

# Perceptions and configurations of balanced scorecard use: evidence from Portuguese SMEs

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## Percepciones y configuraciones del uso del balanced scorecard: Evidencias de las PYMEs portuguesas

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## Percepções e configurações do uso do balanced scorecard: Evidências das PME's portuguesas

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### Abstract

**Purpose** – The purpose of this study is to identify managerial perceptions, as well as individual and organizational contingencies, that influence the use of balanced scorecard (BSC) among SMEs.

**Design/methodology/approach** – This paper adopts a mixed methods approach to study the use of the BSC from a survey database of 414 SMEs across several industries in Portugal.

**Findings** – This paper shows the perceived benefits, reasoning and obstacles that managers face when using the BSC in SMEs. The BSC is not the first choice for strategic management control of most firms in the sample. Most SMEs in this study have an explicitly formulated business strategy. The results show that it is possible to implement the BSC in SMEs without a formalized strategy. Such findings seem to suggest that the use of the BSC may stimulate the formulation of strategies for those firms.



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**Research limitations/implications** – The use of fuzzy-set qualitative comparative analysis limits the generalization of the findings; nonetheless, the transparency of the report enables replication without restrictions.

**Practical implications** – This paper proposes that the size of the firm and the characteristics of the manager may compensate for the absence of a strategy to guide BSC use.

**Social implications** – This paper advises a match between the stage of development of the SMEs strategy and the gender of the manager, which may have implications for recruitment purposes.

**Originality/value** – This study reports alternative configurations of individual and organizational conditions that lead to the use of the BSC in SMEs as well as configurations that prevent its use.

**Keywords** Balanced scorecard, Strategy, SME, fsQCA

**Paper type** Research paper

## Resumen

**Objetivo** – El propósito de este estudio es identificar las percepciones de los gerentes, así como las contingencias individuales y organizacionales, que influyen en el uso del BSC entre las PYMEs.

**Diseño/metodología/enfoque** – Adoptamos un enfoque de métodos mixtos para estudiar el uso del BSC a partir de una base de datos de encuestas de 414 PYMEs de varias industrias en Portugal.

**Resultados/hallazgos** – Mostramos los beneficios percibidos, el razonamiento y los obstáculos que enfrentan los gerentes al utilizar el BSC en las PYMEs. El BSC no es la primera opción para el control de gestión estratégica de la mayoría de las empresas de la muestra. La mayoría de las PYMEs en este estudio tienen una estrategia comercial explícitamente formulada. Los resultados muestran que es posible implementar el BSC en PYMEs sin una estrategia formalizada. Estos hallazgos parecen sugerir que el uso del BSC puede estimular la formulación de estrategias para esas empresas.

**Originalidad** – Este estudio reporta configuraciones alternativas de condiciones individuales y organizacionales que conducen al uso del BSC en las PYMEs, así como configuraciones que impiden su uso.

**Limitaciones/implicaciones de la investigación** – El uso de la fsQCA limita la generalización de los hallazgos; no obstante, la transparencia del informe permite replicarlo sin restricciones.

**Implicaciones prácticas** – Proponemos que el tamaño de la empresa y las características del gerente pueden compensar la ausencia de una estrategia que oriente el uso del BSC.

**Implicaciones sociales** – Aconsejamos hacer coincidir la etapa de desarrollo de la estrategia para las PYMEs y el género del gerente, lo que puede tener implicaciones a efectos de contratación.

**Palabras clave** Balanced scorecard, Estrategia, PYME, fsQCA

**Tipo de artículo** Trabajo de investigación

## Resumo

**Objetivo** – O objetivo deste estudo é identificar as percepções dos gestores, bem como as contingências individuais e organizacionais, que influenciam o uso do BSC entre as PMEs.

**Desenho/metodologia/abordagem** – Adotamos uma abordagem de métodos mistos para estudar a utilização do BSC a partir de uma base de dados de inquérito a 414 PMEs de diversas indústrias em Portugal.

**Resultados** – Mostramos os benefícios percebidos, o raciocínio e os obstáculos que os gestores enfrentam ao usar o BSC nas PMEs. O BSC não é a primeira escolha para o controle estratégico de gestão da maioria das empresas da amostra. A maioria das PMEs neste estudo tem uma estratégia empresarial explicitamente formulada. Os resultados mostram que é possível implementar o BSC nas PME sem uma estratégia formalizada. Tais resultados parecem sugerir que a utilização do BSC pode estimular a formulação de estratégias para essas empresas.

**Originalidade** – Este estudo relata configurações alternativas de condições individuais e organizacionais que levam à utilização do BSC nas PMEs, bem como configurações que impedem a sua utilização.

**Limitações/implicações da pesquisa** – O uso do fsQCA limita a generalização dos resultados; no entanto, a transparência do relatório permite a replicação sem restrições.

**Implicações práticas** – Propomos que o tamanho da empresa e as características do gestor podem compensar a ausência de uma estratégia para orientar o uso do BSC.

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**Implicações sociais** – Aconselhamos uma correspondência entre o estágio de desenvolvimento da estratégia para as PME's e o género do gestor, o que pode ter implicações para efeitos de recrutamento.

**Palavras-chave** Balanced scorecard, Estratégia, PME's, fsQCA

**Tipo de papel** Trabalho de pesquisa

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## 1. Introduction

Managers base their decision-making on more than financial perspectives because firms face constant challenges due to the uncertainty of business environments (Lonbani *et al.*, 2016; Manville *et al.*, 2019). Therefore, the balanced scorecard (BSC) has increasingly become one of the more popular strategic systems for management control (Hudson *et al.*, 2001; Giannopoulos *et al.*, 2013; Malagueño *et al.*, 2018; Monte and Fontenete, 2012). Beyond being a performance appraisal tool, the BSC is a true strategic management system (Curado and Manica, 2010; Giannopoulos *et al.*, 2013; Kaplan and Norton, 1996) used in several industries (Kumar *et al.*, 2023). The generalizability of this tool enables it to be used in several sectors (e.g. Curado and Manica, 2010; Kairu *et al.*, 2013; Speckbacher *et al.*, 2003) by allowing managers to focus on the entire business process, thus ensuring that activities create value and long-term benefits for internal and external stakeholders (Awadallah and Allam, 2015). Consequently, research interest in the use of the BSC has increased over the past few years (Suárez-Gargallo and Zaragoza-Saez, 2023).

While there is adequate research on large firms (e.g. Curado and Manica, 2010; Speckbacher *et al.*, 2003), there is less evidence on the application of the BSC to SMEs (e.g. Giannopoulos *et al.*, 2013). Here, we study SMEs because they face contingencies due to their size (Davila, 2005), as well as their lack of resources and capabilities (Kafetzopoulos, 2020). Consequently, these factors limit their competence in formalizing and following a strategy. There are some criticisms regarding the contribution of the BSC to smaller firms – not only because they have different characteristics than larger ones but also because of their managerial capabilities (Garengo and Biazzo, 2012). The SME's manager (often an entrepreneur) may not have the knowledge or time to implement a strategy according to the firm's objectives (Cardim *et al.*, 2018).

Prior research has addressed the use of the BSC in SMEs (e.g. Giannopoulos *et al.*, 2013), yet the factors that influence the use in SMEs are relatively understudied (Heinicke, 2018). Following Bedford *et al.* (2016), most of the literature on management control systems takes a contingency approach to justify their use as determined by contextual factors. Therefore, the BSC empirical research and literature still lack sufficient evidence on managerial perceptions, as well as individual and organizational contingencies, that influence BSC use in SMEs. Other studies have not yet presented alternative configurations of individual and organizational conditions that lead to (and prevent) the use of the BSC in SMEs.

Here, we analyze the use of the BSC by Portuguese SMEs because it is necessary to assist SMEs in achieving clarity of management, strategy implementation, and consequently, better growth perspectives. Given that SMEs have short resources and capabilities (Kafetzopoulos, 2020), it is important to understand:

- if SMEs have explicitly formulated business strategies;
- if they implement the BSC even if they do not have an explicitly formulated business strategy;
- what perceptions SMEs managers have about the use of the BSC; and
- what the alternative sets of contingencies (both individual and organizational characteristics) that lead (and prevent) SMEs managers to use the BSC.

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We identify the level of knowledge that SME managers have about the BSC, the perceived benefits of adopting it and the main reasons or difficulties for not adopting it. Like [Giannopoulos et al. \(2013\)](#), we identify the reasons why the BSC is suitable for SMEs, the obstacles managers face in using the BSC and whether the managers of Portuguese SMEs who do not use the BSC intend to implement it (and when). We further extend the BSC-strategy literature and question the existence of formulated strategies in SMEs and whether they can implement the BSC without an explicitly formulated business strategy; this approach revealed a contradiction: there is an SME that implemented the BSC without a strategy. Furthermore, we uncover the combinations of individual and organizational circumstances that lead to the adoption of the BSC by SMEs as well as the ones that prevent it. Our article is organized as follows. Section 2 presents the BSC and its relationship with firm strategy in SMEs. Section 3 explains the research method we used, the sample studied and the data analysis technique. Section 4 presents the results, and Section 5 discusses them. In Section 6, we present useful recommendations for practice, and Section 7 offers conclusions.

## 2. Literature review

### 2.1 *Balanced scorecard*

The BSC was first introduced by [Kaplan and Norton \(1992\)](#) to respond to the need to shift the focus of management control. Since then, it has been one of the most adopted strategy implementation and control tools ([Tawse and Tabesh, 2023](#)). According to [Kaplan and Norton \(2000, 2001\)](#), financial measures had become deficient since they were retrospective and did not provide any information on how the firm should behave in the future. According to [Owolabi et al. \(2016\)](#) and [Rafiq et al. \(2020\)](#), performance measures that focus only on financial measures are unsuitable for excellent management. Such systems should be developed and improved using the resources and capabilities of the firm ([Ussahawanitchakit, 2017](#)). Traditional systems that measure performance are usually focused on short-term financial goals ([Ahn, 2001](#)) and fail to identify the critical factors for business consolidation. Thus, there is a need to add nonfinancial indicators to the system ([Lonbani et al., 2016](#); [Manville et al., 2019](#); [Rafiq et al., 2020](#)). The BSC has, in turn, emerged as a model that integrates financial and nonfinancial measures in management control to allow managers to have a more comprehensive view of their business ([Kaplan and Norton, 1992](#)).

In view of this gap, [Kaplan and Norton \(1992, 1996\)](#) developed the BSC to integrate a more comprehensive range of measures capable of giving a future vision of the firm's business ([Ahn, 2001](#); [Quesado et al., 2016](#)). The BSC offers a balance between financial and nonfinancial measures by adding several performance indicators to provide an overall assessment of the firm in the short and long terms ([Monte and Fontenete, 2012](#); [Owolabi et al., 2016](#)). [Kaplan and Norton \(2000, 2001\)](#) introduced the tool to facilitate managers' capability to use nonfinancial measures ([Aryani and Setiawan, 2020](#)) and to combine different perspectives that are aimed to identify, evaluate, store and apply knowledge to meet their needs and preestablished objectives ([Darvish et al., 2012](#)).

[Kaplan and Norton \(1992, 1996\)](#) designed the BSC to account for various objectives through different perspectives: financial, customer, internal, learning and growth. Future developments of the BSC made it a multidimensional framework for measuring strategic performance that:

- combined financial and nonfinancial strategic measures;
- described strategy using cause-and-effect relationships; and
- supported strategy implementation by defining objectives, action plans, results and associated incentives ([Speckbacher et al., 2003](#)).

The BSC model combines these four dimensions sequentially (Garengo and Biazzo, 2012; Lee and Yan, 2024). They involve lagging performance measures: learning and growth, internal processes and clients and markets that affect the quality of business production and indicate how the firm is working and preparing for its future. These lagging indicators lead to financial indicators that show the results of such decisions and actions (Curado and Manica, 2010; Dudic *et al.*, 2020). The correct use of the BSC comes from success in nonfinancial measures before generating good financial results (Davis and Albright, 2004).

### 2.2 *Balanced scorecard and strategy*

The four dimensions of the BSC have interconnectivity with the firm's strategy through what Kaplan and Norton (1996, 2000) referred to as a "strategic map." The relationship between BSC adoption and successful strategy implementation tools has been largely addressed (Tawse and Tabesh, 2023). After the firm defines its strategy, it needs to create a strategic map that communicates its mission, vision and strategic objectives, and, consequently, the cause-effect relationships between them (Monte and Fontenete, 2012). The use of this strategic map identifies and monitors knowledge (Kaplan and Norton, 2000; 2004) that serves as a link between the formulation of the strategy and its implementation (Darvish *et al.*, 2012; Strohhecker, 2016; Heinicke, 2018). There is the possibility of using different indicators according to the organizational context (e.g. social responsibility indicators). However, more indicators can lower the efficiency of the system (Curado and Manica, 2010). The BSC was initially considered as a performance measurement tool and firms have limited their focus over time to only report the past to be able to measure the impact of their actions in the future (Rafiq *et al.*, 2020). Firms may use the BSC to support them in achieving organizational success and long-term survival (Curado and Manica, 2010).

However, the BSC cannot be applied to all firms and all sectors as a predefined model because countless contextual variables may influence the design and effectiveness of such tools (Speckbacher *et al.*, 2003). The variety of market situations, strategies and competitive environments of the firms requires them to adapt the BSC to these conditions (Kaplan and Norton, 1992). In addition, the BSC produces different results for different firms. For some, it can be used as a performance management system, and for others as a strategic management system (Rafiq *et al.*, 2020). The BSC supports managers in the process of creating strategy as well as in generating effective internal communication (Ahn, 2001; Curado and Manica, 2010). This tool allows the management control system to be aligned with the firm's strategy. At the same time, the BSC can clarify and translate the firm's mission into goals (Quesado *et al.*, 2016). Thus, implementing the BSC must be associated with the process of planning strategy and following the firm's mission and vision (Monte and Fontenete, 2012). Therefore, it is only reasonable that the SME's chief executive officers pay growing attention to their firms' missions (Analoui and Karami, 2002).

### 2.3 *Strategy formulation in SMEs*

SMEs are primarily mission-driven; thus, the mission statement has become a major concern of SME's managers as the first step in formulating strategy (Analoui and Karami, 2002). Strategy formulation is a challenging job (Köseoglu *et al.*, 2020) that is associated with top management positions that should respect transparency (referring to how visible the strategy formulation is as a process) and inclusiveness (referring to the extent to which the process accepts inputs from stakeholders) (Adobor, 2019). Systems that measure performance play a role in formulating strategy (Bisbe and Malagueno, 2012). Strategy formulation regard the long-range planning of SMEs concerning the definition of their missions, objectives and strategies (Analoui and Karami, 2002). Business strategy is a multidimensional concept

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based on internal and external assessments (Rehman and Anwar, 2019). The strategy consists of competitive moves and business approaches that managers use to achieve organizational goals (David and David, 2016).

Many strategy researchers consider the firm, or business unit, as the core unit of analysis rather than the individual (Bolinger *et al.*, 2021). However, that approach is not unanimous. SME managers should align both the business unit and the individual's goals with the strategy to improve the use of the BSC. As a result, there is a growing literature in strategy that regards the individual as the core unit of analysis and makes the field go beyond cognitive biases to address strategic practice (Powell *et al.*, 2011). This is the emergent strong line of work on behavioral strategy (Bolinger *et al.*, 2021).

The strategic decisions in SMEs depend on the manager who plays a significant role in formulating strategy (Karami *et al.*, 2006), illustrating the domain of behavioral strategy research. The contribution of strategy formulation to SMEs' performance is recognized in the literature (Mashingaidze *et al.*, 2021). SMEs have simple and small structures, and management is often limited to a single executive who is the only person in the firm playing several business roles that range from operations to strategy (Cardim *et al.*, 2018). Explicitly formulated strategies are not a rule in SMEs because their managers have difficulties in developing formal processes and in considering strategy as mainly emergent (Garengo and Biazzo, 2012). SMEs characteristics can pose a challenge to the strategy formulation because they have poor strategic planning that is mainly reactive; knowledge is mainly tacit and context-specific. Thus, little attention is paid to process formalization, and it often reveals a misconception of performance measurement (Garengo *et al.*, 2005). However, strategy formulation has a link to operations in SMEs (Lonbani *et al.*, 2016). The absence of strategy (particularly in SMEs) is not an inconsistency in decision-making, but rather it shows the variety of possibilities small business managers have. They may opt not to have an explicitly formulated strategy due to their management approach (Hauser *et al.*, 2020) like focusing on *ad hoc* problem-solving and considering the future as not controllable. Managers may not have an explicitly formulated strategy but rather a shared understanding of organizational strategy (Humphreys, 2023). Therefore, we pose the following research question:

RQ1. Do SMEs have explicitly formulated business strategies?

#### 2.4 *Balanced scorecard in SMEs*

Large firms have a greater need to use more sophisticated tools such as the BSC and are better equipped to implement them, while SMEs usually do not demand such elaborate performance management tools (Hoque and James, 2000). However, SMEs do have the advantage of being able to communicate more easily with their customers which allows them greater flexibility when it comes to innovations: they can respond to customer needs quickly and efficiently (Dudic *et al.*, 2020). The strategic performance measurement tool for SMEs should be resource-effective and produce notable short-term and long-term benefits (Hudson *et al.*, 2001). The BSC is a strategic management and organizational communication tool that has matured from being a performance measurement system to adding the role of strategic management (Ha *et al.*, 2022). The BSC helps SMEs improve their strategic planning in line with their competitive advantages (Ha *et al.*, 2022). According to Reynolds *et al.* (2019), the BSC could be useful to SMEs despite their process of implementation differing from larger firms. The BSC is a tool for organizational learning because it participates in the construction of knowledge (Rasolofo-Distler and Distler, 2018). SME managers who know about and use the BSC regard nonfinancial indicators to be as important as financial indicators (Dobrovic *et al.*, 2018).

According to the Firm for Economic Cooperation and Development (OECD), 99% of firms are SMEs, and they employ about 60% of the workforce in the world. Further, they constitute 50%–60% of the value of OECD countries (OECD, 2019), which shows they are a vital part of any economy (Berisha and Pula, 2015; Dudic *et al.*, 2020; Manville *et al.*, 2019). The most common criterion to distinguish SMEs from large firms refers to the number of employees followed by the annual turnover or the annual balance sheet total (Berisha and Pula, 2015). To be considered an SME, the firm must fulfill requirements regarding the number of employees and at least one financial criterion (Berisha and Pula, 2015). Although SMEs do not need a fully developed management control system due to their simplicity, they can benefit from the BSC (Aureli *et al.*, 2018; Hoque and James, 2000). Most SMEs are governed by their mission, and the BSC focuses precisely on that.

The literature on the SMEs' restrictions (such as human resource limitations) shows that SMEs face constraints due to their limited size and their lack of resources and capabilities (Garengo and Biazzo, 2012; Albizu *et al.*, 2017; Davila, 2005; Kafetzopoulos, 2020). They do not usually have as many resources available for training as larger firms do since they often have financial limitations (Garengo and Biazzo, 2012; Curado and Teixeira, 2014). Therefore, we may assume that a manager of an SME is often the key person in the design and implementation of the BSC and is also responsible for implementing the BSC in firms lacking an explicitly formalized strategy. Strategic tools for analysis and their related key performance indicators can be considered in SMEs to improve the formulation of strategy (Viltard, 2019). Adopting the BSC framework to the specific needs of SMEs allows managers and employees to easily formalize the business strategy (Vasnier *et al.*, 2021). Thus, we ask the following research question:

RQ2. Can SMEs implement the BSC without an explicitly formulated business strategy?

### 2.5 Benefits and difficulties of using the balanced scorecard

The combination of different perspectives in the BSC facilitates managers' understanding of the interrelationships that can help overcome barriers that consequently lead to improvements in decision-making and problem-solving (Kaplan and Norton, 1992). A business usually cannot be successful without the involvement of at least one nonfinancial perspective (Dudic *et al.*, 2020). Thus, Table 1 presents the strengths and benefits of the BSC. Despite the advantages presented above, some authors have reported disadvantages to this tool. The BSC is a complex system that takes a long time to design and bears high costs in its implementation (Curado and Manica, 2010; Ratnaningrum *et al.*, 2020). There is some difficulty in estimating the cause-effect relationships among its components (Curado and Manica, 2010). Table 2 thus presents the disadvantages and difficulties in implementing the BSC.

The fact that performance measures must derive from the firm's strategy is a key premise of the BSC. In addition to the strategy, several factors influence the likelihood of a firm adopting the BSC. Some studies have highlighted the fact that despite the advantages associated with the BSC, its use is not widespread among firms mainly due to barriers that could prevent success in implementation (Quesado *et al.*, 2016). Some of these barriers affect SMEs because they are small, and they must adapt the BSC to their less complex and formalized management systems (Lonbani *et al.*, 2016; Monte and Fontenete, 2012).

Organizational resources are essential factors that affect the extent of BSC adoption by SMEs (Ha *et al.*, 2022). According to Monte and Fontenete (2012), the main causes that hinder the use of performance evaluation systems in SMEs are the scarcity of human and financial resources, the lack of strategic planning and the ignorance of the advantages of these systems. SMEs can face challenges regarding the use of the BSC such as limitations in

**Table 1.** Advantages of using the BSC

Advantages of using the BSC	Source
<ul style="list-style-type: none"> <li>• It integrates financial and nonfinancial metrics that allow managers to focus on the entire business process and ensure that activities create value for the long-term organizational strategy</li> <li>• The implementation and development of the BSC positively contribute to organizational performance</li> </ul>	<p>Awadallah and Allam (2015)</p> <p>De Geuser <i>et al.</i> (2009) and Neely <i>et al.</i> (2004)</p>
<ul style="list-style-type: none"> <li>• It makes it possible for small companies to connect internal factors to the four dimensions of the BSC for the benefit of firm success</li> <li>• It overcomes the inadequacies of traditional performance measures</li> <li>• It is the ideal tool to communicate the mission, vision and strategy</li> <li>• It provides a means by which organizations can establish their main operating routines</li> <li>• It increases the ability of the organization to implement its strategy and consequently increases its performance</li> <li>• It allows for communicating the contribution of each individual to the working group</li> <li>• Improves the use of available resources</li> <li>• Clarifies how day-to-day actions have a long-term impact</li> </ul>	<p>Giannopoulos <i>et al.</i> (2013)</p> <p>Kaplan and Norton (1992; 1996)</p> <p>Owolabi <i>et al.</i> (2016)</p> <p>Quesado <i>et al.</i> (2016)</p>
<b>Source:</b> Own elaboration	

**Table 2.** Disadvantages of using the BSC

Disadvantages of using the BSC	Source
<ul style="list-style-type: none"> <li>• It is not equally suitable for all companies</li> <li>• It is a deficient tool due to the unidirectional cause-and-effect relationships, thus it is insufficient to describe today's businesses</li> <li>• Its measures are equally weighted, which in reality is not always correct as some measures may be more important than others</li> <li>• It is too time-consuming to design and implement</li> <li>• It ignores the competitors, the suppliers, the environment and the technological advances that are crucial factors for organizational development</li> </ul>	<p>Awadallah and Allam (2015)</p> <p>Chytas <i>et al.</i> (2011)</p> <p>Drew and Kaye (2007)</p> <p>Giannopoulos <i>et al.</i> (2013); Awadallah and Allam (2015)</p>
<ul style="list-style-type: none"> <li>• Its use can be limited by the aptitudes and cognitive characteristics of managers</li> </ul>	<p>Ratnaningrum <i>et al.</i> (2020)</p>
<b>Source:</b> Own elaboration	

resources (Albizu *et al.*, 2017; Davila, 2005; Kafetzopoulos, 2020). Thus, many SMEs managers may not have the resources needed to use the BSC despite their perceptions of its usefulness. Furthermore, the managers' personal traits influence the adoption of management accounting practices (Holmes and Nicholls, 1988). In fact, BSC adoption in SMEs is dependent upon managers' commitment (Mio *et al.*, 2022), involvement and previous experience (Braam and Nijssen, 2011; Ha *et al.*, 2022). Bearing in mind that the BSC is an important strategic management tool, we believe that studying the perceptions of SMEs managers on its use is within the domain of embryonic behavioral strategy research (Bolinger *et al.*, 2021). Considering the above, we ask the following research question:

RQ3. What perceptions do SMEs managers have on the use of the BSC?

## 2.6 *The complex nature of the circumstances that enable the use of the balanced scorecard*

According to contingency theory, no universally appropriate management control system is fit for all situations (Kober *et al.*, 2007). Thus, the BSC cannot be seen as a standard model because it must be uniquely applied to each firm (Quesado *et al.*, 2016); thus, firms must maximize its use to support managers in their decision-making (Curado and Manica, 2010) because there is no unique best way to do it. There is no optimal situation in which to adopt the BSC because adoption is contingent on the context.

There are individual contingency variables that may influence the use of the BSC like the managers' traits (Holmes and Nicholls, 1988). Individuals often vary in how they use it; however, the role of these variations, such as work experience and gender, is understudied concerning the use of the BSC (Steele *et al.*, 2012). Few studies have addressed women's contributions to formulating and implementing strategy, namely, using managerial mechanisms like the BSC (Songini and Gnan, 2009). Gender and professional experience may play a role in the use of management control systems like the BSC. Likewise, technical knowledge and experience are associated with higher levels of BSC adoption in SMEs (Ha *et al.*, 2022). Accordingly, we posit that the managers' gender and knowledge of the BSC are individual contingency variables that affect the use of the BSC.

Likewise, there are organizational contingency variables that may influence the use of the BSC (Prenestini *et al.*, 2024). Often the literature shows that the size of a firm is positively associated with the sophistication of its management control systems that affect their design and use (Hoque and James, 2000; Quesado *et al.*, 2016). There is evidence that confirms this relationship, namely, that the size of the firm (Mio *et al.*, 2022) is positively related to the use of the BSC (Quesado *et al.*, 2016). Given SMEs' limited size and lack of capabilities (Albizu *et al.*, 2017; Davila, 2005; Kafetzopoulos, 2020), the use of the BSC may be less common in these settings. However, according to Dudic *et al.* (2020), the BSC can be applied regardless of the size of the firm. The owner-manager of the SME (generally its CEO) plays an essential role in information management in the sense that a higher engagement in the strategic process results in an increased search for information. The CEO has a major influence on the decision-making of SMEs, i.e. formulating strategy. CEO's strategic intent enhances information gathering and utilization processes (Broersma *et al.*, 2016). Therefore, the use of the BSC is contingent on the firm's strategy (Lonbani *et al.*, 2016). Furthermore, the age and sector of activity of the SME impact the adoption of management accounting practices (Holmes and Nicholls, 1988).

From a contingent perspective, several factors underlie the adoption of the BSC in firms including the existence of a formal and explicit strategy (Mio *et al.*, 2022). Quesado *et al.* (2014) report that the BSC use in Portuguese firms is not associated with the degree of formalization of the firm, which also applies to strategy formalization. Globally, SMEs face an ambiguous double situation on the relationship between strategy and performance measurement: there is evidence that SMEs have difficulties in rationalizing strategic processes and that they consider strategy as mainly emerging. Consequently, they do not place much importance on the formalization of their strategic choices even if the CEO has set a strategic intention. On the other hand, the literature proposes methodologies (like the BSC) for the implementation of performance management systems that adopt top-down approaches that aim to interpret strategy and transform it into action (Garengo and Biazzo, 2012). Therefore, there is ambiguity and context dependency in the rationale for adopting the use of the BSC. As a result, we posit that the firm size and the lack or existence of an explicit strategy are organizational contingency variables that affect the use of the BSC. Thus, we ask the following research questions:

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- RQ4. What are the alternative sets of contingencies (both individual and organizational characteristics) that lead to SME managers using the BSC?
- RQ5. What are the alternative sets of contingencies (both individual and organizational characteristics) that lead to SMEs managers not using the BSC?

### 3. Method

We followed a mixed methods approach to address the research questions presented above. To address RQ1–RQ3, we followed a descriptive approach to examine the rationale that managers used to support their implementation of the BSC. We used content analysis to explore open-ended answers from the SMEs’ managers. Regarding RQ4 and RQ5, we followed a fuzzy-set qualitative comparative analysis (fsQCA) and we examined the alternative configurations (sets of contingencies, including both individual and organizational characteristics) that led to managers using the BSC. We also used a complementary analysis to discover alternative sets of contingencies that prevented such use.

We chose these research options because a description is a precursor to an explanation of the phenomenon (Saunders *et al.*, 2012, p. 171). We focused on a single phenomenon we wanted to discover (the use of BSC) in a specific setting (Portuguese SMEs). In the second stage, we developed a fsQCA (Ragin, 2008) to inform theory development and to empirically analyze the management control systems (Bedford *et al.*, 2016). FsQCA is best suited to obtain a deeper understanding of the complex, nonlinear and synergistic effects of circumstances that result in an outcome of interest (Rihoux and Ragin, 2009) while being applied to medium-sized samples (Ragin, 2000). The fsQCA can address data sets composed of responses to closed-ended survey questions (Cragun *et al.*, 2016) as well as open-ended ones that require a content analysis. A small number of causal conditions in the analysis can be used because fsQCA has no omitted variable bias like regression analyses because it draws on Boolean algebra rather than on correlations (Fainshmidt *et al.*, 2020). Thus, if the analysis leaves out a relevant condition, it only decreases the explanatory power of the model.

An fsQCA study combines qualitative and quantitative techniques, and thus it essentially reflects a mixed technique application combining the best of the two approaches (Cragun *et al.*, 2016; Pappas and Woodside, 2021). It has been used in mixed-method research designs (Misangyi *et al.*, 2017). The qualitative inductive application comes from data being analyzed “by case” and not “by variable” (Ragin, 2000). The quantitative empirical estimates come from performing sufficient and necessary analyses through statistical methods (Ordanini *et al.*, 2014; Pappas and Woodside, 2021). FsQCA provides a new approach to analyze data sets: it brings together quantitative and qualitative data and broadens methodological options and data analyses. FsQCA is a mixed-method approach that offers deeper insights into the phenomena at study. It can address various topics and supports integration, synthesis and triangulation in mixed methods studies (Cragun *et al.*, 2016). It is a tool that bridges the quantitative-qualitative gap that exists in most fields (Pappas and Woodside, 2021).

FsQCA is suitable for multilevel research because it allows compilation effects (Renkema *et al.*, 2016) when following a case-based approach. That is, fsQCA classifies cases [configuration of causal conditions and the associated outcome are designated as a case (Fiss, 2007)] into sets of cases that each represent a value within a distinct and meaningful group (Ragin, 2008) for the selected variable. Thus, fsQCA can advance multilevel research (Meuer and Rupiotta, 2017) by showing empirically how higher-level outcomes [in this study, the decisions to adopt (or not) the BSC] emerge from several individual and organizational lower-level conditions (Renkema *et al.*, 2016).

Each configuration of causal conditions and the associated outcome are designated as a case (Fiss, 2011). FsQCA is a valuable method for exploring and examining complex causality because it provides a variety of alternative combinations (equifinality) for the same outcome, alternative combinations of causal conditions, asymmetry and asymmetric causality (Fiss, 2011; Misangyi *et al.*, 2017; Rihoux and Ragin, 2009; Schneider and Wagemann, 2010). FsQCA accepts variables measured with binary, categorical, numeric and Likert scales (Ragin, 2006, 2008). Its use constitutes an advantage compared to traditional quantitative statistical techniques that only estimate a single solution to the outcome based on correlations (Rihoux and Ragin, 2009). There are important limitations in their ability to account for complex interactions between variables (Osabutey and Jin, 2016), but the results cannot be generalized and are valid only for the sample being studied.

### 3.1 Data collection

The Portuguese national business structure is mostly composed of SMEs; 99.9% of Portuguese firms are SMEs (INE, 2024), and they contribute significantly to the country's economic development (Cardim *et al.*, 2018). In Portugal (INE, 2024), SMEs are classified into three groups: micro firms (<10 employees; annual turnover < €2m or annual balance sheet total < €2m), small firms (<50 employees, annual turnover < €10m or annual balance sheet total €10m) and medium firms (<250 employees, annual turnover < €50m or annual balance sheet total €43m).

We collected data using an online cross-sectional survey sent to a data set of 10,000 top managers of the largest Portuguese SMEs. Previous studies have used similar surveys (e.g. Curado and Manica, 2010; Giannopoulos *et al.*, 2013). The questionnaire was divided into an initial section on the respondent's data and organizational data. We collected the data using both multiple-choice and open-ended questions to help participants' reasoning to emerge. We gathered a total of 456 questionnaires (4.56% final response rate). In the end, 42 responses to the survey were eliminated (e.g. for incompleteness). The final number of valid questionnaires for the analysis was 414. The data indicate that 63 SMEs use the BSC (15.22%), 95 use the *Tableaux de Bord* (TdB) (22.95%), 52 use another management control system (12.56%) and 204 use nothing at all (49.27%). Of the 63 SMEs that used the BSC, the top managers were as follows: 33 (52.38%) were heads of the firm, 28 (44.44%) were professional managers and only 2 (3.17%) were shareholder representatives.

## 4. Results

### 4.1 Descriptive analysis

The most represented industries in the sample were wholesale and retail trade and manufacturing industries regardless of whether SMEs used the BSC or not (Table 3). Most of the SMEs in the sample have an explicitly formulated business strategy to implement (most of the firms using the BSC have it), and over half of the sample are medium-sized firms (Table 4).

The gender distribution of SMEs managers is unbalanced (men are more common as the top managers, which is consistent with the glass ceiling literature). SMEs that adopt the BSC have younger managers (nearly 80% are younger than 50 years old) than the SMEs that do not adopt the BSC. Consequently, the managers' tenure time at the firm is shorter and they are less experienced (Table 5).

Regardless of using the BSC, the managers of SMEs in this study recognize the importance of financial and nonfinancial measures. Nevertheless, over 90% of the managers who use the BSC consider nonfinancial measures to be important or very important, while only 84.12% of them recognize the importance of financial measures. In contrast, over 85.76% of the managers who do not use the BSC value the financial measures as important or very important, and 86.32% recognize the importance of nonfinancial measures. There is a

**Table 3.** Descriptive statistics on SMEs' industry

SME's industry	SMEs that use the BSC (%)	SMEs that do not use the BSC (%)	Total SMEs
Agriculture, animal production, hunting, forestry and fishing	4 (16.7%)	20 (83.3%)	24
Construction	2 (6.5%)	29 (93.5%)	31
Education	0 (0%)	5 (100%)	5
Electricity, gas and water	4 (40%)	6 (60%)	10
Extractive industries	1 (20%)	4 (80%)	5
Financial and insurance activities	2 (18.2%)	9 (81.8%)	11
Human health activities	1 (20%)	4 (80%)	5
Information and communication technologies	4 (22.2%)	14 (77.8%)	18
Lodging, catering and similar	1 (4.3%)	22 (95.7%)	23
Manufacturing industries	22 (18%)	100 (82%)	122
Real estate activities	1 (16.7%)	5 (83.3%)	6
Social support activities	0 (0%)	4 (100%)	4
Transport and warehousing	3 (16.7%)	15 (83.3%)	18
Wholesale and retail trade	18 (13.6%)	114 (86.4%)	132
Total	63 (15.2%)	351 (84.8%)	414

**Source:** Own elaboration

**Table 4.** Descriptive statistics of SMEs

Types of SMEs	Have explicitly formulated strategy (yes/no) # (%)		SME's annual turnover (€) (*) # (%)		SME's no. of employees (*) # (%)	
	Yes	No	<2M	≥2M	<10	≥10
SMEs that use the BSC	Yes	62 (98.41%)	<2M	2 (3.17%)	<10	6 (9.52%)
	No	1 (1.59%)	2M to <10M	28 (44.44%)	10–49	22 (34.92%)
	Total	63 (100.00%)	≥10M	33 (52.38%)	≥50	35 (55.56%)
SMEs that do not use the BSC	Yes	308 (87.75%)	<2M	18 (5.13%)	<10	19 (5.41%)
	No	43 (12.25%)	2M to <10M	225 (64.10%)	10–49	167 (47.58%)
	Total	351 (100.00%)	≥10M	108 (30.77%)	≥50	165 (47.01%)
	Total	351 (100.00%)		351 (100.00%)		35 (100.00%)

**Notes:** \*The top annual turnover for an SME is €250m, and the maximum number of employees is 250; M = million

**Source:** Own elaboration

clear overvaluation of nonfinancial measures (more than 90%) by managers who use the BSC against a balanced valuation of financial and nonfinancial measures (around 86% for each) versus managers who do not use the BSC. Almost half the managers of SMEs do not adopt the BSC because they do not know the tool. Most of the SMEs that used the BSC have done so for more than three years. Nearly 85% of SMEs managers that do not use the BSC also do not plan on adopting it (Table 6). Regarding the SMEs that use the BSC, the most reported BSC dimension is the one related to clients and markets and the least reported BSC dimension is internal processes (Table 7).

The managers of SMEs that use the BSC ( $n = 63$ ) highlight its benefits: the BSC gives them a global vision of the firm that aligns organizational, departmental and individual objectives (Table 8). Each respondent could use several multiple answers, and thus Table 6

**Table 5.** Demographic descriptive statistics of managers

Types of managers	Age (years)	# (%)	Gender (F/M/other)	# (%)	Tenure (years)	# (%)	Experience (years)	# (%)
Managers who use the BSC	20 to 29	6 (9.52%)	Female	25 (39.68%)	0 to 9	26 (41.27%)	0 to 9	31 (49.21%)
	30 to 39	17 (26.98%)	Male	38 (60.32%)	10 to 19	20 (31.75%)	10 to 19	22 (34.92%)
	40 to 49	26 (41.27%)	Other	0 (0.00%)	20 to 29	13 (20.63%)	20 to 29	7 (11.11%)
	50 to 59	11 (17.46%)			30 to 39	1 (1.59%)	30 to 39	2 (3.17%)
	60 to 69	2 (3.17%)			40 or more	3 (4.76%)	40 or more	1 (1.59%)
Total	70 to 79	1 (1.59%)						
Managers who do not use the BSC	Total	63 (100.00%)		63 (100.00%)		63 (100.00%)		63 (100.00%)
	20 to 29	16 (4.56%)	Female	181 (33.62%)	0 to 9	104 (29.63%)	0 to 9	132 (37.61%)
	30 to 39	65 (18.52%)	Male	232 (66.10%)	10 to 19	119 (33.90%)	10 to 19	123 (35.04%)
	40 to 49	134 (38.18%)	Other	1 (0.28%)	20 to 29	87 (24.79%)	20 to 29	64 (18.23%)
	50 to 59	101 (28.77%)			30 to 39	31 (8.83%)	30 to 39	28 (7.98%)
60 to 69	31 (8.83%)			40 or more	10 (2.85%)	40 or more	4 (1.14%)	
70 to 79	4 (1.14%)							
Total		351 (100.00%)		351 (100.00%)		351 (100.00%)		351 (100.00%)

**Source:** Own elaboration

**Table 6.** Descriptive statistics on the BSC use

Types of managers	Know the BSC (yes/no)	# (%)	Use the BSC (yes/no)	# (%)	For how long (years)	# (%)	Intend to use in the future # (%)
Managers who use the BSC	Yes	62 (98.41%)	Yes	63 (100.00%)	<1 year	2 (3.17%)	
	No	1 (1.59%)	No	0 (0.00%)	1 to 3 years	24 (38.10%)	
	Total	63		63	>3 years	37 (58.73%)	
Managers who do not use the BSC	Yes	179	Yes	0 (0.00%)			
	No	172	No	351 (100.00%)			Not a priority 297 (84.62%)
	Total	351		351			In two years 39 (11.11%) In five or more years 15 (4.27%) 351

**Source:** Own elaboration

**Table 7.** Descriptive statistics on the report of the four dimensions of the BSC

BSC dimensions	Commonly reported # (%)	Commonly not reported # (%)	Total # (%)
Learning and growth	60 (95.2%)	3 (4.76%)	63 (100.00%)
Internal processes	58 (92.06%)	5 (7.94%)	63 (100.00%)
Clients and markets	62 (98.41%)	1 (1.59%)	63 (100.00%)
Financial dimension	60 (95.24%)	3 (4.76%)	63 (100.00%)

**Source:** Own elaboration

**Table 8.** Perceived benefits for adopting the BSC

Benefits for adopting the BSC	# (% out of the 63 SMEs adopting the BSC)
It aligns organizational, departmental and individual objectives	41 (65.08%)
It communicates the strategy	32 (50.79%)
It gives a global vision of the company	41 (65.08%)
It improves the strategy	29 (46.03%)
It is the most used management control system	3 (4.76%)
It permits the organization to learn the strategy	22 (34.92%)
Other	3 (4.76%)

**Source:** Own elaboration

presents no total for the benefits. The managers at the SMEs that did not use the BSC ( $n = 351$ ) also described their reasons for doing so. The main reason is that they use another tool for performance measurement (Table 9). Each respondent could use several multiple answers, and thus Table 7 presents no total for the benefits.

We also used open-ended questions to identify what the “other obstacles” for managers were. A content analysis of the answers allowed us to identify 10 codes. Specifically, the two authors who generated more codes also have more experience in BSC research. We obtained an inter-rater agreement of 83.7% among the 43 examples of obstacles. Of the 10 codes, we had an inter-rater agreement of 90% after two iterations. Each code corresponded to an obstacle for not using the BSC. Table 10 lists the obstacles that SMEs face concerning the BSC in which the most commonly mentioned obstacle is the manager not knowing how to use the BSC.

**Table 9.** Presented reasons for not adopting the BSC

Reasons for not adopting the BSC	# (% out of the 351 SMEs not adopting the BSC)
I do not understand the tool	45 (12.82%)
I use another tool to measure performance	139 (39.60%)
It is expensive	19 (5.41%)
It is not relevant to my company	89 (25.36%)
It is time-consuming	34 (9.67%)
There is no need for such a tool	60 (17.09%)
Other obstacles	49 (13.96%)

**Source:** Own elaboration

**Table 10.** Obstacles SMEs face to use the BSC

Other obstacles for not adopting the BSC	# (%)
The manager does not know how to use the BSC	11 (25.58%)
The manager finds the BSC hard to implement	2 (4.65%)
The manager finds the BSC to be a complex tool	1 (2.33%)
The manager finds that the BSC is not important to/not a priority for the company	4 (9.30%)
The manager considers being a family company an obstacle for the SME company	1 (2.33%)
The manager considers there are no capable human resources to implement the BSC	2 (4.65%)
The manager considers that there is no interest at the top management level in using the BSC	9 (20.93%)
The manager considers there is no strategy or strategic process to support the BSC	3 (6.98%)
The manager considers there is no time to implement the BSC	1 (2.33%)
The manager is preparing to introduce the BSC	9 (20.93%)
Total	43 (100.00%)

**Source:** Own elaboration

Next, we aimed to identify any noticeable distinctions between the samples by investigating mean differences using *t*-tests (Karahanna *et al.*, 1999). *T*-tests on demographics and key information on the firms of the study showed no significant differences between BSC users and nonusers. The analysis revealed no significant mean difference between the two subsamples. Such results further contributed to using a qualitative analysis to explore the nonlinear effects of circumstances that lead to BSC use as well as the ones preventing its use.

#### 4.2 Fuzzy-set qualitative comparative analysis

Our second approach to data developed the configurational analysis. Following Bedford's (2020) suggestion, we used fsQCA in a way that had not yet been exploited: we applied it to an examination of the contextual conditions that led to the adoption of the BSC or that prevented its adoption. Since the standard application of fsQCA relates to the test of sufficiency (not necessity) (Bedford *et al.*, 2016), we followed best practices and reported the intermediate sufficiency solutions (the alternative combinations of conditions that lead to the outcome) that generated the use of the BSC or its absence (not using the BSC – represented by adding a “~” before the outcome) (Mas-Verdú *et al.*, 2015; Ragin, 2008; Schneider and Wagemann, 2010).

To apply fsQCA, the data must go through a calibration process to be converted into values that range from zero (total exclusion of a given group) to one (full inclusion at a given group) and an in-between crossover point of maximum ambiguity of membership (0.50), which is a theoretical and empirical understanding of the variables (Ragin, 2008). We prepared the data by calibrating the data set to reflect the structural differences by using external standards such as the investigator's theoretical and substantive knowledge (Ragin, 2008). The conditions used here correspond to variables coming from the literature. The conditions were measured using binary and categorical scales in the survey. Each was calibrated to serve fsQCA and to represent meaningful groups (Crilly *et al.*, 2012; Ragin, 2008). Table 11 shows the descriptive statistics on the conditions of the data and the cut-off points used for calibration.

According to Fiss (2011), this technique is particularly suitable for analyzing high levels of complexity because it accepts equifinality, alternative combinations of causal conditions and asymmetry that when applied to the present case means:

**Table 11.** Descriptive statistics and calibration of conditions and outcome

Conditions and outcome		Descriptive statistics	Calibration
Organizational conditions	Number of employees (empl)	1 (45.65%); 0.5 (48.31%); 0 (6.04%)	1 = 50 or more employees; 0.5 = between 10 and 49 employees; 0 = less than 10 employees
	Existence of explicitly formulated business strategy (strat)	1 (89.37%); 0 (10.63%)	1 = exists; 0 = does not exist
Personal conditions	The manager knows the BSC (know)	1 (57.97%); 0 (42.03%)	1 = manager knows the BSC; 0 = manager does not know the BSC
	Manager's gender (gen)	1 (34.54%); 0.5 (0.24%); 0 (65.22%)	1 = female; 0.5 = other; 0 = male
Outcome	BSC use by the SME (BSC)	1 (15.22%); 0 (84.78%)	1 = SME uses the BSC; 0 = SME does not use the BSC

**Source:** Own elaboration

- more than one combination of causal conditions leads to the use of the BSC;
- there are alternative causal configurations that produce the same outcome; and
- the causal conditions that lead to the use of the BSC may differ from the causal conditions for not using it (Rihoux and Ragin, 2009).

In turn, the causal conditions' degree of sufficiency shows the extent to which each condition accounts for the outcome (Fiss *et al.*, 2013). The combinations of causal conditions that lead to the outcome are also known as sufficient conditions. When conducting the sufficiency analysis, we confirmed that the truth table analysis respected the minimum consistency thresholds for raw consistency (0.80) (Ragin, 2006). FsQCA provides three solutions: the complex, the parsimonious and the intermediate. We report the intermediate one according to the literature (Ragin, 2008). The configurations involve two kinds of conditions: core and peripheral. The core conditions are the ones included in both the parsimonious and intermediate solutions, while the peripheral conditions are the ones present solely in the intermediate one (Fiss, 2011; Fiss *et al.*, 2013; Ragin, 2000, 2008).

The solutions and the configurations of conditions are assessed by their levels of consistency and coverage. Consistency should respect the threshold of at least 0.75 and preferably 0.85 or higher (Ragin, 2006, 2008). Coverage limits of coverage are from 0.25 to 0.90 (Ragin, 2008; Woodside and Zhang, 2013). For Figures 1 and 2, black circles indicate the presence of a condition, and empty white circles indicate the absence of the condition; large circles indicate core conditions and small circles identify peripheral conditions; a lack of symbol indicates that the condition's presence or absence is not relevant to that configuration.

## 5. Discussion

This study addressed SMEs from several industries (Table 3) as in Speckbacher *et al.* (2003), Curado and Manica (2010), Giannopoulos *et al.* (2013) and Kairu *et al.* (2013). Service providers like electricity, gas and water supply industries use the BSC the most, which is similar to Giannopoulos *et al.* (2013). Construction uses the BSC the least as in Speckbacher *et al.* (2003). This research study covered 414 SME's top managers, yet only 63 (15.22%) used the BSC. Indeed, almost half the sample (49.27%) used no management control system

BSC = f (Gen, Know, Empl, Strat)								
Configurations explaining the Outcome	Gen	Know	Empl	Strat	Coverage		Consistency	Interpretation of fsQCA results
					Raw	Unique		
Configuration A	○	●	○	○	0.015873	0.015873	1.000000	Smaller SMEs run by a male top manager who knows how to use the BSC and that does not have an explicitly formulated strategy – these SMEs use the BSC
Configuration B	●	●	○	●	0.126984	0.126984	0.842105	Smaller SMEs run by a female top manager who knows how to use the BSC and have an explicitly formulated strategy – these SMEs use the BSC

**Notes:** Overall solution coverage: 0.142857; Overall solution consistency: 0.857143

**Source:** Own elaboration

**Figure 1.** Configurational modeling for the BSC use

~BSC = f (Gen, Know, Empl, Strat)								
Configurations explaining the Outcome	Gen	Know	Empl	Strat	Coverage		Consistency	Interpretation of fsQCA results
					Raw	Unique		
Configuration C		○		●	0.357895	0.357895	0.944444	Regardless of size, SMEs that have explicitly formulated strategies and have managers (regardless of gender) who do not know how to use the BSC – these SMEs do not use the BSC
Configuration D	○	●	●	○	0.021053	0.021053	1.000000	Larger SMEs without explicitly formulated strategies that are run by male managers who know how to use the BSC – these SMEs do not use the BSC

**Notes:** Overall solution coverage: 0.378947; Overall solution consistency: 0.947368

**Source:** Own elaboration

**Figure 2.** Configurational modeling for the absence of the BSC use

at all (like [Curado and Manica, 2010](#)). The managers using the BSC were mostly (52.38%) those in charge of the SMEs, which was consistent with the SME’s manager often being an entrepreneur ([Cardim et al., 2018](#)). Perhaps the BSC’s implementation in SMEs faces major difficulties due to the scarcity of resources or the firms’ incapacity to meet the high costs associated with the BSC ([Albizu et al., 2017](#); [Davila, 2005](#); [Kafetzopoulos, 2020](#)).

Our first research question, *RQ1*, was *Do SMEs have explicitly formulated business strategies?* The results show most SMEs that use the BSC have an explicitly formulated business strategy ([Table 4](#)). However, Configuration A regard SMEs that adopt the BSC without having an explicitly formulated strategy, illustrating that a strategy can be implemented by adopting the BSC ([Benková et al., 2020](#)) in contrast to prior reports ([Chalmeta and Ferrer Estevez, 2023](#)). Such results contribute to the literature on the absence of a strategy by addressing firms that do not follow an explicitly formulated strategy but still have a business that survives ([Hauser et al., 2020](#)).

[Table 4](#) shows data on the firms that use the BSC. A higher proportion of larger SMEs use the BSC, which is similar to the results of [Hoque and James \(2000\)](#) from a study on Australian manufacturing firms. However, the complexity of the phenomenon addressed in a configurational modeling approach shows the opposite findings ([Figure 1](#)), i.e. smaller SMEs use the BSC, which is consistent with the results from [Quesado et al.’s \(2016\)](#) quantitative

study on Portuguese firms. Such results challenge the literature on SMEs facing restrictions due to their limited size and their shortage of resources and capabilities (Albizu *et al.*, 2017; Davila, 2005; Kafetzopoulos, 2020).

RQ2 asks *Can SMEs implement the BSC without an explicitly formulated business strategy?* The results (Table 4) show that it is possible to implement the BSC in SMEs without a formalized strategy. The results show (Figure 1 – Configuration A) that the BSC can exist before an explicitly formulated strategy in smaller SMEs. Such findings indicate that the BSC may be the first step toward formulating a strategy because that formulation has a link to operations in SMEs (Lonbani *et al.*, 2016). However, SME managers may opt to not have an explicitly formulated strategy (Hauser *et al.*, 2020).

Managers who use the BSC are on average younger, newer to the SMEs and less experienced; more of them are women (Table 5). Such findings are consistent with Cheng's results (Cheng *et al.*, 2007) on the lack of senior management commitment and support for new performance management systems. Curiously, female SMEs managers are part of a configuration that leads to the use of the BSC (Figure 1, Configuration B) provided the existence of an explicitly formulated strategy. In contrast, male managers are part of the configurations that lead to the use of the BSC (Figure 1, Configuration B) and prevent it as well (Figure 2, Configuration D). However, neither configuration requires the firm to have an explicitly formulated strategy. Consequently, our findings may detect a gender-related pattern of managers' capability to run a firm with (women) or without (men) an explicitly formulated strategy. Regarding the value given to financial and nonfinancial measures, managers who use the BSC overvalue the nonfinancial measures, which is consistent with Benková *et al.* (2020) who defend BSC use because of the nonfinancial indicators. In contrast, managers who do not use the BSC show a balanced valuation between financial and nonfinancial measures (Table 6).

Tables 6 and 7 show the knowledge that SMEs managers have on the BSC and how they use its dimensions. Almost half the managers of SMEs do not adopt the BSC because they do not know the tool, as suggested by Benková *et al.* (2020) who stated that the inability to correctly use the BSC had such an effect. Thus, the willingness to adopt the BSC results from the level of personal knowledge of the BSC that the managers have (Monte and Fontenete, 2012). Most of the SMEs that used the BSC have done so for more than three years (similarly to Giannopoulos *et al.*, 2013). The ones that do not use it are not planning to adopt it in the short run (around 85%) (Table 6). Regarding the four dimensions of the BSC, our results show that the most commonly reported one is related to clients and markets, and the least reported one refers to internal processes. Thus, our results match those of Kairu *et al.* (2013) (Table 7).

Tables 8, 9 and 10 give evidence for the answer to our next research question RQ3: *What perceptions do SMEs managers have on BSC use?* Table 8 provides evidence of the benefits of adopting the BSC. More than 65% of SMEs managers recognize that the benefit of adopting the BSC is that it increases their ability to align organizational strategy with the objectives of smaller units (individuals, departments). This is consistent with the results from Quesado *et al.* (2016). Equally, over 65% of SMEs managers recognize that the use of the BSC gives a global vision of the firm following the BSC creators Kaplan and Norton (1992, 1996). Additionally, 46.03% of SMEs managers cited the benefit of the BSC as an improvement strategy. This result follows Quesado *et al.*'s (2017) work and is consistent with Benková *et al.* (2020) who argued that a strategy could be implemented by adopting the BSC. Approximately 40% of SMEs managers stated that they did not adopt the BSC (Table 9) because they use other performance-measurement tools similar to Giannopoulos *et al.*'s (2013) work. The reason for the managers' lack of interest in introducing the BSC may be the difficulty in using it in small

firms (Owolabi *et al.*, 2016). Furthermore, over 25% of SMEs managers stated that the BSC was not relevant to their firms, which is similar to Giannopoulos *et al.*'s (2013) findings. The most mentioned obstacle (Table 10) for Portuguese SMEs managers not adopting the BSC (25.58%) is related to the fact that managers do not know how to use the BSC, which is in accordance with Ratnaningrum *et al.* (2020) who state that using the BSC could be limited by the aptitudes and cognitive characteristics of managers. In addition, nearly 21% of SME managers express no interest at the top management in using the BSC. Another 21% of SME managers are prepared to introduce the BSC, which is a difficult task due to the scarcity of resources in SMEs (Albizu *et al.*, 2017; Davila, 2005; Kafetzopoulos, 2020).

RQ4 asks *What are the alternative sets of contingencies (both individual and organizational characteristics) that lead to SMEs managers using the BSC?* The results in Figure 1 show the pathways, and they involve two configurations: A and B. These are the two kinds of SMEs where managers use the BSC. Therefore, SMEs that wish to implement the BSC should try to develop such characteristics. The results show that although the strategy has a positive effect on the extent of BSC usage (Hoang *et al.*, 2018), it is possible to use the BSC while not having an explicitly formulated strategy because a strategy can be implemented later by adopting the BSC (Benková *et al.*, 2020).

Finally, RQ5 asks *What are the alternative sets of contingencies (both individual and organizational characteristics) that prevent SMEs managers from using the BSC?* The results in Figure 2 show such pathways, and they involve two very different configurations: C and D. These are the two kinds of SMEs that prevent the use of the BSC. Such configurations are opposites, and they show SMEs managers what combinations to avoid if they want to implement the BSC. Configuration C only comprises two conditions, which means it probably occurs quite easily. If the manager does not know how to use the BSC, then it prevents such use.

This is true regardless of firm size and the manager's gender – and even if the SMEs have an explicitly formulated strategy. This conclusion confirms that the use of the BSC can be limited by the aptitudes of the managers (Ratnaningrum *et al.*, 2020). Configuration D comprises four conditions and thus it is harder to achieve; however, it shows that the manager might know how to use the BSC but choose not to. Therefore, evidence shows that having a manager who knows how to use the BSC is no guarantee of such use. The existence of alternative configurations that lead to the use of the BSC (and prevent such use) shows that the phenomenon at hand is complex and nonlinear – this supports the adequacy of using fsQCA (Rihoux and Ragin, 2009). Therefore, the theoretical assumptions of fsQCA apply to our results as shown in Table 12.

## 6. Implications for practice

The BSC is necessary to assist SMEs in achieving clarity of management, strategy implementation, and, consequently, better growth perspectives. Our study's findings provide several implications for practice suggesting both convergence with previous literature (Tawse and Tabesh, 2023) and new venues of managerial proposals to pursue. Our findings provide evidence on most SMEs having explicitly formulated business strategies, which should incentivize all SME managers to do so. The percentage of managers implementing the BSC that have explicitly formulated business strategies is larger than the percentage of managers not implementing the BSC that have explicitly formulated business strategies. Such evidence is aligned with the literature (e.g. Curado and Manica, 2010). Our recommendation for SMEs managers (often being the entrepreneurs themselves) is to start by explicitly formulating their business strategies as an initial step in the BSC implementation.

**Table 12.** Theoretical assumptions, theoretical propositions and empirical support of fsQCA

Theoretical assumptions	Theoretical propositions	Empirical support
Equifinality	“different paths can lead to the same outcome” (Rihoux and Ragin, 2009: 17)	Two alternative configurations lead to BSC use (A and B) Two alternative configurations prevent the BSC use (C and D)
Conjunctural causation	“outcomes rarely have a single cause but rather result from the interdependence of multiple conditions” (Misangyi et al., 2017: 256) “nonlinear, non-additive, non-probabilistic conception that rejects any form of permanent causality” (Rihoux and Ragin, 2009: 17)	The configurations leading to BSC use (A and B) result from the interaction of multiple conditions The configurations preventing the BSC use (C and D) result from the interaction of multiple conditions
Asymmetry	“attributes found to be causally related in one configuration may be unrelated or even inversely related in another” (Misangyi et al., 2017: 256)	Conditions of Configuration A leading to BSC are unrelated or inversely related to Configuration B Conditions of Configuration C preventing BSC are unrelated or inversely related to Configuration D
Asymmetric causality	“causes leading to the presence of an outcome of interest may be quite different from those leading to the absence of the outcome” (Fiss, 2011: 394)	Configurations leading to BSC use (A and B) are different from the ones preventing its use (C and D)

**Source:** Own elaboration

Considering our findings, SME managers implement the BSC even if they do not have an explicitly formulated business strategy. The existence of a formal and explicit strategy may underlie the adoption of the BSC in firms (Mio et al., 2022); however adopting the BSC makes it easy to formalize the SME business strategy (Vasnier et al., 2021). Therefore, we suggest that managers who do not yet have explicit business strategies may adopt the BSC as a means to develop their business strategies and make them explicit.

We also studied the perceptions that SMEs managers have on the use of the BSC. We understand that managers consider the use of the BSC to be useful and beneficial. SME managers mention that the use of the BSC aligns organizational, departmental and individual objectives; communicates the strategy; gives a global vision of the company; and improves the strategy. Thus, we believe that the disclosure of this study’s results may positively influence the adoption of the BSC by SMEs managers who do not currently use it (Heinicke, 2018; Owolabi et al., 2016; Aryani and Setiawan, 2020; Strohhecker, 2016).

SMEs managers had some input on their reasons for not using the BSC. We identified several preventing issues that may justify the low level of BSC adoption among SMEs (Braam and Nijssen, 2011; Ha et al., 2022; Mio et al., 2022). We recommend that managerial attention should be given to these concerns. In supporting solid decision-making, we encourage the creation of practices to explain the tool to managers including how it can be relevant to companies. The implementation of BSC training and development programs would dissipate the negative perceptions of the tool being expensive and time-consuming (Mio et al., 2022).

The nonlinear design of our study’s findings offers alternative situations under which SMEs managers adopt the BSC as well as situations that might prevent its use. There are two alternative sets of contingencies (both individual and organizational characteristics) that lead

SMEs managers to use the BSC. There are also two alternative sets of contingencies (both individual and organizational characteristics) that prevent SMEs managers from using the BSC.

When identifying these four different alternative situations, we give SMEs managers four patterns on the use (or not) of BSC that allow us to provide actionable direction for managers.

Because of the different patterns found, we suggest:

- The patterns of BSC use with regard to small SMEs indicate that associated implications apply mostly to small SMEs managers;
- Attention should be given to experience in the use of the BSC during the recruitment processes, in the case that the SME manager is not the entrepreneur. In the more usual case of the manager being the entrepreneur itself, we strongly recommend entrepreneurs to get training in the BSC use because this will benefit his/her business success;
- We also advise a match between the stage of development of the SMEs strategy and the gender of the manager. Female managers may be more suitable when opting to use the BSC at firms where there is already an explicit strategy. Male managers may be more suitable when there is not yet an explicit strategy. Such data may have implications for recruitment and retention purposes;
- Given the evidence on SMEs that do not use the BSC, we remain alert to situations where having an explicit strategy, but no knowledge of the BSC (coherently) limits the use of the tool, regardless of firm size and manager's gender;
- Regarding the other configuration preventing the use of the BSC, we posit that large SMEs should avoid having a situation where there is no explicit strategy, and the manager is a male, even if he knows how to use the BSC; and
- Our final recommendation draws from the implications of our research and highlights the need for an individual analysis on the adoption of the BSC by each SME because there is no single common advice and no "one solution fits all." Therefore, the nonlinear results present a toolkit of various managerial choices that can contribute to the design of organizational practices and promote the use of the BSC.

## **7. Conclusion**

This study contributes to the research on the use of the BSC in several ways: first, the study extends the BSC-strategy literature by answering our initial research questions (*RQ1–RQ3*). Most of the SMEs in this study have an explicitly formulated business strategy. Among the ones that use the BSC, 98.41% of them have such a formalized strategy. Thus, they have a strategy to guide the definition and implementation of the BSC. Although the BSC is not the first choice for strategic management control in Portuguese SMEs, the relevance of its benefits is clear. Our findings show the characteristics of the managers and SMEs in the sample as well as the use of the BSC. SMEs that provide electricity, gas, water, information and communication technologies use BSC the most. Construction, lodging, catering and similar industries adopt it the least. Education and SMEs providing social support activities do not use the BSC at all. We uncover the managers' perceptions of what is meaningful to them when considering the use of financial or nonfinancial performance measures and the adoption of the BSC or not. More than 90% of the managers who use the BSC value the nonfinancial measures more than the financial ones (84.12%) while managers who do not use the BSC expressed a balanced valuation of financial and nonfinancial measures (around 86% each). The study exposes knowledge that managers have on the BSC and the perceived benefits of adopting it as well as the main arguments or obstacles for not using the BSC.

The use of the BSC gives the manager a global vision of the firm and makes it possible to align organizational, departmental and individual objectives. SME managers also have difficulties in using the BSC: they do not know how to use it, and they can opt to use another tool to measure performance. In most cases (84.62%), managers who do not use the BSC are not considering its use soon because it is not a priority. Managers who use the BSC are younger, newer to the firm and have less professional experience than those who do not use it. However, they have used it for more than three years in most cases (58.73%). There is a larger proportion of female managers who adopt the BSC versus managers who do not. Considering the Portuguese SMEs managers that use the BSC, the study also addresses the use of the different dimensions of the BSC. The findings show that the most used dimension reflects clients and markets, and the least used one regard internal processes. Thus, SMEs value external contingencies and stakeholders more than internal processes.

Second, in responding to our question on the combinations of circumstances that make managers use the BSC (RQ4), the results show two alternative configurations of conditions that lead to the use of the BSC through empirical evidence of equifinality. Such a finding indicates that conventional contingency approaches proposing a unique best choice for each organizational situation are unlikely to provide a complete understanding of the phenomenon. The findings show that men manage SMEs even if there is no explicitly formulated strategy to guide them whether using the BSC or not. In contrast, women adopt the BSC to manage SMEs that have an explicitly formulated strategy. We deliver a pair of alternative configurations that describe the combinations of circumstances leading to the adoption of the BSC. Regarding the first, the results give support to the idea that female managers who know about the BSC, who run small SMEs and who have explicitly formulated strategies use the BSC. Regarding the second, the results show that male managers who know about the BSC, who run small SMEs and who have no explicitly formulated strategies use the BSC. Such evidence challenges the literature on SMEs that argues they cannot use the BSC due to their constraints (Albizu *et al.*, 2017; Davila, 2005; Kafetzopoulos, 2020).

Furthermore, in responding to our question on the combinations of circumstances that prevent managers from using the BSC (RQ5), we provide two alternative sets of conditions. We deliver two configurations of combinations of circumstances that prevent the adoption of the BSC. One shows that regardless of their size, having an explicitly formulated strategy and having a manager (regardless of gender) who does not know how to use the BSC will lead the SME to not adopt the BSC. The other one shows that larger SMEs without explicitly formulated strategies that are run by male managers who do not know how to use the BSC do not adopt the BSC. We suggest that if SMEs want to adopt the BSC, then they should avoid the characteristics depicted in these two configurations.

We acknowledge the limitations regarding a relatively low response rate to the questionnaire (4.56%). We also recognize that the use of fsQCA limits the generalization of the findings. Nevertheless, the transparency of the report enables replication without restrictions. Finally, we invite colleagues to explore further the use of the BSC in other settings, e.g. nonprofit organizations, because the use of the commonly considered four dimensions of the BSC may be explored in different degrees to adjust to a nonprofit setting. When collecting data, researchers should prioritize questioning multiple employees and stakeholders and not just the managers. This leads to richer databases to explore.

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