0.3335
Chairman/CEO	0.1654	0.0000	0.3717	0.3021	0.0000	0.0461	0.0776
Age	55.4822	55.3333	10.5456	57.2373	56.8313	54.6019	53.4631
Meetings	8.7563	7.0000	6.6493	5.4994	13.5918	12.0551	10.6299
Property Structure	52.3285	50.2600	21.0394	56.8445	47.9247	48.4476	49.0126
Control Structure	57.6293	53.5000	23.3627	64.4098	59.0757	61.3864	49.3964
Log total remuneration	6.6438	7.0000	0.7820	6.2717	6.9637	6.8253	6.9077
Log fixed remuneration	6.3611	6.0000	0.7108	6.1157	6.5468	6.5555	6.5324
Log variable remuneration	6.2316	6.0000	0.7706	6.0144	6.2357	6.2990	6.3457
Total active log	21.5333	21.7101	2.1064	20.5950	23.6862	22.5164	21.8882
ROE	0.0978	0.0889	3.2103	0.0412	0.0463	0.0956	0.1682
Leverage	0.7764	0.6045	1.9459	1.0160	0.5817	0.7006	0.5815

Source: Research data.

Table 5 presents the descriptive statistics of the IGMAP of the total sample by sector of activity. In this perspective, the Utilities sector, made up of companies in the water distribution and sanitation sector, generation and distribution of electricity and piped gas distribution, showed the highest mean, with a percentage of 73.02% of information disclosure management. This result is justified by the fact that Management Accounting also applies to Environmental Management, since in the management of the environment financial control is necessary, while the Public Utility sector has a high potential for pollution and degradation of the environment, requiring greater regulation, since supply and sanitation services can cause instability in water supply due to flooding and changes in river flow, as well as the power generation and distribution service can influence the production process, which suggests increase in strategic management (Santos, et al., 2001; Fonseca, Almeida & França, 2012).

Table 5 - Descriptive statistics of the IGMAP by sectors defined by Comdinheiro (2010 to 2016)

Sectors	Obs.	Mean	Medium	Standard deviation	Minimum	Maximum
Industrial Goods	347	0.5989	0.6875	0.2455	0.0625	1.0000
Construction and transportation	7	0.6250	0.6250	0.2271	0.5000	0.8125
Cyclic consumption	513	0.6240	0.6875	0.2271	0.0625	1.0000
Non-cyclical consumption	157	0.6895	0.7500	0.2089	0.1250	1.0000
Financial and Others	418	0.6253	0.6875	0.2331	0.0625	1.0000
Basic materials	196	0.6406	0.6875	0.2252	0.1250	0.9375
Oil, Gas and Biofuels	49	0.7079	0.7500	0.1990	0.2500	1.0000
Cheers	75	0.7142	0.7500	0.1406	0.1250	0.9375
Information Technology	40	0.6797	0.6875	0.1571	0.2500	0.9375
Telecommunications	42	0.5476	0.5938	0.2878	0.0625	0.8750
Public utility	313	0.7302	0.8125	0.1678	0.3125	1.0000

Source: Research data. Note: Obs. Mean observations

Table 6 shows the Kruskal Wallis average difference for the IGMAP in relation to the Traditional, Governance Level 1, Governance Level 2 and New Market listing segments. In this context, the interpretation of the significance level (p-value) of 5% ($p < 0.05$) was adopted. Thus, with p-value lower than the significance level chosen, the null hypothesis of the test is rejected, that is, the means are statistically different between IGMAP and each segment of listing.

By means of the mean difference test of Kruskal Wallis it is possible to observe that the IGMAP for companies with different listing segments (Traditional, Level 1 of governance, Level 2 of governance and New Market) are also different, however it is worth noting that this result does not necessarily represent an effect of the listing segments on the IGMAP. For this purpose, the econometric tests were analyzed, as emphasized in the next topic.

Table 6 - Kruskal Wallis mean difference test for IGMAP and Corporate Governance segments (2010 to 2016)

Null hypothesis	Significance	Decision
IGMAP distribution is identical between the Traditional segments, Level 1 of governance, Level 2 of governance and New Market	0.0000	Rejected

Source: Research data. Notes: The level of significance is 5%.

5.2 Econometric analysis

Table 7 shows the regressions in IGMAP panels in relation to Corporate Governance, ranging from 2010 to 2016, as the sample was subdivided into 4 models, with the Corporate Governance listing segments (Traditional, Level 1, Level 2 and New Market). Therefore, the Variance Inflation Factor (VIF) test was applied for each indicator, resulting in the existence of multicollinearity problems (VIF greater than 5) in the Chairman/CEO indicator of model 2, in Property Structure of model 4, and in the Log total remuneration in the models 1, 2, 3, that is, it was necessary to exclude the indicators mentioned in the respective models. After that, the models for analysis were chosen using the Hausman, Chow and LM Breusch-Pagan tests.

For models 1, 3 and 4 the fixed effects model was chosen. After that, we detected autocorrelation and hetetocedasticity in these fixed effects models through the Woodridge and Wald tests, so robust

analyzes were performed. As for model 2, it was verified by the Hausman test that there is no rejection of the null hypothesis, taking as a decision analysis by the random effects model.

For the Board of Directors dimension, it is verified that model 4 referring to the sample of companies listed in the New Market segment is the one that best represents the analyzed relationships, since of the 6 selected indicators, 4 presented statistical significance and the expected relationships are: Independence, corroborating Akpan and Amran (2014), Gaur, Bathula and Singh (2015) and Arunruangsirilert and Chonglerttham (2017); Chairman/CEO, confirming Qin's (2012) research; Age, according to studies by Darmadi (2011); and Meetings based on Schwartz-Ziv and Weisbach (2013).

In the sample of Level 1 (model 2), statistical significance and expected relationships were found for the indicator Gender of the president, according to Carli and Eagly (2001), Darmadi (2011), Ujunwa (2012) and Akpan and Amran (2014) and Independence. For level 2 (model 3), there is statistical significance in the Independence and Age indicator. It is worth noting that for the three models in which there is statistical significance (model 2, 3 and 4), the Independence indicator presents the highest coefficients, especially in Level 1 and Level 2 of Corporate Governance, that is, with a percentage of 20.58% and 12.92%, respectively, the independence of the board can positively influence the IGMAP, and thereby provide an increase in the disclosure of managerial information, such as; strategic goal, business model, performance, risk management, among other aspects (Cgma, 2014).

In model 1, which refers to the sample of companies listed in the Traditional level, there is a negative and significant relationship between the size of the council and the IGMAP. This result, although not expected, is not totally different from other surveys already carried out (2008), and Levit and Malenko (2016). In this paper, we present the results of the study. Nevertheless, the explanation of the size of the council in relation to the IGMAP of model 1 has a low coefficient (-0.79%), as well as in models 2, 3 and 4 there is no statistical significance.

In the Structure of Property and Control dimension, there is statistical significance in the indicator Property Structure for model 3 (with sample of companies listed in Level 2). However, a negative relation was identified, the opposite of what was expected, not corroborating Correia, Amaral and Louvet (2011) who affirm the relevance of the Ownership Structure (for issuing common and preferred shares) as a control factor that allows the alignment of interests between the Principal and Agent. Despite this, the coefficient is low (-0.30%), and in the other models there is no statistical significance.

With regard to the Executive Remuneration dimension, it was expected positive and significant relationships for Log Total Remuneration, Log Fixed Remuneration and above all, for Log Variable Remuneration, after all there are previous studies that state that the best performances, companies' results and systems related to incentives (Aguiar et al., 2012; Silva, et al., 2019). However, there is only statistical significance in the Log fixed remuneration, for the 4 models analyzed. This result can be justified by the fact that the attribution of fixed remuneration to executives is greater than the variable remuneration in Brazil, as identified in Table 4, since factors exogenous to companies, such as financial crises, can determine the option for fixed remuneration (Conyon, 1997; Zhang, Tang & Lin, 2016).

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in Brazil, as identified in Table 4, since factors exogenous to companies, such as financial crises, can determine the option for fixed remuneration (Conyon, 1997; Zhang, Tang & Lin, 2016).

Table 7 - Regressions in robust fixed effects and random effects panels: IGMAP and Corporate Governance (2010 to 2016)

Indicators	Model [1] Traditional (Fixed-effect robust)	Model [2] Level 1 (Random Effects)	Model [3] Level 2 (Fixed-effect robust)	Model [4] New Market (Fixed-effect robust)
Size of board	-0.0079**	0.0012	-0.0032	0.0050
	(-2.64)	(0.39)	(-0.33)	(1.05)
Sex president	0.0508	0.0999**	-0.0466	-0.0115
	(1.56)	(2.08)	(-1.47)	(-0.43)
Independence	0.0754	0.2058***	0.1292**	0.0723**
	(1.27)	(3.29)	(2.58)	(2.38)
Chairman/CEO	-0.0068		-0.0177	-0.0495***
	(-0.35)		(-0.88)	(-3.72)
Age	0.0002	-0.0001	-0.0049*	-0.0007***
	(0.60)	(-0.27)	(-1.84)	(-3.33)
Meetings	0.0012	-0.0004	-0.0002	0.0019**
	(1.27)	(-0.43)	(-0.16)	(2.10)
Property Structure	0.0006	-0.0004	-0.0030**	
	(0.79)	(-0.59)	(-2.90)	
Control Structure	-0.0012	0.0007	0.0021	0.0001
	(-1.50)	(1.24)	(1.57)	(0.46)
Log total remuneration				0.0065
				(0.23)
Log fixed remuneration	0.0980*	0.0965***	0.1876**	0.0779***
	(1.86)	(3.15)	(2.33)	(3.02)
Log variable remuneration	0.0167	-0.0265	0.0202	-0.0148
	(1.42)	(-1.35)	(0.65)	(-1.20)
Total active log	0.0446*	0.0270**	-0.0341	0.0480***
	(1.68)	(2.26)	(-0.96)	(4.70)
ROE	0.0004	-0.0002	0.0053	0.0000
	(0.90)	(-0.01)	(0.78)	(-0.04)
Leverage	-0.0579	0.0265	0.2981***	0.0598**
	(-1.24)	(0.65)	(3.49)	(2.39)
Constant	-1.0540*	-0.4671	0.3176	-0.8150***
	(-1.68)	(-1.47)	(0.31)	(-3.68)
Remarks	370	119	91	600
R^2 (within)	0.2249	0.3698	0.5166	0.2893
R^2 (Between)	0.1594	0.2161	0.0707	0.1506
R^2 (Overall)	0.1634	0.2415	0.0045	0.1640
VIF (Average)	1.93	1.81	2.24	1.33
Statistic (F ou Wald c)	2.73	56.09	5.10	14.10
Significance	0.0031	0.0000	0.0000	0.0000
Test LM Breusch-Pagan	0.0000	0.0000	0.0006	0.0000
Test de Chow	0.0000	0.0000	0.0000	0.0000
Test de Hausman	0.0000	0.7744	0.0073	0.0034

*Source: Research data. Notes: Z statistics in parentheses. *** Statistically significant at 1%, ** Statistically significant at 5%, * Statistically significant at 10%.*

The institutional factor in the relationships identified stands out, since for each segment there are specific rules in which companies voluntarily seek to adjust them to their organizational cultures, accor-

ding to Rossoni and Silva (2013). As an example, Level 1 is committed to better disclosures of information to the market; Level 2 requirements meet Level 1 requirements and adopt other governance practices, as well as emphasizing minority rights; and in the New Market the rules are more restrictive, with greater demands being the justification for the greater number of indicators of model 4 that presented statistical significance with the IGMAP.

6 FINAL CONSIDERATIONS

The study aimed to verify the relationships of Corporate Governance with GMAP of public companies in Brazil. The empirical results, for a sample of 311 companies in the period from 2010 to 2016, show that there are characteristics of Corporate Governance that can result in adherence to the GMAP, especially those included in the New Market. Regarding the research hypotheses regarding the associations between the Board of Directors and the GMAP, depending on the governance listing segment, the hypotheses are not rejected for the gender of the president, independence, the chairman/CEO, the age of the directors and the number of meetings, since the expected relationships are confirmed. Despite this, the size was shown to be negative and significant for traditional companies, contrary to expectations, however this result is consistent with Ujunwa (2012) and Levit and Malenko (2016).

The research hypotheses regarding the association between Ownership and Control Structure and GMAP are rejected, because the Ownership Structure proved to be statistically significant at 5%, and with a negative relationship, but only for the sample of companies in the Level 2 segment and with a low coefficient (-0.30%). The Control Structure is not associated with the GMAP, and no inference can be made.

For the research hypotheses in order to verify the relationship between Executive Compensation and the GMAP, it is observed that there is a positive relationship only between the fixed remuneration of the executive board and adherence to the GMAP. Therefore, even if it is not enough to remunerate executives only with financial items, but also with non-financial items, as executives increasingly seek professional recognition and growth prospects, as well as despite studies that portray variable payments as factors related to management systems, the result of this research is justified by the fact that in Brazil there is an emphasis on fixed components of remuneration (Aguiar et al., 2012; Silva, et al., 2019).

These results have managerial implications for publicly traded companies in Brazil. First, considering the complex, dynamic and hostile landscape of an emerging country, these companies can understand the importance of adopting Corporate Governance practices and how it can help to strengthen their contemporary management techniques that combine financial and non-financial information, performance measurement systems, strategic focus and value generation. Second, the findings contribute to the recent academic debate on the relevance of Corporate Governance practices associated with Management Accounting, since governance requires reports with adequate internal practices, especially for the survival of companies operating in competitive markets.

Although the contributions of the research were highlighted, we emphasize that it should not be generalized, as it presented some limitations, namely: limitation of the sample period and the analyzes have been only for public companies in Brazil. However, it cannot be invalidated, because due to the robustness of the econometric models it was possible to make an inference about the relations of Corporate Governance with the GMAP of companies that trade in Brasil, Bolsa and Balcão (B3). Thus, as a suggestion for future research is the extension of the analysis period, as well as the insertion of other governance indicators, in order to provide the capture of greater characteristics on the topic addressed.

REFERENCES

Aguiar, A. B., Teixeira, A. J. C., Nossa, V., & Gonzaga, R. P. (2012). Associação entre sistema de incentivos gerenciais e práticas de contabilidade gerencial. Revista de Administração de Empresas, 52(1).

Akpan, E. O., & Amran, N. A. (2014). Board characteristics and company performance: Evidence from Nigeria. Journal of Finance and Accounting, 2(3), pp. 81-89.

Alfraih, M. M. (2016). The effectiveness of board of directors' characteristics in mandatory disclosure compliance, Journal of Financial Regulation and Compliance, 24.

Arunruangsirilert, T., & Chonglerttham, S. (2017). Effect of corporate Governance characteristics on strategic management accounting in Thailand. Asian Review of Accounting, 25(1), pp. 85-105.

Berle, A., & Means, G. (1932). The Modern Corporation and Private Property. New York: Macmillan.

Borker, David R. (2016a). Global management accounting principles and the worldwide proliferation of IFRS. The Business and Management Review, 7(3), pp. 258-267.

Borker, David R. (2016b). Gauging the Impact of Country-Specific Values on the Acceptability of Global Management Accounting Principles. European Research Studies, 19(1), pp. 149-164.

Bosse, D. A., & Phillips, R. A. (2014). Theory and Bounded Self-Interest. Academy of Management Review, pp. 1-57.

Caixe, D. F., & Krauter, E. (2013). A influência da Estrutura de Propriedade e Controle sobre o Valor de Mercado Corporativo no Brasil. Revista Contabilidade & Finanças, 24(62), pp. 142-153.

Carli, L., & Eagly, A. (2001). Gender, hierarchy and leadership: an introduction. Journal of Social Issues, 57(4), pp. 629-636.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. Financial Review, 38(1), pp. 33-53.

Cgma. (2014). Chartered Global Management Accountant. Global Management Accounting Principles ©. [S.l: s.n.].

Chenhall, R.H., & Langfield-Smith, K. (1998). Adoption and benefits of management accounting practices: an Australian study. Management Accounting Research, 9(1), pp. 1-19.

Coles, J. L., & Daniel, N. D., & Naveen, L. (2008). Does one size fit all? Journal of Financial Economics, 87(2), pp. 329-56.

Conyon, M. J. (1997). Corporate governance and executive compensation. International Journal of Industrial Organization, 15, pp. 493-509.

Correia, L. F., Amaral, H. F., & Louvet, P. (2011). Um índice de avaliação da qualidade da governança corporativa no Brasil. Revista Contabilidade e Finanças-USP, 22(55), pp. 45-63.

Darmadi, S. (2011). Board diversity and firm performance: the Indonesian evidence.Corporate Ownership and Control Journal, 9(1), pp. 524-539.

Espejo, M. M. S. B., & Daciê, F. P. (2016). Redução da assimetria informacional sob a ótica do controle gerencial: discussão sobre práticas em empresas transparentes. Revista Contabilidade e Finanças-USP, 27(72), pp. 378-392.

Fernando Grande, J., & Beuren, I. M. (2011). Mudanças nas práticas de contabilidade gerencial de empresas. Revista de Administração FACES Journal, 8(2), pp. 133-145.

Fonseca, F. A. P. B., Almeida, K. K. N., & França, R. D. (2012). Evidenciação de Informações Ambientais em Empresas do Segmento de Utilidade Pública Listadas na BM&FBOVESPA: Um Estudo sobre a Evolução na Divulgação dessas Informações. Revista de Administração, Contabilidade e Sustentabilidade, 2(3), pp. 51-68.

Gaur, S. S., Bathula, H., & Singh, D. (2015). Ownership concentration, board characteristics and firm performance: a contingency framework. Management Decision, 53(5), pp. 911-931.

Gmińska, R., & Jaworski, J. (2015). Global Management Accounting Principles – CGMA. Origins – Structure – Contents. RESEARCH PAPERS of Wrocław University of Economics. 389, pp. 119-129.

Gray, D., & Irons, P. Managers. (2016). Opinions of Management Accountants' Competency Skills and Personal Qualities. World Journal of Business and Management, 2(1), pp. 33-40.

Gray, S. J. (1988). Toward a theory of cultural influence on the development of accounting systems internationally. Abacus, 24(1), pp. 1-15.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3(4), pp. 305-360.

Junwei, W., Guiqin, L., & Ping, H. (2011). Study on the Relationship Between Agency Costs and Governance Mechanisms: Evidence from Chinas A-share Listed Companies. M & D Forum Studies, pp. 258-271.

Kharatyan, D., Lopes, J., & Nunes, A. (2017). Determinants of return on equity: evidence from NASDAQ 100. In XXVII Jornadas Hispano-Lusas Gestión Científica. Alicante.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. (1999). Law and finance. Journal of Political Economy, 106(6), pp. 1113-1155.

Leech, D., & Leahy, J. (1991). Ownership structure, control type classifications and the performance of large British companies. The Economic Journal, London, 101(409), pp. 1418-1437.

Levit, D., & Malenko, N. (2016). Labor Market for Directors and Externalities in Governance. The Journal of Finance. 21(2).

Massicotte, Steeve, & Henri, Jean-François (2020). The use of management accounting information by boards of directors to oversee strategy implementation. The British Accounting Review, 100953.

Mccahery, J., Sautner, Z., & Starks, L. T. (2016). Behind the Scenes: The Corporate Governance Preferences of Institutional Investors. The Journal of Finance, 71(6), pp. 2905-2932.

O'boyle, E. H., Pollack, J. M., & Rutherford, M. W. (2012). Exploring the relation between family involvement and firms' financial performance: a meta-analysis of main and moderator effects. Journal of Business Venturing, 27(1), pp. 1-18.

Oyewo, B. M. (2020). Outcomes of interaction between organizational characteristics and management accounting practice on corporate sustainability: the global management accounting principles (GMAP) approach. Journal of Sustainable Finance & Investment, 1–35.

Pazetto, C. F., dos Santos, V., & Beuren, I. M. (2019). Abordagens da contabilidade gerencial em periódicos brasileiros. Enfoque: Reflexão Contábil, 38(1), 47-65.

Qin, B. (2012). The influence of firm and executive characteristics on performance-vested stock option grants. International Business Review. 21(5), pp. 906-928.

Rahnama, A., & Jalili, A. (2015). Examining the impact of corporate governance on the relation of management accounting system and performance of the listed companies in Tehran stock exchange. Journal of Scientific Research and Development, 2(4), pp. 6-10.

Ratnatunga, J. & Alam, M. (2011). Strategic governance and management accounting: evidence from a case study. Abacus: A Journal of Accounting, Finance and Business Studies, 47(3), pp. 343-382.

Rossoni, L., & Silva, C. L. M. (2013). Legitimidade, Governança Corporativa e Desempenho: Análise das Empresas da BM&F BOVESPA. Revista de Administração de Empresas, 3(3), pp. 272-289.

Santos, A. O., Silva, F. B., Souza, S., & Sousa, M. F. R. (2001). Contabilidade ambiental: um estudo sobre sua aplicabilidade em empresas Brasileiras. Revista Contabilidade & Finanças, 16(27), pp. 89-99.

Schwartz-Ziv, M., & Weisbach, M. S. (2013). What do boards really do? Evidence from minutes of board meetings. Journal of Financial Economics, 108(2), pp. 349-366.

Seal, W. (2006). Management accounting and corporate governance: An institutional interpretation of the agency problem. Management Accounting Research, 17, pp. 389–408.

Smith, A. (1989). The Wealth of Nations. Blackstone Audio.

Silva, S. S., Silva, J. O., Santos, T. R., & Gonçalves, K. A. (2019). Sistemas de incentivos gerenciais e o desempenho econômico-financeiro das empresas brasileiras. Advances in Scientific and Applied Accounting, 12(1), pp. 082-100.

Tsalavoutas, I., Evans, L., & Smith, M. (2010). Comparison of two methods for measuring compliance with IFRS mandatory disclosure requirements. Journal of Applied Accounting Research, 11(3), pp. 213-228.

Ujunwa, A. (2012). Board characteristics and the financial performance of Nigerian quoted firms. Corporate Governance: The international journal of business in society, 12(5), pp. 656-674.

Wang, D. H. M., & Hynh, Q. L. (2014). The Role of Corporate Governance in the Link between Management Accounting System and Firm Performance. Asian Journal of Finance & Accounting, 6(1).

Zhang, X., Tang, G., & Lin, Z. (2016). Managerial power, agency cost and executive compensation—na empirical study from China. Chinese Management Studies, 10(1), pp. 1-23.