


ORGANIZATIONAL AND INDIVIDUAL CONTINGENCY FACTORS AND MANAGEMENT PRACTICES: A STUDY IN LIGHT OF GLOBAL MANAGEMENT ACCOUNTING PRINCIPLES


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ABSTRACT

It has been argued that the decision-making process has never been more important (or complex) as it has increased the amount of unstructured information, increasingly hostile competition and frequent innovations. In this context, the Global Management Accounting Principles (GMAP) were proposed with the objective of assisting managers of different organizations to evaluate and improve their Management Accounting System (MAS), improving the information provided and, consequently, decision making. In this way, the aim of this study consisted of analyzing the associations between organizational and individual Contingency factors and management practices from the perspective of the GMAP of the industries in Paraíba. To this end, managers' data from 86 industries were acquired through the application of an electronic questionnaire during the year 2020. The data analysis was performed using Spearman's correlation. Regarding organizational contingencies, positive and significant associations were found between strategy and practices related to GMAP. However, the size didn't show significant association with the adoption of such practices. Regarding individual contingencies, negative and significant associations were found between the manager's time in the position and one of the management practices. Additionally, the manager's education showed positive and significant association with some practices related to GMAP. In conclusion, no significant associations between manager's age and management practices were found. This study contributes to the literature by analyzing the antecedents of contemporary management practices from a new perspective (the GMAP). Little is known about the factors that contribute to an effective management accounting function in light of the guidelines provided by the GMAP structure. Likewise, these results may be of interest to professionals as they provide important reflections on the contribution of GMAP to management, as well as they point to the need for such practices to be implemented considering the specific context of each organization.

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1 INTRODUCTION

The dynamic nature of the business environment with high competition, product diversity, increasingly demanding customers, as well as the emergence of new technologies, has pushed organizations to align their strategies with market trends (Oyewo, 2020).

Due to new organizational demands, management accounting has evolved from its traditional emphasis on measurement, cost calculation and budget (Abdel-Kader & Luther, 2008; Burger & Middelberg, 2018), for a more active participation in strategic business decisions (Chenhall, 2005), through the guidance of its operations for the identification, measurement and management of key activities within organizations, which enable the achievement of strategic objectives and value creation (Abdel-Kader & Luther, 2008; Oyewo, Vo & Akinsanmi, 2020).

In this context, it is coherent to assume that organizations are induced to adopt advanced management accounting practices; however, some evidence points to a mismatch between innovations and the adoption of these practices (Klein & Almeida, 2017). This lack of alignment may be due to the fact that the use of such practices may depend on the circumstances in which they are being used, which refers to a contingency perspective (Tillema, 2005).

Thus, in line with the contingency theory, it starts from the premise that there is no management accounting system (SCG) that can fit all organizations (Ahmad & Zabri, 2015). Instead, it is argued that the effectiveness of an SCG depends on the specific characteristics of each company; thus, contingencies related to the organization, such as size, perceived uncertainty, structure, strategy (King, Clarkson, & Wallace, 2010; Otley, 2016) and related to individuals, such as the characteristics of managers (Naranjo-Gil, Maas & Hartmaan, 2009; Pavlatos, 2012), may affect the management practices used by companies.

In this sense, several studies at the national and international level were developed seeking a greater understanding of the factors that influence the use of modern accounting/management control practices (Baines & Langfield-Smith, 2003; Abdel-Kader & Luther, 2008; Junqueira, Dutra, Zanquetto Filho, & Gonzaga, 2016; Klein & Almeida, 2017; Pham, Dao & Bui, 2020; Wernke, Junges & Barros, 2020; Hadid & Al-Sayed, 2021; Qiu, Hu, Liang & Dow, 2022). Other studies have verified how the characteristics of managers affect the use of contemporary management practices (Naranjo-Gil et al., 2009) and cost management systems (Pavlatos, 2012). As well as sought to investigate the level of adherence of the use of traditional versus contemporary management accounting/control practices (Frezatti, 2005; Angelakis, Theriou & Floropoulos, 2010; Guerreiro, Cornachione Júnior & Soutes, 2011; Teixeira, Gonzaga, Santos & Nossa, 2011; Santos, Beuren, Corrêa & Martins, 2018).

Most of the aforementioned studies (mainly the national ones) based their analyzes on accounting/management control practices proposed by the empirical literature or classified by *the International Federation of Accountants* (IFAC) in different evolutionary stages, limiting the generalization of the findings and, consequently, the advancement of knowledge about this relationship. Thus, little is known about more holistic aspects of management accounting. This research seeks to fill this theoretical gap by analyzing the factors that affect the adoption of contemporary management practices from the perspective of the Global Principles of Management Accounting (PGCG).

In this sense, the question that guides the research arises: **What are the associations between organizational contingency factors (strategy and size) and individual factors (age, education and manager experience) and management practices, from the perspective of PGCG of the Paraíba state industries?**

Thus, the objective of this study consisted of analyzing the associations among the

organizational contingent and individual factors and the managerial practices, under the PGCG perspective of the Paraiba state industries.

The PGCG were jointly developed and approved by *the American Institute of Certified Public Accountants* (AICPA) and *the Chartered Institute of Management Accountants* (CIMA) in 2014. These bodies constituted a *joint venture* that received the designation of *Chartered Global Management Accountant®* (CGMA) to which it developed a publication project in which the PGCGs were proposed.

The PGCGs provide a good practice guide for organizations and aims to help key executives and the board of directors compare practices and processes to improve their SCG and support companies to make better decisions (CGMA, 2014; Abednazari, Roodposhti, Nikoumaram & Pourzamani, 2018; Correia & Lucena, 2021). With this, four principles were proposed: (i) communication provides ideas that influence; (ii) information is relevant; (iii) impact on value is analyzed; and (iv) management of resources and relationships (*stewardship*) builds trust. PGCGs are applied in several areas within the organization. However, the focus of this study was its application in management practices.

Thus, considering the contribution brought by the PGCG to the improvement of the management accounting function (Borker, 2016a; Borker, 2016b), it becomes relevant and timely to analyze the factors that may affect the sophistication of management practices from the PGCG perspective. Only two studies were found in Nigeria (Oyewo, 2020; Oyewo et al., 2020) that analyzed PGCG with a contingency approach. However, the present research differs by analyzing managerial practices not analyzed in the previous study, as well as by the operationalization of the constructs. Finally, it differs by analyzing the contingencies related to managers. Naranjo-Gil et al. (2009) comment that although it is strongly recognized by the literature that the characteristics of managers are predictive of organizational results, little is known about how these individual characteristics affect the design of accounting and control systems.

Thus, this study contributes to the literature by providing new *insights* on this field of knowledge still at an early stage, but in constant construction, on contemporary aspects of management accounting (PGCG). Chenhall (2006) mentions that, in order to remain relevant, studies on SCG with a contingency approach need to analyze contemporary aspects and their organizational and social results. It is in this perspective that this study seeks to contribute. Likewise, these results may be of interest to professionals as they provide important reflections on the contribution of GMAP to management, as well as they point to the need for such practices to be implemented considering the specific context of each organization.

2 LITERATURE REVIEW

Global Principles of Managerial Accounting

The PGCGs are intended to be universally applicable to assist large and small, public and private organizations to succeed from the growing volume of information available. These were elaborated from a wide study in 20 countries on the five continents (in which more than 400 people representing companies of different sizes and sectors participated), in order to guide the practice of management accounting, helping to ensure that organizations are successful (CGMA, 2014).

Its structure went through a process similar to the development of accounting standards (IFRS), such as the publication of a discussion document, exhibition draft and final draft, as it engaged with stakeholders throughout the Oyewo process (2020). Therefore, the PGCGs reflect the perspective of different participants, such as CEOs (chief executives), CFOs (financial directors), students and other professionals from public and private bodies who participated in the global consultation process on the five continents (CGMA, 2014).

The PGCGs are focused on four distinct results, namely: i) Influence – communication provides ideas that influence, encouraging integrated thinking and improving the quality of

decision making; ii) Relevance – information is relevant, and the right information must be made available to the right person at the right time, helping organizations plan and obtain the information necessary for the creation of strategies and tactics of execution; iii) Value – the impact on value is analyzed, simulating different scenarios to understand how these impact on value generation and preservation; and iv) Trust – Stewardship of resources and relationships builds trust, protecting financial and non-financial resources, reputation and value of the company through accountability and ethical and sustainable behaviors.

One of the reflections emphasized by these principles is that an effective managerial accounting function is a determining factor for the success and competitiveness of organizations over time (Costa & Lucena, 2021). To do so, it is necessary to combine some fundamental elements, namely: i) competent people; ii) clear principles; iii) well managed performance; and iv) robust practices (CGMA, 2014).

The robust practices to which PGCG refer are the practical areas of the managerial accounting function, namely: 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 to regulation; Resource management; Risk management; Strategic tax management; Treasury and cash management and Internal audit. Such practices encompass strategic, tactical and operational functions of the organization and can contribute to the creation of value, and therefore constitute the focus of this study.

When analyzing the research in the area, it is verified that the theme related to the PGCG has been receiving a lot of attention from the researchers, at the national and international level, ratifying the relevance of the theme. In the national context, these researches have analyzed the relationship between PGCG and Corporate Governance (Correia & Lucena, 2021); Business Performance (Sousa, Valero & Lucena, 2019; Costa & Lucena, 2021); adherence to PGCG from the perspective of costs by third sector organizations (Garcia, Jorge, Carraro & Souza, 2020); as well as trust building (Espejo & Silveira, 2020).

In the international scenario, the research conducted in this sense has focused on its theoretical discussion, analyzing the PGCG critically (Masztalerz, 2014; Abednazari, et al., 2018); investigating the possible acceptance of PGCG due to the cultural and accounting values of each country (Borker, 2016a); as well as its potential to evolve into a set of international management accounting standards (Borker, 2016b). They also investigated the relevance of PGCGs in the sustainability of an organization (Burger & Middelberg, 2018); the interaction between organizational characteristics and the robustness of management accounting practice (from the perspective of PGCG) in corporate sustainability (Oyewo, 2020); As well as the moderation of factors related to the strategy on the adjustment between the sophistication of managerial accounting practice (from the perspective of PGCG) and organizational effectiveness (Oyewo et al., 2020).

2.2 Theoretical Frameworks and Development of Hypotheses

This research uses contingency theory as a theoretical platform with the objective of identifying factors associated with the adoption of practices related to PGCG. Contingency theory is inserted in a context of adaptive organizational change, having as basic assumption the absence of an ideal SCG, which can be applied to all organizations in all the contexts (Otley, 2016). Under these precepts, each SCG used is a response to a set of internal and external contingencies (Haldma & Lääts, 2002; Burkert, Davila, Mehta & Oyon, 2014).

Among the external contingencies normally adopted by the literature are environmental uncertainty, competition and technology; in relation to internal contingencies there are size, strategy, structure (Chenhall, 2006; Abdel-Kader & Luther, 2008) and psychological variables (Otley, 2016). Thus, the literature has shown that these contingencies have a significant influence

on the SCG and on the accounting/management control practices used by organizations (King et al., 2010; Naranjo-Gil et al., 2009; Junqueira et al., 2016). Thus, to be useful, the SCG used must adapt to the changes in contingencies experienced by the companies (Ahmad & Zabri, 2015).

Therefore, the focus of this study was the internal contingencies. Specifically, the contingencies related to the organization (size and strategy) and related to the manager (age, education and time of work in the position). Regarding the contingencies related to the company, the strategy has been an important antecedent to the use of contemporary management practices (Junqueira et al., 2016).

In this research, the use of generic types was opted for the differentiation and leadership in costs of Porter (1980), its theoretical consistency and its acceptability among researchers in the accounting area, being one of the most used taxonomies (Otley, 2016). Thus, regardless of the sector in which the company is inserted, it can choose between one of the two generic strategies to compete effectively (Porter, 1980).

In the cost leadership strategy, the company seeks to reduce costs as its main goal. To do so, it is necessary to build aggressive facilities of efficient scale, preferential access to raw materials, strict control of costs and general expenses, as well as the search for cost reduction in areas such as advertising, research and development, customer support, sales force, etc.

Companies that adopt a differentiation strategy seek to be unique in the market in which they operate, that is, aim to develop products or services that are perceived as unique by customers. This differentiation can be achieved through different aspects such as product quality, after-sales assistance, brand image, customer service, durability, among other characteristics that the client considers important (Porter, 1980).

In this sense, the strategy can be understood as the way an organization chooses to compete in its specific sector (Langfield-Smith, 1997; Wernke, et al., 2020). The business strategy is concerned with the means used by the organization to achieve competitive advantage through the configuration of its resources and skills (Auzair & Langfield-Smith, 2005). Therefore, the strategy articulates an organization's plans, its short- and long-term objectives and what actions are necessary to achieve them, taking into account competitive, economic, legal and regulatory panoramas (CGMA, 2014).

It has been argued that different strategies require specific SCG seeking to provide information that enables its reach (Chenhall, 2006). In this sense, previous research such as those of Baines and Langfield-Smith (2003) and Junqueira et al. (2016) demonstrated that the differentiation strategy is positively related to contemporary management accounting practices. Auzair and Langfield-Smith (2005) found that companies that adopt the cost leadership strategy present a more formal management control system, compared to companies with a focus on differentiation.

In turn, King et al. (2010) found that the extent of the use of written budgets is related to cost leadership strategy. Oyewo, Vo and Akinsanmi (2020) found that business strategy (deliberate/emerging) affects the degree of sophistication of management practices in the light of PGCG. Based on this, the first research hypothesis was elaborated:

H1: There is a positive association between business strategy and the use of practices related to PGCGs

Another important organizational contingent variable is size. This is because a larger company has more resources, being able to make investments in management control practices that best meet their needs (Ferreira & Otley, 2009; Klein & Almeida, 2017). Similarly, larger companies have better internal communication systems that enable a greater dissemination of practices (Ahmad & Zabri, 2015). These companies not only have the resources to invest in software and skills, but can also perform these tasks more efficiently through economies of scale and greater specialization of their employees (King et al., 2010).

In contrast, smaller organizations have limited resources, making it difficult to adopt more

sophisticated management practices (Abdel-Kader & Luther, 2008). According to the authors, the change of management practices considered simple to more sophisticated practices requires physical and financial resources, as well as the assistance of specialists, which is usually accessible only to large organizations. Thus, smaller companies usually present simpler management practices with less sophistication (Pham et al., 2020).

In this sense, Davila and Foster (2005, 2007) and Pham et al. (2020) verified a positive relationship between the size of organizations and the adoption of some management tools. In turn, Abdel-Kader and Luther (2008) found that differences in the adoption of contemporary management practices are associated with the size of the company. King et al. (2010), investigating small businesses in the health sector, found a positive relationship of size over the adoption of written budgets. Similar results were found by Ahmad and Zabri (2015) who, investigating medium-sized industries, found a significant influence of size on the use of certain management accounting practices, such as the costing system and performance evaluation systems.

In a study conducted with 131 Nigerian companies, Oyewo (2020) found that organizational size positively affects the robustness of management accounting practices from the perspective of PGCG. Thus, based on the theoretical discussion and evidence presented by the literature, the second research hypothesis was formulated.

H2: There is a positive association between business size and the use of practices related to PGCGs

In addition, the literature shows that the contingencies related to the manager are an important antecedent of the use of contemporary management practices (Santos et al., 2018). This importance is recognized by the CGMA document (2014), emphasizing that in order to achieve growth, become efficient and be successful, the organization needs to have an effective managerial accounting function (CGMA, 2014). And he comments that one of the fundamental elements to achieve this effectiveness is the existence of competent professionals within the company.

Therefore, it is necessary to analyze how the individual characteristics of managers are associated with the adoption of management practices related to PGCG, since the implementation of these sophisticated tools requires proficiency in the area (Oyewo, 2020). A study conducted by CIMA (2009) noted that the availability of qualified professionals in finance and other departments affects the level of application of management accounting tools in organizations from different sectors, sizes and locations.

Thus, based on previous studies (Young, Charns & Shortell, 2001; Naranjo-Gil et al., 2009; Pavlatos, 2010), it is believed that demographic characteristics, such as age, level of education and time of work in the position, may affect the use of practices related to PGCG.

With age advancement, managers can become less flexible to quickly evaluate new ideas and integrate them effectively into decision-making (Young et al., 2001; Naranjo-Gil et al., 2009, Pavlatos, 2010). Older managers may have invested very financially and emotionally in the status quo they are in and therefore prefer security, not willing to commit to major projects (Young et al., 2001). On the other hand, younger managers are more likely to take risks and start new projects that can contribute to advancing their careers (Naranjo-Gil et al., 2009).

In relation to SCG, older managers usually present a more traditional accounting education and spent most of their career in traditional roles where professional independence and accounting were key performance variables (Granlund & Lukka, 1998; Naranjo-Gil et al, 2009; Pavlatos, 2010). In contrast, younger managers entered the profession less time ago, and tend to become more easily acquainted with contemporary SCG during their training (Naranjo-Gil et al., 2009; Pavlatos, 2010).

These theoretical assumptions were confirmed by empirical research that found a negative relationship between the age of managers and the adoption of contemporary management accounting instruments (Young et al., 2001; Naranjo-Gil et al., 2009, Pavlatos, 2010) and using cost management systems (Pavlatos, 2012). In this context, the third hypothesis of the research arises:

H3: There is a negative association between the manager age and the use of practices related to PGCGs

Regarding the time of work in the position, the literature suggests that managers who have spent a considerable part of their career in an organization tend to become more resistant to change (Boeker, 1997, Young et al., 2001). This is because these managers have probably developed a power base, connections and work routines that they do not want to put at risk, no matter how much they believe that innovation and change would be beneficial to the organization (Naranjo-Gil et al., 2009; Pavlatos, 2010). These arguments were empirically supported by Naranjo-Gil et al. (2009), which found the existence of a significantly negative relationship between the stability of the CFO and the use of contemporary management practices. Given the above, the fourth hypothesis to be tested arises:

H4: There is a negative association between the time the manager operates in the position and the use of practices related to PGCGs

The training of a manager is another theoretically important demographic feature (Pavlatos, 2010). It is believed that individuals with a high level of education can adopt more comprehensive tools and can be easier to deal with the processing of complex information that organizational change efforts require (Young et al., 2001). Therefore, the companies that have qualified managers tend to present efficient management accounting activities and practices (Oyewo, 2020).

In their study, Young et al. (2001) found that the level of adoption of contemporary management practices is positively related to education (possession of a post-graduate degree). Sousa et al. (2006) found that insufficient employee training was the main obstacle to the adoption of new performance measures. Similar results were found by other authors who verified that the training area (relatively business oriented) of the manager significantly and positively affects the adoption of contemporary management practices (Naranjo-Gil et al., 2009; Pavlatos, 2010) and the cost management system (Pavlatos, 2012).

Likewise, the results found in the search by Santos et al. (2018) in a sample of 37 companies in the industrial segment in the South region, they point to the existence of differences in the use of modern management controls in companies according to the profile of managers (age, education and training). Specifically, the authors found that younger managers, with higher education level and graduates in the business area tend to implement and use contemporary management accounting tools. Thus, the fifth hypothesis of the research arises:

H5: There is a positive association between the manager age and the use of practices related to PGCGs.

3 METHODOLOGICAL PROCEDURES

The research universe was constituted by all the Paraíba state industries registered in the Federation of Industries of the State of Paraíba (FIEP) in 2020, totaling 3,894 industries. However, industries belonging to the retail segment, industries with incomplete records and incorrect/outdated information (so that *the emails* sent returned with error message) were excluded from the population on the FIEP website. Thus, the investigated universe consisted of 2,057 industries. The instrument used for data collection was a structured questionnaire applied to managers of these organizations.

The data were collected in 2020, electronically through *the Google Forms platform (Google Forms)*. All the 2,057 industries received an *e-mail* directed to the owner or manager responsible for the company's management accounting/controllership, explaining the purpose of the study, and inviting them to participate in the research. In addition, telephone contact was made with some industries, seeking to obtain a greater number of answers. The content of the call was the same as the *email*. The survey resulted in 92 questionnaires answered, however, 6 forms were eliminated as a result of 2 managers informing that they did not have employees in their industries and 4 managers said they had only 1 employee. Thus, the sample of the research consisted of 86

industries.

The questionnaire was composed of 5 questions (26 items), being divided into 3 blocks: the first block with assertions regarding i) strategy and ii) organizational size; the second block with assertions about the practices related to PGCG and, finally, the third block with questions related to the profile of the respondent and the company. The instrument used, as well as the references used for its elaboration are presented in greater detail in Table 1.

Table 1
Instrument of data collection used

Question 1 – Strategic priorities (adapted from Chenhall & Langfield-Smith, 1998; Auzair & Langfield Smith, 2005).	
Using a scale from 1 to 5 indicate the emphasis your company has placed on each of the strategic priorities outlined below. <i>Scale: SI= indicates that practice is not important; 1= indicates that practice is little important 5= indicates that practice is very important.</i>	To provide high quality products.
	To achieve lower production cost than competitors.
	To customize products and services according to customers' needs.
	To provide effective after-sales service and support.
	Cost reduction in the production process.
	To offer products at a lower price than the competition.
Question 2 – Size (Billing defined by BNDES criterion, 2020)	
What was the gross operating revenue of the year 2019 in your company?	<input type="radio"/> Up to R\$ 360 thousand.
	<input type="radio"/> More than R\$ 360 thousand and less than or equal to R\$ 4.8 million.
	<input type="radio"/> More than R\$ 4.8 million and less than or equal to R\$ 300 million.
	<input type="radio"/> Over R\$ 300 million.
Question 3 – Size (Number of employees, defined by SEBRAE criterion, 2020)	
What is the number of employees of your company? _____	
Question 4 – Management Control Practices / Controllership (Adapted from the CGMA checklist, 2015)	
The following issues are related to different management practices that can be used by the organization. Using a scale from 1 to 5 indicate the level at which your company's Management Control/Controlling System is used to perform each practice. <i>Scale: NU= Never uses 1= Uses little; 5= Uses a lot.</i>	To develop cost targets for different areas of the organization.
	To use funding sources efficiently, controlling working capital and evaluating investments.
	To manage and supervise the systems, processes, and procedures that provide confidence that the organization's resources are being well managed.
	To provide guidance on which opportunities should be exploited or avoided by the company.
	To monitor and issue financial and operational performance reports, and make comparisons between the results obtained and planned objectives.
	To analyze the main consumers to which the products are intended to set an appropriate price and cost targets to achieve this price and obtain the desired profit margin.
	To provide financial analysis to design plans, budgets and spending, ensuring that projects will be properly funded.
	To track changes in regulations that the company is subject to, calculating and evaluating compliance and non-compliance costs.
	To identify areas within the company with greater resource needs, as well as returns arising from the allocation and available options.
	To identify the risks, and assess the probability and impacts caused if these risks occur.
	To calculate the impacts of taxes on capital investment decisions, and carry out tax planning.
To assist in the provision of financial resources of the organization, ensuring that it has sufficient resources to meet obligations and finance prioritized opportunities.	
Question 5 – Characteristics of industries and managers	
In what year did the company begin to develop its activities?	
What is the main business branch of your company (civil construction, food and beverage, etc.)?	
How old are you?	
What is your schooling?	
What position/role do you hold in the company?	

How long have you held this position/role?

Source: Elaborated by the authors based on previous studies (2023).

It should be noted that these organizational and individual contingency variables have already been widely used and validated in previous research (Young et al., 2001; Haldma & Lääts, 2002; Chenhall, 2006; Naranjo-Gil et al., 2009; King et al., 2010; Pavlatos, 2010; Junqueira et al., 2016; Otley, 2016; Klein & Almeida, 2017; Santos et al., 2018; Oyewo et al., 2020), justifying its analysis in the present study.

Prior to the application, the research instrument was validated by five specialists with doctoral level, and with research experiences in the subject covered. The suggestions of these professionals were incorporated and then the instrument was again evaluated by managers of two industries in the beverage manufacturing and food manufacturing sectors. Then the collection of the research data began.

It should be noted that the questionnaire was evaluated and approved by the Research Ethics Committee, and can be consulted by means of a Certificate of Presentation for Ethics Assessment (CAAE), under the number: 38626220.9.0000.5188 or by the legal number: 4429521.

For the data analysis, descriptive statistics techniques were initially adopted seeking to obtain information about the characteristics of the sample. Then, the strength and direction were tested of the association between practices related to the principles and characteristics of companies and managers by means of *Spearman's correlation technique*. This test measures the strength of the association between two variables as ordinal measurement levels, so that the observations or individuals under study can be arranged in two ordered series (Martins & Theóphilo, 2016). This test is a non-parametric alternative to Pearson's correlation and is indicated when the study variables are measured on an ordinal scale (Oliveira & Callado, 2018; Coelho & Callado, 2019), thus adapting to the data of this research.

4 ANALYSIS AND DISCUSSION OF RESULTS

4.1 Descriptive statistics

Initially, the characteristics of the industries were analyzed. Most of these work in the segment of manufacturing various products (17.44%), followed by the segment of building construction (13.95%), clothing and accessories manufacture (12.80%) and Food Products (12.80%). Together, these represent 57% of the segments of all industries analyzed (seeking to be parsimonious, the segments were not included in Table 2). Table 2 shows the characteristics of the industries and professionals who participated in the research.

Regarding the time of operation of the company in the market, it is observed that the majority of these (65.11%) have been in operation for more than 10 years. With this they demonstrate that they are consolidated industries in the market in which they operate. It is also observed that about 41% of industries have been operating for more than 20 years and, of these, about 26% have been operating for more than 30 years.

Based on the number of employees, it is possible to verify that most industries (52.33%) can be classified as microenterprise (ME), with up to 19 employees. Small businesses account for 25.58% of the sample. In addition, 22.10% of industries can be classified as medium and large enterprises. Regarding the size classification based on billing, the result found is similar, and it is possible to verify the representativeness of micro (45.35%) and small companies in the sample (27.91%).

Table 2
Characteristics of industries and managers

Characteristics of Industries			
Age of the company	%	No. of Employees	%
Up to 5 years	8.15	Microenterprise – Up to 19	52.33
From 6 to 10 years	26.74	Small company – from 20 to 99	25.58
From 11 to 15 years	13.95	Medium company – from 100 to 499	11.63
from 16 to 20 years	10.47	Big company – Above 500	10.47
From 21 to 25 years	9.30		
From 26 to 30 years	5.81		
More than 30 years	25.58		
Billing			
Micro company - Up to R\$ 360 thousand.			45.35
Small company - More than R\$ 360 thousand and less than or equal to R\$ 4.8 million.			27.91
Medium company - More than R\$ 4.8 million and less than or equal to R\$ 300 million.			25.58
Big company - Over R\$ 300 million.			1.16
Characteristics of Managers			
Age	%	Schooling	%
Up to 25 years	4.65	Incomplete High School	8.14
From 26 to 35 years	27.90	High School	20.93
From 36 to 45 years	29.07	Incomplete Higher Education	6.98
From 46 to 55 years	23.26	Complete Higher Education	46.51
More than 55 years	15.12	Specialization	13.95
		Master	2.33
		PhD	1.16
Position	%	Professional Experience	%
Manager	32.56	Up to 5 years	31.40
Owner	20.93	From 6 to 10 years	36.05
Director	15.12	From 11 to 15 years	11.63
Administrator	8.14	from 16 to 20 years	5.80
Partner-Administrator	6.98	More than 20 years	15.12
Accounting/Financial Analyst	3.49		
Controller	1.16		
Others	11.63		
Total	100	Total	100

Source: Research data (2023).

Then, the characteristics of the professionals were analyzed. It is possible to observe in Table 2 that most management positions of these industries are occupied by young people, since 62% of respondents are up to 45 years old. It was also verified the predominance of managers aged between 36 and 45 years (29.07%), followed by those aged between 26 and 35 years (27.90%).

Regarding the education of professionals, it is verified that they have a high degree of qualification. Considering that about 64% of these have complete higher education. Of these, 17.44% have post-graduate degrees, signaling that professionals in the industries are in constant search for qualification.

Regarding the position occupied, it is verified that the majority are managers (33.56%), owners (20.93%) and directors (15.12%), representing about 70% of the positions occupied. Then it was verified the preparation time of these professionals in their career to exercise a managerial role. It was found that 68.69% of participants have been in management position for more than 5 years, 17.43% have 11 to 20 years of experience in the role and 15.12% of professionals have been in office for more than 20 years. This contributes to the reliability of the information provided by the respondents, because they are experienced professionals.

Table 3 presents the descriptive statistics for the strategy construct. It is possible to verify that the strategic positioning by the analyzed industries is the differentiation strategy, because these industries seem to prioritize strategies for supplying high quality products, customization of products and services according to customer specifications, as well as providing an effective after-sales.

Table 3
Strategic priorities of the sample of industries in Paraíba

Strategic priorities	Average	Median	Standard Deviation	Minimum	Maximum
1. To provide high quality products.	4.59	5	1.08	0	5
2. To achieve lower production cost than competitors.	4.10	5	1.35	0	5
3. To customize products and services according to customers' needs.	4.17	5	1.31	0	5
4. To provide effective after-sales service and support.	4.10	5	1.38	0	5
5. Cost reduction in the production process.	4.03	5	1.43	0	5
6. To offer products at a lower price than the competition.	3.29	4	1.64	0	5
Notes	86				

Source: Research data (2023).

Regarding the cost leadership strategy, it is possible to verify that the industries also attach a considerable level of importance to the variables related to this strategic positioning. However, this importance is lower when compared to the differentiation strategy, since the strategic priorities associated with the supply of products at a lower price than the competition and the reduction of costs in the production process presented a lower level of importance attributed by the industries. Only the variable related to the reach of lower production cost obtained a level of importance equivalent to the variables of the differentiation strategy.

Table 4 presents the practices related to PGCGs adopted by the Paraíba state industries. Based on these results, it is possible to verify that, in light of the recommendations of the PGCGs, the industries analyzed do not have an effective managerial accounting function, since they present a relatively low level of adoption of management practices related to the PGCGs (average below 3). However, year of analysis of the median there was a reasonable use, since it varied between 3 and 4 for all practices.

Table 4
Practices related to PGCGs adopted by the sample of industries in Paraíba state

Practices that make up the SCG	Average	Median	Standard Deviation	Minimum	Maximum
1. Cost of Transformation and Management	2.67	3	1.83	0	5
2. Financial strategy	2.86	3	1.89	0	5
3. Internal Control	2.98	4	1.81	0	5
4. Evaluation of investments	2.71	3	1.89	0	5
5. Budget Control and Management	2.98	3	1.91	0	5
6. Decision on Price, Discount and Product	2.94	3.5	1.79	0	5
7. Projects Management	2.71	3	1.93	0	5
8. Adherence and Compliance to Regulations	2.73	3	1.91	0	5
9. Resources Management	2.81	3	1.92	0	5
10. Risk management	2.89	3.5	1.87	0	5
11. Strategic Tax Management	3.13	4	1.86	0	5
12. Cash and Cash Management	3.14	4	1.83	0	5
Notes	86				

Source: Research data (2023).

Thus, it is possible to observe that the most adopted management practices were Treasury and Cash Management (3.14) and Strategic Tax Management (3.13), which demonstrates the concern of industries with financial aspects, adopting practices that assist in the administration and control of the organization's resources, as well as the use of accounting practices to monitor the

impacts of fiscal aspects on capital investment decisions, and the realization of tax planning.

Following the analysis, it was verified that the practices of internal control and control and management presented a marked level of utilization (both with average utilization of 2.98), followed by the practice related to decision on price, discount and product (2.94). It is also possible to observe that the practice with the lowest level of use was the cost of transformation and management (2.67). This signals that industries may not be so concerned with the use of practices that focus on the exercise of waste and cost reduction. This finding is compatible with the greater focus on the differentiation strategy observed in Table 3. Finally, it is observed that in general, the other practices present similar levels of use.

4.2 Analysis of Correlation

Table 5 shows the association between contingencies related to industries (strategy and size) and management practices from the perspective of the PGCGs. Based on these results, it was possible to verify that most of the strategies adopted by the industries are positively associated with the practices related to PGCG. In addition, it is observed that the priorities with a greater focus on the differentiation strategy (SPV, CPS and PAQ) presented a slightly higher association when compared to the cost leadership strategy (RCP, PAQ, PPB).

Thus, the strategic priority with greater association with the practices of the SCG was the search for effective after-sales service and support (SPV), and it was verified that the industries that focus more on this priority tend to use more practices related to PGCG. While the strategic priority that has a greater focus on offering products at a lower price than the competition (PPB) was the one that presented a lower association with the practices, being verified in only one (risk management).

Table 5
Correlation between organizational contingencies (strategy and size) and practices related to PGCG in the sample of industries of Paraíba state

Practices that make up the SCG	Strategic priorities						Size		
	PAQ	MCP	CPS	SPV	RCP	PPB	FAT	EMP	
1. Cost of Transformation and Management	0.24*	0.33**	0.28**	0.37**	0.30**	0.19	0.21	0.18	
2. Financial strategy	0.21*	0.33**	0.28**	0.42**	0.34**	0.19	0.08	0.08	
3. Internal Control	0.21	0.27*	0.37**	0.39**	0.27*	0.18	0.17	0.13	
4. Evaluation of investments	0.20	0.28**	0.30**	0.45**	0.33**	0.13	0.07	-0.01	
5. Budget Control and Management	0.20	0.33**	0.24*	0.37**	0.32**	0.16	0.17	0.15	
6. Decision on Price, Discount and Product	0.16	0.25*	0.29**	0.28**	0.33**	0.18	0.00	-0.05	
7. Projects Management	0.04	0.20	0.19	0.34**	0.25*	0.11	0.14	0.14	
8. Adherence and Compliance to Regulations	0.20	0.30**	0.34**	0.40**	0.31**	0.19	0.09	0.04	
9. Resources Management	0.22*	0.28**	0.33**	0.37**	0.26*	0.19	0.04	-0.01	
10. Risk management	0.20	0.29**	0.28**	0.28**	0.34**	0.22*	-0.06	-0.03	
11. Strategic Tax Management	0.19	0.11	0.26*	0.32**	0.12	0.19	0.00	0.01	
12. Treasury and Cash Management	0.12	0.25*	0.25*	0.37**	0.21	0.12	0.10	0.12	
Notes	86								

Note. **, * significance level at 1% and 5%, respectively.

Legend: PAQ = High quality products; MCP = Lower production cost; CPS = Customize products and services; SPV = Effective after-sales service and support; RCP = Cost reduction in the production process; PPB = offer products at a lower price; FAT = Billing; EMP = Number of employees.

Source: Research data (2023).

Therefore, in general it is possible to observe that different strategic priorities require different practices, since the informational needs to achieve specific strategies diverge. Thus

aligning itself with the literature argument (Langfield-Smith, 1997; Auzair & Langfield-Smith, 2005; Otley, 2016). In addition, these results meet what was verified in previous studies that found a relationship between strategy and management practices, as well as with the design and use of SCG (Baines & Langfield-Smith, 2003; Auzair & Langfield-Smith, 2005; King et al., 2010; Junqueira et al., 2016), thus allowing validate hypothesis 1 of the research.

Regarding organizational size, although the literature suggests that the use of management practices tends to increase as the size of the company increases (Haldma & Lääts, 2002; Ferreira & Otley, 2009), the results show that there is no significant association between size and practices related to the PGCGs. That is, the level of use of practices related to PGCG by industries does not change as the company grows and, therefore, the results do not allow to accept hypothesis 2 of the research.

It is worth noting that part of this result is explained by the fact that most of the sample of this research is formed by micro and small industries and, therefore, presenting low variability. Thus, the results contrast the previous empirical evidences that point to the influence of the size of the organization on the use of management practices (Abdel-Kader & Luther, 2008; King et al., 2010; Ahmad & Zabri, 2015; Pham et al., 2020), including from the perspective of the PGCGs (Oyewo, 2020). However, it corroborates the results found in Klein and Almeida's research (2017), which in the context of Paraná state industries did not verify the relationship between the size of organizations and the use of contemporary practices of management accounting.

Table 6 presents the correlation between the characteristics of managers and the adoption of practices related to PGCG. Regarding the age of managers, although a negative association was found for most management practices, these associations were not significant. Therefore, the results do not allow us to infer that there is a negative association between the age of the manager and the use of the practices related to the PGCGs, as suggested in hypothesis 3. And therefore, not allowing its validation.

Thus, these results contrast the evidence that older managers tend to be more traditional and not incorporate new management tools into their work, as suggested by Young et al. (2001), Naranjo-Gil et al. (2009), Pavlatos (2010) and Santos et al. (2018), demonstrating that the level of use of practices related to PGCGs does not vary with the age of the manager.

The second feature analyzed was the manager's performance time in the position. Although the direction of the association found is aligned with that proposed by the literature, this characteristic showed a significant association only with decision on price, discount and product, signaling that the longer the time of action in the position, the shorter the adoption of practices that provide information for this purpose.

These results align with the arguments of Naranjo-Gil et al. (2009) and Pavlatos (2010), who suggest that managers who are in the company longer tend to develop a power base, connections and work routines that do not want to put at risk, being more likely to remain using practices that are already used to; as much as they believe that innovation and change would be beneficial to the organization. And they align with the results found in the research by Naranjo-Gil et al. (2009), which found the existence of a significantly negative relationship between the stability of the CFO and the use of contemporary management practices.

Thus, the results found allow to partially accept hypothesis 4 of the research, which suggests that there is a negative association between the time in which the manager acts in the position and the use of practices related to the PGCG, since this association was found only in a managerial practice.

Table 6
Correlation between individual contingencies and practices related to PGCG in the sample of industries of Paraíba state

Practices that make up the SCG	Age	Time in the company	Schooling
1. Cost of Transformation and Management	0.00	-0.10	0.12
2. Financial strategy	-0.03	-0.18	0.19
3. Internal Control	-0.08	-0.20	0.23*
4. Evaluation of investments	-0.12	-0.17	0.10
5. Budget Control and Management	0.02	-0.12	0.26*
6. Decision on Price, Discount and Product	-0.14	-0.24*	0.12
7. Projects Management	-0.06	-0.12	0.28**
8. Adherence and Compliance to Regulations	0.00	-0.20	0.16
9. Resources Management	-0.01	-0.14	0.15
10. Risk management	-0.09	-0.18	0.15
11. Strategic Tax Management	0.18	-0.13	0.10
12. Treasury and Cash Management	0.01	-0.10	0.19
Notes		86	

Note. **, * significance level at 1% and 5%, respectively.

Source: Research data (2023).

Finally, the level of education of managers was analyzed, and a positive and statistically significant association was verified with some of the practices related to PGCGs. Therefore, it is verified that managers with higher level of education (post-graduate) tend to make a greater use of practices related to PGCGs, such as internal control, budgetary control and management and project management, when compared to managers who do not have post-graduate degrees.

Therefore, these results suggest that individuals with higher education can more easily understand the importance of adopting modern tools to assist their management, as well as having more ease to adapt to the higher informational volume provided by modern tools (Young et al., 2001; Oyewo, 2020). This allows to accept hypothesis 5, suggesting that there is a positive association between the manager schooling and the use of practices related to PGCGs. These results corroborate previous evidence that also found associations between the adoption of contemporary tools and the education of managers (Young et al., 2001; Santos et al., 2018).

Table 7 summarizes the findings found in the research. Thus, based on this, it is possible to verify that 3 of the five hypotheses formulated presented results aligned with the suggestions of the literature, as well as the previous empirical evidence.

Table 7
Summary of the hypotheses raised in the study

Hypothesis	Signal Expected	Significance	Conclusion
H1	Positive	Significant	Validated
H2	Positive	No significance	Not validated
H3	Negative	No significance	Not validated
H4	Negative	Significant	Partially validated
H5	Positive	Significant	Partially validated

Source: Research data (2023).

Therefore, the results indicate that companies with strategies more focused on the differentiation of products and services, which have managers with less time of activity in the company and with a higher education level (graduate), make a greater use of management practices from the perspective of PGCG. Thus, these results can help companies that are seeking to modernize or even implement an SCG.

5 FINAL CONSIDERATIONS

In this way, the aim of this study consisted of analyzing the associations between organizational and individual Contingency factors and management practices from the perspective of the GMAP of the industries in Paraíba.

The results show that, among the contingencies related to the organizations, only the strategy variable presented a positive and statistically significant association with the practices related to the PGCG (H₁). So that the industries that present strategic priorities with a greater focus on differentiation showed a slightly higher association with the use of such practices, when compared to the cost leadership strategy. Thus, it is indicated that the informational needs to achieve specific strategies diverge. However, the size variable did not show significant association with the adoption of the practices related to PGCG (H₂).

Regarding the individual contingency factors, it was found that the age of the manager (H₃), as well as the time of work in the position (H₄), are negatively associated with most practices related to the PGCG. However, only the time of work in the position showed a significant association with a practice related to PGCG. Thus, the results allow us to accept in parts hypothesis 4. Thus, these results indicate that managers who have been in office for a long time can be more resistant to the changes brought by the adoption of contemporary management tools, as suggested by the literature.

Finally, the manager's education level showed a positive and significant association with some practices related to PGCG (H₅), suggesting that these managers are more likely to adopt contemporary tools to assist the decision-making process and value creation.

This study contributes to the literature by analyzing the antecedents of contemporary management practices from a new perspective (the GMAP). Little is known about the factors that contribute to an effective management accounting function in light of the guidelines provided by the PGCG structure. Therefore, it contributes to the construction of knowledge in this regard.

The limitations of this study imply that its results are interpreted with some caveats, considering the size of the sample, and the fact that the research was based on the perception of the respondents to the questions formulated. Thus, there can be subjective aspects in the answers. Finally, it should be emphasized that the scarcity of studies related to the subject affected the comparison of the results.

Thus, future studies can be conducted to advance in relation to these limitations, being possible to extend the sample to other sectors and other regions, providing new perspectives for comparing these results. Future investigations may also analyze other organizational contingency variables (such as competition, life cycle, technology, etc.) and individual (such as behavioral variables). Finally, qualitative research can be carried out to better understand the perception of managers about the usefulness of the PGCGs for management, as well as the practices resulting from these.

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