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Port Authority of Cartagena: Evidence of a Sustainability Balanced Scorecard

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Abstract

This paper provides a deeper understanding to the development and implementation of a Sustainability Balanced Scorecard in the Port Authority of Cartagena, under exploratory research. Open-access documents available on different websites were used as data sources combined with semi-structured personal interviews, which took place at the highest level of the organisation from September 2021 to December 2022. The strategy developed by this government unit has changed over the years, until 2018 when a new review, led by the Planning and Management manager, established a turning point in its sustainable strategy with the introduction of the Balanced Scorecard, resulting in a major internal change for the organisation. The creation of the Strategy Planning Office, external advice from strategy-expertise consultants, IT solutions acquisition adapted to the new scenario, and several internal organisational changes, have been vital in this successful process. The Balanced Scorecard has been shown to be helpful in disseminating the sustainable strategy at all levels of the company: environmental and social actions were confined for years to the Sustainability Department, functioning as isolated actions, but now, they have reached the strategic level involving the whole organisation as part of the company's strategy. This successful process has put this organisation at the forefront of other Spanish ports, providing other port authority managers with a useful framework that can help them in their attempt to implement sustainable strategies by using the Balanced Scorecard—a framework not only valid for ports but which can also be extended to other government units.

KEYWORDS

Balanced Scorecard, government unit, port, port authority, strategy management, sustainability, Sustainability Balanced Scorecard

1 | INTRODUCTION

To go further in the Balanced Scorecard (BSC) insight, the academic community has been demanding for many years an increase in the case-study research focused on the BSC implementation (Agostino & Arnaboldi, 2012; Antonsen, 2014; Brudan, 2005; Glykas, 2013; Hamid, 2018; Hansen & Mouritsen, 2005; Hristov et al., 2019; Malmi, 2001; Rodrigues Quesado et al., 2014; Suárez-Gargallo & Zaragoza-Sáez, 2021; Wu, 2012).

Although the use of BSC was initially focused on the private sector, its implementation in other sectors non-private has taken place over the years, as the BSC is a tool developed to adapt to a company's

strategy at all levels. For many years, having a strategy was very common in every type of organisation, and therefore, it cannot come as a surprise that many non-profit and not-for-profit organisations, as well as government units, have implemented and developed their BSC (Costa Oliveira et al., 2020; Federal Bureau of Investigation, 2016; Houck et al., 2012; Kaplan & Miyake, 2010; Khalid et al., 2019; Kotas, 2015; Mendes et al., 2014; Modell, 2012; Murillo Pérez, 2020; United States Army, 2009; United States Marine Corps, 2007). In fact, Kaplan and Norton remark on the opportunity that the BSC can offer 'to improve the management of governmental and not-for-profit enterprises' (1996, p. 179).

However, the study of the BSC implementation in these type of organisations has not been covered in the same way as in the private sector (Bobe et al., 2017; Ndevu & Muller, 2018). Therefore, a lack of knowledge has been identified as to and how these organisations cope with the challenge of developing and implementing their own BSC particularised to their characteristics.

Discussion about the BSC as it has become traditionally known: a new 'evolution' of the BSC has been demanded for several years to satisfy increasing social demand, resulting in the 'Sustainability Balanced Scorecard (SBSC)' (Butler et al., 2011; da Silva Neiva et al., 2021; de Villiers et al., 2016; Epstein & Wisner, 2001; Ferreira da Cruz & Cunha Marques, 2014; Figge et al., 2002; Hansen & Schaltegger, 2012, 2016; Huang et al., 2014; Jong Na et al., 2020; Journeault, 2016; Kang et al., 2015; Kaplan & Reisen de Pinho, 2008; Khalid et al., 2019; Länsiluoto & Järvenpää, 2010; León-Soriano et al., 2010; Lu et al., 2018; Mio et al., 2021; Modell, 2012; Raut et al., 2017; Trisyulianti et al., 2022). To cover this deficit as well as providing evidence of the relevance that government units have had over the last years in developing and implementing their strategies by using not only a BSC but a SBSC, we decided to carry out this study within the Shipping Industry. According to 'United Nations Conference on Trade and Development (UNCTAD)', over 80% of the world volume of international trade is attributed to the Shipping Industry (United Nations Conference on Trade and Development, n.d.).

The role that Spanish ports have played in this industry, weighted against Europe and the World, shows figures of around 11% and 4.5%, respectively.

Additionally, Spain is placed at the top, occupying the eighth position in the 'Liner Shipping Connectivity Index (LSCI)', in 2022; an index that:

> … captures how well countries are connected to global shipping networks. It is computed by the United Nations 'Conference on Trade and Development (UNCTAD)' based on five components of the maritime transport industry: number of ships, their container-carrying capacity, maximum vessel size, number of services, and number of companies that deploy container ships in a country's ports.[1]

[1]Global Infrastructure Connectivity Alliance (GICA): Liner Shipping Connectivity Index (LSCI) | Global Infrastructure Connectivity Alliance (gica.global).

Due to the relevance that the Shipping Industry plays in the global economy, as well as the remarkable role that Spain holds, this study is focused on Spanish ports, including in 'Puertos del Estado' (Puertos del Estado, s.f.): a Spanish public body, part of the 'Ministerio de Transportes, Movilidad y Agenda Urbana', divided into 28 port authorities managing 46 ports. Its activity represents 1.1% of the Spanish GDP, creating 35,000 direct and 110,000 indirect jobs (Ministerio de Transportes, Movilidad y Agenda Urbana, s.f.).

Within this public body, the organisation selected for this work was one of those 28 'Puertos del Estado' port authorities: the Port Authority of Cartagena (APC) (Autoridad Portuaria de Cartagena, s.f.).

The main reasons to choose the APC as the company to be studied are: first, it was the most profitable port in the Spanish Port System in 2020, 2019, and 2018; second, it was the leader in foreign trade traffic in the Spanish Port System in 2020: leader in terms of bulk transport, with more than 32.9 million tons, and leader in total import and export goods, with a trading volume of 29.7 million tons; and third, it is the fourth largest Spanish Port, with 32.7 million tons (Autoridad Portuaria de Cartagena, 2020a; Puertos del Estado, 2020).

Studying the implementation of an SBSC in the APC covers the above-mentioned scholarly community's demand for more case studies focused on the BSC/SBSC in government units. However, how does this study contribute to fulfil this gap and to what extent can it provide helpful knowledge to increase the BSC/SBSC insight? Additionally, how can this research help other port managers in their sustainable strategy implementation process using a BSC/SBSC?

The research provides a new vision of the BSC in studying how a company evolves over years from setting out a strategy to real-time implementation using a BSC. This study focuses on when the APC decided to perform this step and on the first steps of the BSC definition and implementation, where no previous literature has covered it, providing original and helpful information about this process in a government unit.

As previously stated, several authors have confirmed the usefulness of the BSC for implementing a strategy, particularly a 'sustainable' strategy, whilst using different approaches on how to develop it. The term sustainable strategy can be considered when sustainable actions are included in the strategy in its broader meaning: sustainable in business, sustainable with the environment, and sustainable with the community (Di Vaio & Varriale, 2018).

Although the criterion applied to select the APC as the company to be studied was based on the former, the research also analyses the other two dimensions of the sustainability concept. In particular, the research sets out how the different actions adopted in both fields help reach the desired outcomes and how these actions are measured, confirming the APC's commitment to the local and regional community.

The reasons why environmental and social issues are relevant in any port activity is evident. First, because the 'place' in which this activity takes place is the water and, having responsibility for the area assigned—the port and its surroundings—the port authority must preserve it and all life forms therein, providing all means and policies available to do so. Second, because the goods managed can carry a high risk source of contamination for the local environment, especially

in ports located in the heart of the city. And third, because its activity directly impacts on the local community, regarding the direct and indirect employment generated and the possible environmental consequences due to its activity.

The leadership by the upper management responsible for the BSC, combined with the creation of the new Strategy Planning Office, the support of a strategy-specialised external consultancy practice and specific IT solutions applied, have been key to its successful implementation. These outcomes can serve as a reference for other managers, not only for government units but also for any other industry.

This paper is divided into seven sections. After this first, evidencing the lack of knowledge to be covered by this paper, a literature review is displayed in the second. The Section 3 describes the methodology used to carry out this research, detailing how the data was collected. Section 4 describes the entire SBSC implementation process carried out by the APC. Sustainability in the APC's SBSC is detailed in the Section 5. The Section 6 includes a discussion of the findings as set out. Finally, the Section 7 details the conclusions reached, and discusses bias and channels for future research.

2 | LITERATURE REVIEW

Several works have highlighted the relevant role that sustainability is playing in many companies over the last years (Asgari et al., 2015; Cheon, 2017; Duarte Alonso, 2010; Hansen & Schaltegger, 2012; Khalid et al., 2019; Lozano et al., 2019), interpreting sustainability as the incorporation of environmental and social aspects—but always taking into account that, as stated in the previous section, sustainability is a concept that includes three dimensions: sustainability in business, with the environment, and in the community (Di Vaio & Varriale, 2018).

2.1 | Sustainability and the BSC

The study of integrating the sustainability concept into the BSC structure and the debate regarding if it is or is not useful for this purpose started in its early stages (Epstein & Wisner, 2001), when it was not yet entirely developed by Kaplan and Norton: although the first approach to 'strategy maps' was released in 2000 (Kaplan & Norton, 2000), it was not until 2004 when this concept was developed in book format (Kaplan & Norton, 2004); the 'Office of Strategy Management' was published in 2005 (Kaplan & Norton, 2005); the development of the 'Management System' concept was published in 2008 (Kaplan & Norton, 2008a); and the additional two books that complete the BSC's five-book-set, were published in 2006 and 2008: 'Alignment: Using the Balanced Scorecard to Create Corporate Synergies' (Kaplan & Norton, 2006), and 'Execution Premium: Linking Strategy to Operations for Competitive Advantage' (Kaplan & Norton, 2008b).

Figge et al. (2002) carried out the first comprehensive approach to this integration when little literature was available due to the novelty and lack of experience in this field.

Since then, the scholarly community has shown a genuine interest in progressing this issue, resulting in many articles being published and reviewed over the past years. This work has borne fruit, reaching a broad consensus when confirming that the BSC is a valuable management tool in helping companies in the development and implementation of their sustainable strategies (Butler et al., 2011; de Villiers et al., 2016; Epstein & Wisner, 2001; Ferreira da Cruz & Cunha Marques, 2014; Figge et al., 2002; Hansen & Schaltegger, 2012, 2016; Huang et al., 2014; Jong Na et al., 2020; Journeault, 2016; Kang et al., 2015; Kaplan & Reisen de Pinho, 2008; Khalid et al., 2019; Länsiluoto & Järvenpää, 2010; León-Soriano et al., 2010; Lu et al., 2018; Mio et al., 2021; Modell, 2012; Raut et al., 2017; Trisyulianti et al., 2022).

The key role that this issue is playing in the academic community, as well as satisfying the demand that both society and governments are claiming in this regard over the years, was confirmed by Suárez-Gargallo and Zaragoza-Sáez (2023): when analysing 'Web of Science Categories' within 'Quantity or activity indicators', 68 articles from a sample of 771 were identified belonging to 'Environmental Sciences' (41) and 'Green Sustainable Science Technology' (27).

On the other hand, the literature review reveals the different ways that the scholars have been using to name or refer to this new concept or 'evolution' of the BSC, when sustainable measures are part of it: 'Sustainability Balanced Scorecard', as the most common term (Epstein & Wisner, 2001; Falle et al., 2016; Figge et al., 2002; Hansen & Schaltegger, 2016; Hristov et al., 2019; Huang et al., 2014; Jong Na et al., 2020; Journeault, 2016; Kang et al., 2015; Kaplan & Reisen de Pinho, 2008; Lu et al., 2018; Mio et al., 2021); 'Sustainable Balanced Scorecard' (Kalender & Vayvay, 2016; León-Soriano et al., 2010); or solely 'Balanced Scorecard', without incorporating any additional words (Butler et al., 2011; da Silva Neiva et al., 2021; de Villiers et al., 2016; Kaplan & McMillan, 2020; Kaplan & Miyake, 2010; Khalid et al., 2019; Länsiluoto & Järvenpää, 2010; Modell, 2012; Raut et al., 2017).

How sustainable strategies and their measures can be incorporated into the BSC framework is part of another internal debate within the scholarly community. Yet Kaplan and Norton, at the inception of the BSC, stated that the four-perspective framework was not a straight-jacket but a template, paving the way for the possibility of fewer or more perspectives as needed, 'depending on industry circumstances and a business unit's strategy' (Kaplan & Norton, 1996, p. 34). From this statement, the literature review also reveals that different approaches have been set out over the years.

First, integrating sustainable measures throughout the four perspectives as part of their own BSC (Butler et al., 2011; de Villiers et al., 2016; Falle et al., 2016; Hansen & Schaltegger, 2012; Mendes et al., 2014; Nicoletti Junior et al., 2018; Raut et al., 2017; Suárez-Gargallo & Zaragoza-Sáez, 2021), following Kaplan and Norton criterion, as such measures 'should not be appended to the Scorecard via an isolated set of measures' (Kaplan & Norton, 2002, pp. 7–8).

Second, adding a fifth perspective into the 'traditional' BSC framework to incorporate the environmental and social dimensions, although under different terms according to the specific requirements

of every company: 'Sustainability' (Epstein & Wisner, 2001), 'Non-Market' (Figge et al., 2002; Kang et al., 2015), dividing 'Learning and growth' into 'Human Resources' and 'Environmental and social' (Kaplan & Reisen de Pinho, 2008), 'Governance' (Ferreira da Cruz & Cunha Marques, 2014), 'Environmental and Social' (Kalender & Vayvay, 2016; Lu et al., 2018), 'Environmental' (Khalid et al., 2019), 'Critical' (Hristov et al., 2019), and 'Corporate Social Responsibility' (Jong Na et al., 2020); or even a sixth, separating 'Environmental' and 'Social', as part of the 'Fifth Pillar' of the BSC, both integrated with 'Financial' following the TBL concept (Ghannadpour et al., 2020). This criterion was initially proposed by Epstein and Wisner (2001), although Figge et al. (2002) who developed it in detail considered that the BSC framework 'reflects the market system only' (Figge et al., 2002, p. 274), therefore making it necessary to incorporate this fifth perspective. Due to the nature of this new perspective, they identified it as a 'non-market', 'in order to integrate strategically relevant but not market-integrated environmental and social aspects' (Figge et al., 2002, p. 274). However, they proposed two conditions to justify this incorporation: first, environmental and social dimensions needed to be strategically relevant; and second, where it was not possible to include them in the BSC's four-perspective scheme.

Third, reduction of the BSC framework to three perspectives: León-Soriano et al. (2010) propose a model with three perspectives called 'Sustainability', 'Stakeholders' and 'Structure', linked together by causal relationships—maintaining the nature of the BSC internal links. 'Sustainability' grouped the three dimensions of the Triple Bottom Line (TBL) concept (Elkington, 1997): financial, environmental, and social. 'Stakeholders' includes: clients, workers, shareholders, suppliers, government, NGOs, and others. And 'Structure' where both tangible and intangible assets were collected: financial resources, physical resources, products, technology and knowledge.

Fourth, creating a parallel BSC identified as 'Sustainable BSC' (Huang et al., 2014). As previously stated, although 'Sustainable Balanced Scorecard' is a term employed 'when sustainable strategies or measures are included in the BSC whatever the way it takes place' (Suárez-Gargallo & Zaragoza-Sáez, 2022, p. 24), it should not be confused with this 'parallel Sustainable BSC' concept.

Fifth, set out by da Silva Neiva et al. (2021), who proposed a template for the particular case of 'sustainable cities' with four perspectives named: 'Social dimension', 'Environmental dimension', 'Urban infrastructures dimension' and 'Economic and financial Sustainability'.

Finally the sixth, stated by Journeault (2016), where a new concept named 'Integrated Scorecard' was proposed as an evolution of the SBSC with four perspectives: 'Sustainability Performance', 'External Stakeholders', 'Internal Business Processes', and 'Skills and Capabilities'. It was developed to create 'a more complete a comprehensive scorecard framework' (Journeault, 2016, p. 227), providing 'useful insight into how the environmental and social aspects may provide a competitive advantage and contribute to the economic performance of firms' (Journeault, 2016, p. 227). Although the identification of the perspectives differs from Kaplan and Norton's scheme, it is clear that they maintain the same sentiments, being more of a perspective renaming rather than a substantial change.

2.2 | Sustainability BSC in ports

Although nowadays, the BSC is in use worldwide (Madsen & Stenheim, 2015; Otheitis & Kunc, 2015), the existing literature regarding its presence in port activity is still under consideration, and few works have tackled this issue. Asgari et al. (2015) remarked on the transcendence role that sustainability plays today in port activities, although their study focused on the analysis of two of its three dimensions in the UK port industry: financial and environmental.

In August 2021, a preliminary Internet search was carried out to get a first approach to the existing literature about both the BSC and the SBSC in ports and in ports authorities, with the results included in Table 1.

All the articles are related to using the BSC as a tool for measuring and improving the port's competitive advantage; and three specifically focused on container terminals.

In order to provide a more complete literature review for this study, another search was carried out on 11th April 2022, using the 'Web of Science Core Collection' database as our source, this being considered the most suitable for Social Science issues (de Sousa et al., 2020; Di Stefano et al., 2010; Di Vaio & Varriale, 2018; Dzikowski, 2018; García-Lillo et al., 2016; Rialti et al., 2019). Two parameters were taken into consideration to conduct the search: the filters applied were the words 'BSC*' or 'Balanced Scorecard*' combined with 'Port*', 'Port* Authority' and 'Port*Authorities' in 'Title'; and, in order to search over as wide a period as possible, the dates were taken from 1992 when the article 'The Balanced Scorecard. Measures that Drive Performance' (Kaplan & Norton, 1992) was published until the day of the search. No filters regarding authors, languages, countries, or institutions were applied in order to obtain the broadest range of works possible on this issue. 2359 references were obtained.

Owing to the size of the sample obtained, two additional filters were applied focused on our issue. First, in 'Document Types', the filter 'Articles' was applied according to the 'certified knowledge' criterion to guarantee the quality of the articles had been peer-reviewed (Callón et al., 1993; de Sousa et al., 2020; García-Lillo et al., 2016; Ramos-Rodríguez & Ruíz-Navarro, 2004); 1404 references were obtained. And second, in 'Web of Science Categories', the following filters were applied: 'Management' (41), 'Business' (16), 'Economics' (8), 'Engineering Industrial' (6), 'Business Finance' (5), 'Public Administration' (4), and 'Engineering Civil' (1); 81 references were obtained.

From this sample, several articles were identified as not being relevant for our purpose. So, an additional revision was needed to 'clean' the sample, with a final result of only one article.

Arising from this result, a similar search was performed on the same day but using the 'Scopus' database. Applying the same criteria over the same period, the words used in the search for 'Title' and in the filter by 'Articles' four articles were obtained. However, on review none of them were valid for this study.

Therefore, a further search was carried out, changing the database source again: in this case, 'ProQuest' was used. After applying the same criterion as used in the first filters, 3495 references were

TABLE 1 BSC literature review focused on ports.

Year	Article	Authors	Review	ISSN
2013	An analysis of Role of Dry Ports on Development of Container Transit from the Iranian South Ports by Balanced Scorecard Method	Haghighi, M.; Hassangholi Pour, T.; Yousefi, H.	International Journal of Maritime Technology	2476-5333
2013	Integrating the Balanced Scorecard and PROM ETHEE Methods for Seaport's Performance Evaluation	Jafari, Hassan; Esmaeildoust, Mohammad	American Journal of Marine Science	
2015	The Role of Balanced Score Card as a Strategic Management Tool at Kenya Ports Authority, Mombasa, Kenya	Musyoki, Racheal	International Journal of Scientific and Research Publications	2250-3153
2016	Proposed Model to Port Facility Security Management and Performance Measurement	Abdel Fattah, Mohamed; Hassabou, Maged	International Journal of Applied and Natural Sciences	2319-4022
2021	The Impact of Knowledge Management on Institutional Performance through the Balanced Scorecard—An Applied Study on Ports Training Institution	Mustafa, Rania; Wahaba, Mohamed; El-Gharabawi, Alaa; Ragheb, Mohamed A.	Open Access Library Journal	2333-9721

TABLE 2 BSC literature review focused on ports, using 'ProQuest' database as source.

Year	Title	Authors	Review	ISSN
2013	Estudo sobre a implantação do orçamento baseado em desempenho na Autoridade Portuária de Valência	Rogério, João Lunkes; Ripoll-Feliu, Vicente; Giner-Fillol, Arturo; Silva da Rosa, Fabricia	Revista de Administração Pública	0034-7612
2014	Public–private partnerships for the development of port hinterlands and their ramifications for global supply chain management	Min, Hokey; Jun, Chan-Young	Maritime Economics & Logistics	1479-294X
2015	Performance measurement adoption and business performance. An exploratory study in the shipping industry	Otheitis, Nikolaos; Kunc, Martin	Management Decision	0025-1747
2018	Factor analysis for balanced scorecard as measuring competitive advantage of infrastructure assets of owned state ports in Indonesia. Pelindo IV, Makassar, Indonesia	Hamid, Nurdjanah	International Journal of Law and Management	1754-243X
2018	Management Innovation for Environmental Sustainability in Seaports: Managerial Accounting Instruments and Training for Competitive Green Ports beyond the Regulations	Di Vaio, Assunta; Varriale, Luisa	Sustainability	2071-1050
2018	Use balanced scorecard for measuring competitive advantage of infrastructure assets of state-owned ports in Indonesia. Pelindo IV, Makassar, Indonesia	Hamid, Nurdjanah	Journal of Management Development	0262-1711

obtained. When 'Articles' was applied as an additional filter, 404 references were obtained. From this sample, 'Scientific Reviews' as 'Type of source' was applied, and a sample of 397 references was returned. The sample was 'cleaned' as before to exclude other issues unrelated to this study's aim, and a final sample of six articles was elicited detailed in Table 2.

In the first article, the BSC is mentioned four times but only to indicate its use as a mechanism to apply the strategy internally.

Min and Jun's article (2014) focused on Public-Private Partnerships (PPP) for the development of port hinterlands, noting that Performance Management Systems (PMSs) were used to integrate the relationship between the all stakeholders involved, suggesting the BSC as the best option.

In the third article, Otheitis and Kunc (2015) conducted a study based on implementing Performance Measurement Systems (PMSs) in the Shipping Industry, the BSC being one of them. With an initial

sample of 100 companies and a final one of 41 usable questionnaires from 13 countries, only four had implemented a BSC: a poor figure, which suggests the authors concluding that PMSs implemented are mainly focused on operational matters rather than strategic ones. At the same time, and according to the authors, PMSs are generally perceived by shipping-company managers 'as impositions rather than tools to improve business performance' (Otheitis & Kunc, 2015, p. 150); which complements previous works, where managers interviewed considered the BSC as a 'fashion concept' (Kraus & Lind, 2010). However, on the other hand, the authors remark in 'Conclusions' that 'early adopters of PMSs are today among the leaders in the industry' (Otheitis & Kunc, 2015, p. 151), which stresses the convenience of implementing such management solutions—BSC included.

Hamid's paper (2018) is a descriptive and exploratory qualitative case study which addresses by analysing the 'effectiveness of BSC over the strategic management process' (Hamid, 2018, p. 386), using the study of the factor analysis for BSC. 'Pelabuhan Indonesia (Pelindo)' PELINDO (Pelindo, n.d.) was founded in October 2021, as a result of the amalgamation of four State-owned Enterprises (BUMN), where the study was carried out in one of them: PT Pelindo IV (Persero), which manages 28 ports spread out across central and eastern Indonesia.

The study concludes that 81.2% of the competitive advantage depends on the four BSC perspectives, 'Learning and Growth' being the most powerful. They also conclude that 'using BSC concept improves the execution of strategic management processes, particularly with regard to clarification and strategy description, communication of strategy to the BU, organisational alignment and monitoring of objectives and strategic learning' (Hamid, 2018, p. 398). However, its use does not guarantee its success.

In the fifth article, Di Vaio and Varriale (2018), after a review of the different regulations focused on a sustainable Sea-Port Industry carried out in the most relevant European countries who applied environmental policies (Spain, United Kingdom, France, Netherlands, and Germany), covering the period from 1997 to 2017, found a gap in these regulations identifying management mechanisms in the development of such regulations. To do so, they propose two lines of action: the use of management accounting tools such as the BSC and the Tableau de Bord; and the implementation of training systems designed to create a global sustainable outlook among the people involved in this industry.

The sixth has been rejected: upon reading, the authors noticed that the majority of the article had been copied from his previously cited article (Hamid, 2018).

Finally, in a recent search on 20th February 2023, the works of Lim et al. (2019) and Mio et al. (2021) were analysed.

In the former, although the BSC is not mentioned, the research addressed the identification of the most accurate indicators to implement a successful sustainable performance measurement system (PMS) in its broader context: economic, environmental, and social dimensions; therefore, being the BSC a PMS, their study can be applied to this current one. On the other hand, this literature review presents interesting conclusions for sustainability policies in ports, especially as it identifies the most frequent environmental and social indicators that can be used as a reference for any port in its sustainability strategies. However, bias identified in this work must be considered for this purpose: the study is exclusively focused on container ports, and so environmental and social risk derived from another types of goods managed are not contemplated—such as general cargo, bulk carriers, tankers, or livestock. A situation that makes those indicators not necessarily or at least partially valid for these ports, as in the case of the APC.

In the latter, the authors concluded that the SBSC was demonstrated as useful 'for integrating sustainability within the overall corporate strategy and increasing sustainability performance' (Mio et al., 2021, p. 377), as well as confirming that there was no prevalence in applying any of the different approaches stated by Figge et al. (2002). Additionally, from this work, several articles were reviewed and deemed relevant to this research, including their conclusions in this section: Epstein and Wisner (2001), Länsiluoto and Järvenpää (2010), León-Soriano et al. (2010), Kang et al. (2015), de Villiers et al. (2016), Journeault (2016), Raut et al. (2017), and Lu et al. (2018).

From the above, the remarkable consensus within the scholarly community confirms the usefulness of the BSC in assisting the implementation of sustainability strategies, although under various terms and approaches. Most importantly: this consensus has been maintained over the years, from its inception to the latest works, consolidating the consensus reached.

However, when analysing the SBSC implementation applied to ports, as a notable sector of activity and specifically when acting as government units, the literature review reaps poor results. Apart from the lack of articles found, several of them were rejected for not providing enough relevant information about the subject of this research, although some of them do contribute interesting issues about the BSC. However, none are focused either on describing the BSC implementation process within a specific entity such as a port authority or directly regarding the concept of SBCS. Therefore, an opportunity to fulfil this gap and increase its insight has opened, justifying the focus of this research.

It is here where we consider that this work fits and can provide insight to enrich this field: a case study focused on the SBSC implementation in the Port Authority of Cartagena, to ratify the BSC as a useful tool in implementing sustainability strategies as well as contributing to cover the existing gap in the literature review regarding this issue in government ports. In providing answers to these two questions, the research adds value to this issue as the BSC's usefulness for this purpose is confirmed, and our contribution to the gap in the literature is fulfilled.

3 | METHODOLOGY

As stated in Section 1, to increase and improve the knowledge of how the BSC/SBSC is implemented in companies, the scholarly community has claimed and maintained over the past years the need to delve deeper into it, and specifically, by using the case-study methodology,

both in the private sector (Agostino & Arnaboldi, 2012; Antonsen, 2014; Brudan, 2005; de Villiers et al., 2016; Glykas, 2013; Hansen & Mouritsen, 2005; Hristov et al., 2019; Länsiluoto & Järvenpää, 2010; Malmi, 2001; Rodrigues Quesado et al., 2014; Suárez-Gargallo & Zaragoza-Sáez, 2021; Wu, 2012), as well as in the public sector (Hamid, 2018; Khalid et al., 2019; Modell, 2012).

Consensus among scholars has remarked on the important role of this methodology in social sciences (Ylikoski & Zahle, 2019) and in management (Gibbert et al., 2008), as it provides 'rich, empirical descriptions of particular instances of a phenomenon' (Eisenhardt & Graebner, 2007, p. 25). Specifically applied to the study of the BSC/SBSC implementation, it is considered 'a powerful tool for in-depth exploration of practices in use' (Agostino & Arnaboldi, 2012, p. 331), as 'it provides a good understanding and content theorization of the processes and context in which the practices of management control take place' (Hamid, 2018, p. 392).

Following the criterion stated by Gibbert et al. (2008) and Gibbert and Ruigrok (2010), a triangulation of different data sources was adopted by using: open-access documents available on several websites and semi-structured interviews. The former was provided by annual reports, strategic plans and other sorts of documents available in the APC, 'Puertos del Estado', 'Plataforma de Objetivos de Desarrollo Sostenible (PODS)', external strategy consultants and other local association websites described in the coming sections (de Villiers et al., 2016; Hamid, 2018; Länsiluoto & Järvenpää, 2010); particularly for this research, the APC's annual sustainability reports were key to providing proof about how environmental and social dimensions have been included into the APC's strategies, strategic maps and, eventually in its BSC/SBSC (Khalid et al., 2019).

Regarding the latter, the personal semi-structured interview methodology was selected as the best method to gather useful information, according to several authors (Agostino & Arnaboldi, 2012; Bobe et al., 2017; Costa Oliveira et al., 2020; de Villiers et al., 2016; Hamid, 2018; Khalid et al., 2019; Länsiluoto & Järvenpää, 2010; Lueg & Carvalho e Silva, 2021; Modell, 2012; Murillo Pérez, 2020; Ndevu & Muller, 2018; Wu & Hua, 2018), rather than completing a questionnaire or a survey (Abdelraheem & Hussien, 2022; Alves & Lourenço, 2022; Hristov et al., 2019; Lin, 2022). This is because interviews are considered: 'a highly efficient way to gather rich, empirical data' (Eisenhardt & Graebner, 2007, p. 28); 'the most suitable method to provide answers to the research questions at this early stage of BSC diffusion' (Malmi, 2001, p. 209); and the best option 'to guarantee data quality' (Malmi & Brown, 2008, p. 298), and 'to obtain a deep-understanding' (Hoque, 2014, p. 39).

In this particular case, these interviews provided vital information to understand how the BSC/SBSC was introduced and the reasons for any amendments and modifications in its implementation/development process.

On the other hand, to avoid bias in the data collection, interviews should preferably be conducted an upper management level (de Villiers et al., 2016; Lueg & Carvalho e Silva, 2021; Wu & Chen, 2014; Wu & Hua, 2018), to gather the most accurate information.

The first contact took place in 2021 via phone conversations with the Innovation Division manager, who provided a general view of the APC interest in previous years in developing its strategy and in its implementation. From these conversations, a personal interview with a member of APC's staff took place in July 2021: an IT developer who provided detailed information about the different scorecards developed within the APC for several areas, divisions, departments, and units, as a direct consequence of the acquisition and implementation in 2020 of a 'Data Warehouse' (Autoridad Portuaria de Cartagena, 2019a). Although this interview could be considered contrary to the criterion adopted to maintain such interviews at the top level, we considered it particularly relevant to learn first-hand about the real implementation of the strategy, and because the 'additional benefits would be the increase in the diversity of data sources from multiple informants' (Wu & Chen, 2014, p. 88).

From this first approach, and as the strategy and its implementation directly depended on the Planning and Management Department, a first meeting took place on 15th September 2021 with its manager together with the Strategic Planning manager—who is in charge of the BSC/SBSC. From this meeting, direct contact with the latter was established, and several interviews, both personal and phone, took place between 2021 and 2023—12 interviews, lasting between 16' to 85' in total, none recorded. During this period several emails were also exchanged.

The number of interviews, their duration, and why there have been difficulties in their execution and planning, were a result of two factors. First, the phase in which the APC's BSC/SBSC was engaged, which was in its first steps and the bulk of the work was concentrated on two people, the Planning and Management Department and the Strategic Planning managers; and second, as a direct consequence of the former, these two managers were and are overworked, and are making a significant effort in developing this tool, in close collaboration with external consultants and redefining internal processes with other managers.

According to the five 'variety of ways' to carry out a case study described by Scapens (1990), ours identifies with the 'Exploratory case study'. This is because our goal is to describe and 'explain the particular circumstances of the case' and, from there, try to 'generate theories capable of explaining all the observations which have been made' (Scapens, 1990, p. 270). This goes along with previous works specifically focused on the study of the BSC implementation, which have selected the exploratory study using a qualitative approach (Agostino & Arnaboldi, 2012; de Villiers et al., 2016; Duarte Alonso, 2010; Hamid, 2018; Hoque, 2014; Khalid et al., 2019; Länsiluoto & Järvenpää, 2010; Modell, 2012; Rodrigues Quesado et al., 2014; Suárez-Gargallo & Zaragoza-Sáez, 2021), considering it 'the most suitable research method' (Agostino & Arnaboldi, 2012, p. 331).

4 | INTRODUCING THE SUSTAINABILITY BALANCED SCORECARD

The first 'Ports System Strategic Plan' was approved in 1998, and the second in 2019 which took into consideration for the first time the entire maritime agency (Puertos del Estado, 2019). During this period, every port authority was free to define and develop its own strategy,

TABLE 3 Strategy axes and perspectives' performance indicators evolution.

Year	Strategic axes	Economic and social	Clients and environment	Processes	Resources
2020	4	3	6	8	4
2019	3	4	8	6	3
2018	3	4	10	9	4
2017	5	4	9	10	4
2016	5	4	9	10	4
2015	5	4	9	10	4
2014	5	4	9	10	4

Source: Elaborated by the authors from 'Memorias Anuales' [Memorias anuales, Autoridad Portuaria de Cartagena (DOCUMENTACION (apc.es))].

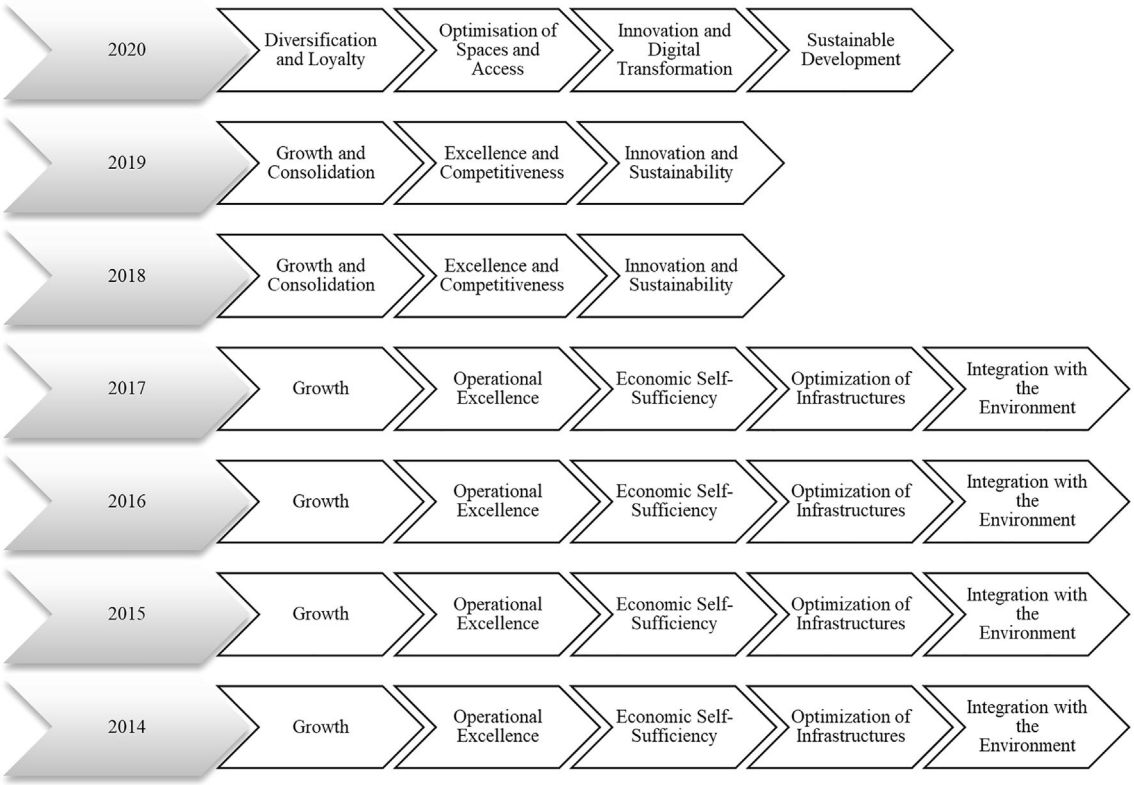

FIGURE 1 Strategic axes evolution from 2014 to 2020. *Source*: Elaborated by the authors from 'Memorias Anuales' [Memorias anuales, Autoridad Portuaria de Cartagena (DOCUMENTACION (apc.es))].

although always respecting the guidelines established by 'Puertos del Estado'.

In this context, the APC started a process in which its strategy was continually evolving there by maintaining the concept of being something 'alive' (Brudan, 2005; Kaplan & Norton, 1996), especially during the last 7 years where the strategic axes and the performance measures defined within the four perspectives presented several changes or adaptations—see Table 3.

Figure 1 shows the strategic axes evolution over the past 7 years, in which the number of axes and their identification have changed (Autoridad Portuaria de Cartagena, 2014b, 2015, 2016, 2017b, 2018b, 2019b, 2020a).

2018–2019 marked a turning point when the five axes were summarised to three, summarising the essence of the strategy, and for the first time 'Innovation' and 'Sustainability' appeared together at this level. In 2020, a new change was introduced, separating the latter two, the APC acknowledging their important role.

These strategic axes, as well as the strategy maps, had been established for years by the General Management. In 2018 several changes were introduced and, since then, the axes and strategy maps are defined by the manager's team.

4.1 | First approach

However, all these strategic axes and the performance measures spread out within the four perspectives of their respective strategy maps were just strategy maps: a clear visual representation of the

APC's strategy, but they did not have much of a track record. In fact, the BSC was neither implemented nor considered necessary at that point.

Nevertheless in 2018, things changed when the Planning and Management Department manager championed two projects: first, a deep revision of the 'Strategic Plan', supported by external advice; and second, the creation of a new team position: the Strategic Planning Office.

In May 2018, a bid for a public contract for a new revision of the 'Strategic Plan' (Plataforma de Contratación del Sector Público, 2019a) was released under the title of 'Strategic Plan 2020–2025' (Autoridad Portuaria de Cartagena, 2018a), focused on aligning the strategic goals to the budget. The bid document was devised and written by the Planning and Management Department manager.

The firm awarded the contract was the consulting practice 'Ocean Capital Partners', and the work carried out can be summarised as stated on its website. First, 'Revision and redefinition of Mission, Vision and Values, value proposition and change management agenda in order to reflect the high strategic aspirations of Cartagena Port. Second, analysis and diagnostic of the current situation: definition of actual strategic positioning, a market study of Cartagena Port hinterland and foreland, benchmarking with main competitors about traffics, infrastructures, access, services, strategies, and so forth; Diagnosis of Port Authority management model, leadership, organisational and human resources culture, innovation and digitalization capacity, financial capacity, and port value chain; PESTEL analysis of the environment: political, economic, social, technological, environmental, and legal factors impacting the competitiveness of the Port; and, SWOT and CAME analysis. And third, Strategic Plan definition and implementation: determination of strategic goals, strategic lines, strategy map using the BSC (Balanced Scorecard) methodology, KPIs and operational objectives; and, planning the deployment of the new strategy with the main actions to be implemented, personnel responsible and milestones. Definition of a Communication Plan: target audience, channel of communication and key messages.' (Ocean Capital Partners, 2018).

An advance of this work was published in the APC's 'Annual Report 2019' (Autoridad Portuaria de Cartagena, 2019b), in which the new strategy map, SWOT analysis, and operational objectives were included. The complete work was presented in September 2020, delayed due to problems in maintaining personal interviews caused by COVID-19, with the collaboration of the firm 'Coenable Advisors'—providing additional external support (Autoridad Portuaria de Cartagena, 2020b).

Additionally, the Strategic Planning Office was created to support the Planning and Management Department manager with the task of developing the APC's BSC. This office was the cornerstone to following a natural process after the design and adaptation of the different strategy maps over the last years: the development and implementation of their BSC. This scorecard was initially set out as a BSC, but it was transformed into an SBSC shortly after its first iteration, due to the nature of the APC's strategy—as 'sustainability' is core to it and is inherent among the four perspectives. The Strategic Planning Office manager joined the APC in October 2018. Her two main responsibilities are: the development of the 'Business Plan', in collaboration with the Planning and Management Department manager; and managing the 'Oficina de Gestión Estratégica (OGE)' [Strategic Management Office], created in 2021 (Autoridad Portuaria de Cartagena, 2021c), where the SBSC resides.

As stated in the annual reports from 2014, the concept of sustainability is presented under different denominations in the strategic axes: 'Integration with the environment', from 2014 to 2017; 'Innovation and sustainability', from 2018 to 2019; 'Sustainable development', in 2020; and 'Positive impact on the community' in 2021.

For the first time, an SBSC is being built under the Strategic Planning Office, although it finds itself in the first stages of its implementation, due to the different adjustments and changes introduced in the organisation over the past 18 months. However, according to Speckbacher et al. classification (2003), the APC's SBSC can be considered as a Type III,[2] although a reward system linked to the SBSC is still pending but is expected to be implemented in 2023.

Furthermore, this SBSC maintains the four-perspective scheme of the BSC, integrating sustainable measures, following the same criterion as other scholars (Butler et al., 2011; de Villiers et al., 2016; Falle et al., 2016; Hansen & Schaltegger, 2012; Kaplan, 2002; Mendes et al., 2014; Nicoletti Junior et al., 2018; Raut et al., 2017; Suárez-Gargallo & Zaragoza-Sáez, 2021)—although it introduces certain changes to the perspectives-identification, adapted to the specific needs of the APC business, as shown in Table 4.

4.2 | Strategic Planning Office

As stated previously, the Strategic Planning Office was created in 2018, with the initial mission of managing the 'Business Plan' and the APC strategy, working in close collaboration with the Planning and Management Department manager. An interesting question is posed: is this office acting, in any way, as the 'Office of Strategy Management (OSM)' proposed by Kaplan and Norton (2005)?

To fully answer this question, two points should be analysed. The first is where this office is placed within the APC's organisational chart—displayed in Figure 2.

As shown in Figure 2, the Strategic Planning Office is part of the Planning and Management Department, which directly reports to General Management. According to Kaplan and Norton, we are facing a 'Panel C' positioning, two levels below and with no direct access to General Management, forcing that its 'tasks and processes must be filtered through the CFO or COO before reaching the attention of the CEO' (Kaplan & Norton, 2005, p. 10). However, the Strategic Planning Office manager declared in one of the interviews that she always has had direct access to the General Manager, in the absence of the

[2]Type III: PMS with a specific approach to measuring intangibles, and intangibles are identified and measured by non-financial strategic measures; specific approach to describe strategy by using a sequential cause-and-effect logic to link tangible and intangibles assets; and strategy implemented by defining objectives, action plans and results, and linking incentives to SBCS measures (Speckbacher et al., 2003).

TABLE 4 Evolution of the APC's SBSC perspectives from 2014 to 2020.

Year/perspective	Financial	Customer	Internal	Learning and growth
2020	Economic and Social	Clients and Environment	Processes	Resources
2019	Economy/Social	Clients	Processes	Resources
2018	Economy/Social	Clients	Processes	Resources
2017	Economy/Social	Clients	Processes	Resources
2016	Economy/Social	Clients	Processes	Resources
2015	Economy/Social	Clients	Processes	Resources
2014	Economics–Social	Customers	Procedures	Resources

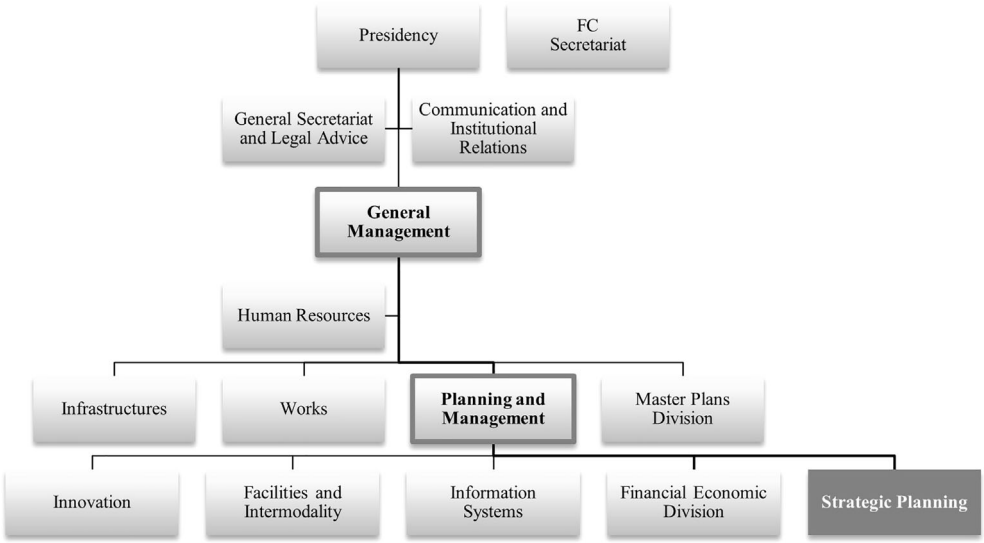

FIGURE 2 APC's organisational chart resumed. *Source*: Elaborated by the authors from APC's '2021–2025 Strategy Plan' (2021b).

Planning and Management Department manager; so, it can be affirmed that the positioning is in actuality a 'Panel B': a 'dual' relationship, two levels below but with direct access to General Management.

On the other hand, in accordance with the Spanish Public Servant system, it should be noted the different types of categories existing within this chart, according to their importance, which affects their internal relationships. First, 'Top Management': Presidency, and General Management; second, 'Area': Infrastructures, and Works; third, 'Section': Communication and Institutional Relations, and Master Plans Division; fourth, 'F.C. Secretariat'; and fifth, 'Department': General Secretariat and Legal Advice, Human Resources, Planning and Management, Facilities and Intermodality, and Information Systems. According to this scheme, Planning and Management, as a 'Department', is formally five levels in rank below the General Management, as 'Top Management'; and the Strategic Planning Office is not even taken into consideration, as it is not included in any of these categories.

In this situation, 'an OMS buried deep in a finance or planning department may find it difficult to command similar respect and attention from senior executives for strategy management priorities' (Kaplan & Norton, 2005, p. 10). However, most importantly, this puts at risk the key role of the BSC, as it can be 'viewed solely as a performance measurement system that drives operational improvements but is not positioned at the core of a strategy management system' (Kaplan & Norton, 2005, p. 10).

Nevertheless and contrary to this formal criterion, the Planning and Management manager is in actuality considered and recognised as an 'Area', so avoiding all the above-mentioned constrictions and limitations—as being just below General Manager.

Eventually, it should be noted that General Management has permitted both Planning and Management and Strategic Planning managers the convenience to place the latter with direct access to General Management within the organisational chart, thereby establishing a 'sole' relationship and so transforming its positioning into a 'Panel A' (Kaplan & Norton, 2005)—although with no results so far.

The second question to be analysed is what activities the Strategic Planning Office delivers. This office was created in 2018 to develop and implement the 'Business Plan' and the APC strategy; but in 2021, another duty was added to it, with the creation of the 'Oficina de Gestión Estratégica (OGE) [Strategic Management Office]' (Autoridad Portuaria de Cartagena, 2021c): 'es la unidad de la organización destinada a ejecutar y coordinar la estrategia, siendo su principal responsabilidad la supervision y administración del Plan Estratégico. [This is the unit of the organisation allocated to execute and coordinate the strategy, with its main responsibility being the supervision and management of the Strategic Plan]' (Autoridad Portuaria de Cartagena, 2020b, pág. 11).

TABLE 5 Strategic management process: Kaplan and Norton's OSM versus APC's OGE.

Role	Kaplan–Norton's OSM	APC's OGE	OGE objectives
Core	Scorecard management	Contribute to develop the strategy	Leading the annual process of revision and actualisation of the strategy, as well as coordinate the elaboration of new strategic plans—when required
	Organisation alignment	Organisation alignment	Assure that all departments and their staff were aligned with the defined strategy
	Strategy reviews	Elaborate Strategic reports	Develop the strategic reports, and their distribution to the strategic committees
Desirable	Strategy planning	Coordinate Strategic Committees	Coordinate the committees' organisation by supporting their meetings and providing the information needed
	Strategy communication	Strategy communication	Coordinate the strategy internal policy communication, as well the training in strategic matters
	Initiative management	Supervise the execution of operational goals and initiatives	Supervise the operational objectives development and their strategy projects linked
Integrative	Planning and budgeting	Budget alignment	Assure that the budget reflects in a coherent way the strategic priorities, and that those operational objectives and projects with higher strategic impact were developed
	Workforce alignment	-	-
	Best practice sharing	Best practice sharing	Continuous improvement in assuring best practices for the APC through markets studies

When looking at the name of this new office, it is easy to identify it with Kaplan and Norton's OSM (2005); therefore, a comparison between the objectives defined by the authors for both offices is needed—displayed in Table 5.

When comparing the OGE responsibilities with the OSM, a parallel is noted between the two and the conclusion is that the former has been developed following the criteria stated in the latter.

Regarding the managers responsible and implicated in the 'budget' process, comparing OSM versus OGE, the former includes CFO, HRO, CIO, and CMO,[3] while the latter develops three different budgets, with three different sets of participants: 'Expenses Budget', which includes: Strategic Planning, Infrastructures, Works, Planning and Management, Innovation, Facilities and Intermodality, Information Systems, Financial Economic Division, FC Secretariat, Communication and Institutional Relations, Human Resources, Sustainability, Business Development, and Audit Coordinator—a General Management staff, not included in the 'formal' organisational chart; 'Revenue Budget', which includes: Strategic Planning, and Works; and, 'Investments Budget', involving only one department: Infrastructures.

With regard to the staff, the OGE has currently one manager, although the internal document sets out the inclusion of two-three additional members (Autoridad Portuaria de Cartagena, 2021c), expected to be in post in 2023—far from the ideal approach of Kaplan and Norton, with six to eight 'full-time-equivalent (FTE)' staff (Kaplan & Norton, 2005), although it seems obvious that such numbers of staff should be adapted to individual company's needs and size.

After this analysis, and answering the question previously stated, it is clear that the Strategic Planning Office has delivered and acted according to the OSM model proposed by Kaplan and Norton (2005), following the recommendations stated by the consulting practice 'Ocean Capital Partners' in 2018 (Ocean Capital Partners, 2018).

4.2.1 | Business Plan

Apart from managing the OGE, the Strategic Planning Office is responsible for the development of the 'Business Plan', in collaboration with the Planning and Management Department manager—although before 2018, this plan was defined by the manager's team.

The 'Business Plan' covers a 5-year-period, although a formal monitoring meeting takes place every year between the Chairman of 'Puertos del Estado' and the Chairwoman of the APC, agreeing and formalising this business plan, including: a SWOT analysis, traffic expectations, investments, environmental and social issues, and so forth, as well as the operational objectives defined by 'Puertos del Estado'.

Regarding the SWOT analysis, every year the APC organises a workshop in which its main clients and several local agents involved in the port activity—town council, the Spanish Navy, the shipyard Navantia, shipping agents, and so forth—are invited to provide and discuss their points of view before reaching an agreement. The results are later presented at a meeting.

4.2.2 | Strategic Plan

In September 2020, 'Ocean Capital Partners' and 'Coenable Advisors' presented the 'Strategic Plan 2020–2025' (Autoridad Portuaria de Cartagena, 2020b), in which a new configuration to develop the strategy was proposed: the creation of six strategic committees, with the

[3]CFO: Chief Financial Officer; HRO: Human Resource Officer; CIO: Chief Information Officer; CMO: Chief Marketing Officer.

'General Strategic Committee' leading the process, and five more focused on monitoring the strategy, regarding their fields—'Diversification and Loyalty', 'Spaces and Access Optimisation', 'Innovation and Digital Transformation', 'Sustainable Development', and 'Organisational Development'. These committees were created in May 2021, with the Strategic Planning Office manager acting as liaison between the top managers.

One year later, in September 2021, a revised plan was presented, reducing to five the strategic committees: 'General Strategic Committee'; and, 'Business Sustainability', 'Competitiveness based on Innovation', 'Positive Impact', and 'Advance Management' (Autoridad Portuaria de Cartagena, 2021b).

However, and later in 2021, Planning and Management Department and Strategic Planning Office managers noticed that this structure of committees was not working as expected and proposed their change for another model: summits and quarterly meetings.

Two summits are held per year. The first takes place in the first half of February, at which the previous year annual closure and the new operational objectives for the current year are presented to the entire organisation. The second summit takes place in the first half of October, only for managers and focuses on a roundtable for strategic and operational objectives called 'Strategy Monitoring'; the entire data of each area/section/department is collected here and it will be presented at the February's summit.

It is precisely here where the BSC is developed: results from those objectives coming from the global strategy, every manager is responsible for their development with regard to their respective area/section/department, considering the corresponding cause-and-effect relationships which guarantees proper alignment to the APC strategy. Therefore, this development first takes place on a personal level: every manager holds periodic meetings with their teams to progress this work, being free to include and involve staff considered useful for this purpose, so providing the best possible measures/indicators and their respective ways to be measured and valued, to achieve the operational objectives assigned to their area/section/department.

Later, in the October summit, a roundtable discussion brings each area/section/department BSCs together, grouping together them into a sole but comprehensive BSC valid for the entire APC.

The first summit was held in April 2022 and the second was initially programmed to take place in November 2022. However, due to internal changes later in 2022, the latter and the 2023-February summits did not take place in the end. Currently, the summits are postponed as the APC's chairman and general manager positions are vacant, although they are expected to be filled after the regional elections in May 2023—both positions being political and designated by the regional government, according to articles 31 and 33 of the Spanish Royal Decree 2/2011 (Boletín Oficial del Estado, 2011).

To maintain a degree of normality, the management team will hold a monitoring meeting of the 'Business Plan', and this is expected to take place during the 19th week of 2023.

In addition to these summits, the Strategic Planning manager conducts individual quarterly meetings with every manager, as a periodic monitoring of their respective BSC, introducing the necessary adjustments to preserve the strategic alignment. These meetings, not only play a key role in the proper APC's BSC development but also to its revisions, helping to keep the strategy alive (Brudan, 2005; Kaplan & Norton, 1996).

The replacement of the strategic committees with these summits and the quarterly meetings, and after the success of the first, even if now postponed, has implied a turning point in the internal management of the strategy. The development of a goal evaluation system at the top level is one of the most relevant objectives for 2023—and so, allow the implementation of a reward system linked to the BSC/SBSC.

4.3 | Strategic and operational objectives

As stated in Section 1, the state administration which coordinates and controls the 28 port authorities (APs) existing in Spain, is 'Puertos del Estado' (Puertos del Estado, s.f.). Among others, it defines the operational objectives, common and mandatory for the whole APs—which must be reported on yearly, in a specific format.

Apart from these operational objectives as an AP, the APC has also defined its strategic objectives and placed them above the former. However, not all strategic objectives have operational ones, which implies that when they were aligned, the APC had to 'force' this process, as a cause-and-effect relationship did not necessary exist between them. This situation changed in 2018: the operational objectives were integrated into the APC's strategy, and so, aligned with the strategic ones defined by the APC.

To manage strategic and operational objectives, the APC acquired 'mideNet[4]' in February 2018: software previously used by other APs, and specifically designed to help the development and implementation of the company's strategy: objectives and their indicators were introduced, including a detailed description, and additionally allowing the introduction of the evidence that would justify its grade of compliance.

Once the strategy was managed by 'midNet', the APC faced the problem of linking it to the budget, 'placed' in the APC's Enterprise Resource Planning (ERP) 'Dynamics 365 Business Central[5]'. Every strategic objective must be assigned to a sample budget, and so be linked to the budget—this is how a budget should be built: coming from the strategy (Kaplan & Norton, 2005). Turnover takes place in 'INTEGRA2' and 'belongs' to the Turnover Department—another department different from the Accountability Unit, due to the characteristics and the special relationship that Turnover has with both freight forwarders and the APC's Maritime Services Division.

That said the APC faced a problem: 'midNet' was acquired to manage several actions from the same objective, with the corresponding independent items accounted for in the budget or not for such actions, to eventually link them to the budget—placed in 'Dynamics 365 Business Central'. However, the latter does not allow different items to be assigned and accounted for the same action.

In 2019, this situation was identified and in order to correct it, the APC decided: first, if an account item in the budget was required,

[4] mideNet – Conozca nuestras soluciones.
[5] Business Central | Microsoft Dynamics 365.

every objective's action should have one and only one account, to get the best match—to cope with the strategy-budget from 'Dynamics 365 Business Central' to 'midNet'; and second, all those account items should be created in 'Dynamics 365 Business Central'.

Now, every action created in 'midNet' has its own account items both in 'midNet' and in 'Dynamics 365 Business Central', regardless of the operational objective it belongs to. Therefore, in 'midNet' both the account item and the actions can be seen, while in 'Dynamics 365 Business Central' only the former can be seen.

'midNet' acts by linking the four different databases: one for each strategic objective, one for each operational objective, one for the whole objective's indicators, and one for the whole account items defined—almost 400 in 2022.

4.4 | Digitalisation Plan: DIDO Port and Data Warehouse

In 2017, the APC started a digital process resulting in the definition of a digital strategy displayed in the 'Digitalisation Plan' (Autoridad Portuaria de Cartagena, 2019a) to get and implement a unique, scalable, open, and integrated solution. The first consequence of this process was the appearance in 2018 and 2019 of a new strategic axis, identified as 'Innovation and Sustainability'. And lastly, its 'independence' in 2020 as an isolated strategic axis, in conjunction with 'Digital Transformation', noting its relevance in the APC's strategy.

Two of the five base solutions set out in its 'Action Plan' are especially remarkable for its development: 'DIDO Port' and 'Data warehouse (DWH)'.

4.4.1 | DIDO Port

In May 2019, a bid for a public contract for 'DIDO Port' was released (Plataforma de Contratación del Sector Público, 2019b). 'DIDO Port' is an integration platform for the whole software and applications used in the different processes and departments of the APC, removing every direct contact between them by using a bus (Autoridad Portuaria de Cartagena, 2019a). This allows their communication and global integration—apart from allowing interaction with third parties, like, for instance, other public administrations (see Figure 3).

Such an integration bus (ESBEnterprice Service Bus) is a unique and multidirectional channel placed in middleware between the different systems, in which communication flows with the following characteristics: connectivity, to gain access to other databases, connecting them; integration; planning; security, for information access controls and safety communications; and, supervision, to control the bus.

4.4.2 | Data Warehouse

In May 2019, a bid for a public contract for a new 'Data Warehouse (DWH)' (Plataforma de Contratación del Sector Público, 2019c), was released with the purpose of implementing a stable, coherent, reliable, and with historical information corporate-data-warehouse. Its provision therefore would establish a global, common and integrated vision of the organisation data to: (1) integrate the different classes of existing data and obtain information according to the level of aggregate data required by means of ETL Processes, which should be designed for the extraction, transformation and uploading of the existing data to the new warehouse, by employing a graphical user interface (GUI); (2) develop scorecards, which should display the key indicators of a business unit or processes allowing the analysis of such performance indicators, and provide differentiated access according to the user's role and position in the organisation; and (3) develop statistics and predefined reports, which should be designed to mainly provide information about operational goals, according to the Business Plan and the BSC (Autoridad Portuaria de Cartagena, 2019a).

Further to the predefined reports, two templates were created: one for the Sustainability Department; and one for the Annual Report, in accordance with the specifications and operational indicators required and defined by 'Puertos del Estado' to collect the relevant information from the 28 APs into a standardised format.

Regarding the scorecards, the first to be developed were for: the Operating Area, the Human Resources Department, the Finance and Management Analysis Division, and the Accounting Unit; and shortly thereafter, for the Infrastructure Area and Public Domain Division. However, these scorecards were developed independently, without considering the common strategy. This changed in 2018, with the beginnings of the BSC, ensuring that every area/section/department strategic and operational objective came from the strategic axes, and so ensuring that the BSC was aligned to the APC's strategy (Kaplan & Norton, 1992, 1996, 2005).

In the DWH project, the APC stated that the scorecards must be visualised by: first, using 'QlikView[6]'; and further, 'Qlik Sense[7]'—specially designed for mobile applications. Recently, the APC has introduced 'Qlik NPrint[8]', a specific software to generate and send periodically designed scorecards in 'pdf/doc' format to the area/department/division/unit responsible, from the data and analysis previously produced by 'QlikView' and 'Qlik Sense'.

The use of a data warehouse has been confirmed as a helpful tool not only to integrate all the data produced by the BSC (León-Soriano et al., 2010) but also to process it within the ERP (Rom & Rohde, 2006).

5 | THE APC'S SUSTAINABILITY BALANCED SCORECARD

The importance that 'Sustainability' is playing in the APC's strategy (Autoridad Portuaria de Cartagena, 2020a), is visible in Figure 1, where the term 'Integration with the Environment' appears for the first time in 2014 as one of the five strategic axes or sources of value, as well as in the evolution that this concept has experimented with

[6] QlikView – Analítica y cuadros de mando interactivos y eficaces | Qlik.
[7] Qlik Sense | Analítica moderna en la nube.
[8] Qlik NPrinting | Enterprise Reporting.

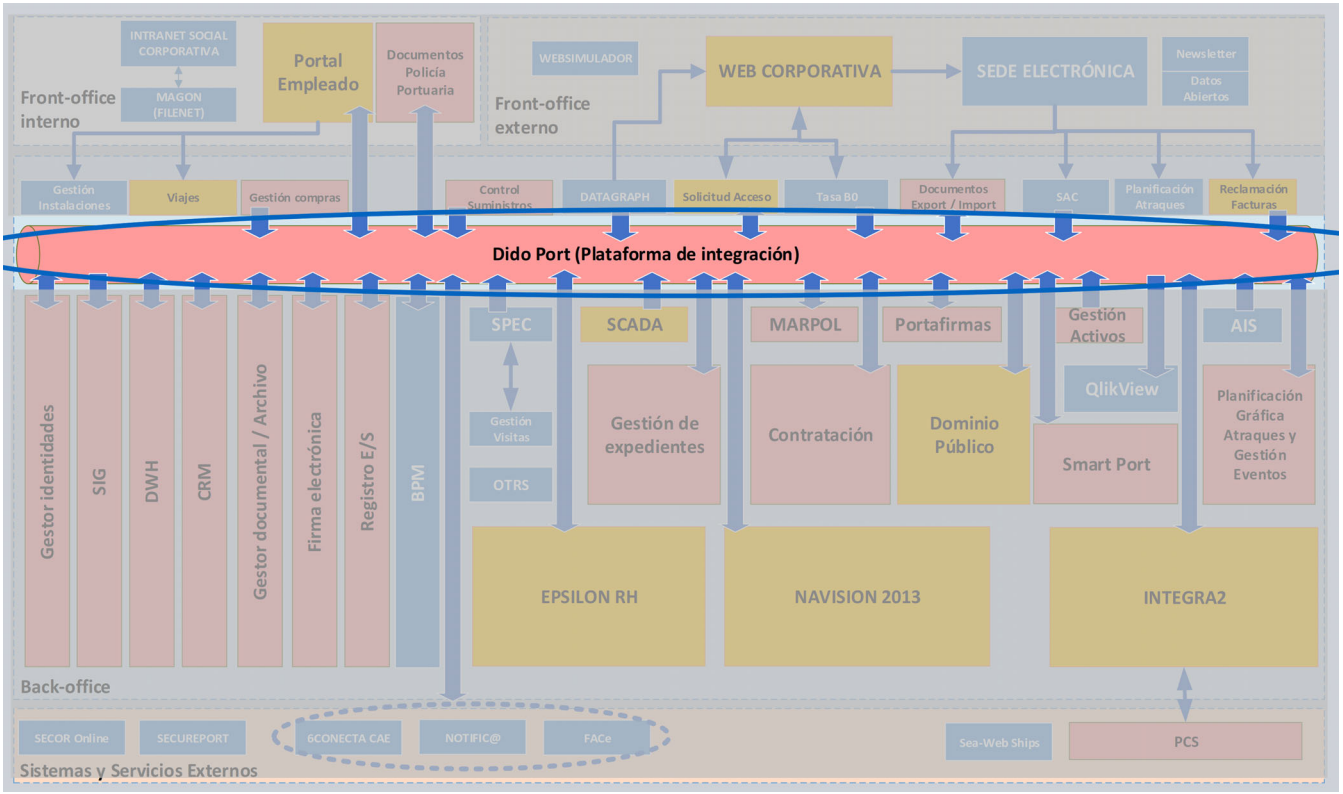

FIGURE 3 DIDO Port scope's scheme. *Source*: Programa de Digitalización (Autoridad Portuaria de Cartagena, 2019a).

over the years: maintaining this term from 2014 to 2017; changing to 'Innovation and Sustainability' in 2018 and 2019, with a sustainability objective defined in the financial perspective: 'To be a motor of socio-economic growth (E4)' (Autoridad Portuaria de Cartagena, 2019b); and eventually, adopting 'Sustainable Development' in 2020, from which, another sustainability objective is defined in the financial perspective: 'Contribute to socio-economic development (E3)' (Autoridad Portuaria de Cartagena, 2020a). Changes that have affected the identification of the strategy axes, and, at the same time and as part of its evolution, by quantity were: five in 2014–2017, three in 2018–2019, and four in 2020.

These changes prove that sustainability not only is a live issue for the APC's BSC, but also it is recognised as not being a fashion (Madsen & Stenheim, 2015; Malmi, 2001; Wiersma, 2009), but as a key part of its global strategy. In fact, the 'Sustainability Report 2021' (Autoridad Portuaria de Cartagena, 2021a) refers to the BSC as one of the tools to develop the sustainability objective included in the strategy.

5.1 | The strategy map

Referring to Figure 4, it is clear that we are facing an SBSC, as detailed in the first approach previously documented: integrating sustainable measures throughout the four perspectives (Butler et al., 2011; de Villiers et al., 2016; Falle et al., 2016; Hansen & Schaltegger, 2012; Kaplan & Norton, 2002; Mendes et al., 2014; Nicoletti Junior et al., 2018; Raut et al., 2017; Suárez-Gargallo & Zaragoza-Sáez, 2021). Something that the APC has maintained since 2014.

The 2018–2019s strategies introduced a significant change to the APC strategy, amending the one established and maintained for 5 years, from 2014 to 2017, with five strategic axes, by simplifying them into three: 'Growth and Consolidation', 'Excellence and Competitiveness' and 'Innovation and Sustainability'. However, the 2020 strategy presented a turning point when introducing a new proposal, adding a fourth strategic axis: 'Diversification and Loyalty', 'Optimisation of Spaces and Access', 'Innovation and Digital Transformation' and 'Sustainable Development'.

This new strategy concept breaks with the traditional strategy in use over the years, by going further, and adapting it to high-demand daily usage, not only by governments and society, but also by customers and stakeholders. When looking at the strategy map, the TBL concept (Elkington, 1997) can be also seen in it: sustainability in business, sustainable with the environment, and sustainable in the community (Di Vaio & Varriale, 2018). The first, is mainly based on the three strategic axes, whereas the third, 'Innovation and Digital Transformation' takes special relevance as stated in Section 4; and the second and the third, included in 'Sustainable Development', is deeming necessary to go down the perspectives to identify both in the different performance drivers.

On the other hand, when an SBSC is applied to non-profit and not-for-profit organisations and government units, it is widely accepted that the 'Financial' perspective is placed at the bottom, considering it just as a source of income and not as a strategy goal

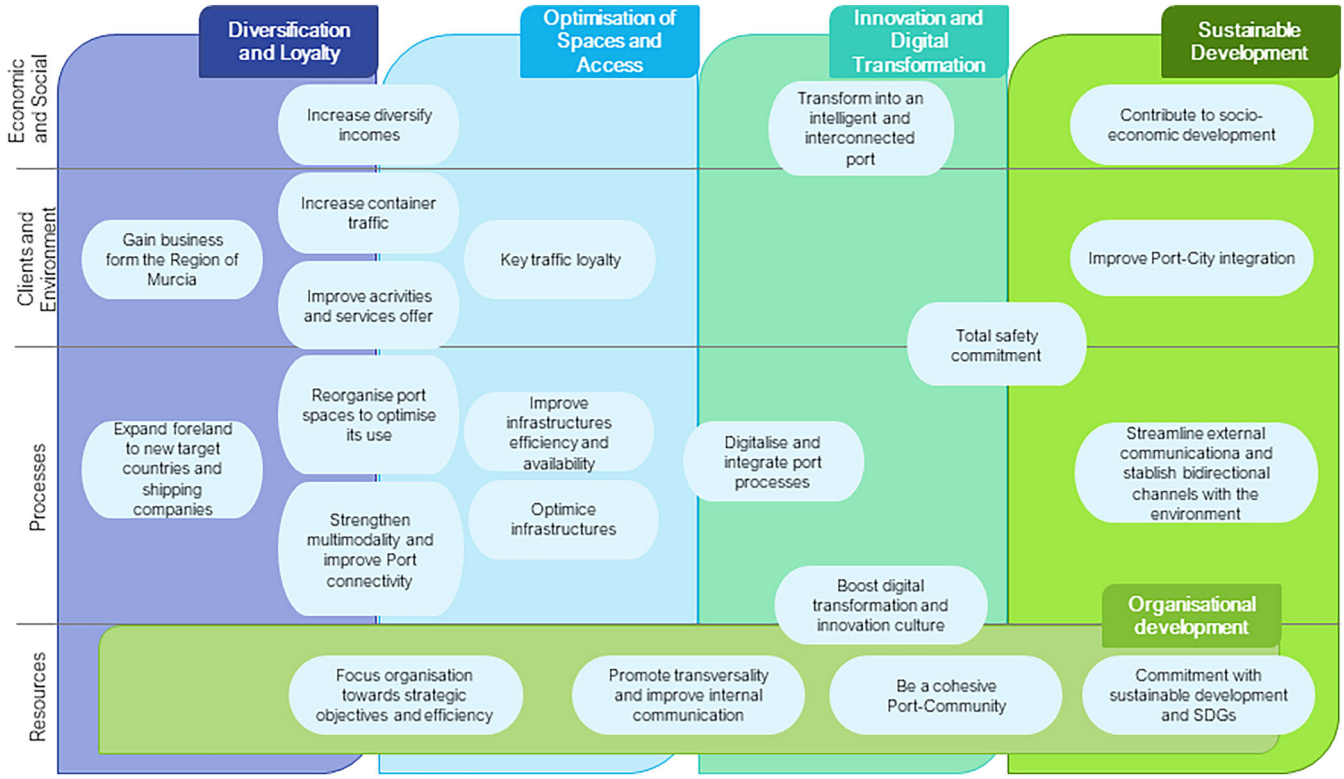

FIGURE 4 2020 APC's strategy map (Autoridad Portuaria de Cartagena, 2020b).

(Mendes et al., 2014; United States Army, 2009; United States Marine Corps, 2007); and therefore, 'Customers' perspective is placed on top, putting customers at the heart of their strategies (Arveson, 2007; Costa Oliveira et al., 2020; Kaplan & Miyake, 2010; Kaplan & Norton, 2000; Musyoki, 2015; Ndevu & Muller, 2018; Wu & Hua, 2018), as well as under clearly defined headings: 'users' (Abdel Fattah & Hassabou, 2016); 'community' (Bobe et al., 2017); 'stakeholder' (Khalid et al., 2019); or, 'social' (Murillo Pérez, 2020). The APC has followed the original BSC template, only introducing slight changes in the identification of the traditional four perspectives but not changing their essence. This is because of its particular nature: although being a government unit, the Spanish port authorities must be economically self-funding, according to the Spanish Royal Decree 2/2011 (Boletín Oficial del Estado, 2011).

However, Kaplan and McMillan (2020) maintained the traditional structure, introducing a change, modifying the traditional 'names' of the perspectives, a product of the evolution of the BSC in integrating the TBL concept, and needed to provide the perspectives with the correct required meaning: outcomes versus economic and social; stakeholders versus clients and environment; internal processes versus processes; and enablers versus resources.

Eventually, it should be noted that Kaplan & Reisen de Pinho's case study 'Amanco: Developing the Sustainability Scorecard' (2008), in the first approach to developing what they named a 'Sustainability Scorecard', integrated the traditional BSC and the concept of TLB, introduced a fifth perspective between 'Internal Processes' and 'Learning and growth': 'Social and Environmental', 'to signal their importance in Amanco's way of doing business and how they integrated with all actions of the company' (Kaplan & Reisen de Pinho, 2008, p. 6). However, that adaptation was carried out by Mr Salas, CEO of Amanco, as well as the text in between quotation marks, and not by Kaplan & Reisen de Pinho.

5.2 | Sustainable performance measures

Although 'sustainability' should be considered in its broader context, following the TBL concept proposed by Elkington (1997) and including the general idea commonly accepted of being sustainable in business, with the environment, and in the community (Di Vaio & Varriale, 2018), the research seeks to set out how the APC has introduced and developed the 'environment' and 'social' issues—which, over the past years, has introduced the SBSC model.

The strategy implicit in the 'Sustainable Development' axis, follows the path described in Figure 5, within the four perspectives.

Although the strategic axis is clear in its message and range of issues involved, in order to identify environmental and social components it is necessary to go down the perspectives: the latter is quickly found in the first one, but the former requires reaching the second.

In 2009, the APC created the Corporate Social Responsibility (CSR) committee with the commitment of 'making Social Responsibility a transversal axis in the organisation, and at the same time, the highest decision-making body regarding relations with stakeholders' (Autoridad Portuaria de Cartagena, 2021a, p. 26). This committee has

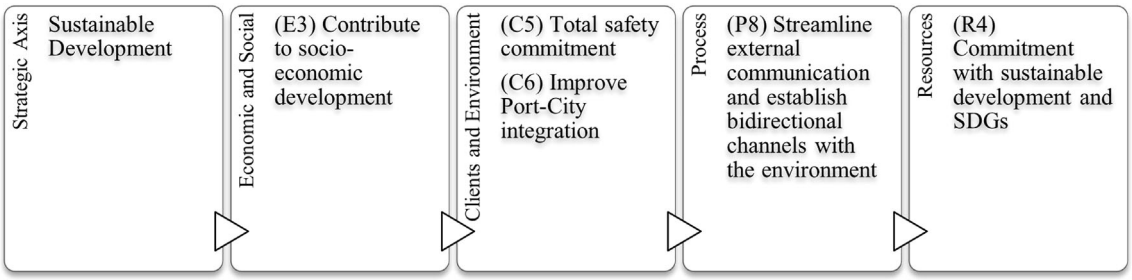

FIGURE 5 Sustainable measures itemised within the APC's SBSC (Autoridad Portuaria de Cartagena, 2020a).

TABLE 6 Environmental performance measures.

Code	Strategic objective	Coordinator	Code	Operational objective	Responsible	Indicator
E3	Contribute to socio-economic development	Sustainability Department manager	E3.2	Neutral Climate Plan	Facilities and Intermodality Department manager	(Not provided)
C5	Total Safety Commitment	Operations Division manager	C5.5	Corporate Ethic Culture	General Secretariat and Legal Advisory Department manager	(Not provided)
C6	Improve Port-City integration	Master Plans Section manager	C6.1	'Plaza Mayor' development	Master Plans Section manager	Meetings with local and regional associations and government units (No.)
			C6.2	Citizen proposals study	Institutions and Communication Relations Section manager	Socio-Cultural functions (No.)
P8	Streamline external communication and establish bidirectional channels with the environment	Institutions and Communication Relations Section manager	P8.2	Strategic Communication Plan development	Planning and Management Department manager	(Not provided)
R4	Commitment with sustainable development and SDGs	Corporate Social Responsibility manager	R4.2	Environment Sustainability Plan	Sustainability Department manager	Ratio of local companies joined to PODS (%)
			R4.3	Healthy Company	HR Department manager	Environmental Investment Plan achieving (%)

Source: Elaborated by the authors from the '2020–2025 Strategy Plan' (Autoridad Portuaria de Cartagena, 2020b).

been the basis on which projects were developed to address and tackle environmental and social issues, resulting in the publication of the first annual sustainability report in 2014 (Autoridad Portuaria de Cartagena, 2014a). Since then, every year an annual report on sustainability has been released, including and detailing the activities carried out by the APC during that period.

5.2.1 | Environmental performances measures

The environmental performance measures are displayed in Table 6.

In 2017 the APC joined the 'Sustainable Development Goals (SDG)' (United Nations, 2015), as stated in the annual sustainability report (Autoridad Portuaria de Cartagena, 2017a). Then in 2019, the APC created the 'Plataforma de Objetivos de Desarrollo Sostenible (PODS)' with the purpose of 'making Cartagena a sustainable port, leader and a model for the Mediterranean Sea'; and to do so and to be effective, the platform counts on the active commitment and participation of a great number of government, regional and local companies and organisations, involved in the Port activities (Plataforma de Objetivos de Desarrollo Sostenible, 2019a).

The most remarkable project developed by this platform was presented in December 2020, under the title of '13. Climate Action' (Plataforma de Objetivos de Desarrollo Sostenible, 2020b), focused on: Climate Change Mitigation, Climate Change Adaptation,

TABLE 7 Social performance measures.

Code	Strategic objective	Coordinator	Code	Operational objective	Responsible	Indicator
E3	Contribute to socio-economic development	Sustainability Department manager	E3.1	Port share-value strategy development	Sustainability Department manager	(Not provided)
C5	Total Safety Commitment	Operations Division manager	C5.5	Corporate Ethic Culture	General Secretariat and Legal Advisory Department manager	(Not provided)
C6	Improve Port-City integration	Master Plans Division manager	C6.1	'Plaza Mayor' development	Master Plans Division Manager	Meetings with local and regional associations and government units (No.)
P8	Streamline external communication and establish bidirectional channels with the environment	Institutions and Communication Relations Section manager	P8.1	Bidirectional Communication Plan with the environment	Institutions and Communication Relations Section manager	(Not provided)
R4	Commitment with sustainable development and SDGs	Corporate Social Responsibility manager	R4.1	Impact analysis of ODSs in the Port activity	Corporate Social Responsibility manager	Investment in environmental projects (M€)

Source: Elaborated by the authors from the '2020–2025 Strategy Plan' (Autoridad Portuaria de Cartagena, 2020b).

Low-Carbon-Emission Innovation Products and/or Services Development, and awareness and training in tackling Climate Change.

Other projects have been developed, such as: maintaining and raising the profile of the Chair of Environment, in collaboration with the two local and regional universities; leading the Club EMAS[9] non-profit association founded in 2009; carbon footprint monitoring, introducing actions to reduce it; optimisation of electric power and water consumption, the latter acting on the APC ones and those invoked by maritime traffic; waste treatment; water cleaning, led by the 'Pelican' boat with 4340 kg removed in 2020 from surface water; renewing the car fleet, replacing diesel cars with hybrid and LNG fuelled vehicles; monitoring and reduction of emissions to the atmosphere; noise pollution control; and environmental actions focused on their own and surrounding areas: control and support of bird and plant life with special care in the Isla of Escombreras, continuing with reforestation of local species in the quarry used for the port amplification, or biological studies of life on the seabed including certain bivalves and algae whose presence is a synonymous of clean water (Autoridad Portuaria de Cartagena, 2020c).

Comparing these actions with the environmental indicators stated by Lim et al. (2019) reference, it should be noted that they all are included: water pollution management, air pollution management, energy and resource usage, noise pollution, green port management, ecosystem and habitats, soil pollution management and occupation, waste pollution management, and green construction and facilities—odour pollution management is the only one not considered. This fact contributes to and confirms the validity of Lim et al. (2019) proposal.

[9]Club EMAS Región de Murcia: Inicio (clubemas-rm.org).

5.2.2 | Social performance measures

Social performance measures are described in Table 7.

These performance measures are executed by means of several projects developed in the daily activity during 2020, such as: working on a stable workforce of around 190, and in terms of male/female balance maintaining a constant but gentle growth—18.85% in 2018, 19.52% in 2019, and 19.90% in 2019; monitoring frequency and severity accidents rates, focused on their reduction (de Villiers et al., 2016); 7 Tons basic-necessities were delivered to the City Council for emergency operations; 12,000€ donated to a local charity focused on fighting childhood cancer; food collection campaigns for underprivileged sectors; toy collection campaign for the 'Three Wise Men Day', organised by the City Council; IV Meeting of Entrepreneurial Women, organised by AMPIEC[10]; renovation of the 'Blue Path', 5 km route from the yacht marina to the beach of Cala Cortina; or a collaboration agreement with SAMOA II Project[11] (Autoridad Portuaria de Cartagena, 2020c).

6 | DISCUSSION

The bid document written by the Planning and Management Department manager in 2018 (Autoridad Portuaria de Cartagena, 2018a), and released in the form of a public bid to revise the 'Strategic Plan' (Plataforma de Contratación del Sector Público, 2019a), marked the

[10]Asociación de Mujeres Profesionales, Investigadoras y Emprendedoras de Cartagena y Región de Murcia (ampiec).
[11]Samoa project.

key turning point in the APC strategy. Until then, several strategies, with their strategy maps and performance measures defined across the four perspectives, had been developed, maintaining a certain stability, especially from 2014 to 2017. But in 2018, with new revisions and detailed guidelines included in the bid document, the strategy moved into a new phase.

The creation of the Strategic Planning Office and the recruitment of its manager were the cornerstones created by the Planning and Management Department manager to translate the strategy and the strategy map into a BSC/SBSC and put the foundations in place to initiate its development and implementation within the organisation.

However, another mandatory aspect was to be tackled in parallel: the 'Digitalisation Plan', which played a key role, much more relevant than could be foreseen initially. The first attempts to develop scorecards in 2018 failed due to: first, the data collection and data input took place using manual processes, not by using specific software; and second, the system was not fit for purpose in managing this sort of information. When changes were introduced in 2018 and 2019, following the scheme defined by the Planning and Management Department manager, 'DIDO Port' and 'Data Warehouse' projects launched in 2019 initiated a significant change, providing help and support to this department and its Strategic Planning Office, as well as providing the required tool to establish the basis for the BSC/SBSC implementation at all levels (León-Soriano et al., 2010; Rom & Rohde, 2006).

Once these tools were launched, the Planning and Management Department and the Strategic Planning Office managers, led the development of this new strategy, counting on the support of external advice from consulting practices specialised in defining strategies and in implementing them by using the BSC, such as 'Ocean Capital Partners' and 'Coenable Advisors'. This support was vital in providing an external view, it being necessary to gain a broader and comprehensive vision of the strategy and the way to implement it throughout the organisation (Madsen & Stenheim, 2015; Malmi, 2001); specifically in relation to the BSC, after years of working with this tool and coordinating several BSC companies' implementations from diverse industries.

However, after the implementation of the solutions proposed, an internal debate was opened up during 2019 and 2020 when trying to adapt and refit such proposals to the APC's strategy, needs and specific demands, resulting in the revision of the strategy plan carried out by both Planning and Management Department and Strategic Planning Office managers in September 2021 (Autoridad Portuaria de Cartagena, 2021b).

In 2009, the APC formalised its concerns and commitment to tackle environmental and social issues, implicating in its projects not only government, regional and local organisations, but also a wider number of agents directly or indirectly involved in the port activity, having special significance since 2014, when the first annual sustainability report was published (Autoridad Portuaria de Cartagena, 2014a).

Since then, the APC has developed, participated and collaborated in several projects regarding environmental and social aspects, demonstrating and consolidating its commitment to such issues, not only in general but raising them at strategic level. And when such a level was reached, the APC strategy could be identified as a sustainable one.

The BSC/SBCS is, therefore, a natural consequence of these years of constant work and commitment on behalf of sustainability in its broader context.

As stated in Section 3, and to avoid bias in the data collected and to gather the most accurate information possible, interviews took place at the top level (Lueg & Carvalho e Silva, 2021; Wu & Chen, 2014; Wu & Hua, 2018). Of significant importance was to identify the SBSC responsible: the Strategic Planning Office manager—following the criterion proposed by Hristov et al. (2019) and Malmi: 'In each company we tried to identify the person most knowledgeable about the development and use of the BSC application' (Malmi, 2001, p. 210).

In this research, the manager is a highly educated female with more than 10 years' experience in these positions—in the way with Lucianetti (2010). This appointment complements one of the 'social' goals by helping to balance the workforce composition between men and women. The 'Management Team' is composed of 23 members, eight of them women: 34.78%, showing the effort that the APC is making regarding this issue, although still far from other industries such as Spanish Footwear, where the percentage female workforce is higher: 47.14% for SMEs, and 82.17% in large companies (Suárez-Gargallo & Zaragoza-Sáez, 2021).

The BSC/SBSC is widely disseminated throughout the organisation, as almost 400 indicators derived from the strategic and operational objectives were defined in 2022. This guarantees something key to a successful BSC/SBSC implementation: that all employees know and understand the strategy (Kaplan & Norton, 2002), what the organisation expects from them (Kaplan & Norton, 1996), and how they are contributing to reach it by achieving the goals assigned (Antonsen, 2014; Ismail & Abd Razak, 2016; Misanková & Kocisová, 2014; Sôltés & Gavurová, 2015). 'Leaders now recognise that their strategies, however brilliantly they may be formulated, will be successful only if everyone in the organisation understands the strategy and helps to implement it' (Kaplan & Norton, 2002, p. 2).

Although Section 4 stated that the APC's BSC/SBSC was classified as a 'type III', according to the Speckbacher et al. criterion (2003), there is one matter yet to be implemented to complete it: a reward system linked to the BSC/SBSC. This is one programmed objective to be implemented and executed in 2023, specifically for top managers. This measure plays a key role in developing a full BCS/SBSC, as it was shown to be necessary to translate the strategy at all levels of the organisation (Agostino & Arnaboldi, 2012; Bryant et al., 2004; Dudic et al., 2020; Kaplan, 2002; Kaplan & Norton, 1996, 2005; Lucianetti, 2010; Malmi & Brown, 2008; Ukko et al., 2007; Wiersma, 2009), and to increase and foster the employee's commitment (de Villiers et al., 2016; Kotas, 2015).

7 | CONCLUSIONS

The main goal of the current research is to analyse the development and implementation process of the BSC/SBSC in the APC as a government unit, using the case-study method, providing such insights as may be added to the general knowledge of the BSC/SBSC and answering to needs identified by other scholars (Agostino & Arnaboldi, 2012; Antonsen, 2014; Brudan, 2005; de Villiers et al., 2016; Glykas, 2013;

Hamid, 2018; Hansen & Mouritsen, 2005; Hristov et al., 2019; Khalid et al., 2019; Länsiluoto & Järvenpää, 2010; Malmi, 2001; Modell, 2012; Rodrigues Quesado et al., 2014; Suárez-Gargallo & Zaragoza-Sáez, 2021; Wu, 2012).

Having developed varying strategies year on year, it was not until 2018 when the APC started the BSC/SBSC implementation process that it forced the adoption of several internal changes and investments, resulting in a successful tool to make the strategy an inherent part of the daily work of the organisation, confirming the BSC/SBSC as a useful management tool in helping the APC to implement its sustainable strategy, going along with previous works (Butler et al., 2011; de Villiers et al., 2016; Epstein & Wisner, 2001; Ferreira da Cruz & Cunha Marques, 2014; Figge et al., 2002; Hansen & Schaltegger, 2012, 2016; Huang et al., 2014; Jong Na et al., 2020; Journeault, 2016; Kang et al., 2015; Kaplan & Reisen de Pinho, 2008; Länsiluoto & Järvenpää, 2010; León-Soriano et al., 2010; Lu et al., 2018; Mio et al., 2021; Raut et al., 2017; Trisyulianti et al., 2022), and specifically for government units (da Silva Neiva et al., 2021; Hamid, 2018; Khalid et al., 2019; Modell, 2012).

The method used by the APC was under the BSC denomination without incorporating any additional words (Butler et al., 2011; de Villiers et al., 2016; Kaplan & McMillan, 2020; Kaplan & Miyake, 2010; Khalid et al., 2019; Länsiluoto & Järvenpää, 2010; Modell, 2012; Raut et al., 2017), and integrating sustainable measures throughout the four perspectives as part of their own BSC (Butler et al., 2011; de Villiers et al., 2016; Falle et al., 2016; Hansen & Schaltegger, 2012; Kaplan & Norton, 2002; Mendes et al., 2014; Nicoletti Junior et al., 2018; Raut et al., 2017; Suárez-Gargallo & Zaragoza-Sáez, 2021).

The leadership role in the BSC has been demonstrated as one of the vital components for successful development and implementation (de Villiers et al., 2016; Falle et al., 2016; Kaplan & Reisen de Pinho, 2008; Modell, 2012). Until 2018, the APC was immersed in a dynamic in which the strategy and strategic maps were developed year in and year out, but with no further implications; and then, the Planning and Management Department manager marked a turning point leading the process of 'translating the strategy into action' (Kaplan & Norton, 1996) by applying a BSC: 'the process of building a balanced scorecard starts by having district leadership clearly articulate linked strategic objectives' (Kaplan & Miyake, 2010, p. 2). Her leadership, creating and providing the Strategic Planning Office manager with her support, has been key in developing and implementing the APC's BSC/SBSC.

The creation of the Strategic Planning Office was also one of the pillars of such development. Additionally, the direct and tight collaboration established between both managers who, always aligned in their points of view, has been crucial in this successful implementation. The creation of the OGE in 2021, as part of its responsibilities and following the OSM model proposed by Kaplan and Norton (2005), was vital too in providing this office with the tools needed to manage this process.

Since 2018, the APC has made a special effort to establish a coherent strategy according to its current and future needs, and so developing not only its BSC/SBSC but also the tools and IT infrastructures required to fully implement it properly, establishing solid foundations for its development and guaranteeing its effective functioning as the tool to disseminate the strategy within the organisation. A BSC for a company such as the APC, with such a degree of development, generates a huge amount of data which could only possibly be managed by using adequate IT tools; and when they were provided, the BSC could reach every single position in the organisation and so, the strategy. When these solutions are available to any company, the BSC can be managed properly: managers have immediate and agile access to adequate information, establishing feedback from the 'bottom to top', which allows them to adapt and/or 'modify strategies to reflect real-time learning' (Kaplan & Norton, 1996a, p. 3), which is vital for managers 'to check if the planned strategy is being executed according to plan' (Kaplan & Norton, 1996c, p. 20).

Although the BSC/SBSC reaches almost the entire organisation, the reward system linked to it is programmed for the top management level. This is the first step in this implementation before reaching the entire workforce: '70 percent of middle managers and more than 90 percent of frontline employees do not have incentive compensation tied to successful strategy implementation' (Kaplan & Norton, 2005, p. 2).

The idea of it not being considered necessary to have a bonus system for all employees, it only being implemented at the top management level, is widely extended (Kaplan, 2002); however, the commitment required from every employee should be balanced according to their contribution to the strategic goals, resulting in a personal BSC/SBSC for every employee and its corresponding reward system linked to it (Agostino & Arnaboldi, 2012; Bryant et al., 2004; Dudic et al., 2020; Kaplan, 2002; Kaplan & Norton, 1996, 2005; Lucianetti, 2010; Malmi & Brown, 2008; Ukko et al., 2007; Wiersma, 2009). This reward system contributes to increasing and fostering the employee's commitment (de Villiers et al., 2016; Kotas, 2015), in tandem with the APC social commitment: 'One of the main objectives is to improve the work motivation of our workers' (Autoridad Portuaria de Cartagena, 2020c, p. 53).

Although initially the operational objectives were defined by 'Puertos del Estado' and no alignment existed between them and the strategic ones defined by the APC (Agostino & Arnaboldi, 2012), this has been corrected in recent years, and now the strategy demonstrates a coherent arrangement.

7.1 | Literature contributions

This research is focused on the first steps of the BSC development and on the changes needed for it to be implemented internally. No previous works have been addressed in this way, and therefore, this work provides a fresh perspective on this process which can help other researchers in understanding it better and to have a comprehensive insight into it.

As the study was carried out in a public unit such as the APC, this new approach can specifically help other studies focused on ports, which share similar legal frameworks and face similar problems and challenges—particularly those regarding environmental and social aspects.

Di Vaio and Varriale (2018) focused on the application of sustainable regulations issued by different European countries, recommending the use of the BSC as the best choice to implement such regulations. Although the purpose of this work is not related to the regulations and/or policies established by 'Puertos del Estado'—the public body which defines the guidelines that are mandatory for the Spanish port authorities, in the 'Ports System Strategic Plan' (Puertos del Estado, 2019)—the outcomes coincide with them in considering the BSC useful in integrating such regulations into the APC's strategy. On the other hand, as 'Puertos del Estado' defines these mandatory general strategic lines for all the port authorities, the ability of any port authority to influence those policies and regulations is in reality very restricted, especially because most of the policies are devised at political level and/or come from European directives.

The APC has developed different strategies for years, and it was not until 2018 that the BSC implementation was initiated. In spite of that several significant internal changes have occurred since then, this process has been developed without provoking radical changes within the personnel; and this was because of one reason: the workforce has been gradually and incrementally prepared over the years to understand the need to have a strategy and implement it. As a result, when the BSC was introduced and that strategy started to reach every internal level affecting the employees' daily work, it was not anything out of the ordinary for them.

In the end, this research contributes to enriching the current BSC literature in various aspects. First, because it can be useful to other authors in detailing the steps to be adopted at the start-up of the BSC implementation/development. Second, the study of the APC provides information from a real case; in particular, the interviews have provided first-hand relevant information from the key managers. And third, the previous trajectory of the APC has provided an internal atmosphere that has made easier to implement the process in the workforce.

As stated in Section 5.2, the environmental and social indicators defined by Lim et al. (2019) as a reference for sustainable ports, are almost fully included, confirming the validity of their study. However, considering that their work was exclusively focused on 'container ports', and the APC, apart from containers, additionally manages general cargo, bulk carriers, tankers, and livestock, this validity could be extended to any other type of ports—where other indicators could be added to theirs.

7.2 | Managerial contributions

These outcomes can help managers and especially other Spanish port authorities and government units in their BSC/SBSC development and in the measures adopted to shape the organisation to this implementation, by trying to find similarities to their particular situation. In the case of other port authorities, implementation should be easier as they share a common legal framework, although always bearing in mind the fact that the BSC/SBSC is not a 'straight jacket' (Lueg & Carvalho e Silva, 2013; Madsen & Stenheim, 2015; Voelpel et al., 2006).

The leadership of the Planning and Management Department manager, as well as the Strategic Planning Office manager, has been crucial in encouraging the organisation to go one step further by integrating the strategy in the daily work of every employee.

The value of external advice provided by two strategy-specialised consultancy practices has been vital in bringing an outside view with experience of the BSC and its implementation in companies, helping the APC to find the best internal structure to progress it.

The IT adaptation through the 'Digitalisation Plan' has provided the APC with the IT tools to properly develop and meet the needs of the BSC/SBSC.

The work done by the Sustainable Department since 2009 has been defining a framework for developing environmental and social issues, resulting in a consolidated trajectory in these matters. This consolidation has made their inclusion in the APC's strategy easier, and thus, in the development of its BSC/SBSC.

This set of measures, the Planning and Management Department manager leadership, the creation of the Strategic Planning Office specifically designed to develop and implement the APC's strategy, the external advice provided by strategic-expertise consultants, the IT solutions applied, combined with the internal organisational and procedural changes introduced by the Planning and Management Department and the Strategic Planning office managers, have been crucial in the APC's BSC/SBSC development and implementation process. Of course, they all have the total support of the General Manager: without who is backing, the status quo would have endured.

These outcomes can serve as a reference for other managers, not only for government units but also for any other industry, to develop their strategies or sustainable strategies through the use of the BSC.

7.3 | Bias and future research

Even after consulting different databases to find similar studies, the lack of previous works tackling the development and implementation of a BSC/SBSC in a government unit, such as a port authority, limited the range of the outcomes of this research. This suggests the need to extend this type of study to other port authorities and government units in Spain and abroad.

Future studies should be focused on analysing the merging of the TBL concept within the SBSC, especially after confirming the high level of commitment and development shown by the APC.

Although the APC's BSC/SBSC can be considered highly developed, future research should be conducted to monitor its evolution in the coming years and confirm its consolidation (Brudan, 2005; Kaplan & Norton, 1996a).

No access to the Sustainable Department manager or any staff member was achieved; therefore, no access to a relevant and important source of data about how the environmental and social issues are tackled was possible—apart from other reasons, because the manager changed late last year and a new one has been in post since then.

Additionally, other data sources, such as access to other managers as well as participation or direct observation in meetings or workshops, or key informers (Gibbert et al., 2008; Hamid, 2018; Länsiluoto & Järvenpää, 2010; Modell, 2012; Wu & Chen, 2014), although

desirable, has not been possible in this case. On the other hand, although the research sets out the convenience of maintaining interviews at the top management level, access to frontline employees to ascertain the effectiveness of the internal strategic communication would be interesting and should be borne in mind (Kaplan & Norton, 2005).

Future research which focuses on monitoring the APC's BSC/SBSC evolution should set out to get access to these data sources, which could provide comprehensive information of the picture and reinforce the validity of the construct, minimising possible bias identified in the current study (Eisenhardt & Graebner, 2007; Gibbert et al., 2008; Gibbert & Ruigrok, 2010).

Recording interviews should be recommended to minimise the possibility of errors during transcription and to strengthen the managers' message including excerpts.

Otheitis and Kunc (2015) concluded that the use of PMS in the Shipping Industry helps companies in being leaders within the industry. Therefore, as the BSC is a PMS, future research could confirm if port leaders: first, have a BSC implemented to develop their sustainable strategies; and second, if it plays a relevant role in reaching such a leadership.

The method by which the strategy is internally communicated at all levels of the organisation, could not be confirmed, among others, because of the initial phase in which it is now. Therefore, future research should study this in detail and ascertain how the strategy is executed (Kaplan & Norton, 1996b, 1996c).

CONFLICT OF INTEREST STATEMENT

None.

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