

## articles

# SMEs Managers' Perceptions of MCS: A Mixed Methods Approach

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The goals of this study are to explore the use of the Management Control Systems (MCS) by SMEs' managers at the country level in order to identify the importance given to financial and nonfinancial measures, as well as key performance indicators. In this study, we use the behavioral accounting lens and adopt mixed methods approach to study the use of the MCS in Portuguese small to medium enterprises (SMEs): a correlational and a configurational analysis. Data was collected from a cross-sectional survey of 414 top managers of Portuguese SMEs across several industries. The results show that managers' perceptions of the importance given to financial measures is positively and significantly related to the importance given to several nonfinancial measures. We take an original approach by addressing the managers' perceptions to contribute to the understanding of Portuguese SMEs' use of tools for strategy implementation: the use of different MCS. Additionally, the study discovers alternative configurations of individual and organizational conditions that lead to the managers' perception of the importance given to financial and nonfinancial measures. This paper offers support for SMEs based on controlling strategy implementation by using MCS. The study's limitations regard a relatively low response rate to the questionnaire (4.56%), which may be justified because data was collected during the COVID-19 pandemic. We offer alternative configurations that generate the perception of managers about the importance of using financial and nonfinancial measures. Our results enlighten the use of such tools in support of strategic accomplishment.

### 1. Introduction

The senior management of small and medium enterprises (SMEs) are responsible for decision-making and establishing the firm's strategy. SMEs typically measure their performance by using indicators built from the perceptions of their managers (Duréndez et al., 2016). However, academic research on managers' perceptions is relative scarce (e.g., Ho et al., 2016; Sawang, 2011). SMEs address turbulent and dynamic environments that characterize today's competitive arenas (Cosenz & Noto, 2015), thus, their managers must use more than financial measures to assess performance (Manville et al., 2019). Management control sys-

tems (MCSs) (e.g., Balanced Scorecard and Tableau de Bord) support strategic planning and change management initiatives of SMEs by translating the organizational vision and mission into a set of objectives which then get interpreted by a series of financial and nonfinancial measures and key performance indicators (KPIs) (Psarras et al., 2020; Tarurhor & Osazevbaru, 2019). Most of the academic literature on MCSs takes a contingency approach to justify their use as determined by contextual factors (Bedford et al., 2016). We focus on SMEs because they face constraints due to their limited size (Davila, 2005) and their lack of resources and capabilities (Albizu et al., 2017; Kafetzopoulos, 2020). Managing human resources is a key task in SMEs,

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and MCSs can play an important role in such a task (Davila, 2005). Increasing employees' skills in particular is very important in SMEs, because it improves employee performance and business results (Curado & Teixeira, 2014).

Although organizations increasingly use financial and nonfinancial measures in reports such as the Tableau de Bord (TdB) (Campos et al., 2022) and the Balanced Scorecard (BSC) (Malagueño et al., 2018), there is no evidence on the perceptions of the importance given to the financial and nonfinancial measures by the SME managers, since not much attention has been given to human perceptions in accounting (Birnberg, 2011). Nevertheless, SMEs managers recognize the importance given to both types of measures and adopt different MCSs. Curado and Teixeira (2014) and Mehra et al. (2014) show that managers expect that improving employees' skills to be related to financial results, but they are related to nonfinancial ones as well (Aragón & Valles, 2013; Curado & Bernardino, 2018). The perceived importance and the use of both financial and nonfinancial measures are significantly related, yet around 40% of managers who highly recognize the importance of nonfinancial measures do not use them; so further research is needed (Sawang, 2011). Managers' perceptions of the importance of evaluations explain their usage of activities like training (Ho et al., 2016). SMEs usually do not have as much resources available for training as larger firms have, since they often have financial limitations (Curado & Teixeira, 2014). Therefore, we identify a gap in the understanding of the perceptions of SME managers on the importance of financial and nonfinancial measures, the use of key KPIs, and how they relate. With this study we aim to enhance the understanding of the perceptions that SME managers have on such issues.

The behavioral accounting research in management is an issue of increasing importance (Birnberg, 2011; Singh, 2021). To close the gap we follow the behavioral accounting lens and add to the literature on MCSs use, by adopting a mixed methods approach in which we use a sample of 414 Portuguese SMEs to test our hypotheses. The results contribute to our understanding of Portuguese SMEs' managers' perceptions. We offer alternative configurations that generate the perception of managers about the importance of using financial and nonfinancial measures.

## 2. Theoretical background

### 2.1. Management control systems

In this paper we adopted a behavioral accounting perspective over the addressed phenomena. The theoretical lens of behavioral accounting permits the examination of the interplay between financial and nonfinancial measures from the MCSs and associated behaviors of the managers using such tools. In order to use of most discretion and increase the possibility to get responses, such research typically relies on surveys and requires participants to be professionals (Birnberg, 2011). An MCS provides processes for managers to engage with resources required to accomplish an organization's goals (Langfield-Smith, 1997). Thus, in order for organization's to achieve these goals, they need

the MCS to be compatible with their strategies (Eker & Eker, 2016). Additionally, Duréndez et al. (2016) and Sztowski (2020) propose that MCS allow managers to plan, analyze, measure, and evaluate financial information essential to decision-making. Therefore, managers produce financial and nonfinancial information for the purpose of supporting decision-making, monitoring the achievement of plans and goals, communicating corporate strategy internally, and influencing the making of strategy (Albertini, 2019). Hence, performance measures that are focused exclusively on financial measures are unsuitable for excellent management (Owolabi et al., 2016; Rafiq et al., 2020). In view of the above, traditional appraisal systems of performance cannot identify crucial success factors (CSFs) of the organization, so they need to include nonfinancial indicators in addition to traditional financial performance measures (Chytas et al., 2011; Hoque, 2014; Manville et al., 2019; Rafiq et al., 2020). In this context, we present examples of MCSs that have emerged from the need to develop a model to replace the traditional financial performance report in order to respond to the integration of financial and nonfinancial measures in management control.

### 2.2. Balanced scorecard

The Balanced Scorecard (BSC) was first introduced by Kaplan and Norton (1992). With this method, they tried to respond to the need for the referred shift in management control after financial measures had become deficient since they were retrospective and did not provide any information on how the company should behave in the future (Kaplan & Norton, 2001). Consequently, the BSC emerged as a tool that served to improve organizational performance by allowing managers to better manage companies and increase performance (Hoang et al., 2018; Quesado et al., 2016). The BSC supports the strategic planning and change management by aligning and transmitting the strategy and vision of the organization for each and every employee (Kaplan & Norton, 1996b). This is achieved by connecting the targets of the organization with the targets of its relevant departments. In this sense, the BSC model combines four dimensions that sequentially translate the company's mission and strategy into various objectives through different perspectives. These levels are a) the financial perspective, b) the customer perspective, c) internal business processes perspective, and d) learning and growth perspective (Kaplan & Norton, 1992, 1996a, 1996c).

Kaplan and Norton (1992) originally conceived of the BSC model as a control system for the measurement of performances, but over time, theorists have developed the concept in the direction of a strategic management system (Jolović & Jolović, 2020). Therefore, the BSC concept has evolved from a list of lag indicators (showing results) with tolerance limits and acknowledgement of failure and excellence to generating reports and routines to address such deviances (action indicators). Such limits vary in degree (e.g., different percentages) to indicate the acceptable margin of deviation in the result from the target, or noticing the off-limits situation and advising on steps to take. They serve as a warning alerts for a possible noncompliance with

the pre-established goal or for a lower performance level than forecasted. The company reaches excellence when it exceeds a goal by a certain percentage or the achieved performance level is higher than forecasted. The BSC presents three generational functions –as a performance measurement system, as a strategic management system, and as a control system (Jolović & Jolović, 2020). These three functions reflect different forms of applying the BSC, both in large companies and SMEs (Basuony, 2014). In short, the use of nonfinancial measures are reflected in lagged indicators while allowing financial indicators to disclose the results of managerial decisions (Curado & Manica, 2010; Dudic et al., 2020). Each organization should decide on the adequate KPIs to adopt and arrive at target values for those KPIs.

## 2.2. Tableau de Bord

The TdB and the BSC are two similar management instruments and both are used on a large scale around the world. The TdB was born in France, while the BSC was developed much later in the United States. The French specialists state that the TdB is an enterprise control tool that contains relevant information which helps the manager to make decisions and to act to meet objectives (Ionescu, 2014). The TdB is a “dashboard” that helps to guide organizations to their destinations and, consequently, has emerged and evolved over time to meet the operational needs of managers (Bessire and Baker, 2005). In using the TdB, French authors have emphasized the need for non-financial indicators and organizational changes over the years have forced companies to adopt non-financial measures, leading the TdB to move in that direction (Campos et al., 2022). The TdB involves translating the organizational vision and mission into a set of objectives which the company then translates into a series of quantitative KPIs (Epstein & Manzoni, 1998) that yield four types of benefits:

1. Providing each manager with a periodically succinct overview of the performance of its unit to guide decision-making.
2. Informing the next level up on the sub-unit's performance (a complement to decentralization of responsibilities).
3. Forcing each sub-unit to position itself within the context of the company's overall strategy and the responsibilities of other sub-units and to identify the corresponding CSFs and KPIs.
4. Contributing to the structuring of the management's agenda and to directing managerial focus and discussions.

In this context, the TdB reflects the effort to adapt management control to the complexity of today's world by accounting for the need to translate vision and strategy into objectives and indicators, to include a number of financial and nonfinancial indicators, and to link the decisions of top management with the actions of employees by anticipating rather than reacting (Bourguignon et al., 2004). The TdB however does not offer guidance for action indicators.

## 2.3. Key performance indicators

The disclosure of performance indicators allows for better decision-making by managers. Therefore, they use KPIs to measure and evaluate the success of their companies. These indicators are usually presented as percentages or ratios that come from a combination of several metrics. They can be considered key elements that allow managers to learn from experience and changes that are evident in improving the future performance of the company (Duric et al., 2010). The choice of these indicators varies from company to company, since it depends on the type of business. The development of performance measures, reflects the level of achievement of the organizational objectives and, consequently defining and selecting a list of relevant KPIs is important (Fotovatfard & Heravi, 2021). The KPIs provide a basis for understanding what is happening within a company and in its operations that provides managers with the information needed for improving performance, achieving organizational goals, and helping investors to evaluate management performance (Dorestani & Rezaee, 2011; Werner et al., 2021). Thus, a paradigm shift from traditional reporting on financial performance to a more complete set of measures has occurred because the traditional performance systems fail to identify CSFs in business consolidation (Chytas et al., 2011; Hoque, 2014; Manville et al., 2019; Rafiq et al., 2020).

## 3. Proposed hypotheses

Nonfinancial measures in complement to traditional financial measures have now been added to management accounting systems in order to increase management control and to allow a better articulation between the defined objectives and the concrete actions to be taken to achieve them (Vaivio, 1999). Nonfinancial information can be defined as all that is not obtained directly through financial statements (Cohen et al., 2008) and can be expressed through ratios, indexes, and quantities among other things (Orens & Lybaert, 2013). Thus, financial information is not sufficient to assess the market value of companies (Lev & Zarowin, 1999) or to explain their total performance. Organizations can only translate 63% of their strategy into performance while the other 37% represents a performance loss due to the neglect of nonfinancial measures (e.g., insufficient performance monitoring) (Mühlbacher et al., 2016). Financial and nonfinancial measures are complements as both types of information are valuable and relevant to each other (Callen et al., 2010). Nonfinancial and financial measures should not be preferred to one another, rather they are complementary and should be utilized in an integrative framework (Callen et al., 2010; Uyar, 2010). SMEs increasingly use nonfinancial reporting to complement the financial reports, like the BSC (Malagueño et al., 2018). Hence we propose that in SMEs:

Hypothesis 1. Managers' perceptions of the importance given to financial measures is positive and significantly related to the importance given to nonfinancial measures.

We choose to organize the nonfinancial measures according to the three nonfinancial dimensions of the BSC: learning and development, internal business, and customers (Dudic et al., 2020). SME use of the BSC is similar to the one in large firms, but SMEs use on average fewer measures (5-15) as opposed to large companies (18-23) (Basuony, 2014). First, we propose the relationship between the managers' perceptions of the importance given to financial measures and the BSC's learning and development dimension. This dimension involves increasing employees' skills (Spanò et al., 2016) and their satisfaction (Dudic et al., 2020). Considering that it is difficult to obtain financial and objective measures in SMEs', subjective performance measures are adequate for performance measurement (Din & Abbas, 2021). SMEs owners and managers take most of their decisions based on non-financial measures which are directly related to the financial performance of the business (Dimovski et al., 2017). Therefore, SME performance measures should include financial and non-financial measures (Bianchi et al., 2015). We propose several hypothesis regarding the relationship between financial measures and subjective performance measures in order to illustrate that both are accurate to measure business performance (Vij & Bedi, 2016).

SMEs need to increase each employee's job-related skills to support business performance, to reach objectives, and to increase productivity. However, SMEs face challenges such as resource limitations; thus, formal training activities in SMEs are uncommon compared to larger companies (Curado & Sousa, 2021). Moreover, SME often underestimate the benefits of training (Rabie et al., 2016) and, consequently, affect their performance. Financial limitations in particular (Antonioli & Della Torre, 2016) prevent SMEs from investing in increasing their employees' knowledge and skills to levels similar to larger firms, although they face similar needs (Curado & Sousa, 2021). Training and development activities boost SMEs business performance (Rabie et al., 2016). Thus, we expect managers to associate the use of financial measures and the perception of employees' relevancy at SMEs:

Hypothesis 1.1. Managers' perceptions of the importance given to financial measures are positively and significantly related to the importance given to increasing employees' skills.

SMEs providing of training to employees (Bai et al., 2017) are aiming to increase both employees' skills and satisfaction. There are variables that affect business (Phillips and Phillips, 2016). Employee satisfaction measurement is a critical component of proper management control (Goretzki et al., 2022). Employees' satisfaction regard the feeling they have on their jobs and way they degree to which they like them (past experiences, current circumstances and future alternatives). Their satisfaction reflects on organizational growth and consequently it is positively related to financial performance (Hatane, 2015). Since employee satisfaction is a nonfinancial indicator that can drive organizational performance (Goretzki et al., 2022), so we expected that:

Hypothesis 1.2. Managers' perceptions of the importance given to financial measures are positively and significantly related to the importance given to increasing employees' satisfaction.

Second, we consider the relationship between the managers' perceptions of the importance given to financial measures and the BSC's internal processes' dimension. This dimension involves issues like increasing the quality of products and services (Curado & Manica, 2010) and increasing productivity (Pérez et al., 2017). Evidence shows that the measures from the financial perspective are positively and significantly related to measures of the internal business process perspective (Nafari & Rezaei, 2022). Relationship between results measured using nonfinancial performance measures – such as product quality (Nagar & Rajan, 2001) – show they impact future financial performance measures (Kober & Northcott, 2021). Then, we expect such a relationship to be in accordance with:

Hypothesis 1.3. Managers' perceptions of the importance given to financial measures are positively and significantly related to the importance given to increasing the quality of products and services.

We propose the relationship between the managers' perceptions of the importance given to financial measures and the firm's increasing productivity (Pérez et al., 2017). Using only financial measures does not cover all the objectives of the SME owners and managers to evaluate business performance (Din & Abbas, 2021), because there are variables that affect business (Phillips and Phillips, 2016) like higher productivity (Kirkpatrick & Kirkpatrick, 2005). Productivity is related to financial performance (Grifell-Tatjé & Lovell, 2018, p. 331) and we believe managers know there is a relationship among the two. Therefore, we expect that:

Hypothesis 1.4. Managers' perceptions of the importance given to financial measures are positively and significantly related to the importance given to increasing productivity.

Third, we propose a relationship between the managers' perceptions of the importance given to financial measures and the BSC's customer dimension. Managers should respect relevant market factors that influence the financial results of their firms, like positioning and image building (Bennet et al., 2011). We used a proxy for positioning and image building: we considered the number of clients (Dudic et al., 2020). We propose that a subjective perspective on a marketing quantitative measurement metrics (clients count) (Šalkovska & Ogsta, 2014) is positively related to financial measures. Consequently, we expect such relationship to be this way:

Hypothesis 1.5. Managers' perceptions of the importance given to financial measures are positively and significantly related to the importance given to increasing the number of clients.

We use the logic of set theory (Misangyi et al., 2017) to examine complex causality, providing a variety of alternative combinations (equifinality) for the same outcome (Fiss,

2011; Schneider & Wagemann, 2010). Considering the complexities of managers' perceptions (Antony, 2020), we propose that there is no single circumstance that generates the views on the importance given to financial measures, since these are abstract and have to capture a complex reality in ratios (Orens & Lybaert, 2013). The financial measures reveal that financial results are achieved by successfully attaining the goals in the BSC's other three perspectives (Nafari & Rezaei, 2022), therefore there are several contributions for financial results, and several arguments as well for managers to use financial measures of performance when looking for decision making support. It is only natural that managers face different circumstances that make them value financial measures. Research and practice reflect the dominant use of financial and accounting data central to support managerial decision-making, resulting in a bias towards the adoption of financial measures of performance (Saxena et al., 2022), perhaps because a large majority of SME's managers attach total importance to financial indicators (Olaru et al., 2014). Thus, we put forward:

Hypothesis 1.6. There are alternative configurations that lead to the managers' perceptions on the importance given to financial measures.

Additionally, considering the complex causations of managers' perceptions (Antony, 2020), we propose that there is no single circumstance that generates the views on the importance given to nonfinancial measures (Dudic et al., 2020), since they are hard to use. Sawang (2011) results show that 38-40% of manufacturing managers and 41% of non-manufacturing managers who highly recognized the importance of nonfinancial measures do not use them. However, managers increasingly adopt non-financial performance measures (Campos et al., 2022; Corona, 2009) and it is often associated to corporate social regulation and investments increasingly deal with nonfinancial consideration. Hence, managers must recognize the importance given to nonfinancial measures since they rise the investors' confidence on investment (Antony, 2020) and reduce risk (Ghoul et al., 2011). SMEs cannot entirely depend on objective measures for performance measurement (Rashid et al., 2018) and nonfinancial measures are used due to insufficiency of the financial measures for the long-term planning (Lassoued et al., 2017). Thus, managers have to integrate their knowledge of the theoretical financial analysis with several important psychological features on other sources of information (Antony, 2020), like non-financial indicators. Therefore, we propose:

Hypothesis 1.7. There are alternative configurations that lead to the managers' perceptions on the importance given to nonfinancial measures.

#### 4. Research design

We follow a mixed methods approach (Bryman & Bell, 2003) based on a cross-sectional study that combines correlational and configurational analyses to better study the complex phenomena (Venkatesh et al., 2013). Our option to address data using two different techniques in parallel

allows a complete and joint interpretation of the results: a correlational analysis and a configurational analysis. The mixed methods approach combines the strengths provided by the two techniques, attenuates the weaknesses of their separate application, and allows for a better understanding of the studied phenomenon (Creswell & Plano, 2007).

First, we applied a correlational approach to the data to characterize the SMEs in the study by their industries and the demographics and perceptions of their managers. With the correlational analysis of the data, we test the nature and significance of the relationships among managers' perceptions.

Second, we use the configurational approach to the data to test our hypotheses. We use this approach to discover alternative combinations that lead to the managers' perceptions of the importance given to financial measures. As there are still only a few mixed methods studies that adopt a configurational analysis (Cragun et al., 2016), our analysis is a pioneer because it provides multiple lines of analysis to deliver more complete findings. We fully implement a mixed methods approach by including both methods in the sequential research phases (Creswell & Tashakkori, 2007):

a) Data collection - we use the same questionnaire to collect the data.

b) Data analysis - both the correlational and the configurational analyses address the same data.

c) Integration - we use the results from the two approaches to broaden our knowledge of SME managers' perceptions and how they relate to financial and nonfinancial measures.

#### 4.1. Data collection

We sent an online cross-sectional survey to the top managers of the 10,000 largest Portuguese SMEs (according to the number of employees) provided by Informa D and B. According to the Organization for Economic Cooperation and Development (OECD), 99% of companies are SMEs, and they employ about 60% of the workforce in the world. Further, they add 50-60% to the value in OECD countries (OECD, 2019) that shows they are a vital part of any economy (Berisha & Pula, 2015; Dudic et al., 2020; Manville et al., 2019). The Portuguese national business structure is mostly composed of SMEs; 99.9% of Portuguese companies are SMEs (INE, 2021), and they contribute significantly to the country's economic development (Cardim et al., 2018). The most commonly used criterion to distinguish SMEs from large companies refers to the number of employees followed by the annual turnover or the annual balance sheet total (Berisha & Pula, 2015). In Portugal, according to the Law (DL 372/2007) (INE, 2021) SMEs are classified into three groups: micro firms (< 10 employees; annual turnover < 2 million euros or annual balance sheet total < 2 million euros), small firms (< 50 employees, annual turnover < 10 million euros or annual balance sheet total < 10 million euros), and medium forms (< 250 employees, annual turnover < 50 million euros or annual balance sheet total < 43 million euros). To be considered a SME, the company must fulfil the requirement regarding the number of

employees and at least one financial criterion (Berisha & Pula, 2015).

We used a questionnaire (Appendix 1.) that combined multiple choice and open-ended responses. The survey was validated by running a pre-test and a pilot test of the questionnaire. The pre-test checked content validity of the instrument and was developed to assess to clarity the questions, eliminate biases (Kline, 2011) and verify the adequacy of the questionnaire items (Hair et al., 2005). Content validity was carried out with two academics and two accountants, their feedback was considered. Then, the questionnaire underwent a pilot test to verify face validity, in order to check if the questionnaire was free of presentation problems (Hair et al., 2005). Face validity was carried out by 39 Master students (working students) from a Corporate Sciences Program and no major issues arose. Other correlational studies have been based on the use of similar surveys, as was the case in Tarurhor and Osazevaru (2019), Quesado et al. (2018) and Malagueño et al. (2018). The survey's data were also used to run an fsQCA analysis as formerly done in Gonçalves et al. (2018). We targeted top managers with the questionnaire as they likely perform both strategic and operational roles because SMEs have little hierarchical and functional differentiation (Lubatkin et al., 2006), so management control (Basuony, 2014; Dudic et al., 2020) and personnel policy are often executed by top management (Hoang et al., 2018). The questionnaire was divided into an initial section on the respondent's personal data and three more sections on information on the company, the MCS, and on the use of the BSC. We also used both multiple choice and open-ended questions to allow for participants' meanings to emerge. The survey was sent out during late 2020 under the Covid-19 pandemic state of emergency, which may have restricted the response rate. We gathered a total of 456 responses (4.56% response rate), yet we had to remove 42 for several reasons, such as incomplete questionnaires and the presentation of non-plausible answers as well as the number of years in the company or the number of years in the position were greater than the age of the respondent. Thus, the final number of valid questionnaires for the analysis was 414.

## 4.2. Data analysis and results

### 4.2.1. Descriptive and correlational analyses

This is a cross-sectional study that uses a correlation analysis. Data were analyzed using descriptive and statistical tests in SPSS such as frequencies and percentages to assess the SMEs' and managers' demographic data. The Kolmogorov-Smirnov test results (Razali & Wah, 2011) show that the scores for the descriptive statistics, demographics, and perceptions do not follow normal distributions and do not meet the conditions of a linear regression model. Therefore, we used Pearson's correlation coefficients to investigate the relationship among managers' perceptions. The sign indicates the direction and the value shows the intensity of the relationship (Bryman & Cramer, 2003). Initially, we developed the analysis to characterize the sample with regard to the use of MCS in relation to several individ-

ual and organizational variables and KPIs. The most represented industries in the sample were wholesale and retail trade and manufacturing (Table 1).

The majority of SMEs had an established formal strategy that was known by the employees, had an annual turnover of between 2 to 10 million euros, and had 50 employees or more (Table 2).

Regarding SME managers, the majority were male and aged 40 to 49 years old who had been at the firm for 10 to 19 years and had experience in the present position for up to nine years and did not use a MCS (Table 3).

Regarding managers' perceptions of the importance of control measures, a dominant trend (overall managers > 85%) showed that they considered both financial and nonfinancial measures as important or very important. Managers who used the BSC were the ones that most valued financial and nonfinancial measures as "Very important" (Table 4).

Managers' perceptions of the relevancy of KPIs and which were important or very important indicated that increasing the quality of products and services was the most important. This KPI was followed by increasing productivity, increasing employees' skills, increasing employees' satisfaction, and increasing the number of clients. If we just consider the scores for "Very important", the ranking is similar (Table 5).

Table 6 shows that there is a weak correlation (0.407) among the managers' perceptions of the importance of financial and nonfinancial measures. The table also shows that the KPIs related to increasing the skills and satisfaction of employees have a strong correlation (0.775) and with the quality of products and services (0.631 and 0.702, respectively). The KPI on productivity has a moderate correlation with the KPI on employees' skills (0.578). Most of the other correlations in Table 6 are weak. The relation between the importance given to increasing the number of clients and the other KPIs is very low. All correlations in Table 6 are positive and significant at the 0.001 level (2-tailed).

### 4.2.2. Configurational analysis

We used fsQCA to examine managers' individual perceptions (Beynon, Jones and Pickernell, 2018) and to determine the configurations that lead to the perceived importance of financial and nonfinancial measures. FsQCA is particularly suitable for analyzing high levels of complexity since it accepts equifinality, alternative combinations of causal conditions, and asymmetry. Means it accepts that a) more than one configuration of causal conditions can lead to the outcomes, b) alternative causal configurations can lead to the same outcome, and c) the causal conditions for an outcome can differ from the causal conditions for its absence (Fiss, 2011). Such characteristics are an improvement over traditional quantitative statistical methods that only provide a single estimated solution to the dependent variable (Rihoux & Ragin, 2009).

Given the complexity of the involved phenomena, the configurational approach is suitable for addressing the control (e.g., Bedford et al., 2016) and accounting (e.g., Gonçalves & Gaio, 2021). We use this technique to under-

**Table 1. Descriptive statistics on SMEs Industry.**

SME's Industry	BSC	TdB	Other	None	Altogether (%)
Agriculture, animal production, hunting, forestry, and fishing	3.17%	7.37%	9.62%	4.90%	24 (5.80%)
Construction	3.17%	7.37%	9.62%	8.33%	31 (7.49%)
Education	0.00%	2.11%	3.85%	0.49%	5 (0.01%)
Electricity, gas, and water	6.35%	3.16%	1.92%	0.98%	10 (2.42%)
Extractive industries	1.59%	0.00%	0.00%	1.96%	5 (0.01%)
Financial and insurance activities	6.35%	3.16%	3.85%	0.98%	11 (2.66%)
Human health activities	1.59%	2.11%	1.92%	0.49%	5 (0.01%)
Information and communication technologies	0.00%	4.21%	7.69%	4.90%	18 (4.35%)
Lodging, catering, and similar	11.11%	1.05%	3.85%	6.37%	23 (5.55%)
Manufacturing industries	33.33%	26.32%	28.85%	29.90%	122 (29.47%)
Real estate activities	0.00%	3.16%	0.00%	1.47%	6 (0.01%)
Social support activities	0.00%	0.00%	1.92%	1.47%	4 (0.01%)
Transport and warehousing	7.94%	2.11%	1.92%	4.90%	18 (4.35%)
Wholesale and retail trade	25.40%	37.89%	25.00%	32.84%	132 (31.88%)
Total (%)	63 (15.22%)	95 (22.95%)	52 (12.56%)	204 (49.28%)	414 (100.00%)

**Table 2. Descriptive statistics of SMEs.**

Descriptives			BSC	TdB	Other	None	Altogether
SMEs	Company has a formal Strategy	Yes	94.23%	96.84%	94.23%	81.86%	89.37%
		No	5.77%	3.16%	5.77%	18.14%	10.63%
	Company strategy and objectives known by the employees	Yes	92.06%	90.53%	82.69%	64.70%	77.05%
		No	6.35%	7.37%	13.46%	18.14%	13.29%
		Does not answer	1.59%	2.10%	3.85%	17.16%	9.66%
	Annual turnover	< 2 M	3.17%	2.11%	7.69%	5.88%	4.83%
		2 M to < 10 M	44.44%	50.53%	59.62%	71.57%	61.11%
		≥ 10 M	52.38%	47.37%	32.69%	22.55%	34.06%
	Number of employees	< 10	9.52%	6.32%	3.85%	5.39%	6.04%
		10 to 49	34.92%	35.79%	50.00%	52.45%	45.65%
		50 to 250	55.56%	57.89%	46.15%	42.16%	48.31%
	Total (%)			63 (15.22%)	95 (22.95%)	52 (12.56%)	204 (49.28%)

stand the nonlinear, concrete, and specific complex realities (Ragin, 2009) of the managers' perceptions. Since the standard application of fsQCA relates to the test of sufficiency (not necessity) (Bedford et al., 2016), and following the best practices, we report the intermediate sufficiency solutions (sets of alternative configurations that lead to the outcome) (Fiss, 2007; Mas-Verdú et al., 2015; Ragin, 2008; Schneider & Wagemann, 2010). The causal con-

ditions' degree of sufficiency shows the extent to which each condition accounts for the outcome (Fiss et al., 2013) with values ranging from zero (total exclusion of a given group) to one (full inclusion at given group) and an in-between crossover point of maximum ambiguity of membership (0.50), which indicates a theoretical and empirical understanding of the variables (Ragin, 2009). We prepared the data by calibrating the dataset reflecting the qualitative

**Table 3. Demographics statistics of managers.**

Demographics			Managers using BSC	Managers using TdB	Managers using other system	Managers using no system	Altogether
Managers	Gender	Female	39.68%	26.32%	30.77%	37.75%	34.54%
		Male	60.32%	73.68%	67.31%	62.25%	65.22%
		Other	0.00%	0.00%	1.00%	0.00%	0.24%
	Age	20 a 29	9.52%	1.05%	1.92%	6.86%	5.31%
		30 a 39	26.98%	11.58%	15.38%	22.55%	19.81%
		40 a 49	41.27%	38.95%	26.92%	40.69%	38.65%
		50 a 59	17.46%	33.68%	44.23%	22.55%	27.05%
		60 a 69	3.17%	12.63%	9.62%	6.86%	7.97%
		70 a 79	1.59%	2.11%	1.92%	0.49%	1.21%
		Tenure	0 a 9	41.27%	27.37%	19.23%	33.33%
	10 a 19		31.75%	34.74%	32.69%	33.82%	33.57%
	20 a 29		20.63%	28.42%	30.77%	21.57%	24.15%
	30 a 39		1.59%	5.26%	9.62%	10.29%	7.73%
	40 or more		4.76%	4.21%	7.69%	0.98%	2.90%
	Experience	0 a 9	49.21%	32.63%	30.77%	41.67%	39.37%
		10 a 19	34.92%	40.00%	38.46%	31.86%	35.02%
		20 a 29	11.11%	16.84%	28.85%	16.18%	17.15%
		30 a 39	3.17%	10.53%	1.92%	8.33%	7.25%
		40 or more	1.59%	0.00%	0.00%	1.96%	1.21%
	TOTAL			15.22%	22.95%	12.56%	49.28%

**Table 4. Managers' perceptions of the importance of control measures.**

Managers' perceptions of the importance of control measures		Managers using BSC	Managers using TdB	Managers using other system	Managers using no system	Altogether
Financial measures	No importance	1.59%	0.00%	0.00%	0.00%	0.24%
	Little importance	4.76%	3.16%	3.85%	4.90%	4.35%
	Reasonable important	9.52%	5.26%	15.38%	10.78%	9.90%
	Important	28.57%	49.47%	34.62%	46.57%	43.00%
	Very important	55.56%	42.11%	46.15%	37.75%	42.51%
Nonfinancial measures	No importance	1.59%	1.05%	0.00%	0.49%	0.72%
	Little importance	1.59%	0.00%	0.00%	1.96%	1.21%
	Reasonable important	6.35%	9.47%	9.62%	13.73%	11.11%
	Important	36.51%	47.37%	42.31%	52.45%	47.58%
	Very important	53.97%	42.11%	48.08%	31.37%	39.37%

differences making use of our theoretical and substantive knowledge (Emmenegger et al., 2014). In order to apply fsQCA, the data must go through a calibration process to

convert it into the following values: No importance = 0; Little importance = 0.25; Reasonable important = 0.50; Important = 0.75, and Very important = 1. The conditions used in



**Table 5. Managers' perceptions of the importance of KPIs.**

Managers' perceptions of the importance of KPIs		Managers using BSC	Managers using TdB	Managers using other system	Managers using no system	Altogether
Increasing number of clients	No importance	0.00%	0.00%	0.00%	0.50%	0.24%
	Little importance	6.36%	3.16%	7.69%	6.36%	5.80%
	Reasonable important	22.22%	14.73%	26.93%	21.08%	20.53%
	Important	26.98%	38.95%	32.69%	41.18%	37.44%
	Very important	44.44%	43.16%	32.69%	30.88%	35.99%
Increasing productivity	No importance	0.00%	0.00%	0.00%	0.98%	0.48%
	Little importance	6.36%	2.11%	5.76%	1.96%	3.14%
	Reasonable important	4.76%	13.68%	7.70%	13.72%	11.59%
	Important	22.22%	29.47%	23.08%	37.26%	31.41%
	Very important	66.66%	54.74%	63.46%	46.08%	53.38%
Increasing employees' skills	No importance	0.00and	0.00%	0.00%	1.96%	0.97%
	Little importance	4.76%	1.05%	5.77%	3.92%	3.62%
	Reasonable important	17.46%	6.32%	5.77%	16.17%	12.80%
	Important	25.40%	41.05%	32.69%	39.22%	36.72%
	Very important	52.38%	51.58%	55.77%	38.73%	45.89%
Increasing employees' satisfaction	No importance	0.00%	0.00%	0.00%	3.92%	1.93%
	Little importance	4.76%	1.05%	5.76%	1.47%	2.42%
	Reasonable important	15.88%	7.37%	7.70%	18.14%	14.01%
	Important	26.98%	46.32%	38.46%	40.69%	39.61%
	Very important	52.38%	45.26%	48.08%	35.78%	42.03%
Increasing quality of products and services	No importance	0.00%	0.00%	0.00%	0.49%	0.24%
	Little importance	4.76%	1.05%	5.77%	3.43%	3.38%
	Reasonable important	4.76%	8.42%	5.77%	11.28%	8.94%
	Important	26.98%	18.95%	26.92%	34.80%	28.99%
	Very important	63.50%	71.58%	61.54%	50.00%	58.45%

fsQCA came from the literature and were measured using categorical scales in the survey. Each was calibrated in order to represent meaningful groups (Crilly et al., 2012; Ragin, 2008).

We ran the fsQCA software to find the intermediate solutions that lead to the outcomes revealing the combinations of conditions considered in this study, as well as their ab-

sences (represented by adding a “~” before the condition) (Fiss, 2007; Mas-Verdú et al., 2015; Ragin, 2008; Schneider & Wagemann, 2010). The solutions and the configurations are assessed by their levels of consistency and coverage. Consistency means significance and regards the existence of multiple configurations of conditions that are useful in predicting the scores of a given outcome (Wang et al., 2016)

**Table 6. Correlation among managers' perceptions.**

Managers' perceptions (Importance given to...)	1	2	3	4	5	6	7
1 financial measures	1						
2 nonfinancial measures	0.407	1					
3 increase productivity	0.306	0.253	1				
4 increase the number of clients	0.230	0.209	0.251	1			
5 increase employees' skills	0.337	0.351	0.578	0.224	1		
6 increase employees' satisfaction	0.328	0.390	0.449	0.247	0.775	1	
7 increase quality of products and services	0.333	0.417	0.404	0.279	0.631	0.702	1

**Table 7. Results from configurational modeling for the managers' perceptions of the importance of financial measures.**

Causal configurations	Raw coverage	Unique coverage	Consistency
Fin = f (Nonfin, Skills, Satisf, Quali, Produc, Clien)			
Conf 1: Nonfin, Skills, Satisf, Quali, Clien	0.771930	0.011696	0.980198
Conf 2: Nonfin, Skills, Satisf, Quali, Produc	0.803119	0.042885	0.980952
Solution coverage: 0.814815			
Solution consistency: 0.978923			

it should respect the threshold of 0.75. It reflects the extent to which the cases share a given combination of conditions that lead to the outcome in question (Ragin, 2008, 2009; Woodside & Zhang, 2013). Coverage means strength and reflects how much of the variation in the outcome is accounted for by a causal condition or combination (Ragin, 2006), which is similar to the R<sup>2</sup> in linear regressions (Fiss et al., 2013). The research defines the limits for configurations of coverage as 0.25 to 0.90 (Ragin, 2008; Woodside & Zhang, 2013). Woodside and Zhang (2013) stress the importance of achieving high consistency over high coverage. All the solutions and configurations meet the consistency and the coverage thresholds.

Tables 7 to 11 present the causal configurations of conditions that lead to the presence of the outcomes in this study. For these tables: Fin = Importance given to financial measures; Nonfin = Importance given to nonfinancial measures; Skills = Importance given to increasing employees' skills; Satisf = Importance given to increasing employees' satisfaction; Quali = Importance given to increasing the quality of products and services; and Product = Importance given to increasing the number of clients. Regarding the managers' perceptions of the importance of financial measures, the solution presents two alternative causal configurations (Table 7) that support Hypothesis 1.6. Regarding the managers' perceptions of the importance of nonfinancial measures, the solution presents five alternative causal configurations (Table 8) that support Hypothesis 1.7.

### 3.2.3. Results

Our results show that all correlational hypotheses are supported. Managers' perceptions of the importance given to financial measures is positively and significantly related

to the importance given to nonfinancial measures (H1) and specifically to the importance given to: a) increasing employees' skills (H1.1), increasing employees' satisfaction (H1.2), increasing the quality of products and services (H1.3), increasing productivity (H1.4), and increasing the number of clients (H1.5).

The configurational hypothesis is also supported; there are two alternative configurations that lead to the managers' perceptions on the importance given to financial measures (H1.6). They involve the managers' perceiving as important the nonfinancial measures, increasing employees' skills and satisfaction, and increasing quality and either productivity or the number of clients (these two KPIs seem to work as substitutes in the configurations) (Table 7). Moreover, there are five alternative configurations that lead to the managers' perceptions on the importance given to nonfinancial measures: they involve four to five conditions each and all but one involve the managers' perceiving as important the financial measures as well (Table 8). Table 9 has a summary the results of testing the hypotheses.

## 5. Discussion

The results show that companies across all industries use the BSC, the TdB, and other MCSs. However, nearly half of those in the study do not use a MCS (Table 1) that is probably due to their lack of resources and capabilities (Albizu et al., 2017; Kafetzopoulos, 2020). Most SMEs in the study have a formal strategy on how to achieve their goals (Eker & Eker, 2016), and they communicate that strategy and objectives to their employees (Albertini, 2019). The average annual turnover per company is between 2 and 10 million euros, and the number of employees is typically be-

**Table 8. Results from configurational modeling for the managers' perceptions of the importance of nonfinancial measures**

Causal configurations	Raw coverage	Unique coverage	Consistency
Nonfin = f (Fin, Skills, Satisf, Quali, Produc, Clie)			
Conf 1: Skills, Satisf, Quali, Produc	0.854976	0.095735	0.937630
Conf 2: Fin, ~Skills, ~Satisf, Produc, Clie	0.165877	0.002844	0.988701
Conf 3: Fin, Skills, Satisf, Quali, Clie	0.770616	0.011374	0.974820
Conf 4: Fin, ~Skills, Quali, Produc, Clie	0.197156	0.000000	0.990476
Conf 5: Fin, Satisf, Quali, Produc, Clie	0.768720	0.006635	0.974760
Solution coverage: 0.881517			
Solution consistency: 0.938446			

**Table 9. Results of hypotheses testing.**

Hypotheses	Evidence found regarding the hypotheses	Results
Hypothesis 1	Managers' perceptions of the importance given to financial measures is positive and significantly related to the importance given to nonfinancial measures (0.407*) (Table 6)	Supported
Hypothesis 1.1	Managers' perceptions of the importance given to financial measures is positive and significantly related to the importance of increasing employees' skills (0.337*) (Table 6)	Supported
Hypothesis 1.2	Managers' perceptions of the importance given to financial measures is positive and significantly related to the importance of increasing employees' satisfaction (0.328*) (Table 6)	Supported
Hypothesis 1.3	Managers' perceptions of the importance given to financial measures is positive and significantly related to the importance of increasing the quality of products and services (0.333*) (Table 6)	Supported
Hypothesis 1.4	Managers' perceptions of the importance given to financial measures is positive and significantly related to the importance of increasing productivity (0.306*) (Table 6)	Supported
Hypothesis 1.5	Managers' perceptions of the importance given to financial measures is positive and significantly related to the importance of increasing the number of clients (0.230*) (Table 6)	Supported
Hypothesis 1.6	There are two alternative causal configurations that lead to the managers' perceptions of the importance given to financial measures (Conf. 1 and 2) (Table 7)	Supported
Hypothesis 1.7	There are five alternative causal configurations that lead to the managers' perceptions of the importance given to nonfinancial measures (Conf. 1, 2, 3, 4 and 5) (Table 8)	Supported

\* - positive and significant at the 0.001 level (2-tailed).

tween 50 and 250 (Table 2). These ranges both agree with the European size limits for SMEs (OECD, 2015).

The majority of SMEs' managers are male and are aged 40 to 49 years old. They have been at the company for 10 to 19 years and have been in a top management position for less than 10 years (Table 3). We verified that 15.22% of the SME managers use the BSC (Basuony, 2014; Malagueño et al., 2018). Most of them (over 85%) consider financial and nonfinancial measures as either important or very important (Table 4). However, while highly recognizing the importance of nonfinancial measures, not all managers use them (Sawang, 2011) and as such, only 38.17% of them use MCSs with both types of measures (BSC and TdB) (Tables 1, 2, and 3).

We find evidence that the managers' perceptions of the importance given to financial measures are positively and significantly related to the importance given to nonfinancial measures. Specifically, the relation exists for several KPIs associated with the three nonfinancial dimensions of the BSC: increasing employees' skills (Spanò et al., 2016), increasing employees' satisfaction (Dudic et al., 2020), increasing the quality of products and services (Curado &

Manica, 2010), increasing productivity (Pérez et al., 2017), and increasing the number of clients (Dudic et al., 2020). The importance given to increasing the number of clients has the lowest score from SME managers on being important or very important among the KPIs in the study, and its correlation to the importance given to financial and nonfinancial measures, and to other KPIs, is very low. On the contrary, increasing the quality of products and services scores higher and its correlation to increasing employees' skills and their satisfaction is strong (Tables 5 and 6). Such results reveal little SMEs' concern for market performance and high attention given to the production and employees at SMEs.

The managers' perceptions of the importance given to increasing employees' skills may explain SMEs' decisions to provide training to employees (Bai et al., 2017; Ho et al., 2016), even when they face size contingencies (Davila, 2005), have less resources and capabilities (Albizu et al., 2017; Kafetzopoulos, 2020), suffer from financial limitations (Antonioli & Torre, 2016) and consider training is less formal than in large firms (Curado & Sousa, 2021) There is evidence that the managers' perceptions of the importance

given to increasing employees' skills are positively and significantly related to the importance given to financial measures which may explain why increasing employees' skills is related to financial results (Curado & Teixeira, 2014; Mehra et al., 2014) (Tables 5 and 6). Our results support Antony's (2020) rationale on the complex causations of managers' perceptions since we find several alternative configurations on the importance they give to financial measures (Table 7) and nonfinancial measures (Table 8).

## 6. Conclusions

This paper offers support for SMEs controlling strategy implementation by using MCS. We provide evidence on the perceived importance of financial and nonfinancial measures for SME managers responsible for decision-making and establishing the company's strategy. Such a discovery is relevant for management, since SME's performance is measured using indicators built from managers' perceptions. We were also able to show that SME managers highly value both types of measures, which indicates MCSs should be balanced and should include both for better decision-making. Additionally, we find the managers' perceptions of the importance of financial and nonfinancial measures are positively and significantly related, therefore, we advise SMEs to adopt MCS that include both.

We also corroborate the complexity of the origins of managerial perceptions by identifying several alternative ways that lead to the importance given to financial and nonfinancial measures. We find that there are more configurations that lead to managers' perceptions of the importance of nonfinancial measures (five) than for financial measures (two). This is consistent with the necessity to include nonfinancial indicators in MCSs in addition to traditional financial performance measures.

We contribute to the literature on understanding the perceptions of SME managers on the importance given to financial and nonfinancial measures, and their relations among each other and several KPIs. We were able to confirm that SME managers perceive the importance of a variety of measures associated to strategic management control. By addressing such perceptions of managers, we

provide relevant evidence that supports and foresees the adoption of these measures and their practices in SMEs.

We contribute to SME management by providing evidence on the relationship among the managers' perceptions of the importance of the measures and KPIs in the study. We show that SME managers' perceptions on financial and nonfinancial measures relate, and we offer alternative paths that lead to such perceptions. Thus, managers may identify and retain the individual profiles that match the configurations to the benefit of SMEs' strategic implementation.

We acknowledge the small response rate in the study as a possible limitation, which may be justified because data was collected during the COVID-19 pandemic. Yet, we have a cross industry sample that involves companies with diverse sizes and a collection of very different managers. We also admit limitations to this study regarding the qualitative findings and their lack of generalization; however, this analysis is replicable worldwide without restrictions. Furthermore, we invite colleagues to run this study in other locations, because national or local culture may affect expectations and behaviors of the decision maker (Birnberg, 2011). Considering the high scores of the manager's perceptions on the importance given to increasing the quality of products and services and its strong correlation to increasing employees' skills and their satisfaction, future studies should explore the alternative paths that lead to these perceptions, and whether they predict specific decisions by SMEs.

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## Supplementary Materials

### Appendix 1. Academic Survey

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