

## Article

# Strategic management tools and decision-making in state-owned enterprises

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Given the need to understand in more detail how strategic management tools (SMT) contribute to decision-making in the context of public management, this article aims to evaluate the use of SMTs and its influence on decision-making in a group of state-owned companies. The study was conducted with three companies selected by means of accessibility. A content analysis of transcripts from the interviews with managers of each company was performed, leading to the following results: long-term decisions were mainly associated with those necessary to comply with strategic planning, but little emphasis was placed on decisions involving risk or uncertainty; the use of SMTs with a focus on complying with legal requirements undermines the awareness and training of users. Such factors, as well as the need to accommodate changes of a political nature to the tools, undermine the full benefits of SMTs in state-owned companies and their ability to deal with the complexity of the strategic environment. The study contributes to a broader comprehension of specific aspects of the use of SMTs, as well as their benefits and limitations in public organizations, particularly, state-owned enterprises.

**Keywords:** strategic management tools; decision making; public administration.

## Ferramentas da administração estratégica e tomada de decisão em empresas estatais

Dada a necessidade de se compreender mais detalhadamente como as ferramentas da administração estratégica (FAE) contribuem para a tomada de decisão no contexto da administração pública, este artigo tem o objetivo de avaliar o uso das FAE e sua influência na tomada de decisão em um grupo de empresas estatais. O estudo foi realizado com três empresas selecionadas por acessibilidade. Uma análise do conteúdo das entrevistas com os gestores de cada empresa foi realizada, obtendo-se os seguintes resultados: decisões de longo prazo foram associadas, principalmente, àquelas necessárias ao cumprimento do planejamento estratégico, porém, pouca ênfase foi dada às decisões que envolvessem risco ou incerteza; o uso das FAE com foco no cumprimento de exigências legais tendia a minar a conscientização e o preparo dos usuários. Tais fatores, assim como a necessidade de acomodar alterações de natureza política às ferramentas, restringem os benefícios plenos do uso das FAE nas empresas

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estatais e sua capacidade de lidar com a complexidade do ambiente estratégico. O estudo contribui para maior compreensão dos aspectos específicos do uso de FAE, bem como seus benefícios e limitações em organizações públicas, particularmente, empresas estatais.

**Palavras-chave:** ferramentas da administração estratégica; tomada de decisão; administração pública.

## Herramientas de gestión estratégica y toma de decisiones en empresas estatales

Dada la necesidad de entender con más detalle cómo las herramientas de gestión estratégica (HGE) contribuyen a la toma de decisiones en el contexto de la administración pública, este artículo tiene como objetivo evaluar el uso de HGE y su influencia en la toma de decisiones en un grupo de empresas estatales. El estudio se realizó con tres empresas seleccionadas por su accesibilidad. Se realizó un análisis de contenido de las entrevistas con los gerentes de cada empresa, obteniendo los siguientes resultados: las decisiones a largo plazo se asociaron principalmente a las necesarias para cumplir con la planificación estratégica, pero se dio poco énfasis a las decisiones que involucran riesgo o incertidumbre; el uso de HGE con un enfoque en el cumplimiento de los requisitos legales socava la conciencia y la preparación de los usuarios. Tales factores, así como la necesidad de acomodar los cambios de naturaleza política a las herramientas, restringen todos los beneficios del uso de HGE en las empresas estatales y su capacidad para hacer frente a la complejidad del entorno estratégico. El estudio contribuye a una mayor comprensión de aspectos específicos del uso de HGE, así como sus beneficios y limitaciones en organizaciones públicas, particularmente, empresas estatales.

**Palabras clave:** herramientas de gestión estratégica; toma de decisiones; gestión pública.

## 1. INTRODUCTION

Strategy is understood as an adequate path to be followed by an organization so that it can achieve its objectives. It consists of an integrative process of the activities and functions of an organization, guiding and strengthening its effectiveness in the long term (Poister & Streib, 1999).

With technological, social, cultural, political and economic changes, several questions on the part of society have been directed to the way public and private organizations are managed, mainly considering, their impacts on society (Blonski et al., 2017; Gomes, 2009; Oliveira & Ramos, 2010). In the case of public administration, there is the challenge of developing a strategic administration aimed at effectively meeting the social demands provided for by law (Diniz et al., 2006; Ota, 2014). In light of this problem, the New Public Management (NPM) emerges, in order to minimize the inefficiency arising from excessive procedures and procedural control, as well as the low accountability of bureaucrats to the political system and society (Gomes, 2009; Sano & Abrucio, 2008). This theoretical current advocates that the public sector adopt principles from the private sector, such as flexibility, emphasis on results, focus on the customer and control by society, also giving the public agent greater scope for action (Blonski et al., 2017; Sano & Abrucio, 2008).

In the Brazilian context, a consequence of this movement to improve public administration was the enactment of Law No. 13,303/2016, which deals with the requirement of strategic administration in public organizations, particularly in state owned enterprises (those controlled by the State) and mixed-capital companies (organizations controlled by the State, but also with private capital) – both can be classified as state-owned companies given control by the State (Pietro, 2016). Among the aspects provided for by such a law are the inspection of strategic business documents and information, the execution of the objectives established in the business plan to achieve the long-term strategy, the updated maintenance of the long-term strategy, with risk and opportunity analysis for at least the next five years, and the annual analysis of goals and results in the execution of the business plan and the long-term strategy, with the publication of its conclusions and subsequent information to the relevant entities (Law No. 13,303/2016).

In this context, although several studies show the relationship between the implementation of strategic management tools and practices, in addition to performance indicators, for example, effectiveness, few studies, especially in public administration, have focused on the specificities of their implementation and use. George et al. (2019), for example, show that there is a relationship between planning formalization and effectiveness, however, without considering efficiency. In studies on the Brazilian reality, on the other hand, it has been verified that influences from the institutional environment make a full implementation of SMTs unfeasible, thus preventing real contributions to organizational improvement (Borges & Matias, 2011; Gonzaga et al., 2017).

Thus, a thorough investigation into the aspects of the implementation and use of SMTs in public administration is warranted. By delving into the details of these aspects, especially in the face of institutional pressures (such as Law No. 13,303/2016), it is possible to understand how SMTs can influence organizational and social performance in the context of public administration, especially in state-owned companies. Thus, this article aims to shed light on the managerial experience regarding the use of SMTs and the reasons behind their use, as well as to highlight elements that relate the use of the tools to the achievement of long-term organizational objectives through strategic decision making, using a set of state-owned companies as a research locus.

For this study, SMTs were considered the instruments/artifacts used by organizations to create and implement models and structures with a view to achieving long-term objectives and/or increasing the final performance and competitiveness formally implemented in the investigated organizations, such as strategic planning, *Balanced Scorecard* (BSC), market intelligence systems, competitive intelligence and analysis of strengths, weaknesses, opportunities and threats (SWOT).

To this end, this article is based on the following research question: what are the contributions of SMTs to strategic decision-making within state-owned companies? Therefore, the objective of the article is to evaluate the use of SMTs and establish its relationship with strategic decision-making in a group of state-owned companies.

Research on SMTs in public administration has addressed topics such as the use of strategic planning (Ota, 2014); construction of indicators and strategic goals (Borges & Matias, 2011; Gonzaga et al., 2017); use of the BSC (Fernandes, 2013; Galas & Forte, 2005) and management by results (Diniz et al., 2006; Gomes, 2009; Oliveira & Ramos, 2010). However, the relationship between the use of tools and their specificities, as well as their influence on long-term or strategic decisions – important and usually complex decisions, with consequences for the company's performance (Rosenzweig, 2013), indicating the relevance of these tools for the organization, still lack more focused investigation. The theoretical contribution of this research is to provide details on the use of SMTs in state organizations and to build on previous studies by analyzing their influence on long-term decision making, an essential aspect to organizational effectiveness and its improvement, but still little investigated. In addition, this proposal responds to a call from Wright et al. (2013) – and other authors – for investigative approaches of constructivist content related to the practice of strategy in organizations.

As for practical contributions, the analysis of the SMTs and its relationship with the improvement of state-owned companies allow to isolate possible obstacles to the full use of these tools, thus helping administrators to deal with this issue in a more grounded way, based on the understanding of how the implementation of strategic management and its tools can provide better results to state organizations through decision-making processes.

## 2. STATE-OWNED ENTERPRISES, NEW PUBLIC MANAGEMENT AND LAW NO. 13,303/2016 IN THE BRAZILIAN CONTEXT

The characteristics of state-owned companies are rooted in the economic and political dynamics of the national context, however, their origins are linked to common factors, such as the desire or need to control strategic sectors, lead the promotion of economic development and ensure revenue flows to the government (Tábito, 1983). Thus, according to different state models, whether the liberal model – which values individual freedom, integrity of private property and minimal government intervention in the economy – or a model more focused on socialism – which emphasizes the role of the state in the economy, aiming at the redistribution of resources – or even the combination of both, state-owned companies acquire different purposes and play different roles in their national contexts, at the same time that they are fundamental for the production of wealth and even help countries to deal with the effects of economic instabilities at the international level (Bruton et al., 2015).

Regardless of the state model, effectiveness and efficiency in state-owned enterprises have been constant themes in debates on the improvement of public administration, especially when the approach is the quality of the provision of services to society. Arguments related to privatization – transfer of state ownership or part of it to private initiative – arise as an alternative to obstacles, problems and inefficiency often witnessed in state-owned companies, aiming to give them dynamism and a performance culture characteristic of private companies, however, they carry with them intense debates and conflicts of views around the world. Arguments in favor of privatization argue that the transfer of state-owned enterprises to the private sector can lead to greater efficiency, innovation and competition (Claessens & Djankov, 2002). On the other hand, criticism of privatization emphasizes potential negative consequences, such as the loss of jobs, reduced access to essential services, and loss of state control over critical sectors. However, still in this discussion, Bruton et al. (2015), Musacchio and Lazzarini (2014) and Musacchio et al. (2015) point to the emergence of new varieties of state capitalism, each with unique strategic and governance implications, which give some state-owned companies high levels of efficiency and competitiveness, thus challenging the perception that all of them are inherently inefficient, while making it possible to keep strategic assets under state control.

The complexity of the debate about the organizational efficiency and effectiveness of state-owned enterprises requires a detailed analysis of elements internal and external to the organization and, despite the benefits obtained from privatizations, this is not the only solution to deal with the complexity behind the existence of state-owned enterprises.

From these discussions was born the so-called NPM, a model of modernization/improvement of public administration whose objective is to overcome traditional models of administration of public services and introduce a new culture of administration, based on the experience of private organizations. Characterized by a set of management principles and practices, this model originated from a movement of governments from different countries, in order to develop alternatives and solutions in the face of challenges such as scarcity of public resources and increased pressure from society for responsibility, performance, quality, innovation and equity in the provision of services (Barretta & Busco, 2011; Felício et al., 2021; Lima et al., 2016). Even so, the ease of implementation or even the usefulness of these private models in the practice of public management is still questioned (Williams & Lewis, 2008).

Hertog's (2010) study on successful state-owned enterprises brings an understanding of how some countries managed to circumvent the so-called "resource curse" and manage them according to the

principles of effectiveness. The authors suggest that, in addition to broader, external reasons, such as the absence of effective monitoring of activities, absence of competition and politicization, which negatively affect state-owned companies, performance-oriented management (profit) depends on the separation between political objectives and economic planning.

On the other hand, in a study in the context of an Italian ministry and in the light of NPM, Mauro et al. (2021) found that the failure to implement a tool, such as performance-based budgeting, is the result of an insufficient integration of communication, values and objectives between actors, but also of an illusory expectation of factual possibilities. Such aspects, of a more internal nature, impair the perception of cause and effect relationships, thus compromising their implementation, because even if the organization demonstrates the use of the tool, it cannot produce the desired changes.

In Brazil, NPM is highlighted by the enactment of said Law No. 13,303/2016, also called “State-Owned Companies Law”, whose objective is to improve the management of Brazilian state-owned companies, through the implementation of governance mechanisms and management processes already established, to establish guidelines, mainly related to risk management, transparency, *accountability*, operational efficiency and effectiveness, as well as relationships with the private sector. The effects of this legislation have brought relevant changes to state-owned companies, whose process, however, is almost always challenging.

Thus, Rezende and Fontes (2013), in a comparative study between private and state-owned companies in Brazil, highlight that the efficiency of state-owned companies depends on several factors, for example, governance structures, managerial capacity and alignment with the government’s strategic objectives, that is, both internal and external factors.

Subsequently, Fontes (2018) recalls the importance of governance mechanisms and of SMTs for the administration of state-owned companies by stating that:

[...] if the effectiveness, or desired effect, is subject to variations in interpretation in the political command or society, efficiency is impaired by governance failures, fragility in the meritocratic business model and use of the state-owned company’s resources for public policy actions detached from its primary function.

The case study carried out by Gomes et al. (2022) in a mixed economy company highlighted that the legislation boosted the adoption of more structured risk identification, assessment and mitigation processes, reflecting a cultural shift towards a more proactive approach to organizational management. However, among the main challenges encountered are: reduced or insufficient staff for the implementation of the project, lack of a computerized system to support the process and resistance from other areas of the organization.

In Silva and Nunes (2019), Brazilian legislation of 2016 played a crucial role in raising governance standards and, despite the progress in relation to the implementation of governance mechanisms and regulatory compliance by most of the companies participating in the research, there are still specific cases with little progress, especially in relation to information transparency.

In view of the results shown in the previous paragraphs on the implementation of governance mechanisms and strategic processes and tools in the country, it can be argued that there is a need for greater understanding of the obstacles to improving the management of state-owned companies, specifically through strategic decision-making, which may affect their final performance.

### 3. STRATEGIC TOOLS

In the context of private companies, the speed and intensity of changes in the business environment, in addition to increased competition, require the use of strategic tools, essential to organizational survival (Afonina & Chalupsky, 2012, 2013; AlMaryani & Sadik, 2012; Borges et al., 2021; Capalonga et al., 2014). In the context of state-owned companies, even with the influence of competitive variables such as those mentioned above, the implementation and use of strategic tools have been more influenced by pressure from society and by legislation – such as Law No. 13,303/2016 –, which aims to improve them.

In general, SMTs are used in activities such as elaboration and definition of strategies and monitoring of their executions; planning; search for the solution of strategic problems; measurement of results; organizational performance, efficiency and effectiveness, especially in environments of instability. They are, therefore, essential for making broad and complex, long-term decisions, and are decisive for organizational performance (Clark, 1997; Conke, 2013; Quehaja et al., 2017; Rosenzweig, 2013; Tassabehji & Isherwood, 2014; Vendruscolo et al., 2012). Such tools are the starting point for structuring the management activity, acting as a guide for managerial thinking: the use of SMTs makes managers aware of the business environment, subsidizing the task of managing in the midst of instability and motivating them to analyze opportunities and threats, so that risks to operations can be reduced, thus providing greater assertiveness to decisions and contributing to increased organizational performance (Afonina, 2015; Afonina & Chalupsky, 2012; 2013; AlMaryani & Sadik, 2012; Borison & Hamm, 2010; Jarzabkowski & Kaplan, 2015; Jarzabkowski & Spee, 2009; Jarzabkowski & Wilson, 2002; Knott, 2006).

However, the use of SMTs can prove to be complex when analyzing its context, as it is influenced by the political dynamics among those involved with the strategy, in addition to the specificities of the tool (Jarzabkowski & Spee, 2009). This means that different users can use the same tool in different ways and for different reasons, and that executives make choices for a particular tool based on the knowledge they have about it.

In addition, Wright et al. (2013) argue that SMTs are not the only means to arrive at the best strategic decisions. In this sense, there is the influence of the composition of the teams that will make the decisions; the context in which they will be made; the risk propensity of the decision makers; their available time; access to information at the time they are requested; and the skills and competencies of the users of the tool, among others. Nevertheless, strategic thinking is instrumental for companies, especially in public administration (Poister & Streib, 1999), with tools being their main means of execution.

Thus, investigating the use of SMTs in organizations makes it possible to clarify the possible managerial motivations for the adoption of certain tools, to suggest specific processes for the dissemination of knowledge and *know-how* underlying their application, and to assist academics and administrators in directing efforts towards a practice-based approach, that is, in the real contribution of the tool to organizational objectives and in understanding its effective use (Gunn & Williams, 2007).

#### 4. RESEARCH ON THE USE OF SMTs

Some research on the use of SMTs brings extensive inventories of tools, allowing a broad view of their use in companies. Afonina (2015) and Wright et al. (2013), for example, relate the following tools, identified both in the literature and in organizational daily life: Porter's five forces; generic strategies (differentiation, cost leadership and focus); SWOT analysis; firm resource-based view (RBV); value chain analysis; BCG matrix (Boston Consulting Group); 7S model (McKinsey); Balanced Scorecard (BSC); Bowman's strategic clock (comparative model of attributes presented by competitors); strategic group mapping; strategic factor analysis; blue ocean strategy; cost-benefit analysis; customer satisfaction analysis; customer complaint analysis; employee satisfaction analysis (employee views and attitudes); market segmentation; price analysis; market share analysis; customer profitability analysis; comparative evaluation; service level analysis; product life cycle analysis; PEST analysis (political, economic, social and technological analysis); portfolio methods; activity-based calculation and, finally, critical success factors.

In another survey, Rigby and Bilodeau (2015) list the SMTs most used by American executives. These include customer relationship management; *benchmarking*; employee engagement surveys; strategic planning; outsourcing; BSC; mission and vision; supply chain management; change management programs; customer segmentation; core competency analysis; *big data and data* analysis; total quality management; satisfaction management; loyalty and loyalty; digital transformation; business process reengineering and, finally, strategic alliances.

Qehaja et al. (2017), when analyzing studies on the subject between 1990 and 2015, identify SWOT analysis as the most used SMTs by companies, followed by *benchmarking*; PEST analysis; "what if?" analysis; vision and mission; Porter's five forces analysis; financial analyses; critical success factors; cost-benefit analysis and, finally, customer satisfaction. The study also shows that the use of these tools is more common in large companies, in different national contexts.

Given their scope, these surveys show only one perspective on the subject, thus admitting more detailed, complementary investigations about the reasons for use, the relationships between the potential benefits with the adoption of the tools and nuances in their use, among other possibilities. Some of these studies – not restricted to state-owned enterprises – are discussed below.

In small and medium-sized enterprises (SMEs), Bellamy et al. (2019) reveal the predominant use of more operational tools; strategic issues are addressed in a more implicit and unstructured way, even though managers are aware of the results of their decisions. Even so, they identify that clear strategies and a solid implementation of SMTs influence the company's growth.

In a *survey* also conducted with SMEs, but focusing on knowledge management, Singh et al. (2021) identify the facilitating role that the appreciation of knowledge by senior management and knowledge management tools have in enabling open innovation and subsequent performance. Thus, the importance of internal communication and senior management for the implementation and full use of SMTs is verified, as well as the interdependence between them and the innovation processes in the company.

Regarding the use of SMTs, there is also the consideration of institutional factors. Foltean et al. (2019), for example, analyze the adoption of social media technology and customer relationship management. The use of SMTs by influence of both customers and competitors can make the benefits of these tools unfeasible if there is an absence or insufficiency of skills for its full use in the company.

Thus, there is a complementary role of these tools in the improvement of skills. Thus, institutional influences on the adoption of SMTs require consideration as to the alignment of organizational resources for their full use.

More recently, on the strategic use of artificial intelligence by companies, Borges et al. (2021) argue that, despite the promises of the technology, value creation with its use must be considered, suggesting four possibilities: decision support, customer and employee engagement, automation and new products and services.

Still on the value of tools for the organization, amid criticism related to strategic planning, George et al. (2019) revealed, through a meta-analysis, that strategic planning (formalization of planning) significantly influences organizational performance (effectiveness, but not efficiency), and this effect is verified in both private and state-owned companies and in different national contexts. Thus, they advocate the adoption of the tool, even if specific aspects regarding implementation and use are not emphasized in the study.

In turn, in a more in-depth approach to public administration, Borges and Matias (2011) show that, despite the managerial improvement in the government of the state of Minas Gerais, with the implementation of a BSC, there were difficulties in relating current actions to long-term planning, in addition to the lack of accurate management information for resource allocation decisions, especially due to the absence of objective criteria. In a subsequent study also in the same context, Gonzaga et al. (2017) found that the management tools adopted by the government were insufficient to shield the management structure of the management model from environmental pressures, distorting the model initially proposed and promoting changes in indicators. In both cases, it is seen that strategic tools lose considerable relevance in supporting administration and long-term decision-making in public administration.

Ota (2014), in addition, identifies five obstacles in the use of strategic planning in public organizations: engagement and commitment of the people involved; consideration of multiple perspectives in the decision-making process; flexibility to deal with political factors and turnover; organizational culture and principles of public administration; and provision of human and financial resources. Such aspects differ greatly from the dynamics of private organizations, which requires adaptations and preparation by public administrators.

Similarly, Blonski et al. (2017), in research on the use of BSC in the Federal Revenue Service of Brazil, identified as one of the main barriers to the success of the tool the lack of alignment with people, especially during its implementation. They highlight, in addition to the precarious communication of the strategy, the absence of incentives, such as variable remuneration, in line with the principles of NPM and BSC itself.

The studies discussed in the previous lines bring an understanding of the importance, potential and obstacles related to the use of strategic tools in private and state-owned companies. However, there is still room for further contributions: although several authors mention the importance of SMTs for strategic decision-making, an investigative focus (still scarce) on the strategic decisions of state-owned companies will bring greater understanding of managerial challenges and the need to adopt SMTs in this context. Second, few studies cited here provide a detailed view of the use of SMTs, especially in a context of continuous search for efficiency and managerial improvement of public administration. Amid cases of failure in the implementation of tools, management models and governance, as verified in the literature, it is necessary to obtain more detailed clues about the users'



perception of the usefulness and alignment with the objectives and challenges of the implementation. Finally, given the nature of SOEs compared to private companies, to what extent do SMTs truly contribute to organizational effectiveness, according to the literature, and are legitimized by it? Or would the pressures for performance and institutional mechanisms based on the NPM and Law No. 13,303/2016 have a greater influence on the adoption of these tools? And if so, do the tools play their original role?

These questions from the literature exposed here served as guides for field research and the definition of the categories of analysis (considerations on strategic decisions in state-owned companies, SMTs employed and their context of use and contribution of SMTs to organizational effectiveness). Such a methodological path is dealt with in detail in the following section.

## 5. METHODOLOGY

This research aims to study the characteristics of a group, raising opinions and experiences about the use of strategic tools within the scope of state-owned companies. The purpose is not to understanding each of the selected organizational units in its entirety, including in comparative terms, this is not configured as a case study (Yin, 2010), but as field research.

The categories of analysis were defined prior to data collection, based on theoretical gaps and subsequent research objective, as presented in the previous section. Simultaneously, the formation of emerging categories of analysis was considered when the exploratory evaluation of the data. As a data collection instrument, we used a script of interviews whose items (open questions) were spontaneously prepared by the authors, in order to reflect the categories of analysis previously defined, based on specific contributions from the literature. The initial script underwent modifications after the peer review process, thus conferring greater reliability to the instrument (Box 1). The interviews were scheduled and conducted in the city of Fortaleza, where the researchers live and work professionally.

### BOX 1 INTERVIEW SCRIPT BASED ON CATEGORIES OF ANALYSIS

Categories of analysis (subdivisions of the research objective)	Interview Roadmap Items
Key long-term decisions in the company	Indicate and comment on the main types of long-term decisions made in the organization (Jarzabkowski & Wilson, 2002; Ota, 2014; Qehaja et al., 2017; Rosenzweig, 2013; Wright et al., 2013).

*Continue*

Categories of analysis (subdivisions of the research objective)	Interview Roadmap Items
Strategic tools used as input for long-term decisions	<p>Is there the use of strategic tools by the organization’s managers in order to support long-term decisions? If so, what would these tools be? (Jarzabkowski &amp; Wilson, 2002; Ota, 2014; Qehaja et al., 2017; Wright et al., 2013).</p> <p>According to your experience, to what extent do the strategic tools employed meet the information needs for long-term decision-making? (Jarzabkowski &amp; Wilson, 2002; Ota, 2014; Qehaja et al., 2017; Wright et al., 2013).</p> <p>According to your experience, what are the fundamental factors for the effective adoption and implementation of a strategic tool in a public organization? (Afonina &amp; Chalupsky, 2012; Afonina, 2015; Ota, 2014).</p>
Contribution of strategic tools for the achievement of the organization’s objectives	How do you describe the relationship between the use of strategic tools and organizational effectiveness (achievement of organizational objectives)? (Jarzabkowski & Wilson, 2002; Ota, 2014; Qehaja et al., 2017; Wright et al., 2013).

**Source:** Elaborated by the authors.

The research was carried out in three state organizations – two mixed-capital companies and one state-owned enterprise – located in the state of Ceará. The selection of the units of analysis (companies) was based on accessibility criteria, in which the researcher selects the units to which he/she has access. Company A operates in the information technology sector. Founded in 2000, it has approximately 185 employees and annual revenues of R\$164 million. Company B, active in water resource management, was founded in 1993 and employs 127 employees, with revenues similar to that of Company A (R\$167 million). Company C, active in the water and sanitation sector, is the oldest of the researched group (founded in 1971), has 1,305 employees and its annual revenue is in the order of R\$1 billion.

To conduct the interviews, subjects directly involved with the use of strategic tools and the strategic planning/strategic management process of the organization were surveyed. Two profile criteria were also established for its selection: minimum educational level of specialization and managerial experience over 10 years. This profile presupposes a relevant level of knowledge about the strategic tools used in the organization, as well as the company’s own operations (Box 2).

**BOX 2 PROFILE OF RESEARCH SUBJECTS**

Position	Education	Education	Area	Work Experience
Management Analyst (Company A)	Data processing	Specialist	Corporate Governance Office	30 years
Coordinator (Company A)	Software engineering	Specialist	Corporate Governance Office	29 years
Coordinator Company B	Administration	Specialist	Planning and Budgeting	15 years
Planning Director Company B	Engineering	Master	Planning Board	17 years
Manager Company B	Accounting	Specialist	Planning and Budgeting	15 years
Superintendent Company C	Engineering	Master	Superintendence of Expansion Planning and Fundraising	20 years
Manager Company C	Administration	Master	Governance, Risk and Compliance	16 years
Superintendent Company C	Administration	Master	CEO	14 years

Source: Research data.

Even with a small number of subjects interviewed from each organization, the profile described was satisfactory in terms of data quality, which proved to be sufficient as answers to the items in the script. The interviews were conducted individually and in person, during the workday, according to the availability of each of the subjects (aged over 18 years); the agreement of each of them was obtained after the presentation of the data collection instrument and the clarification regarding anonymity and object of the research, which is outside the personal sphere. Each interview, with an average duration of 72 minutes, was recorded with the consent of the interviewee and subsequently transcribed, thus obtaining a robust data set for content analysis.

The qualitative content analysis of the transcripts followed the steps proposed by Bardin (2011): pre-analysis (retrieval of the research objective; elaboration of indicators as guides for interpretation, even if they may come after data collection; and respect for the homogeneity of the materials); exploration of the material (coding of the content units according to the transcriptions, also considering the emergence of new categories, and review); and treatment of the results, inference and interpretation (construction of meaning from the data based on answers to simple questions and identification of cause and effect relationships).

The content analysis also followed the “mixed grid” approach, in which the categories pertinent to the research objective are preliminarily established (the main types of strategic decision, the use

of strategic tools by managers and the relationship between the use of these tools and organizational effectiveness), however, also admitting the inclusion of emerging categories throughout the analysis process (Vergara, 2005), such as planned and unplanned strategic decisions, the level of use of SMTs in companies (incipient, moderate and full) and the type of contribution of the tools to organizational effectiveness (low, medium and high). Content analysis, especially in the stages of treatment, inference and interpretation, was aided by the NVivo9 software.

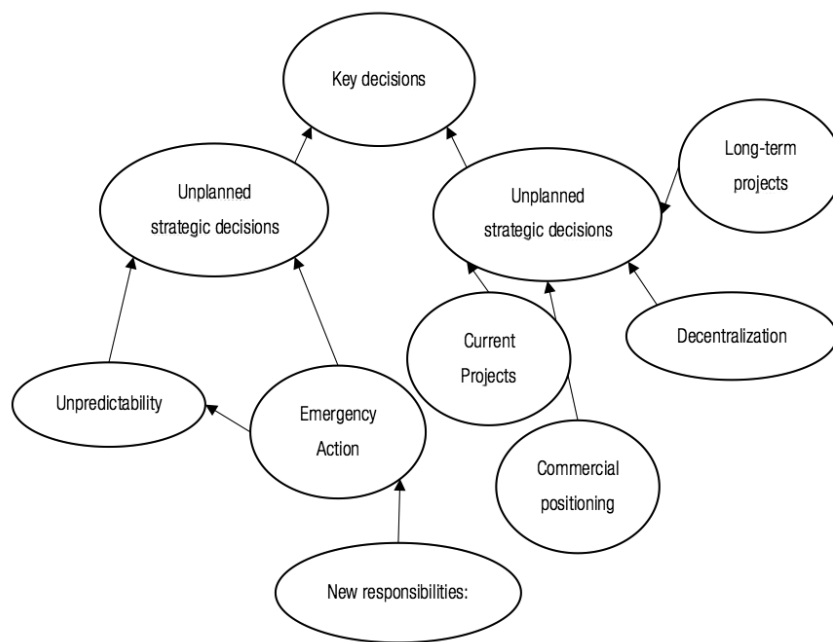
## 6. RESULTS AND DISCUSSION

This section presents the main results of the research regarding the three items of analysis already mentioned, as well as a discussion considering the conceptual basis.

### 6.1. Key strategic decisions

With the recording of the main strategic decisions in the interview transcripts, two categories could be established *a posteriori*: planned and unplanned strategic decisions (Figure 1).

**FIGURE 1 MAIN DECISIONS – MAP OF EMERGING CATEGORIES**



Source: Research data.

As for the first, an emphasis was identified on meeting the goals and indicators aligned with the ten and five-year strategic plans in Companies B and C, respectively. This emphasis is due to the fact that both deal with the management of infrastructure projects, while Company A operates in a more dynamic sector: information technology. In this category of analysis (strategic decisions), several

examples of organizational actions perceived as planned strategic decisions were cited, especially new positioning in commercial activities (Company A), modification of the organizational structure (decentralization) (Company B) and various projects foreseen in strategic planning. Among these, it was highlighted the mention of one of the subjects working in Company B, in long-term projects, associated with a vision still outside the scope of the company's management or the company's current scope of operations, such as the implementation of "bolder" projects and operations linked to water security: developments of broader government projects, such as the transposition of the São Francisco River. Of all the planned strategic decisions exemplified, this was the most complex among all those contemplated in strategic planning.

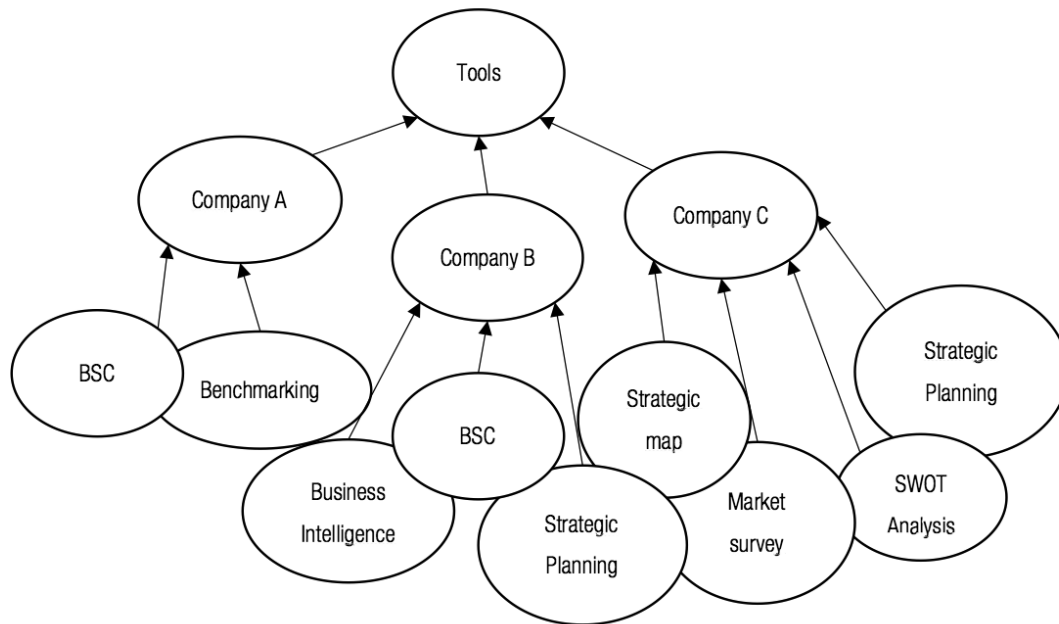
On the other hand, unplanned strategic decisions were mentioned exclusively by the subjects of Company B. Described mainly as "emergency," these decisions, according to the company's sector of operation, are influenced by the meteorological unpredictability in the state, which demands new responsibilities, new functions and operations that escape daily actions and cause inefficiency. Despite this, the design of future scenarios or risk simulations was not mentioned by the respondents. On the other hand, even in the absence of activities aimed at analyzing future scenarios, Borison and Hamm (2010) consider the critical role of judgment in strategic decisions. In the case of this decision, judgment regarding the possibility of environmental or meteorological events can provide a valuable exercise in planning alternative actions.

In summary, the so-called strategic decisions were mostly perceived as those pertinent to strategic planning or inserted in it, predictable, pertaining to the long term and related to organizational performance as a whole (even in occasions of natural monopoly), which is in line with the literature on strategic decisions (Borison & Hamm, 2010; Rosenzweig, 2013), especially in the light of the model suggested by Rosenzweig (2013), according to which strategic decisions are characterized by a high degree of control and lead to relative (comparative) performance. However, considerations about unplanned strategic decisions, commonly related to risk and uncertainty, but without a basis for performance comparison, are not necessarily strategic decisions, but choices that require judgment to solve a problem (Rosenzweig, 2013). The mention of this category of decision as strategic by the subjects can be attributed to recent and remarkable experiences, especially because they are inserted in an organizational culture usually marked by the stability of bureaucratic and routine processes.

## 6.2. Strategic tools used

Regarding the strategic tools used to support long-term decisions, it should be noted that their adoption can occur informally and that a set of them can be used in a complementary way, thus hindering an analysis based on a single tool. Even so, only those formally implemented in the investigated organizations were considered, even with overlapping functions among other possible ones. Of these, strategic planning and the BSC stand out (Figure 2).

**FIGURE 2 TOOLS USED – MAP OF EMERGING CATEGORIES**



Source: Research data.

Strategic planning was mentioned as the main tool employed by Company C because of legal requirements. However, in the case of this company, in addition to complying with a legal requirements, the five-year strategic plan receives unique attention from leaders: it is marked by weekly meetings and the involvement of other organizations linked to the company and essential to fulfilling the plans. Similarly, Company B has a consolidated strategic planning, with well-defined processes and clearly defined roles, with an emphasis on achieving the indicators. The strategic decisions, previously discussed, essentially refer to corrective actions, in order to achieve indicators (main focus) and final objectives.

As for the BSC, mentioned by all companies, it is recognized, on the part of all of them, the importance of having a tool that makes it possible to control strategic plans on a daily basis: “[...] through the BSC, which monitors the indicators and verifies those that are not being reached, how to take the necessary actions to circumvent this” (Interviewee 2, Company B).

Blonski et al. (2017) report that, in the public sector, the BSC maintains a strength as a management control tool, allowing budget monitoring and the achievement of efficiency in the use of resources. This is because this tool translates the major strategic guidelines into medium and short term functional and operational indicators, and such considerations can be verified based on the recognition of the managers of the three companies investigated.

However, it is worth highlighting an emerging aspect in the reports: the level of use, that is, the extent to which each organization utilizes the full potential of the tools mentioned. It can be said that, with the exception of Company C, an intermediate level of BSC use was found in the companies

analyzed: the use provides benefits to managers and the organization, but there are, however, issues or obstacles – specifically, the adhesion of people in the organization and leadership – that prevent the exploitation of its potential to obtain the benefits resulting from full use, such as better alignment between different departments and areas and communication about organizational strategy, in addition to subsequent ones, such as greater agility and risk reduction in the execution of the strategy. This finding is similar to the results presented by Mauro et al. (2021), whose failure to implement a tool in the context of Italian public administration stems from failures in the integration of communication, values and objectives. Furthermore, this reality may undermine strategic decisions, the quality of which, according to Wright et al. (2013), depends fundamentally on the use of SMTs, which also depend on skills, knowledge and integration between people and areas.

Regarding the level of use of the tools, the following categorization of text units was generated in three distinct groupings (emerging categories): full, intermediate and incipient. Of these three categories, we highlight the BSC, mentioned by Companies A and B, and strategic planning, referring to Company B, as tools used in an intermediate stage: “Managers could use more of these tools, through which meetings are held in which they seek to enable, for example, the identification of projects necessary for the company, but there are still deficiencies in the way of prioritizing projects” (Interviewee 1, Company B). It should be noted that, although strategic planning was not mentioned by the subjects as a formally implemented tool, Company A presents guiding elements such as mission, vision and values, in addition to a strategic plan, essential to the BSC.

The Business Intelligence (BI) tool, also mentioned by Company B, was categorized as incipient in its use. This finding is justified by the fact that the tool was implemented independently of strategic planning, which leads to lower visibility by senior management and less comprehensive reach at the organizational level. In addition, BI is a dynamic, complex tool that requires specific knowledge and skills and, consequently, requires an adaptation phase to achieve its full use.

On the other hand, Company C indicates having full use of all the tools mentioned (BSC, market research, SWOT analysis and strategic planning), as well as Company A regarding *benchmarking*. This aspect associated with Company C, however, does not eliminate the need for continuous improvement in its use, according to the following report:

The Balanced Scorecard tool works a lot with the cause-and-effect relationship and, often, we cannot see this cause-and-effect relationship; we often cannot measure whether my strategic map... whether I will check all the perspectives of the BSC (Interviewee 1, Company C).

Once again, there is the importance, brought in the literature by Mauro et al. (2021), of communication, values, and objectives, in this case, regarding the continuous improvement of the use of the tool, so that its users are able to verify and analyze the relationships of cause and effect.

In addition, due to the aforementioned Law No. 13,303/2016, state-owned companies have incorporated some strategic tools and, although SMTs are designed to assist and guide managers in decision-making in complex environments (Wright et al., 2013), the purpose of use by the investigated companies seems to focus mainly on directing management efforts and their communication to senior management, that is, on more formal aspects of their use. This aspect, desirable as a movement for the improvement of management in these organizations, seems to ignore the need for communication

between people and the alignment between different areas, preventing the use of tools in their fullness, mainly in the tasks of understanding and acting on the strategic environment in a more responsive way through people.

[...] Presentation of the meeting, this helps a lot when senior management, following the indicators... if they are not meeting, what they can do to improve [...] they use much more formatting of the planning presentations of the sectoral and corporate indicators than even a system tool (Interviewee 2, Company B).

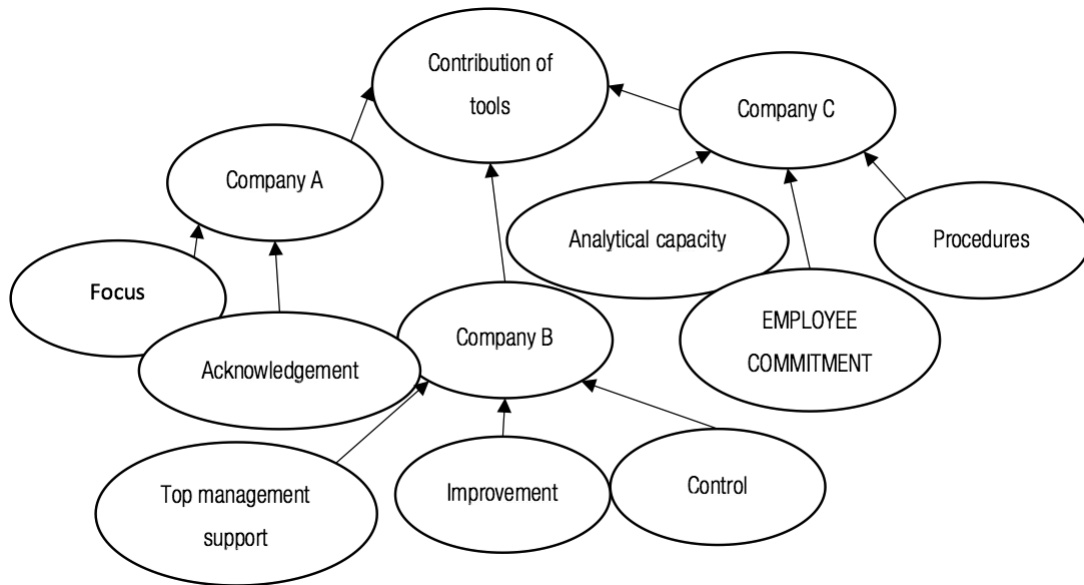
Regarding the strategic tools used by the companies researched, the main points identified were their different levels of use and the relationship between the successful implementation and use of a tool and its complementarity with others already employed in the organization, in addition to the purpose regarding its use: on the one hand, a formality of communication between managers and senior management, even if in attention to legal requirements and their inherent processes; on the other hand, meeting the real needs of a strategy-oriented administration, which aims at greater “fluidity” in the use of the tool through broad communication of the strategy to people, through different areas, thus contributing to more agile decisions and actions. From the analysis, there was greater representation of the first purpose, in line with studies such as Silva and Nunes (2019).

### **6.3. Relation of SMTs to long-term decision-making and effectiveness**

The last item of analysis concerns the contribution of SMTs to long-term decision making and achievement of organizational objectives (effectiveness). The analysis of the content of the transcripts revealed the following classifications regarding these contributions: focus and knowledge (in Company A); support for senior management, improvement of management and control (in Company B); and analytical capacity, commitment, and procedures (Company C) (Figure 3).



**FIGURE 3 CONTRIBUTION OF STRATEGIC TOOLS TO ORGANIZATIONAL EFFECTIVENESS – MAP OF EMERGING CATEGORIES**



Source: Research data.

In addition, people’s knowledge of the tool(s) is an instrumental condition for a *real* contribution toward organizational effectiveness. Without the necessary knowledge about the use of the tool(s), people do not use them and, thus, inefficiencies such as duplication of effort, rework, informational loss and conflicts can perpetuate/arise.

In relation to Company B, the transcripts essentially revealed the relationship of the tools with the control and improvement of the organization in dealing with projects. Similar to Company A, there were points relevant to social relations: in Company B, the tools were perceived as mechanisms for the credibility of managers’ work with senior management and a common language that transmits to senior management the information necessary for more far-reaching decision-making.

Likewise, the support of senior management was identified, as well as in the literature, as a primordial aspect for the full use of the tool for decision making. In addition, it was possible to verify that the influence of politics in changing the direction of the organization’s projects is a common phenomenon in public administration and, even if it affects strategic planning, it is adapted and/or incorporated and transmitted to the people of the organization through strategic tools and indicators.

Thus, strategic tools, in this case, may lose their role as aligners/drivers of strategic decisions for organizational performance, to the extent that political interventions and individual interests can change informational inputs and stipulate new analysis parameters.

As for Company C, it was found that the strategic tools made two key contributions: the formalization of essential procedures, which depends largely on the clarity of communication at the organizational level, and the increase in the organization’s analytical capacity to filter external influences and respond to them through clear objectives and aligned projects. It is also noteworthy that the contributions of SMTs depend strongly on factors such as resource sizing, including human

resources, in addition to the commitment and attitude of those who will use them, similarly to the results of other studies (Gomes et al., 2022; Mauro et al., 2021).

From this emerging variable, we sought to characterize the level of contribution of the tools to organizational effectiveness, based on the transcripts of all interviews conducted, using the subjective criteria of low, medium and high. Thus, it was possible to ascertain a high level of contribution (medium and high) of the tools to organizational effectiveness in the three units investigated, with special mention to the high level of contribution in Company B and the medium level of contribution in the case of Companies A and C. In these last cases, the transcripts bring to light elements of a more human/social nature (attitude, commitment and knowledge about the tool by the people) and pertinent to the implementation: “It could be greater if the full potential of the tool were used, sometimes it is not, the person is not aware” (Interviewee 2, Company A); “No tool works miracles, the true miracle is the attitude that people have towards the tool” (Respondent 2, Company C).

Still referring to Company C, the need for greater ownership of management regarding the use of tools in decision making was pointed out:

[...] As well as the incorporation of these tools here in the company is important, we have the tool, it shows the problem, but we do not use and do not know the importance, so it is important that people know and want to use the tools (Interviewee 2, Company C).

It is important to emphasize that the full use of tools depends on managers’ understanding of their advantages and limitations, and creativity is still necessary to integrate them in a timely manner, in addition to skill (Gomes et al., 2022; Wright et al., 2013).

In general, the importance of training managers reduces empiricism in decisions with the search for informational support through tools. This result corresponds to the considerations of Jarzabkowski and Wilson (2002) and Ota (2014) regarding the need to develop skills to use the tool to its full potential, exploring the purpose of its adoption in order to deal with complex environments. Thus, the degree of satisfaction with the tool will depend on the competence of the user and the context in which it is used (Jarzabkowski & Spee, 2009; Jarzabkowski & Kaplan, 2014).

Based on the contributions of Afonina (2012), it is also possible to verify the satisfaction of managers with those tools they know how to use or with which they are familiar. However, there is a gap between knowledge and the use of management tools and techniques, which reinforces the need for training of managers and the development of skills for their use.

From a theoretical perspective, the use of strategic tools helps managers to reflect on internal and external changes, structure strategic management and support decisions related to customer needs and project prioritization, thus improving organizational results. However, the results show that the level of use of SMTs to deal with the external environment is still incipient in the cases analyzed, in addition to the idiosyncratic applicability, such as accommodating changes of a political nature. This aspect, which distorts the use of the tool, was also verified in Borges and Matias (2011) and Gonzaga et al. (2019). Thus, the full potential benefits of the tools are not yet verified in the analyzed context. This finding, in addition to the legal requirement in the case of state organizations, illustrates the difference in the literature on strategic tools applied in the context of private companies.

## 7. CONCLUSION

Amid the pressures for changes in performance, governance, transparency and accountability that characterize the NPM movement, there is still room for contributions for the improvement of public organizations. In order to explore some relevant factors in the implementation of SMTs, this article aimed to analyze their use and their influence on decision-making in a group of state-owned companies.

Interviews with managers who use tools in these companies and the subsequent analysis of the content of the reports showed that, even with clearly defined strategic guidelines and policies, the use of tools for decision making is not yet fully explored due to obstacles to implementation: the preparation of people; the alignment of the tool with their and the organization's needs; attitude, commitment, participation and involvement, in addition to the communication tripod, values and objectives, points already present in the literature. However, a contribution to a better understanding of this phenomenon is the different levels of use of the tools (incipient, intermediate and full), based on which the means – such as internal communication, institutional alignment and complementarities – necessary for the state-owned company to take better advantage of these tools for greater effectiveness can be analyzed.

Since the state-owned company is a hybrid organization that adjusts to its context to obtain advantages from both state ownership and the natural competitive dynamism of private companies (Bruton et al., 2015; Musacchio & Lazzarini, 2014; Musacchio et al., 2015), it can be argued that the full use of SMTs contributes to this entity exercising a more expressive leadership role in different national contexts, especially in the face of major global challenges, by supporting strategic decision-making.

However, the possibility of different levels of contribution of the tools to organizational effectiveness is consistent with findings of previous research by pointing out that, without communication, the adoption of SMTs brings with it false expectations about its contribution to the effectiveness of the organization. Thus, in this study, it was found that the adoption of SMTs goes through stages: from the adoption to comply with legal requirements related to the incorporation of tools and strategic control, even in support of management in meeting goals and objectives in which the effectiveness of operations is achieved, to its full use, in which the tool, institutionalized in the organization, has in its use a process of continuous improvement. In this last stage, the potential benefits of SMTs are obtained, such as support for strategic decision-making in view of the dynamics of the environment – in the case of state-owned companies and other public organizations, innovation gains and growth in new business functions.

Future research may, therefore, relate the degree of innovation and/or speed of organizational change as ways of adapting to a dynamic strategic context to the degree or intensity of use of strategic tools. Thus, more information can be gathered about the contribution of strategic tools to improve the management of state-owned enterprises and other public organizations.

There is the suggestion to explore the influence of managers in the execution of the strategy, such as the level of maturity regarding the use of tools in the execution of the strategy, or the comparison between state and private companies based on the influence of the use of strategic tools in organizational decisions, in addition to issues and obstacles related to implementation.

The research has some limitations: the small number of companies analyzed, in order not to allow generalization of the findings to state-owned companies in the country; the small number of individuals interviewed and the focus on the selection of subjects (interviewees) linked to the routines of the SMTs, without considering members of senior management (board of directors and/or boards of directors), instance in which strategic decisions are effectively made and, with this, other possible perspectives regarding the items investigated cannot be obtained; and the dependence on a single source of data collection, for example, interviews. Still, important conceptual relationships were established, bringing greater understanding of how SMTs can contribute to the improvement of public administration, as well as subsidies for future research.

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## **AUTHORS' CONTRIBUTION**

**Susanne Matos Nogueira Leal:** Conceptualization (Equal); Data curation (Lead); Formal analysis (Equal); Investigation (Lead); Methodology (Equal); Project administration (Equal); Software (Equal); Validation (Equal); Visualization (Equal); Writing - original draft (Lead); Writing - review & editing (Supporting).

**Afonso Carneiro Lima:** Conceptualization (Equal); Data curation (Supporting); Formal analysis (Equal); Investigation (Supporting); Methodology (Equal); Project administration (Equal); Software (Equal); Validation (Equal); Visualization (Equal); Writing - original draft (Supporting); Writing - review & editing (Lead).

**Anna Beatriz Grangeiro Ribeiro Maia:** Methodology (Equal); Writing - review & editing (Supporting).

## **DATA AVAILABILITY**

The dataset supporting the results of this study is not publicly available.