

RESEARCH ARTICLE

Performance measurement tools for sustainable business: A systematic literature review on the sustainability balanced scorecard use

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Abstract

This article focuses on the sustainability balanced scorecard (SBSC) as a performance measurement and management control tool that can play an essential role in driving companies towards sustainability goals. According to previous studies, research on the SBSC can be structured into the stages of design, implementation, use and evolution. This study aims to systematise knowledge on the use stage. Specifically, it addresses the determinants affecting SBSC use, the approaches that companies employ in SBSC application and the outcomes it generates in terms of the effects on sustainability control and management. The research was conducted through a systematic literature review considering 65 articles published in ABS-ranked journals in the period 2000–2020. Findings add to the body of literature on the SBSC in management and accounting fields, providing an overview of current research, mapping research streams, indicating potential future research avenues and highlighting some managerial implications.

KEYWORDS

management control, performance measurement, sustainability, sustainability balanced scorecard, systematic literature review

1 | INTRODUCTION

Corporate sustainability broadly refers to ‘company’s activities - voluntary by definition - demonstrating the inclusion of social and environmental concerns in business operations and in interactions with stakeholders’ (van Marrewijk & Werre, 2003, p. 107). A recent study by Lozano and von Haartman (2018) identified the most important drivers of corporate sustainability and highlighted the need for a holistic perspective. Indeed, the path towards corporate sustainability involves creating environmental, social and economic value over the long term through sustainability-oriented strategies, business models, investments and management tools. Generally, sustainability awareness plays a critical role in implementing sustainability management tools (Talbot et al., 2020).

Several authors have suggested that the appropriate use of performance measurement and management control systems can support strategy implementation and push organisations towards sustainability objectives (Baumgartner, 2014; Gond et al., 2012). Lueg and Radlach (2016) provided a literature review on the type of controls used by companies to enforce sustainable development, finding that a combination of formal and informal controls seems to be required to reinforce each other and address the different sustainability dimensions. This article focuses on the sustainability balanced scorecard (SBSC), a multi-dimensional performance measurement and management control tool that can play an essential role in corporate sustainability and is attracting growing research interest (Hansen & Schaltegger, 2018).

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In its original form, the balanced scorecard (BSC) balances financial and non-financial as well as short- and long-term performance measures. The BSC supplements traditional financial performance measures with metrics from three additional perspectives - customer, internal process and learning and growth - based on cause-and-effect relationships and proposed as the drivers for creating long-term shareholder value (Kaplan & Norton, 1992).

Combining the BSC's four perspectives with the sustainability dimensions to explicitly embed environmental, social or ethical concerns, the SBSC is one of the principal methodologies used to measure corporate sustainability performance (Küçükbay & Sürücü, 2019). Literature has suggested that the SBSC may be a viable tool to satisfy a range of management needs regarding corporate sustainability issues, namely, to assist companies in the process of implementation of a sustainable strategy, to foster sustainability management standards and decision-making, to support regulatory data requirements and to meet stakeholders' information demands (Schaltegger & Wagner, 2006). There are three main possibilities to include sustainability within the BSC (Figge et al., 2002): to integrate environmental and social aspects within the four perspectives; to add a non-market perspective and to build a specific environmental or social scorecard.

According to Searcy (2012), research on the balanced scorecard (both BSC and SBSC) can be structured into the four stages of design, implementation, use and evolution. While the design stage is vital as the SBSC architectures can be per se a significant internal communication device and enabler in the strategy-making process (e.g., Schaltegger & Wagner, 2006), Hansen and Schaltegger (2016) encourage a shift of the discussion from design to implementation, use and evolution (de Geuser et al., 2009; Searcy, 2012) regardless of the actual SBSC architecture. Therefore, future research on sustainability performance measurement and control should examine existing frameworks and their related strengths and weaknesses more broadly.

Thus, in line with Hansen and Schaltegger (2016), according to which the SBSC is a promising framework for integrating strategy and sustainability in businesses, and answering their call for further inquiry, our study aims to systematise and provide an overview of the existing knowledge on the SBSC use taking advantage of a systematic literature review (Tranfield et al., 2003). In particular, to fill this gap and deepen the understanding of the SBSC, our study focuses on the determinants, applications and outcomes related to the use stage. The study attempts to contribute to the recent findings emerging from Wu et al. (2021), who identified a research theme still not deeply investigated, about how the companies address sustainability through financial and non-financial performance measurement tools (e.g., the SBSC).

The article is structured as follows: Section 2 presents a theoretical background on the SBSC leading to the research questions; Section 3 describes the methodology adopted for a systematic literature review on the SBSC use; then, findings on the leading emerging topics are illustrated and finally discussed (Sections 4 and 5).

2 | THE SUSTAINABILITY BALANCED SCORECARD

The BSC was developed in its original form by Kaplan and Norton (1992, 1996) to alleviate problems arising from the wide use of financial results control systems and accounting measures, such as transaction-based orientation, focus on the past, lack of congruence with changes in firm value and short-termism, which can cause myopic decision-making. The BSC has a multi-dimensional approach to performance measurement. While it retains the emphasis on traditional financial performance measures as the outcome measures for company success, it integrates these with metrics from three additional perspectives - customer, internal process and learning and growth - based on cause-and-effect relationships and regarded as the drivers for creating long-term shareholder value. For each perspective, the BSC framework involves defining the objectives, selecting appropriate measures, setting targets and undertaking congruent actions to meet the targets.

While financial measures deliver the results of previously taken actions, the other three perspectives consist of non-financial indicators that enable companies to monitor progress in developing the capabilities and the intangible assets required for future growth and financial performance. The BSC is an open system that incorporates different stakeholders' interests, balances short- and long-term concerns, leading and lagging indicators and has the purpose of providing the information needed in feed-forward control. Further, it tackles sub-optimisation by forcing senior managers to evaluate all the significant measures together to make sure that improvements in one area are not achieved at the expense of another (Merchant & Van der Stede, 2017).

Initially proposed as a performance measurement tool, the BSC has become increasingly associated with strategic planning and implementation, serving as a management framework that helps identify the critical value drivers that businesses could exploit to optimise strategy (Kaplan & Norton, 2001). Under the BSC approach, top management translates its strategy and vision into a set of performance measures that employees can understand and act on, according to the four perspectives. This outlook facilitates aligning strategy with employees' actions and goals (Davis & Albright, 2004). Further, the performance measures should be derived following cause-and-effect relationships that need to be hypothesised by managers, based on their beliefs and assumptions and considering the organisation's contingencies. Managers should make their best estimate of the actions (strategy) that bring about the desired outcomes (Bukh & Malmi, 2005). The principle that there should be cause-and-effect relationships among measures included in the different perspectives is essential as measurements in non-financial areas should be tailored to predict future financial performance (Norreklit, 2000). The hypothesised relationships can be depicted through strategy maps, which provide a visual representation of the links between the strategy's components and the BSC measures (Kaplan & Norton, 2004).

A body of research has emphasised that the BSC may be an appropriate tool to control and account for sustainability issues for

different reasons (Epstein & Roy, 2001; Hansen & Schaltegger, 2016; Möller & Schaltegger, 2005): many environmental and social issues are non-financial; the environmental and social effects of organisational actions mostly manifest themselves over the long term; the cause-and-effect relationships that should be hypothesised to develop the BSC may help managers to clarify the connections between long-term resources and capabilities, including sustainability issues and short-term financial outcomes; the multi-dimensional approach would allow managers to address environmental, social and governance (ESG) goals whereas other approaches only focus on, for example, the environment; and, finally, sustainability involves a performance measurement system including both leading and lagging indicators.

Thus, the concept of SBSC was derived from the conventional BSC combining the four perspectives of the BSC with the sustainability dimensions to embed environmental, social or ethical concerns explicitly and including sustainability-related objectives and performance measures. The SBSC may be a viable tool to satisfy a range of sustainability management needs, namely, to assist companies in the process of implementation of a sustainable strategy, foster sustainability management standards, decision-making and reporting, support regulatory data requirements, meet stakeholders' information demands and make employees more sensitive to sustainability issues (Epstein & Wisner, 2001; Schaltegger & Wagner, 2006).

Figge et al. (2002) explained and discussed the three main approaches to embedding sustainability within the BSC framework. The first is the integration of environmental and social aspects into the four BSC perspectives. The four perspectives' arrangement is not modified, and the environmental and social aspects add to the other relevant strategic aspects through respective strategic core elements or performance drivers that require the setting of objectives, lagging and leading indicators and targets. In this way, cause-and-effect links include the environmental and social aspects. The second possibility involves the introduction of an additional non-market perspective into the BSC. While the conventional BSC perspectives reflect the market logic, environmental and social aspects often represent externalities that are not fully integrated into the market transactions through prices. However, they can influence the performance in all four BSC perspectives. Thus, strategic core aspects and leading indicators of the non-market perspective must be identified and translated into respective measures and linked to the other perspectives. These two approaches are not mutually exclusive, as some environmental and social indicators can be included under the four conventional perspectives, while others can be grouped under an additional perspective. The third approach entails deriving an environmental and/or social scorecard. This scorecard should 'further differentiate the environmental and social aspects, once their strategic relevance and position in the cause-and-effect chains have been identified by the two approaches presented above' (Figge et al., 2002, p. 275). Thus, it must be built and used in conjunction with one of the other two alternatives.

According to Searcy (2012), research on both the BSC and the SBSC can be structured into the four stages of design, implementation, use and evolution. Hansen and Schaltegger (2016) focused on

the design stage and emphasised that companies may conceive SBSC architectures in various ways to link performance perspectives, strategic objectives and the logical relationships between these elements. Generally, the architectures may vary depending on two criteria: the nature of the hierarchy among the individual performance perspectives (and strategic objectives), which is influenced by the value system of a company and the design of performance perspectives, which refers to the approach used to integrate sustainability within the SBSC.

This study, on the other hand, aims to review existing knowledge on SBSC use. Drawing upon previous works (Hansen & Schaltegger, 2016; Searcy, 2012), the use of the SBSC is here described in terms of three key issues: (i) the contextual factors driving companies to implement the SBSC; (ii) the approaches to SBSC application, concerning how managers incorporate sustainability issues in the scorecard perspectives and balance the relative use of financial and non-financial indicators in practice and (iii) the outcomes of the SBSC use in terms of the effects on sustainability management and control.

Thus, the following research questions are posed:

1. Which are the main determinants of the SBSC use?
2. What are the different approaches to the SBSC application?
3. What are the outcomes deriving from the SBSC use?

3 | RESEARCH METHODOLOGY

This study performs a systematic literature review to explore the scope of the existing academic debate regarding SBSC use. Systematic reviews adopt a replicable, scientific and transparent process and differently from traditional narrative reviews, ground the study on a specific and rigorous sequence of stages (Tranfield et al., 2003). A systematic literature review is an organised, transparent and replicable research methodology for analysing the extant literature (Alvarez Jaramillo et al., 2019; Delbufalo, 2012; Sivarajah et al., 2017; Tranfield et al., 2003). Prior studies have outlined several reasons for conducting a systematic literature review, such as synthesising knowledge and determining gaps within the existing research in a field, proposing areas for further investigation and identifying current research strands and potential research themes (Sivarajah et al., 2017). The implemented methodological phases rely on Tranfield et al. (2003) and Sivarajah et al. (2017). The first phase involves 'planning the review process', encompassing the definition of the research objectives and the development of the review protocol. The second phase is 'conducting the review process', that is, identifying, selecting, evaluating and synthesising the relevant research studies. The third phase ('reporting and dissemination of the overall research results') is shaped by the descriptive reporting of results and thematic reporting of journal articles.

Relying on Mio et al. (2020), the review protocol was developed following Alvarez Jaramillo et al. (2019) and Sivarajah et al. (2017). For articles to be suitable for this specific study, the following conditions were required:

1. The Scopus database was identified as the source for a reliable list of studies on the topic of interest. Scopus is widely used and offers a higher coverage of peer-reviewed research literature in the social sciences (Aksnes & Sivertsen, 2019);
2. To investigate the academic debate, this study only considers peer-reviewed articles that have been published in journals ranked on the UK-based ABS Academic Journal Guide 2018;
3. To enhance consistency, the search was limited to studies published in journals in the time interval 2000–2020 and written in English;
4. In the light of the study's aims, the search addressed articles discussing SBSC and published in journals belonging to the Business, management and accounting subject area (as categorised in the Scopus database);
5. To ensure the selected articles' suitability, keywords related to the use of management control tools for sustainability were considered. Specifically, all research works that had a word directly regarding the SBSC (i.e., Sustain*balanced scorecard) in their titles, abstracts or among their keywords were examined;
6. Not only empirical (based on quantitative, qualitative or mixed methods analysis) but also conceptual articles were selected;
7. Final substantive suitability 'was confirmed by reading the remaining whole article for essential research perspective and satisfactory empirical data. The latter process forced the alignment between the selected articles and the research review objectives' (Sivarajah et al., 2017, p. 267).

In the second phase, the authors relied on Delbufalo (2012), who clarifies the different stages and activities of the database searching process. First, keywords were entered into the Scopus database following the conditions (2)–(4). This initial step resulted in 144 publications being extracted. Then, title, abstract and full-text analyses were conducted on the collected articles based on conditions (5) and (6). These analyses provided a sample of 81 studies as at 24 December 2020. At the end of this process, the articles were considered for a more detailed examination. The search was further refined, assessing conceptual and empirical studies against the criteria pointed out in conditions (5) and (7), leading to a sample of 54 documents. Web of Science (WoS) was then consulted as a second scientific search engine to secure data reliability, following the conditions from (2) to (7).

Regarding point (4), Management and Business WoS categories were considered. As a result, 11 articles were added to those extracted from Scopus. Thus, the final sample includes 65 ABS-ranked articles.

To respond to the research question, the authors performed a manual content analysis to develop a dataset and listed their findings on a spreadsheet.

The third phase involved reporting the overall results of the descriptive investigation. They included the following information: author(s); publication year; article title; journal title, volume and issue; ABS journal ranking and article's number of citations. To obtain a more in-depth knowledge of the academic debate dealing with the use of the SBSC, the authors also collected the following information about each article: the main topic addressed; the methodology implemented (qualitative, quantitative or mixed); the specific methodology applied (e.g., case study, interview and statistical analysis) and whether the article analysed a specific industry.

4 | RESULTS

First, the study reports the frequency distribution of the articles identified in the review by the research setting, regarded as the industry on which a research is based, and the methodology adopted. The results also present the three most cited papers and the articles' cross-distribution by their main topics category and journal ranking.

Table 1 shows the frequency distribution of the SBSC articles by research settings. From a temporal standpoint, it emerges how interest in the SBSC increased continuously from 2000 to 2020. Publications tripled from 2005–2009 to 2010–2014 and almost tripled again in the latest analysis period (2015–2020). In terms of research settings, the articles prove to be heterogeneous. Manufacturing is the most represented industry in the sample (more than 30% of the companies), but the proportion of studies grounded in the service industry and the public sector is not negligible (15.4% and 10.7%, respectively).

Table 2 provides the results regarding the research methods. Almost half of the articles adopt a qualitative case study methodology, whereas about one-fifth of the reviewed studies employ a quantitative survey methodology and statistical analysis. Quantitative articles have increased, especially in the last 6 years. Five papers adopt a mixed-method approach, whereas 14 papers (either conceptual

Research setting	2000–2004	2005–2009	2010–2014	2015–2020	Total	%
Energy				4	4	6.2
Hospitality	1			4	5	7.7
Manufacturing		3	7	10	20	30.8
Public sector			3	4	7	10.7
Services			2	8	10	15.4
Miscellaneous ^a	3	2	3	11	19	29.2
Total	4	5	15	41	65	100

TABLE 1 Frequency distribution of articles on the SBSC by research settings

Abbreviation: SBSC, sustainability balanced scorecard.

^aIt includes conceptual papers, reviews and studies based on a firm sample from different industries.

TABLE 2 Frequency distribution of SBSC articles by research method

Research method	2000–2004	2005–2009	2010–2014	2015–2020	Total	%
Conceptual paper/literature review	3	1	1	9	14	21.5
Behavioural experiment			1	1	2	3.1
Case study	1	3	9	18	31	47.7
Mixed methods				4	4	6.2
Survey		1	4	9	14	21.5
Total	4	5	15	41	65	100

TABLE 3 Top three most cited papers by number of citations

Most cited papers	Tot. citations	Citations per year	Authors	Year	Title	Journal (ABS-ranking)	Stream
1	553	29.1	Figge et al.	2002	The sustainability balanced scorecard - linking sustainability management to business strategy	<i>Business Strategy and the Environment</i> (3)	Applications
2	372	31.0	Hubbard	2009	Measuring organizational performance: beyond the triple bottom line	<i>Business Strategy and the Environment</i> (3)	Applications
3	147	21.0	Bhattacharya et al.	2014	Green supply chain performance measurement using fuzzy ANP-based balanced scorecard: a collaborative decision-making approach	<i>Production Planning & Control</i> (3)	Outcomes

Source: Elsevier Scopus, citations retrieved on 23 February 2021.

TABLE 4 Number of SBSC articles by topics and ABS-ranking

Topics	ABS 1	ABS 2	ABS 3	ABS 4	Total	%
Determinants	2	8		1	11	16.9
Applications	9	10	13		32	49.2
Outcomes	6	7	8	1	22	33.9
Total	17	25	21	2	65	100

Abbreviation: SBSC, sustainability balanced scorecard.

papers or literature reviews) do not analyse primary data on the SBSC use.

Table 3 shows the top three most cited papers, all published in a 3-ABS-ranking journal. Specifically, the two less recent papers were published in '*Business Strategy and the Environment*', while the most recent one was published in '*Production Planning and Control*'. Figge et al. (2002) considered the process and steps to formulating a SBSC for a business unit. Hubbard (2009) proposed a stakeholder-based conceptual framework coupled with a sustainability performance index to integrate the measures in the SBSC. Finally, Bhattacharya et al. (2014) delineated a framework for green supply chain performance measurement and implemented it in a UK-based manufacturing company. The approach is found to aid a company's decision-making process regarding the overall organisational goals.

The authors then identified three research streams on SBSC use related to its determinants, applications and outcomes. As outlined in

Section 2, the 'determinants' cluster deals with the factors driving the use of SBSC. Articles classified within the 'applications' cluster refer to those articles discussing the different approaches to the SBSC use, while articles included in the 'outcomes' category refer to the consequences and outcomes emerging from the use of the SBSC related to the effects on sustainability management and control.

Table 4 shows the frequency distribution of SBSC topics by ABS-ranking. Descriptive statistics show the more populated research stream belongs to the 'applications' field (48.8%), followed by research investigating the 'outcomes' of the SBSC use (34.8%), and finally by its 'determinants' (16.7%). Most of the papers are published in 2-ABS journals, while just two papers are published in a 4-ABS journal. An analysis of the research streams' trend discussed in the literature by period (not represented in the study) indicated the interest in SBSC 'determinants' only started in the period 2010–2015. The investigation of the 'applications' stream began in 2000 and continuously



increased over time. Finally, although the 'outcomes' stream began in 2000–2005, it is only in the last few years (2015–2020) that it has proliferated.

As explained in Section 2, the literature review on the SBSC use is presented, focusing on the determinants influencing the use, the application of the SBSC and the outcomes it generates.

4.1 | Determinants

In line with the topics identified in the literature, the first stream analysed relates to the factors influencing the use of the SBSC (the 'determinants'), which is the one less discussed by prior literature (Table 5).

Vieira et al. (2017) underline the relevance of the design of an SBSC, which requires the translation of the strategy, organisational structure and stakeholder interests into business objectives and measures. The design process will determine the target and measures that will be monitored to manage performance and drive employees and external stakeholders in their actions and decision-making. The authors stress the influence of stakeholder interests on the design of the SBSC as a performance system in terms of the appropriate performance perspectives and measures to attain a balance between economic, social and environmental aspects. Furthermore, the design and implementation processes require involving management and key actors inside the organisation to ensure understanding and compliance with the model.

Khalid et al. (2019)¹ present the different ways to integrate sustainability within the BSC based on the organisation strategy. They highlight that companies can choose between different integration levels based on the strategy pursued and recognise that environmental performance measurement is mainly dependent on the organisational environmental strategy. This result is consistent with other works underlining the need to explicitly acknowledge the organisational strategy for sustainability considerations before connecting it to the BSC (Asiaei & Bontis, 2019; León-Soriano et al., 2010; Vieira et al., 2017).

De Andrade Guerra et al. (2018) investigate a BSC development in the universities to integrate environmental education programs. It emerges from the research that the SBSC implementation requires a particular effort to change the organisation's culture. Culture is a fundamental aspect to take into account when introducing changes because only through the commitment of all employees inside a company can the goal be achieved (Lämsiluoto & Järvenpää, 2010). Financial resources are also needed to implement an SBSC. Moreover, successful implementation of the SBSC requires the top management's explicit commitment to create 'a more receptive environment for cultural changes, incentive programs, training programs that encourage empowerment in employees, conducting changes in systems and processes of the organisation' (p. 1683). Top managers should be the first actors involved and committed to discussion actions and practices related to environmental issues. Further, they should contribute to enforcing environmental principles across the company. The fundamental role of managers is also underlined by

León-Soriano et al. (2010), who propose a methodology to integrate sustainability in planning, and management tasks recognising that successful implementation derives from management's commitment to invest in employees' education and to provide resources for creating an appropriate environment. Top management is in charge of providing the necessary information to employees at different company levels and establishing a trust relationship with them to ensure their commitment and alignment with the company's strategy. Further, Tung et al. (2011) documented that appropriate training on the use of performance measurement systems, such as the BSC, can enhance employee knowledge and skills in developing and implementing the systems to help achieve specified desired outcomes.

Schaltegger et al. (2015) found that managers in different organisational roles (finance, marketing, process, knowledge and learning and extra-market) may perceive the need for different sustainability information types (e.g., quantitative vs. qualitative, monetary, physical, environmental, social or economic). The study underlines that while physical and environmental information may be helpful to all management roles for decision-making related to sustainability, it is essential for the activities of managers appointed to sustainability roles, which should be supported by the production of information from non-accounting disciplines (e.g., engineers or environmental scientists). The study also clarifies those internal factors such as decentralisation may influence the information dealt with in different management roles. These findings imply that the organisational structure affects the shaping of the sustainability information needs of managers.

Finally, Hsu et al. (2017) recognise that unlike large companies, in small- and medium-sized enterprises (SMEs), which commonly suffer a shortage of resources, it is more challenging to pursue sustainable strategies and invest in implementing sustainability controls. However, they are convinced that SMEs should effectively use their limited resources and define the performance factors according to a BSC approach since they usually participate in the large companies' supply chain systems in many industries. As such, they could need a framework to implement a sustainability development scheme as requested, not only by the stakeholders but also by the focal companies of the supply chain systems.

4.2 | Applications

Based on Figge et al. (2002), the well-developed research stream on 'applications' refers to how the sustainability aspects have been integrated into the BSC framework to balance the different perspectives and between financial and non-financial indicators (Table 6).

Chalmeta and Palomero (2011) conducted an exploratory study on the experiences of 16 companies of different dimensions and sectors that 'agreed to include the dimensions of ecological and social sustainability within their strategic considerations and to manage them using the BSC' (p. 1346). The study results enable the identification of critical aspects in using the SBSC as a sustainability control tool. In particular, the companies mostly chose to increase the number of perspectives included in the SBSC. In addition to conventional BSC

TABLE 5 Sustainability balanced scorecard paper: 'determinants' stream

N	Authors	Year	Journal (ABS-ranking)	Title	Methodology	Research setting	Research stream
1	Lämsiluoto and Järvenpää	2010	<i>Business Horizons</i> (2)	Greening the balanced scorecard	Case study	Manufacturing	Determinants
2	León-Soriano et al.	2010	<i>Industrial Management and Data Systems</i> (2)	Methodology for sustainability strategic planning and management	Case study	Manufacturing	Determinants
3	Tung et al.	2011	<i>International Journal of Operations & Production Management</i> (4)	Factors influencing the effectiveness of performance measurement systems	Survey	Manufacturing	Determinants
4	Wynder et al.	2013	<i>Accounting Education</i> (2)	Rhetoric or reality? Do accounting education and experience increase weighting on environmental performance in a balanced scorecard?	Behavioural experiment	Public sector	Determinants
5	Schaltegger et al.	2015	<i>Australian Accounting Review</i> (2)	Management roles and sustainability information. Exploring corporate practice	Survey	Miscellaneous	Determinants
6	Hsu et al.	2017	<i>Journal of Cleaner Production</i> (2)	Identifying key performance factors for sustainability development of SMEs – integrating QFD and fuzzy MADM methods	Survey	Miscellaneous	Determinants
7	Vieira et al.	2017	<i>Organization and Environment</i> (2)	Aligning strategy and performance management systems: The case of the wind-farm industry	Case study	Energy	Determinants
8	Xia et al.	2017	<i>Journal of Cleaner Production</i> (2)	Sustainable technology selection decision-making model for enterprise in supply chain: Based on a modified strategic balanced scorecard	Survey	Miscellaneous	Determinants
9	de Andrade Guerra et al.	2018	<i>Journal of Cleaner Production</i> (2)	A proposal of a balanced scorecard for an environmental education program at universities	Mixed methods	Public sector	Determinants
10	Asiaei and Bontis	2019	<i>Knowledge and Process Management</i> (1)	Using a balanced scorecard to manage corporate social responsibility	Case study	Manufacturing	Determinants
11	Yanine et al.	2020	<i>Journal of Information Technology Management</i> (1)	The impact of dynamic balanced scorecard in knowledge-intensive organizations' business process management: A new approach evidenced by small and medium-size enterprises in Latin America	Mixed methods	Manufacturing	Determinants

perspectives, two new perspectives (social/labour and environmental) were also implemented, with a duality of objectives. On the one hand, companies aimed to help foster social well-being and cultural development and on the other, to increase the commitment to environmental matters. Furthermore, the companies incorporated sustainability non-financial indicators in customer, internal processes and learning and growth perspectives and relied on ethical criteria to shape the financial perspective (e.g., for cash flow management, in planning the payment

of suppliers and outsourced services and the management of collections on accounts receivable). The larger companies involved in the study were interested in considering a set of known *Corporate Social Responsibility* (CSR) indicators, such as the global reporting initiative metrics or to apply principles such as those of the Global Compact.

Journeault (2016) investigated the SBSC framework application in two Canadian companies selected as case studies, a family-owned business operating in the agriculture and food industry and a clothing



retailer. In both the companies, the SBSC helped to identify the (non-financial) performance indicators for every strategic objective under the perspectives of external stakeholders, environmental performance and social performance, in addition to the conventional perspectives of internal processes and core skills and capabilities. Further, economic, environmental and social aspects were considered across the life cycle of products and services and included in all the perspectives of the SBSC. The use of the SBSC supported the managers in the development of a new sustainability strategy and emphasised the importance of meeting stakeholder expectations and requirements to enhance financial performance and company value through costs reduction and sales increase.

In the case study analysed by Hansen et al. (2010), the company added a social perspective to the conventional four perspectives and developed several key performance indicators (KPIs) for each of the strategic goals on input, output and impact levels. Social strategic goals, related to corporate community involvement in CSR, were connected to traditional BSC goals such as employee engagement and excellence in the learning and growth perspective or customer satisfaction. Ponte et al. (2017) cooperated in an action research project with the managers of an in-house hybrid organisation that provides ICT services to a local government to create an SBSC intended to control the company's social responsibility. They designed a 'social responsibility' perspective in the SBSC with two main critical success factors, value creation for the local government and supporting and fostering the local economy, and two KPIs for each factor. The perspective allowed them to control, for example, the costs of the services for the local community and the local impact of the business (salary to employees). To meet possible emergent information needs, the SBSC undergoes a continuous refinement process.

Through a survey that collected responses from senior management and middle management of a sample of large Australian companies, Sands et al. (2016) examine how companies integrated the social, environmental and innovation processes within the four BSC perspectives. Their results support the feasibility of integrating environmental, social and innovation-orientated performance measures into the internal process perspective. They also determine the extent of linkages between and within the SBSC perspectives and highlight the need to monitor the performance regarding environmental concerns, social community engagement and social employee-related processes since customers may value highly developed internal processes that extend to sustainability issues.

Again, Aliakbari Nouri et al. (2019) aim to provide a framework to assess the supply chain sustainability in the service industry combining the concept of the BSC and the triple bottom line (TBL) model. Based on the opinions and comments of a group of experts of the hospitals' supply chain, 20 factors affecting the service supply chain sustainability were recognised and categorised in four dimensions: financial, stakeholders, supply chain, learning, growth and innovation. The scorecard requires service supply chain managers to maintain balanced attention to all four dimensions and permeate the financial dimension, which is directly affected by the other three, with the criteria of environmental, energy and social efficiency.

4.3 | Outcomes

Finally, the last stream of research provides insight into the outcomes emerging from the SBSC use regarding the impact on sustainability management and control (Table 7).

Lu et al. (2018) apply the SBSC to evaluate three international airports' sustainability performance considering quantitative and qualitative information. The results show that using the SBSC framework can extend the airports' involvement in sustainability measures and help the administrators recognise the improvement priorities (strategic and operating) across different perspectives. In turn, this can help airports to deliver a service quality consistent with passenger and community expectations.

De Villiers et al. (2016) examined the combined use of SBSC and sustainability reporting in a large forestry products manufacturer. The study highlights several advantages resulting from this combination. First, the sustainability reporting objectives can be better operationalised when incorporated into a management control tool such as the SBSC, as the SBSC provides a framework to translate the aspects covered in sustainability reporting into objective measures. Second, the use of an SBSC focuses the attention of employees and managers on what is essential for the company in terms of sustainability aspects, helps them in collecting ideas to be reformulated into principles, objectives and measures, and formalising the assumption of individual responsibility for specific sustainability measures/issues. Further, the SBSC provides a formal mechanism for communicating sustainability reporting objectives throughout the company. Finally, the use of the SBSC to gather information useful for sustainability reporting purposes stimulates more significant interactions with both internal and external stakeholders.

Kerr et al. (2015) also found that frameworks such as the SBSC could facilitate the implementation of sustainability reporting, the operationalisation of TBL objectives, broadening stakeholder accountability as well as intensifying relationships with stakeholders, the formalisation of organisation beliefs and improvements in the internal communication of sustainability measures. The authors note that these advantages are more likely to manifest themselves in organisations generating significant social and/or environmental impacts.

In a study based on interviews with representatives of some large Portuguese companies, Dias-Sardinha and Reijnders (2005) pointed out that the scorecard format is useful to verify the existence of links between three categories of sustainability strategic objectives (compliance with relevant regulations, pollution prevention and eco-efficiency) and performance references in terms of specific targets, measurements, initiatives and achievements. Thus, the process of developing an SBSC, which is based on the formulation of cause-and-effect relationships among performance perspectives and measures, can be intrinsically beneficial for addressing social and environmental issues through a comprehensive methodological order instead of fragmentary.

Van der Woerd and Van der Brink (2004) assessed the practical feasibility of an SBSC in companies operating in the food and tourist industries. They conclude that, from a theoretical standpoint, an SBSC can be a powerful tool to develop and implement sustainable

TABLE 6 Sustainable balanced scorecard papers: 'applications' stream

N	Authors	Year	Journal (ABS-ranking)	Title	Methodology	Research setting	Research stream
1	Figge et al.	2002	<i>Business Strategy and the Environment</i> (3)	The sustainability balanced scorecard - Linking sustainability management to business strategy	Conceptual/ Literature review	Miscellaneous	Applications
2	Hardjono and De Klein	2004	<i>Journal of Business Ethics</i> (3)	Introduction on the European Corporate Sustainability Framework (ECSF)	Conceptual/ Literature review	Miscellaneous	Applications
3	Van Marrewijk	2004	<i>Journal of Business Ethics</i> (3)	A value-based approach to organization types: Towards a coherent set of stakeholder-oriented management tools	Conceptual/ Literature review	Miscellaneous	Applications
4	Alsyouf	2006	<i>Journal of Quality in Maintenance Engineering</i> (1)	Measuring maintenance performance using a balanced scorecard approach	Case study	Manufacturing	Applications
5	Scavone	2006	<i>Journal of Cleaner Production</i> (2)	Challenges in internal environmental management reporting in Argentina	Case study	Manufacturing	Applications
6	Hubbard	2009	<i>Business Strategy and the Environment</i> (3)	Measuring organizational performance: Beyond the triple bottom line	Conceptual/ Literature review	Miscellaneous	Applications
7	Tsai et al.	2009	<i>Journal of the Operational Research Society</i> (3)	The sustainability balanced scorecard as a framework for selecting socially responsible investment: An effective MCDM model	Case study	Manufacturing	Applications
8	Hansen et al.	2010	<i>Business Strategy and the Environment</i> (3)	Managing strategic alliances through a community-enabled balanced scorecard: The case of Merck Ltd, Thailand	Case study	Manufacturing	Applications
9	Chalmeta and Palomero	2011	<i>Journal of the Operational Research Society</i> (3)	Methodological proposal for business sustainability management by means of the balanced scorecard	Case study	Miscellaneous	Applications
10	Dias-Sardinha et al.	2011	<i>Journal of Cleaner Production</i> (2)	Using corporate social responsibility benchmarking framework to identify and assess corporate social responsibility trends of real estate companies owning and developing shopping centres	Survey	Services	Applications
11	Mendes et al.	2012	<i>Journal of Cleaner Production</i> (2)	The balanced scorecard as an integrated model applied to the Portuguese public service: A case study in the waste sector	Case study	Public sector	Applications
12	Yiannaki	2012	<i>International Journal of Organizational Analysis</i> (1)	A systemic risk management model for SMEs under financial crisis	Survey	Miscellaneous	Applications
13	De Felice and Petrillo	2013	<i>International Journal of Engineering Business Management</i> (1)	Key success factors for organizational innovation in the fashion industry	Case study	Manufacturing	Applications
14	Reefke and Trocchi	2013	<i>International Journal of Productivity and Performance Management</i> (1)	Balanced scorecard for sustainable supply chains: Design and development guidelines	Conceptual/ Literature review	Miscellaneous	Applications

(Continues)

TABLE 6 (Continued)

N	Authors	Year	Journal (ABS-ranking)	Title	Methodology	Research setting	Research stream
15	Huang et al.	2014	<i>Australasian Accounting, Business and Finance Journal</i> (1)	Implementing a sustainability balanced scorecard to contribute to the process of organisational legitimacy assessment	Case study	Services	Applications
16	Labucay	2015	<i>European Journal of International Management</i> (1)	Diversity management and performance: Paving the way for a revised business case	Conceptual/Literature review	Miscellaneous	Applications
17	Hansen and Schaltegger	2016	<i>Journal of Business Ethics</i> (3)	The sustainability balanced scorecard: A systematic review of architectures	Conceptual/Literature review	Miscellaneous	Applications
18	Journeault	2016	<i>Journal of Environmental Management</i> (3)	The integrated scorecard in support of corporate sustainability strategies	Conceptual/Literature review	Miscellaneous	Applications
19	Haghighi et al.	2016	<i>Journal of Cleaner Production</i> (2)	An integrated approach for performance evaluation in sustainable supply chain networks (with a case study)	Case study	Energy	Applications
20	Sands et al.	2016	<i>Accounting Research Journal</i> (2)	An empirical investigation on the links within a sustainability balanced scorecard (SBSC) framework and their impact on financial performance	Survey	Miscellaneous	Applications
21	Wudhikarn	2016	<i>Management Decision</i> (2)	An efficient resource allocation in strategic management using a novel hybrid method	Case study	Public sector	Applications
22	Aly and Mansour	2017	<i>Managerial Auditing Journal</i> (2)	Evaluating the sustainable performance of corporate boards: the balanced scorecard approach	Survey	Manufacturing	Applications
23	Ponte et al.	2017	<i>Managerial Auditing Journal</i> (2)	Between mission and revenue: Measuring performance in a hybrid organization	Case study	Services	Applications
24	Hahn and Figge	2018	<i>Journal of Business Ethics</i> (3)	Why architecture does not matter: On the fallacy of sustainability balanced scorecards	Conceptual/Literature review	Miscellaneous	Applications
25	Hansen and Schaltegger	2018	<i>Journal of Business Ethics</i> (3)	Sustainability balanced scorecards and their architectures: Irrelevant or misunderstood?	Conceptual/Literature review	Miscellaneous	Applications
26	Lea et al.	2018	<i>Journal of Cleaner Production</i> (2)	Data visualization for assessing the biofuel commercialization potential within the business intelligence framework	Case study	Manufacturing	Applications
27	Aliakbari Nouri et al.	2019	<i>International Journal of Productivity and Performance Management</i> (1)	Developing the framework of sustainable service supply chain balanced scorecard (SSSC BSC)	Mixed methods	Services	Applications
28	Khalid et al.	2019	<i>Meditari Accountancy Research</i> (1)	Incorporating the environmental dimension into the balanced scorecard: A case study in health care	Case study	Public sector	Applications
29	Kim et al.	2019	<i>Journal of Hospitality marketing & Management</i> (1)	Sustainability research in the hotel industry: Past, present, and future	Conceptual/Literature review	Hospitality	Applications

TABLE 6 (Continued)

N	Authors	Year	Journal (ABS-ranking)	Title	Methodology	Research setting	Research stream
30	Chaker et al.	2020	<i>Sustainability Accounting, Management and Policy Journal</i> (2)	Isn't it time we transitioned to integrated sustainability? Decoding the hard-soft divide from a systems-theoretic perspective	Conceptual/Literature review	Miscellaneous	Applications
31	Fatima and Elbanna	2020	<i>International Journal of Hospitality Management</i> (3)	Balanced scorecard in the hospitality and tourism industry: Past, present and future	Conceptual/Literature review	Hospitality	Applications
32	Guix and Font	2020	<i>International Journal of Hospitality Management</i> (3)	The materiality balanced scorecard: A framework for stakeholder-led integration of sustainable hospitality management and reporting	Conceptual/Literature review	Hospitality	Applications

strategies, especially for companies that aspire to find, in the process of stakeholder engagement, a balance between economic, social and ecological concerns, or to create economic, social and ecological value simultaneously in synergy with the stakeholders. According to Van der Woerd and Van der Brink, the main stakeholders assume a higher relevance in the SBSC framework, which also explicitly integrates the three Ps (profit, people and planet). As a potential disadvantage, the authors assert that the implementation of the SBSC requires renewed learning processes and strategic rethinking for companies that have become familiar with the traditional BSC, which demands top managers' time and effort.

The inquiry conducted by Raut et al. (2017) in the banking sector witnesses that an SBSC approach may offer an effective method to track the performance and evaluate the improvement towards the sustainability goals, at the company and the individual stakeholder level, as well as detect and analyse the causes of low performance and suggest corrective interventions. Moreover, the authors claim that the use of sustainability planning and control tools such as the SBSC, while assisting managers in strategic choices, 'would help to promote the culture of green investments, social aspects, resource efficiency and safeguarding the interests of stakeholders. Besides, the external agencies (government, rating agencies, unions etc.) can make use of the evaluation system for grading and ranking' (p. 564). Ferreira et al. (2016) indicate that the SBSC framework can help assess a supply chain's environmental performance, especially for first tier suppliers and products and define actions to improve this performance.

Kang et al. (2015) investigated the links between the CSR and the SBSC use in the context of family-owned hotels. In particular, based on an SBSC framework, they documented that managers and employees may perceive the importance of CSR and performance dimensions for business operations differently. Accordingly, they recommend that managers, who understand the whole picture, should take the responsibility to share the strategic intent with employees. The study provides empirical support to the argument that establishing a strategic management tool like the SBSC can help hospitality SMEs or family-owned companies achieve their goals and vision and drive employees' actions,

whereas the measures selection process might be expensive in terms of time and resources.

Wynder (2010) documented the potential use of an SBSC, which integrated environmental measures into the company's strategy map, to evaluate managers and employee performances based on lead and lag indicators and assign rewards accordingly. While highlighting the strategic importance of environmental performance, Wynder cautions against the cognitive limitations that can undermine performance evaluation's subjective criteria and reward in using multi-dimensional frameworks.

5 | DISCUSSION AND CONCLUSIONS

Focusing on SBSC determinants, application and outcomes, this literature review aims to systematise knowledge on the SBSC use and generally contributes to the research on corporate sustainability performance measurement and control tools supporting strategic management.

Regarding the determinants, the overall review shows the critical role of sustainability strategy in supporting the SBSC use, which affects company sustainability performance. The SBSC use mainly tends to be viewed as part of a broader process that starts with sustainability initiatives and strategies leading to the use of the SBSC for integrating sustainability within the overall corporate strategy and increasing sustainability performance. Besides, prior studies reveal that the SBSC is a tool that can be applied not only to the overall business but can be tailored for business units as well. Further, results also show how environmental aspects are the most discussed by the literature on the SBSC use drivers, suggesting that environmental strategies, initiatives and measures represent the first step towards sustainability goals.

Notwithstanding the importance of integrating sustainability into the corporate strategy, the attention to stakeholders' interests, organisational culture, top management commitment, organisational structure and company size are found to represent relevant determinants to ensure successful use of the SBSC. First, many studies (e.g., Asiaei & Bontis, 2019) identify sustainability strategy as a driver



TABLE 7 Sustainability balanced scorecard papers: 'outcomes' stream

N	Authors	Year	Journal (ABS-ranking)	Title	Methodology	Research setting	Research stream
1	van der Woerd and van der Brink	2004	<i>Journal of Business Ethics</i> (3)	Feasibility of a responsive business scorecard - A pilot study	Case study	Miscellaneous	Outcomes
2	Dias-Sardinha and Reijnders	2005	<i>Business Strategy and the Environment</i> (3)	Evaluating environmental and social performance of large Portuguese companies: A balanced scorecard approach	Survey	Miscellaneous	Outcomes
3	Wynder	2010	<i>Journal of Accounting Education</i> (2)	Chemico: Evaluating performance based on the balanced scorecard	Case study	Manufacturing	Outcomes
4	Vila et al.	2010	<i>Tourism Management</i> (4)	The creation and use of scorecards in tourism planning: A Spanish example	Survey	Public sector	Outcomes
5	Bhattacharya et al.	2014	<i>Production Planning and Control</i> (3)	Green supply chain performance measurement using fuzzy ANP-based balanced scorecard: A collaborative decision-making approach	Case study	Manufacturing	Outcomes
6	Zhao and Li	2015	<i>Journal of Cleaner Production</i> (2)	Evaluating the performance of thermal power enterprises using sustainability balanced scorecard, fuzzy Delphic and hybrid multi-criteria decision-making approaches for sustainability	Case study	Energy	Outcomes
7	Kang et al.	2015	<i>International Journal of Hospitality Management</i> (3)	Corporate social responsibility and sustainability balanced scorecard: The case study of family-owned hotels	Survey	Hospitality	Outcomes
8	Kerr et al.	2015	<i>Pacific Accounting Review</i> (1)	Sustainability reporting integrated into management control systems	Case study	Miscellaneous	Outcomes
9	Tseng et al.	2015	<i>Industrial Management and Data Systems</i> (2)	Sustainable supply chain management: A closed-loop network hierarchical approach	Case study	Miscellaneous	Outcomes
10	de Villiers et al.	2016	<i>Journal of Cleaner Production</i> (2)	A new conceptual model of influences driving sustainability based on case evidence of the integration of corporate sustainability management control and reporting	Case study	Manufacturing	Outcomes
11	Lin et al.	2016	<i>Journal of Cleaner Production</i> (2)	Sustainable development in technological and vocational higher education: Balanced scorecard measures with uncertainty	Mixed method	Services	Outcomes
12	Ferreira et al.	2016	<i>Benchmarking - An International Journal</i> (1)	An environmental balanced scorecard for supply chain performance measurement (Env_BSC_4_SCPM)	Case study	Manufacturing	Outcomes
13	Raut et al.	2017	<i>Business Strategy and the Environment</i> (3)	Sustainability in the banking industry: A strategic multi-criterion analysis	Case study	Services	Outcomes
14	Lu et al.	2018	<i>Journal of Air Transport Management</i> (1)	A hybrid MCDM and sustainability-balanced scorecard model to establish sustainable performance evaluation for international airports	Case study	Services	Outcomes

TABLE 7 (Continued)

N	Authors	Year	Journal (ABS-ranking)	Title	Methodology	Research setting	Research stream
15	Nicoletti et al.	2018	<i>Journal of Cleaner Production</i> (2)	Sustainability evaluation model for manufacturing systems based on the correlation between triple bottom line dimensions and balanced scorecard perspectives	Case study	Manufacturing	Outcomes
16	Deng et al.	2018	<i>Journal of Cleaner Production</i> (2)	A hybrid multiple criteria decision making model of sustainability performance evaluation for Taiwanese Certified Public Accountant firms	Case study	Services	Outcomes
17	Islam et al.	2018	<i>Benchmarking - An International Journal</i> (1)	Role of strategic alliance and innovation on organizational sustainability	Survey	Manufacturing	Outcomes
18	Lee and Hageman	2018	<i>Journal of Business Ethics</i> (3)	Talk the talk or walk the walk? An examination of sustainability accounting implementation	Behavioural experiment	Manufacturing	Outcomes
19	Malviya and Kant	2019	<i>Benchmarking - An International Journal</i> (1)	Developing integrated framework to measure performance of green supply chain management a comparative case analysis	Survey	Manufacturing	Outcomes
20	Sislian and Jaegler	2020	<i>Supply Chain Forum</i> (1)	ERP implementation effects on sustainable maritime balanced scorecard: Evidence from major European ports	Case study	Services	Outcomes
21	Tsai et al.	2020	<i>Journal of Cleaner Production</i> (2)	A performance assessment approach for integrated solid waste management using a sustainable balanced scorecard approach	Case study	Public sector	Outcomes
22	Chandra and Kumar	2020	<i>Omega</i> (3)	Evaluating the effect of key performance indicators of vaccine supply chain on sustainable development of mission indradhanush: A structural equation modeling approach	Survey	Services	Outcomes

of SBSC use and the need for sustainability strategy and SBSC alignment. Second, stakeholders' interests in the design of an SBSC are also a preliminary step to the management involvement in the SBSC use (Vieira et al., 2017). This result adds to Talbot et al. (2020), who found that stakeholder consultation plays a central role in implementing sustainable management tools in the context of SMEs. Other identified drivers are a shared organisational culture oriented to sustainability and top management commitment (e.g., De Andrade Guerra et al., 2018; León-Soriano et al., 2010).

Furthermore, the need for non-financial information of different managerial roles in decentralised organisational structures and the company size are considered determinants of SBSC use (e.g., Hsu et al., 2017; Schaltegger et al., 2015). Generally, the review results indicate that the SBSC should align with the type of sustainability strategy and strategic priorities and are consistent with Baumgartner (2014), who suggested that the SBSC supports different strategic

orientations. In this light, various framework elements can be omitted if they do not adhere to ESG aspects that managers do not judge to be necessary or have limited influence on the organisation. However, there are still very few articles on SBSC use determinants, which deserve greater attention from accounting and management scholars.

Second, the literature mostly deals with the different applications of SBSC and does that through case studies and surveys. In particular, the articles' review focused on the approaches adopted by companies in the SBSC application broadly suggests that there is no prevalence of one of the possibilities indicated by Figge et al. (2002). While some of the investigated companies add the fifth perspective to the BSC, which is regarded as an approach that emphasises sustainability values (Butler et al., 2011), others decide to integrate non-financial performance indicators related to environmental and social aspects in the conventional BSC perspectives. The integration may be full, with sustainability indicators included in all the four perspectives, or partial,

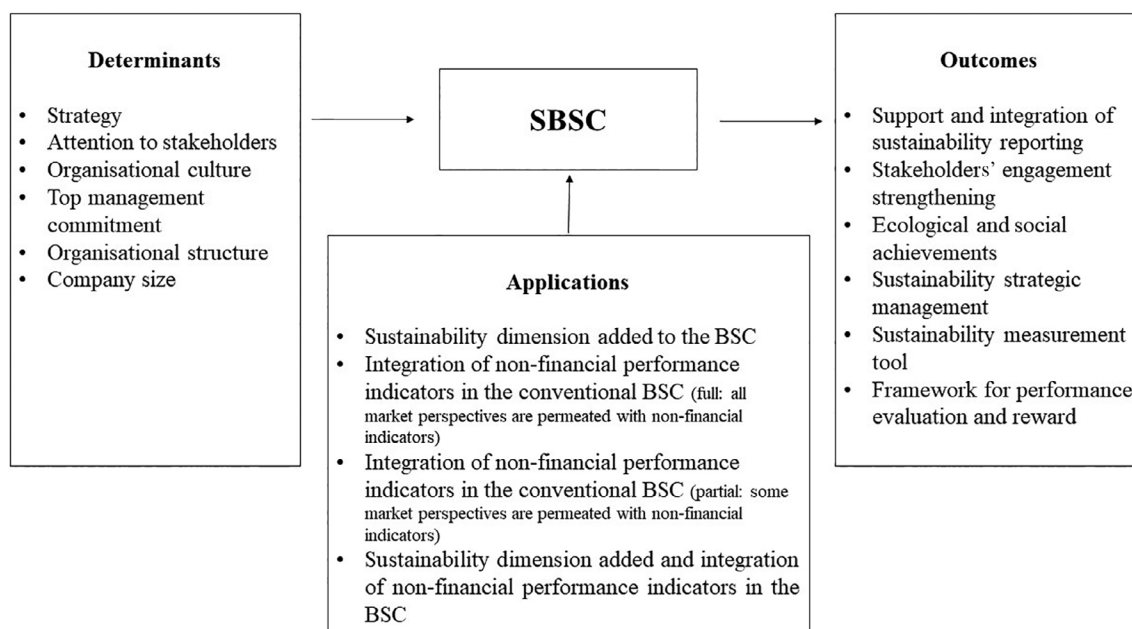


FIGURE 1 SBSC use: main determinants, applications and outcomes. SBSC, sustainability balanced scorecard

when they are included in some of the perspectives only. However, as in Journeault (2016), companies may apply a model that combines the approaches, coupling the additional perspective to include the ESG performance measures in conventional perspectives. These results reflect the view advanced in the literature that there is little consensus on the best method of incorporating the sustainability dimension within the BSC (Khalid et al., 2019). Further, the studies review broadly indicates that the non-financial indicators' integration is contextual and needs to be tailored for each company according to its organisational purposes, although this limits their performance comparability. Nevertheless, the empirical results on 'applications' show linkages between and within the SBSC perspectives where generally the market dimensions are permeated with non-financial indicators derived from the other non-market dimensions of the SBSC.

Finally, a very recent interest in the sustainability 'outcomes' deriving from SBSCs use is exploding. Most of the authors investigate the use of SBSC to evaluate how it affects companies' sustainability management and control and the potentialities to serve sustainable development purposes. Prior studies show that the SBSC facilitates and integrates sustainability reporting (Kerr et al., 2015) and strengthens stakeholder engagement (de Villiers et al., 2016; van der Woerd & van der Brink, 2004). It is also a valuable tool to reach ecological and social achievements (Dias-Sardinha & Reijnders, 2005). Finally, SBSC is found to be an effective strategic management and measurement tool towards sustainability (Kang et al., 2015; Raut et al., 2017) in addition to a multi-dimensional framework for performance evaluation (Wynder, 2010). Therefore, the present study supplements Schaltegger and Wagner (2006) considerations, not only showing that SBSC may be a viable tool to satisfy a range of management needs regarding sustainability issues and meet stakeholders' information demands, but also identifying SBSC

determinants and applications leading to them. See Figure 1 for a summary of the literature review's primary results.

Different authors documented that an increasing number of organisations recognise the importance of sustainability dimensions, which should be integrated into strategies and management models, and the need for assessing performance along the economic, environmental and social dimensions through a systematic and balanced process (Silvestre & Fonseca, 2020). However, from an empirical point of view, the review results imply that implementing corporate sustainability measurement tools such as the SBSC may not be an immediate task in practice, as many organisational factors should be considered. For example, before establishing an appropriate balance among the different SBSC goals and a coherent set of (non-financial) performance indicators, reflected in the tool application, managers should first profoundly reflect on shaping an organisational culture that is sustainability-oriented and on what organisational structure can reinforce the priority of those goals.

There is a need to focus on organisational culture, as a fit between organisational culture and new management systems and approaches enhances the success of these new approaches (Baumgartner, 2014). Managers can shape a sustainability-based culture through a variety of ways, such as social and environmental initiatives, transparent communication, engagement and statements of organisational values (e.g., mission and vision statements, policies and codes of conduct), to help employees make sense of corporate sustainability and motivate them to pursue sustainability goals (Lueg & Radlach, 2016).

Then, the organisational structure design can generally encourage certain types of contact and interactions among units and employees and contribute to organise sustainability activities and address sustainability issues (Soderstrom & Weber, 2020). For example, Gond

et al. (2012, p. 209) propose that the organisational structure, which is a component of administrative controls (Malmi & Brown, 2008), is designed 'in ways that facilitate the socialisation of management accountants to become specialists of sustainability reporting and control and that enhance the financial accounting skills of sustainability managers'. Generally, different organisational units should engage in using an SBSC framework in terms of information provided and performance to be measured, and the formal structures that companies establish to manage the environmental and social dimensions should be involved.

To sum up, the managerial implication is that using an SBSC, which is a formal control tool, should be complemented by relying on informal controls, such as cultural and administrative. This implication broadly aligns with Lueg and Radlach (2016), who noted that sustainable development could not be enforced with isolated controls.

Finally, extending Lozano and von Haartman (2018), whose results highlight the companies' need to approach sustainability comprehensively - taking into account internal, external and their connecting drivers - the current study meets that need by discussing the use of a specific sustainability performance measurement and control tool such as the SBSC.

The study mainly suffers from some methodological limitations. For instance, the study only selected articles published in the English language in ABS-ranked journals. Nevertheless, this study adds to the emerging literature on the use of SBSC in management and accounting fields, providing an updated overview of current research, mapping research streams and indicating potential future avenues. Future research is indeed called for investigating the SBSC use adopting more quantitative studies, especially on SBSC drivers and outcomes fields. Future studies may also analyse under-investigated research settings, such as financial companies or SMEs. Furthermore, results on SBSC's use in terms of determinants, applications and outcomes may contribute to both theory and managerial practices on sustainability performance measurement and management that must be recognised as a critical element of the overall corporate strategy within a globalised context. Indeed, most of the prior research investigates SBSC as a tool for companies' sustainable development, while little has been written on the role of SBSC as a corporate tool for global Sustainable Development achievement.

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ENDNOTE

¹ The authors include Khalid et al.'s (2019) study within the 'applications' research stream, but it also discusses determinants.

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How to cite this article: Mio, C., Costantini, A., & Panfilo, S. (2022). Performance measurement tools for sustainable business: A systematic literature review on the sustainability balanced scorecard use. *Corporate Social Responsibility and Environmental Management*, 29(2), 367–384. <https://doi.org/10.1002/csr.2206>