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Analysis of contingency factors and management control systems associated with sustainable management practices

Análisis de factores de contingencia y sistemas de control de gestión asociados a prácticas de gestión sostenible

Análise de fatores contingenciais e sistemas de controles gerenciais associados às práticas de gestão sustentáveis

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Abstract

Purpose: The objective of this study was to analyze how contingency factors and the use of management control systems are associated with sustainable management practices in organizations.

Methodology: A field study (survey) was carried out through questionnaires and semi-structured interviews with managers linked to management control systems in two creative companies in the telecommunications sector. The sample has a non-probabilistic character and the data treated using the content analysis technique of Bardin (2011).

Results: The findings shows that technology, organizational culture, suppliers and customers are contingency factors associated with sustainable management practices by the study organization. The research results indicate that the use of an interactive management control system is an essential tool. for the establishment of communication among managers and employees at operational levels of organizations, supporting the implementation of environmental management initiatives. Diagnostic control has been used to monitor goals and implement environmental management practices with a positive impact on organizational performance through indicators of cost reduction, profitability, customer satisfaction and increased sales.

Contributions of the study: The study provided dissemination in the literature of studies on management controls from the perspective of the Contingency Theory, above all, contributing to organizations to create environmental awareness allied to the improvement of their performance with management control practices. In addition to it, the research is relevant for organizations to develop actions to reorganize their processes and meet society's pressures for sustainable practices, increasing competitiveness and improving organizational performance.

Keywords: Management control; Contingency theory; Sustainable practice.

Resumen

Objetivo: El objetivo de este estudio fue analizar cómo los factores de contingencia y el uso de sistemas de control de gestión se asocian con las prácticas de gestión sostenible en las organizaciones.

Metodología: Se realizó un estudio de campo (encuesta), a través de cuestionarios y entrevistas semiestructuradas a directivos vinculados a los sistemas de control de gestión en dos empresas creativas del sector de telecomunicaciones. La muestra tiene un carácter no probabilístico y los datos fueron tratados mediante la técnica de análisis de contenido de Bardin (2011).

Resultados: Los hallazgos muestran que la tecnología, cultura organizacional, proveedores y clientes son factores de contingencia asociados a la adopción de prácticas de gestión sostenible por parte de las organizaciones del estudio. Los resultos de la investigación indican que el uso de un sistema de control de gestión interactivo es una herramienta fundamental para el establecimiento de comunicación entre gerentes y empleados en niveles operativos de las organizaciones, apoyando la implementación de iniciativas de gestión ambiental. El control de diagnóstico se ha utilizado para monitorear metas e implementar prácticas de gestión ambiental

con un impacto positivo en el desempeño organizacional a través de indicadores de reducción de costos, rentabilidad, satisfacción del cliente y aumento de ventas.

Contribuciones del estudio: El estudio proporcionó difusión en la literatura de estudios sobre controles de gestión desde la perspectiva de la Teoría de la Contingencia, sobre todo, contribuyendo a las organizaciones a crear conciencia ambiental aliada a la mejora de su desempeño con prácticas de control de gestión. Además, la investigación es relevante para que las organizaciones desarrollen acciones para reorganizar sus procesos y atender las presiones de la sociedad para la adopción de prácticas sustentables, aumentando la competitividad y mejorando el desempeño organizacional.

Palabras clave: Control de gestión; Teoría de la contingencia; Práctica sostenible.

Resumo

Objetivo: O objetivo deste estudo foi analisar como os fatores contingenciais e o uso de sistemas de controle gerencial estão associados às práticas de gestão sustentáveis em organizações.

Metodologia: Foi realizado um estudo de campo (*survey*), por meio de questionários e entrevistas semiestruturadas com gestores ligados aos sistemas de controles gerenciais em duas empresas criativas do setor de telecomunicações. A amostra tem caráter não probabilístico e os dados foram tratados utilizando a técnica de análise de conteúdo de Bardin (2011).

Resultados: Os achados denotam que a tecnologia, cultura organizacional, fornecedores e clientes, são fatores contigenciais associados com a adoção de práticas de gestão sustentáveis pelas organizações do estudo.s resultados da pesquisa indicam que uso de sistema de controle gerencial interativo constitui uma ferramenta essencial para o estabelecimento de comunicação entre os gestores e funcionários em níveis operacionais das organizações, corroborando para implementação de iniciativas de gestão ambiental. O controle diagnóstico tem sido usado no acompanhamento de metas e implementação de práticas de gestão ambientais com impacto positivo no desempenho organizacional por meio de indicadores de redução de custos, rentabilidade, satisfação do cliente e aumento de vendas.

Contribuições do estudo: A pesquisa proporcionou disseminação na literatura de estudos sobre controles gerenciais sob a ótica da Teoria da Contingência, sobretudo, contribuindo para que as organizações criem consciência ambiental aliado a melhoria de seu desempenho com práticas de controle gerencial. Além disso, a pesquisa possui relevância para que as organizações desenvolvam ações no sentido de reorganizar seus processos e atendam às pressões da sociedade pela adoção de práticas sustentáveis, aumentando a competitividade e melhorando o desempenho organizacional.

Palavras-chaves: Controles gerenciais; Fatores contingenciais; Prática sustentável.

1. Introduction

The dynamics of markets has required from organizations a search for management artifacts that help the decision-making process. Management accounting can be characterized as a mechanism that identifies, measures and highlights information in order to create organizational value (Beuren, Souza & Portulhak, 2018). In this sense, management control systems, among their functions, support organizations communicate their strategies to employees and monitor their actions to achieve results (Anthony & Govindarajan, 2006). This is accomplished through organizational demands driven by contingency factors, which, combined with the competitive business environment and global trends related to sustainable practices, constitute challenges for the performance of entities (Lucianetti, Jabbour, Gunasekaran & Latan, 2018).

The Contingency Theory seeks to explain the relationship between the elements (culture, technology, customers, suppliers, size, among others) of the organizational context, structure and performance, which affect the functioning of organizations and their management practices. Furthermore, this theory indicates that organizations have the ability to adjust their structures in the face of environmental uncertainties in order to achieve goals with higher levels of organizational performance (Beuren & Fiorentin, 2014; Iredele, Tankiso & Adelowotan, 2020). Additionally, factors such as environmental uncertainty, quality, decentralization, environmental issues and organizational strategy can affect the use of strategic management instruments and practices (Lucianetti et al., 2018).

There are studies that used the Contingency Theory are registered in the search for understanding the link between the use of managerial practices and the performance of companies (Sousa & Voss, 2008; Otley, 2016; Lucianetti et al., 2018). This study is distinguished by the search to understand how contingency actors affect the use of diagnostic and interactive control systems, as Simons (1995) puts it, in encouraging the use of sustainable management practices in organizations.

Management controls are formal practices (incentive and monitoring systems) and informal (selection of employees and corporate culture) that can support the entity's objectives (Feichter & Grabner, 2020). It is noteworthy this study uses formal management controls. So, Simons' (1995) control system, *levers of control* (LOC), establishes a diagnosis of the actions implemented in order to control and correct eventual non-conformities, in addition to the interactive use of information for organizational management in the definition of strategies against uncertainties (Oro & Lavarda, 2019).

Organizations have been pressured to use sustainable management practices arising from an increasingly growing demand for awareness in society, which can impact processes and performance. However, there are difficulties associated with identifying, classifying, measuring, allocating and managing of environmental costs (Iredele, Tankiso & Adelowotan, 2020). This study, seek to discuss how managerial accounting can support sustainable management practices that impact the entity's performance.

The constantly changing business environment and the scarcity of resources have required organizations to be creative in order to remain competitive in the market (Hutahayan, 2020). Creative companies can be understood as a path to the development of sustainability with actions of innovation in processes or technology that trigger activities, which minimize the environmental impact concomitantly with economic growth.

The use of sustainable management practices in the entities is based on introducing actions that provide the economic growth of companies reducing damage to the environment. Futhermore, it aims to use measures that reflect the concern with material waste, use of

renewable energy, recycling, among other actions, which contribute to an organization being sustainable (Hutahayan, 2020).

Therefore, sustainability is an emerging theme that has been discussed in society, demonstrating the need for equitable development among the economic, social and environmental tripod, being associated with the ability of human beings to interact with the planet without harming natural resources for future generations. The sustainable management practices generates benefits in terms of management and organizational performance with cost reduction, compliance with specific legislation, social responsibility, higher levels of productivity and profitability, with accounting as an ally in providing information that enhances the decision-making process (Paiva & Ribeiro, 2005).

The implementation of sustainable management practices in companies is an emerging and current issue, which contributes to obtaining competitive advantages through strategic sustainability objectives (Bernardo & Camarotto, 2012). Additionally, according to the authors, when verifying the motivational factors for sustainable management practices, with an environmental emphasis, in São Paulo entities that process wood, they identified factors such as legal obligation, market regulation and aspects related to the competitiveness of the business. However, these factors allied to the lack of resources, the need for legal, governmental, suppliers and customers pressures can be seen as restrictions in some organizations that seek to implement sustainable management initiatives and practices, especially environmental ones, due to the influence of cultural aspects, education levels of managers, organizational life cycle, entity size, capital structure, among others (Martins, Escrivão & Nagano, 2016).

Santos, Silva and Caetano (2019), when looking for social responsibility and sustainability actions of micro companies, identified that these organizations have not conducted sustainable management practices. The managers, who participated in the research, emphasized that there is a need to use sustainable management practices in the face of competitiveness and the creation of competitive advantage, above all, with long-term results, as the concern has been in relation to short-term financial performance.

Chenhall Studies (2006); Abernethy, Bouwens and Van Lent, (2010); Su, Baird and Schoch (2015); Bisbe, Kruis and Madini, (2019); Crespo et al., (2019); Feichter and Grabner (2020) demonstrate the relationship among management control systems and the use of sustainable management practices so that organizations meet environmental uncertainties and remain competitive. Thus, it is necessary for regulatory agencies to reflect on the relevance of sustainability, as well as the management practices that support its implementation.

In light of the exposed, the following research problem arises: How are contingency factors and the use of management control systems associated with sustainable management practices in organizations? For this, the objective is to analyze how contingency factors and the use of management control systems are associated with sustainable management practices in organizations.

The study is justified not only by the theoretical relevance of disseminating in the literature of studies on management controls from the perspective of the Contingency Theory, but also by the empirical contribution for organizations to use sustainable management practices and stimulate environmental awareness.

Furthermore, it stimulates the practical reflection of managers and other stakeholders in the organizational context, especially in relation to sustainable management initiatives associated with management control systems, denoting the role of managerial accounting in supporting and enhancing the use of artifacts in the creation of value and competitive advantage.

Moreover, this study has scope in small companies that creatively reorganize themselves to remain competitive in the market, making it essential to identify the risks that can affect

processes and organizational performance.

The study presents, besides this introduction, the theoretical framework, which discusses contingency factors, management control systems and sustainable management practices in organizations, applied methodology and its design, results and conclusions.

2. Theoretical Reference

2.1 Contingency factors

The business environment demands creativity from organizations to reduce the impacts of interconnected risks in the value creation process in their internal and external activities, mainly in the relationship with the customer. Thus, organizations try to use their creativity to innovate in providing services and offering new products that meet customer needs, but also maintain competitiveness against competitors (Hutahayan, 2020). For Simon (1995), organizations shape and innovate with the support of control systems to meet their strategic objectives and minimize the effect of internal and external risks, understood as contingencies, which can impact organizational performance.

The Contingency Theory emerged in the 1950s, based on the conviction of other theories that reported entities as open organisms that interacted with the environment, reachinga certain level of balance with the environment. Initially, the studies of this theory dimensioned a direction, using the interference of organizational size factors and technology in business activities. Over time, other factors were considered, such as market position, entity growth and organizational strategy (Kulkarni, 2017).

This theory seeks to understand the behavior of companies in the face of contingency factors of technology, culture, external and internal environment that influence the structure and internal processes of organizations, which are fundamental for decision making (Marques, Souza & Silva, 2015; Oliveira, Rech, Cunha & Pereira, 2016). The business environment has been constantly changing, showing decision makers that the organizational environment is full of uncertainties. Furthermore, technological development has become a pattern to drive changes in business practices, environmental uncertainty and the collapse of predictive models on which control was based. The contingency considers a context in which the business environment is dynamic, being essential to identify the mechanisms of change and the introduction of modified ways of management and control (Otley, 2016).

When considering that contingency factors impact the modeling of management accounting, it is added that management control systems need to consider, in their formulation, the inherent aspects to the entity's context, that is, situations and conditions that organizations are facing (Otley, 1980). Consequently, organizational performance must be improved through a good interaction among management accounting, control system and its variables that refer to the internal and external environment in the business context (perceived environmental uncertainty, business strategy, market orientation and company size) for organizations to adapt to their context in order to continue and survive (Al-Mawali, 2015).

The environment organizational concept is not made in a clear and descriptive way, but with the perception of each individual that integrates it. Thereby, it is observed that each entity contains a different view of the environment in which it is inserted, since it is based on its experiences, expectations, convictions, motivations, hierarchical positions and mainly on the way of thinking of its internal users (Guerra, 2007).

So, because there is no ideal formula for better organize companies, the contingency approach is something dynamic that requires flexibility, adaptation and continuous learning. Management control systems must adhere to this dynamism, seeking appropriate techniques for

the context in which the organization is inserted to promote a better organizational performance and survival in the competitive market (Otley, 1994).

Beuren and Fiorentin (2014) argue that organizations operate under different conditions, and therefore, undergo changes depending on the environment they belong to. These conditions or contingency factors can be called threats or opportunities that directly influence the structure and internal processes of companies. As aforesaid, contingency factors affect companies from different angles, positively ornegatively, including the practices they choose to conduct. As an example, there are contingency factors that affect sustainable management practices in entities, such as lack of awareness of the benefits of environmental management, lack of managers' knowledge in the environmental field, unawareness of environmental damage, financial resources, time management, low pressure from customers, lack of managers' information, strategic proactivity, stakeholder management, shared vision and production flexibility (Martins, Escrivão & Nagano 2016).

In face of this, it is noted that the contingency factors are associated with the process of internal and external organizational change, in an interconnected way with the controls. Moreover, it promotes arguments that seek a better explanation of factors that make a company react to the environment, implementing practices and a certain management system or simply abandoning them (Brandt, 2010).

2.2 Systems of Management control

The Systems of Management control are a set of management artifacts that aim to measure and provide information so that managers can assess organizational performance (Feichter & Grabner 2020). In this way, the control of value creation processes in organizations becomes vital so that it is possible to measure, control and evaluate the strategies executed to achieve the proposed objectives.

Simons' (1995) control system, Levers of Control (LoC) or levers model, emerged through case studies and a view of multiple control systems (beliefs, constraints, diagnostics and interactives), which aimed to the implementation and control of organizational strategies. When trying to balance innovations and restrictions caused by dynamic tensions in the organizational environment, Heinicke, Guenther and Widener (2016) highlighted the balancing of tensions within the four systems proposed in the levers model, which are: characteristics such as the essential values present in beliefs; the search to avoid risks; diagnostics of critical aspects to performance; and attention to emerging strategies (Simons, 1995; 2000).

The systems of beliefs constitute a set of communication mechanisms, through formal documents, mission, values and objectives used by managers in the organization (Simons, 1995). These elements must be related to the entity's strategy and tend to be an integral part of the system with the formalization of information used by managers in an attempt to maintain or change the organization's activities (Pletsch & Lavarda, 2016).

The system of restrictions is based on the establishment of limits on the behavior of the organization's members, allowing the search for opportunities and development of innovation within defined restrictions (Simons, 2000). For Oyadomari, Frezatti, Aguiar and Cardoso (2009), the restrictions aim to help managers by delimiting the degree of risk that the entity can assume. In addition, it can operationalize by disclosing indebtedness indicators and the degree of operational and financial leverage.

The control of diagnostic is considered by Simons (1995) as a formal control, by which managers monitor the strategic execution, identify problems, compare results and present an action available for decision making on factors that can influence organizational performance.

For Pletsch and Lavarda (2016), diagnostic control systems act to provide feedback that allows establishing reasonable security in achieving goals. Through diagnostic control, the organization can analyze events to achieve planned strategies (Oro & Lavarda, 2019).

The interactive control system aims to use the diagnosis to encourage learning and strategic innovations, reducing strategic uncertainties (Simons, 1995). For Degenhart and Beuren (2019), successful use of interactive control precedes information sharing between higher managers and lower hierarchical levels. Also, interactive control supports the expansion of learning, stimulates innovative ideas, as well as emerging strategies to reduce the degree of uncertainty for the entity to achieve its goals (Feichter & Grabner 2020).

The interactive control has characteristics that show its relevance for organizations, in the sense of promoting an integration of managers of high hierarchical levels with the other employees of the organization. According to Simons (1995), this control system provides relevant information to top management, requiring regular control and attention from managers at all levels of the entity. In order to monitor and formulate strategies, the information is discussed in meetings involving managers at the strategic, tacit and operational levels. Thus, the entity has a continuous process, above all, for the development of action plans to identify eventual uncertainties about the organization's strategies (Oyadomari et al., 2009).

For Heinicke, Guenther and Widener (2016), diagnostic and interactive control systems differ according to the purpose of their use, and may be distinguished from the organizational objectives. Therefore, the use of diagnostic and interactive controls can contribute to the innovation process in organizations, especially the reorganization of processes that generate efficiency and effectiveness in production and services provided. However, some challenges contribute to organizations not being able to reorganize their processes so that environmental improvement strategies, with less deteriorating effect, are within the financial strategies.

The systems of control of diagnostic and interactive are related to organizational performance, as they monitor the execution of strategies and innovations to reduce uncertainties that can affect the result. These controls ensure that predetermined objectives are met and corrective actions taken when a gap between planned and achieved results is detected. Furthermore, it is expected that through interactive communication, the entity is more likely to use creativity and innovation in the search for competitive advantage, especially with sustainable management practices, concomitant with organizational performance (Su, Baird & Schoch, 2015).

The organizational performance can be understood as a positive result evidenced in financial and non-financial indicators, resulting from activities and processes throughout the entity's production chain (Anthony & Govindarajan, 2006). In this study, organizational performance was understood by profit targets, sales, return on investment and product competitiveness strategy against competitors.

2.3 Sustainable management practices

The 20th century was marked by industrial development that affected emerging nations and developing countries with many consequences for the environment. Therefore, 21st century environmentalists warned society that the lack of care with natural resources can impact people's quality of life (Schlesinger et al., 2016). Thus, it is clear that the impacts of entrepreneurial activities are positive when social, environmental and economic aspects are incorporated into the strategies and practices of organizations (Leitão & Alves, 2016).

Abreu, Castro and Lazaro (2013) demur that stakeholders, together with companies, gradually grow in a path of introducing and integrating their responsibility actions to improve

sustainable development. In Brazil, the forwarding of these actions still face obstacles, which hinders their efficiency in simultaneously contemplating the social, economic and environmental dimensions.

Currently, it is perceived that several leaders and managers are looking for skills development that provide changes in organizational processes and systems to develop socio-environmental responsibility through good sustainable management practices. In this way, it is necessary for organizational managers to acquire the ability to face challenges in the internal and external environments of companies (Singh, 2018).

Paiva and Ribeiro (2005) identified recycling as an environmental practice, in a study with a construction company, which provides returns in cost savings, better use of raw materials and elimination of losses. Thus, activities that improve the environment offer the lowest possible cost and greater use of its resources, making it essential for a company that wants to have a longer life cycle.

Viegas, Bianchi and Medeiros (2014) also analyzed those sustainable practices used in light vehicle dealerships, through a multi-case, such as soil impermeability, energy savings and selective collection caused improvements to the environment. Still, it is noticed that even with the difficulties of high costs and implementation difficulties, the tools of environmental improvement are introduced in the entities studied by the authors.

Martins, Escrivão and Nagano (2016), through a literature review, sought to identify the main contingency factors and their links with small and medium-sized companies to establish in which dimension of the specifics (manager, organization and environment) each contingency factor focused on regarding the use of best sustainable management practices. Ergo, barriers and facilitators to practices and environmental management were identified, as shown in Table 1. Schenini (2000), listed internal and external motivational factors for the use of sustainable management practices in companies, which corroborates the Contingency Theory.

Table 1

Contingency factors (barriers and facilitators)

Barriers	Facilitators
Unawareness of environmental damage	Strategic proactiveness
Lack of financial resources	Stakeholder Management
Shortage of human resources	Shared view
Lack of time management	Production flexibility
Low pressure from customers	
Lack of managers' information	
Lack of managers' knowledge in the environmental field	
Lack of awareness about environmental management benefits	

Source: *Adapted by Martins, Escrivão and Nagano (2016).*

Schenini (2000) and Brandt (2010), argue that internal and external factors promote organizational change, indicating two groups: (1) External motivating factors: pressure from the local community, compliance with legislation, new regulations, reduction of expenses with fines and decontamination, avoid lawsuits, consumers, prevention of ecological accidents, pressure from agencies or financing banks, pressure from insurance companies and pressure from NGOs; and (2) Internal motivating factors: waste treatment and disposal costs, raw material and production costs, technological updating and optimization of the quality of finished products.

There are numerous pressures for practices that provide better environmental conditions

for the planet, especially from customers, suppliers, communities and governments. However, small and medium-sized companies face greater obstacles to the implementation of activities that have a positive impact on the environment in which the entities are inserted. Furthermore, it is essential to expand knowledge of activities that generate environmental sustainability, their implementation process and their costs versus benefits, in order to motivate companies that have not yet acquired better sustainable management practices (Martins, Escrivão & Nagano, 2016).

Jhunior and Vilela (2018), when investigating which sustainable management practices have been used in small and medium-sized companies, identified the green and clean production process, the capture and reuse of rainwater, the control of noise emission, the treatment of effluents, the use of packaging, awareness-raising and recycling actions by employees to environmental preservation.

Sehnem and Machado (2018), when studying environmental sustainability practices in the state of Santa Catarina, 50 companies from different sectors showed that the difficulties for implementation are: legislation, lack of investments, bureaucracy of political policies, lack of awareness of high management of the benefits of these practices, lack of commitment and knowledge with the implementation of sustainable actions.

It is noteworthy that the reasons that lead organizations to overcome difficulties and implement sustainable practices are highlighted, such as: external demands (customers, shareholders, NGOs, community), cost reduction, profit increase, concern for corporate reputation, internal and concern about regulation (Sehnem & Machado, 2018). Even, when observing these motivations, managers noticed that sustainable management practices provide benefits to organizations, such as image improvement, low costs, greater profitability, quality and among others.

3 Methodology

The research is classified in relation to the objectives as descriptive since it seeks to characterize how contingency factors and management control systems are associated with sustainable management practices. Regarding the procedures, a field study was conducted with the support of the survey technique with a quantitative-qualitative approach.

The research sample has a non-probabilistic character and was composed by the answers of six (6) managers linked to the management control systems, in two companies in the telecommunications sector in Paraíba, distributed among the positions of Administration (2), Accounting (2) and Financial/Commercial (2). The choice of companies was due to the relevance of the telecommunications segment in the economy and society. Besides this, it hasa level of competitiveness that requires dynamic management practices to meet market demands.

The data were collected from semi-structured interviews and a structured questionnaire, during the month of August 2020. The interview included questions related to the experiences of the interviewees, according to the script: a) questions in order to identify sustainable management practices and how they affect performance. In this sense, in a supplementary way, we seek to capture in the perception of managers the financial and non-financial performance, according to Su, Baird and Schoch (2015); and b) identify how contingency factors influence sustainable management practices. The interviews were conducted in two stages, the first one, through the Zoom Video Communications, Inc.©2020 platform, with the financial and accounting managers of the companies, with an average duration of 63 minutes. The second stage took place on site with the administrative managers/general director, with an average duration of 120min. Due to confidentiality and anonymity, the administrative managers of

company 01 were called G1 - E1, while those belonging to company 2 will be called G2 - E2.

The questionnaire was divided into two blocks: I - questions related to the profile of the respondents; II - identification of the type of diagnostic and interactive control, using questions based on the description of the diagnostic and interactive use by Simons (1995) and additionally, identify the effect on organizational performance.

The questions were adapted from the construct proposed by Su, Baird and Schoch, (2015). The diagnostic use (4 assertions) is captured as indicators are used to measure results, compare pre-defined targets and generate a corrective response and the interactive use (5 assertions) with information for an agenda addressed by the highest levels of management, interactive control system requires frequent and regular maintenance of operational managers at all levels of the organization, the data generated by the system are interpreted and discussed in face-to-face meetings of superiors, subordinates and peers, as well as the system is a motivator for continuous improvements with discussion of underlying data and action plans; organizational performance (3 statements).

To measure the questions in block II of the questionnaire, a five-point Likert scale was used (1 – completely disagree to 5 – completely agree). The questionnaire to support the interview was submitted to the application of a pre-test with three professionals (accountant, external sales and operational manager) who did not make up the sample. Furthermore, the appropriate suggestions for objectivity and understanding of the construct were used.

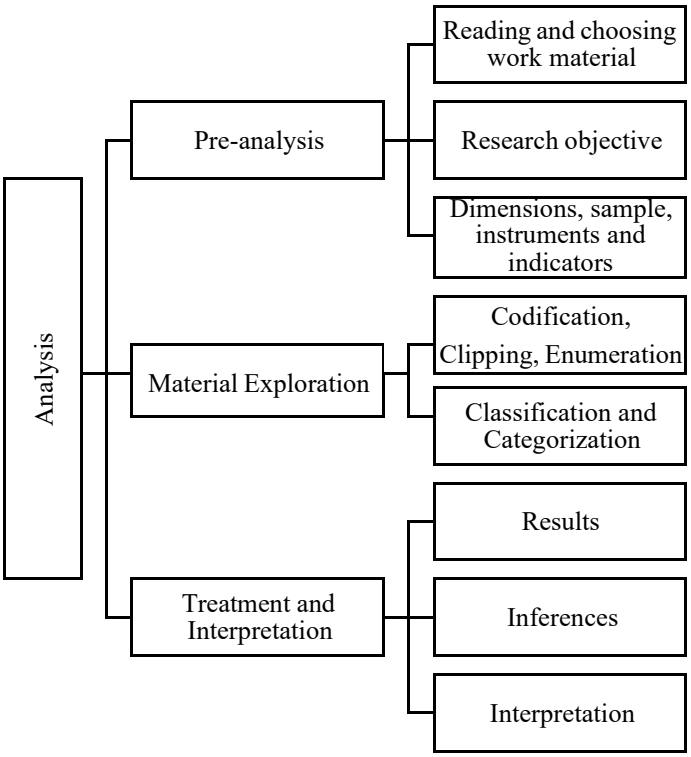

Figure 1 *Research Content Analysis Steps.*
Source: adapted from Bardin (2011).

The data were structured in three phases (Colognese & Melo, 1998): pre-analysis, material exploration and data processing. Thus, the first is the period of idea systematization

that provide theoretical support to answer the research question, with emphasis on literature on contingency factors and sustainable management practices. There is the coding/transcription of the recorded interviews and the categorization (subcategories) of the data for further analysis. Finally, in the last step, the data were processed using Bardin's (2011) content analysis technique.

4. Results

In this section, the results of the data collected in the interview will be presented, segregated by the virtual and on-site interview (G1 - E1 and G2 - E2). The profile of the respondents will be highlighted, the type of control used (diagnostic and interactive) and its purpose, as well as the relationship between sustainable management practices and contingency factors.

4.1 Profile of respondents

The medium and small companies participating in the study have an significant role in the provision of telecommunications services, as they have faced aggressive competition from a conglomerate of companies with greater capital contribution, which denotes the need for innovations in their processes in regard to shaping to meet contingency factors with competitive strategies. Table 2 shows the characterization of the respondents in terms of their role, age and length of time in the organization.

Table 2
Profile of Respondents

Occupation	Company 1		Company 2	
	Age	Operating time	Age	Operating time
Administrative	52	22	47	14
Accounting	29	3	34	2
Financial/Commercial	30	5	31	6
Total Employees	**29**		**30**	

Source*: Research Data.*

For Heinicke, Guenther and Widener (2016), the length of time working in the company can influence the levels and use of diagnostic and interactive controls, directly impacting organizational performance, the search for process innovations to meet external pressures and practices of sustainable management. As a control variable, the number of employees was collected to avoid biases arising from the complexities of the size of the company, which would impact the reading of the results, which have characteristics of Small and Medium-sized Companies.

4.2 Use of diagnostic and interactive controls in organizations

This section shows how the managers of organizations use interactive and diagnostic controls. The questions were collected using a five-point Likert scale (1 – completely disagree and 5 – completely agree), therefore, they were presented in Table 3.

Table 3

Interactives	**1**	**2**	**3**	**4**	**5**
Frequent interaction among the company's managers and operational employees	0	0	1	3	2
Face-to-face meetings scheduled among managers and employees in general	0	0	0	2	4
Use of indicators by managers to discuss changes in the organization	0	0	2	0	4
Controls generate information that forms a recurring agenda in discussions between managers and other company employees	0	0	0	3	3
Diagnosis	**1**	**2**	**3**	**4**	**5**
Controls are used to monitor goals and results	0	0	1	2	3
Controls are used to plan operations in accordance with strategic planning	0	0	0	2	4
Controls are used to analyze performance	0	0	0	3	3
Organizational Performance	**1**	**2**	**3**	**4**	**5**
Profit targets achieved	0	1	1	0	4
Sales targets achieved	0	0	1	3	2
Return on investment targets achieved	0	0	0	2	4

Source: *Research Data.*

Regarding to interactive control, the statements about the use of information for interaction among managers and employees at operational levels, respondents (5) indicate using this tool in the organization. The statement that deals with frequent meetings or meetings among managers and employees was also indicated as relevant by the participants (6). Controls are used to stimulate and support organizational change, as stated by four (4) respondents, while three (3) are indifferent. Moreover, respondents (6) claim that controls generate information that form a recurring agenda in discussions between managers and other company employees. This type of control supports the development of skills and abilities of managers and employees, through the exchange of experiences and learning from innovative ideas and emerging strategies to achieve goals (Feichter & Grabner 2020).

Diagnostic controls, in the assertion about their use to monitor goals and results, respondents (5) state that they use control for this purpose, showing that organizations focus on monitoring established activities and projected results. When asked about the use of diagnostic control to plan actions, the participants (6) claimed to use this management artifact, as well as (6) indicated to use to compare the results obtained with those projected in the strategy. For Pletsch and Lavarda (2016), diagnostic control provides feedback for achieving goals. This finding is in line with the study by Su, Baird and Schoch, (2015).

Consequently, the reflection of interactive controls and diagnoses is evidenced in the Likert scale, the agreement of the respondents in relation to the variables used to capture organizational performance. Profit targets were indicated by four (4) participants, sales targets were emphasized by managers (5), mainly because the telecommunications sector has prospective strategies to obtain a competitive advantage over competitors. Furthermore, the (6) participants use diagnostic controls to track investment targets. The use of interactive controls and diagnostics linked to organizational performance can support sustainable management practices due to social pressures and competitiveness.

4.3 Association between contingency factors and sustainable management practices

In this section, open questions are presented to capture the "how and whys", emphasizing that the interviewees in loco (G1 - E1 and G2 - E2) presented relevant insights for the research, therefore, they will be explained and discussed in a segregated way. When asked if there were practices in the company that promoted improvement both in the environment and in the organization, both respondents stated that it contains cost savings in companies by using sustainable management practices.

Therefore, the results obtained on sustainability practices at the entity corroborate those cited in the research of authors such as Paiva and Ribeiro (2005) when citing recycling, as well as in the study by Viegas, Bianchi and Medeiros (2014) when mentioning recycling. selective collection as a practice that improved the environment. The respondents argued:

> "Yes, reduction of paper consumption, disposal of unusable materials and implementation of selective collection" (G1 - E1)
> "Yes, reduce the cost of fuel, we use alcohol as fuel in our vehicles, our technicians do not use paper" (G2 - E2).

When asking about the difficulties of implementing sustainable management practices, internal contingency factors are identified that affect the introduction of initiatives related to the research of authors Schenini (2000) and Martins, Escrivão and Nagano, (2016). In addition to Sehnem and Machado (2018), who mention as an obstacle the lack of commitment and knowledge with the implementation of sustainable actions. Thus, the interviewees quote:

> "Consciousness of employees is a complicated thing, but we are trying to improve. In addition to investing in systems that help to automate processes." (G1 - E1)
> "Any change at the beginning of the processes is met with resistance, but after the benefits of the processes are explained to employees, everyone understands and the processes flow naturally" (G2 - E2).

However, there are reasons that contribute to the introduction of activities that will result in improvements to the environment. According to Oliveira and others. (2016), the Contingency Theory analyzes which factors influence organizational practices, as shown in Table 4, the interviewees' arguments show which of these factors contributed to sustainable management practices. The results obtained agree with the research by Schenini (2000) and Sehnem and Machado (2018).

Table 4
Identification of Contingency Factors Affecting Sustainable Management Practices

CATEGORY	SUBCATEGORY	RESPONDENT	FREQ.
Contingency factors in sustainable management practices	Pressure from the local community, avoidance of funding agencies or banks	Interviewee G1 - E1	1
	Technological update	Interviewee G2 - E2 and G1 - E1	2

Source: R*esearch data.*

Furthermore, when asking participant G1 - E1 if any control is used to measure the impact of using sustainable management practices, for example recycling, reduction of paper

use and what these controls are, it is identified that the participant's response associates up to the good sustainable management practices. These are found by authors such as Jhunior and Vilela (2018), when verifying recycling as a practice used by micro and small companies. The study by Paiva and Ribeiro (2005) also points to recyclable material as the best use of raw materials in companies. In this way, the participant G1 - E1 replied:

> "We are looking to optimize the processes, eliminating all paper use. Now, we are reducing the use of paper and disposal of unusable materials on the ground, with high pollution power" (Interviewee G1 - E1).

When the interviewee G2 - E2 was asked if any control is used to measure the impact of sustainable management practices and what these controls are, it was noticed that it corroborates the Contingency Theory, which according to Brandt (2010) identifies internal and external factors that promote organizational change. As an example, participant G2 - E2 mentioned that technological innovation is used as an internal contingency factor to assist environmental practice.

In the study by Schenini (2000), technology is seen as a motivation for good sustainable practices. Interviewee G2 - E2 states that "we use our own application to avoid printing (OS) where we control the services of our technicians regarding the use of paper" (Interviewee G2 - E2).

It is known that management control systems provide communication guidance between employees of the organization that are located in the tactical, operational and strategic areas. They also serve to provide indicators that accompany the actions in the companies to direct the impact of these attitudes of the employees in the result that is intended to achieve (Anthony & Govindarajan, 2006). Thus, the relevance of management controls is perceived to lead to good organizational performance and generate information. When inquiring about the types of control, the interviewee G1 - E1 stated that:

> "In our company we use several controls to evaluate the performance of the employees. We have monthly reports of the service number of the collection sector, including discounts granted to reduce non-compliance; accounts payable and receivable; number of new customers and service cancellations by the commercial sector, with a monthly agenda of strategies and actions; support incident number and installation number by technicians; customer satisfaction after contacts" (Interviewee G1 - E1).

However, the interviewee G2 - E2, when asked about the type of control, only mentions them, it is observed in his dialogue that the management control indicators are used to assist in the profit, commercial, customer satisfaction and conducts in external service practices performed by the company. Thus, it contains relationships with data from the study by Moreira, Borges and Santiago (2017), who report that management control systems support the achievement of business objectives and strategies. Interviewee G2 - E2 stated that "financial indicators, commercial, control of external technical services, assistance by telephone, WhatsApp".

The questions about Simons' control system (1995), which involves a set of controls that provide communication, diagnosis and interaction, were directed to the interviewee and categories and subcategories were jointly formulated according to their answers. It is noted that the answers reinforce, through their results, links with previous research, such as Oro and Lavarda (2019), who argue for diagnostic control to achieve strategies in companies, and Simon (1995), emphasizing that through from the diagnosis one can see the achievement of goals.

Therefore, Degenhart and Beuren (2019) state that the pillar of interactive control is communication in meetings with managers and employees to align the entities' strategies and objectives.

The findings denote that diagnostic and interactive controls are associated with the search for the sustainable management practices, above all, with the reorganization of processes in the elimination of the use of paper with the technological investment, the optimization of the processes and the reduction of costs and time of communication among activities. Contingency factors such as pressure from customers and the community, as well as compliance with requirements from suppliers, banks and technological changes, aim to improve organizational performance.

5 Conclusion

The present article aimed to analyze how contingency factors and the use of management control systems are associated with sustainable management practices in organizations. The results show that organizations have managers with a working time of more than one year, which can influence the formulation and implementation of controls, also to their diagnostic and interactive use. Therefore, the organizational structure of the entities may be related to the findings of this research.

Regarding the use of interactive controls, managers revealed the importance of controls in the frequent interaction between managers and operational employees of organizations, in addition to evaluation meetings between managers and employees. As an example, managers use indicators to discuss changes in the organization, which create discussions to reduce strategic uncertainties and design innovations with the insertion of sustainable management practices in organizational strategies.

The diagnostic control has been used to monitor goals and results, but also to plan operations in accordance with the organizations strategic planning. In this way, it is related to the objectives of organizational performance of profit targets, investments, mainly sales that are linked to the competitive levels of the organizational segment.

The inclination for organizational performance with sales goals shows that organizations are directly influenced by contingency factors linked to customers, using sustainable management practices as part of processes, which reduce costs and optimize the timeliness of information in the attendance and provision of services to customers. Thus, it was identified that the sustainable management practices used in organizations are incipient, motivated by external factors linked to customers and the community, in addition to suppliers and banks.

The findings bring a reflection, above all, for companies in the telecommunications sector in seek to implement sustainable management practices as a competitive differential against competitors, concomitant with cost reduction, process optimization and informational improvement that increase the quality of services provided and create competitive advantage by creating value for customers. Besides, they mention discussions about sustainable management practices in the context of Medium and Small Companies, denoting their impacts on organizational strategy and performance. Additionally, the results show the need for managers to encourage an environment focused on the environmental initiatives and consider these efforts in the organization's decision-making process.

The assessment has limitations inherent to the procedures in the survey research, which limits its generalizations to deepening in the organizations studied, but sheds light on the theme in the expansion of the sample, that is, companies that operate in this segment and can become

even more competitive. The study presents as contributions to the dissemination of literature on interactive and diagnostic controls (Simons, 1995). Finally, it denotes the incipience of environmental issues in small and medium companies, requiring greater awareness of managers and employees so that strategies aimed at better organizational performance include sustainable management practices.

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