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Integration of ESG metrics into balanced scorecard frameworks – a literature review

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Abstract

As environmental, social, and governance (ESG) issues have become more relevant, the need for performance measuring systems that can incorporate sustainability objectives into organizational strategy has grown. This paper presents a review of literature about how the ESG measures have been integrated into the Balanced Scorecard framework as well as their contribution to the area of Strategic Performance Management. Based on the articles retrieved from Scopus, Web of Science and DOAJ, the review applies a structured literature review approach, focusing on recent peer-reviewed studies published between 2021 and 2025. The results show that there is a clear trend towards moving away from the traditional Balanced Scorecard and towards Sustainability Balanced Scorecard, which includes environmental, social and governance objectives in addition to the traditional set of performance measures. The reviewed studies also indicate that ESG-integrated scorecards can be used to aid in sustainability reporting, governance and organizational performance evaluation. But issues still exist on standardized ESG metrics, the digital capabilities needed to measure performance and integrated implementation frameworks. The novelty of the present paper is that it brings together the scattered literature on ESG-focused Balanced Scorecard into a coherent conceptual framework. The results offer practical guidance for organizations with a need to integrate sustainability goals into strategic performance management and value creation processes.

Key words:
Balanced Scorecard; Sustainability Balanced Scorecard; ESG Performance; Performance Measurement Systems; Strategic Management.

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1. Introduction

As organizations try to match their operational activities with long-term objectives, performance measurement has become an integral part of modern-day strategic management. The Balanced Scorecard (BSC) is one of the most popular frameworks created for this purpose which integrates two types of indicators, financial and non-financial, into a unified management system. In the past few years, the BSC has evolved from merely being a measurement instrument into a mechanism for supporting strategy implementation, organisational learning and performance improvement (Kumar et al., 2022; Tawse & Tabesh, 2022; Kumar et al., 2023).

Environmental, social and governance (ESG) matters have been gaining more and more prominence in recent years. Organisations are now held to higher standards for responsible environmental actions, social engagement and good corporate governance by investors, regulators, customers and society. As a result, performance in the areas of environmental, social and governance is today viewed as a critical component of long-term business success. Past studies indicate organizations with the right performance measurement system that translates the strategic intent into measurable outcomes can derive more value from sustainability efforts (Martiny et al., 2024; Dong et al., 2025).

These developments have stimulated interest in integrating ESG considerations into the Balanced Scorecard. One response has been the Sustainability Balanced Scorecard (SBSC), which incorporates environmental and social objectives into traditional BSC perspectives. The SBSC has been used in several other applications such as business organizations, municipalities, educational institutions, and healthcare organizations, and has shown promise in linking sustainability objectives to organizational strategy and evaluation (Mio et al., 2022; Hristov & Searcy, 2024; Santos et al., 2024).

Although there is a growing interest in the scholarly community on ESG performance, sustainability reporting, corporate governance and Sustainability Balanced Scorecards, knowledge in this area is fragmented across multiple connected research streams (Mio et al., 2022; Martiny et al., 2024). Despite progress made, there has been limited focus on how ESG indicators are integrated within BSCs and how this integration contributes to strategic performance management processes (Dong et al., 2025; Hristov & Searcy, 2024). Furthermore, the literature offers a narrow range of suggestions regarding whether to integrate ESG goals into the existing Balanced Scorecard views or to create a new dimension focused on sustainable goals. This review therefore brings together recent evidence on ESG-integrated Balanced Scorecards, their role in strategic management, and emerging directions for ESG-oriented performance measurement systems. Specifically, the study addresses the following questions:

- How are ESG metrics being integrated into Balanced Scorecard frameworks?
- What role does ESG-enhanced Balanced Scorecard play in strategic management?
- What future directions exist for ESG-oriented performance measurement systems?

2. Research Methodology

This review investigates recent research regarding environmental, social and governance (ESG) metrics integration in the frameworks of Balanced Scorecard. The relevant literature was identified by searching the databases Scopus, Web of science and DOAJ using the following keywords: Balanced Scorecard, Sustainability Balanced Scorecard, ESG performance, strategic performance measurement between 2021 and 2025. A preliminary search brought up 47 records. Following removal of duplicates, and screening of titles and abstracts for relevance to ESG oriented Balanced Scorecards and performance measurement systems a total of 23 studies remained. A comprehensive evaluation was then carried out leading to the selection of 15 publications, which covered ESG integration and Sustainability Balanced Scorecards or performance measurement related to ESG. Only peer-reviewed journal articles, conceptual papers and review studies directly related to the topic were selected. The studies identified were analysed and synthesised to identify key themes, applications, gaps in the research and future research paths.

Table 1

Systematic Mapping of Reviewed Literature

Author(s)	Year	Main Focus	Key Contribution	Relevance to Review
Kumar et al.	2022	Balanced Scorecard literature	BSC evolved from a measurement tool into a strategic management framework	Establishes foundation for ESG-oriented BSC development
Mio et al.	2022	Sustainability Balanced Scorecard	Sustainability objectives can be embedded within traditional BSC perspectives	Provides conceptual basis for ESG integration
Tawse & Tabesh	2022	Thirty years of BSC research	Long-term success of BSC depends on adaptation to changing business needs	Demonstrates capacity of BSC to accommodate ESG concerns
Kumar et al.	2023	Developments in BSC research	Sustainability and digitalization represent major emerging BSC themes	Positions ESG integration within contemporary BSC research
Martiny et al.	2024	ESG performance determinants	ESG performance is influenced by governance, strategy, and organizational capabilities	Highlights drivers of ESG measurement and management
Hristov & Searcy	2024	ESG, governance and BSC	Balanced Scorecard can connect sustainability reporting with governance objectives	Demonstrates strategic role of ESG-integrated BSC
Santos et al.	2024	Environmental Sustainability Balanced Scorecard	Environmental objectives can be translated into measurable strategic actions	Provides practical evidence of sustainability-oriented scorecards
Cosa & Torelli	2024	Digital performance measurement systems	Performance measurement systems are becoming more flexible and data-driven	Indicates future direction of ESG measurement systems
Wang & Hou	2024	Digital transformation and ESG	Digital transformation contributes positively to ESG performance outcomes	Highlights technological support for ESG monitoring
Dong et al.	2025	ESG performance and measurement systems	Performance measurement systems mediate the relationship between strategy and ESG outcomes	Directly links ESG performance with measurement frameworks
Deng et al.	2025	Sustainable Balanced Scorecard application	Environmental and social indicators improve sustainability performance evaluation	Demonstrates sector-specific SBSC implementation
Mariani et al.	2025	ESG and organizational performance	Organizational agility strengthens the performance benefits of ESG practices	Supports strategic value of ESG integration
Hekimoğlu et al.	2025	Sustainability measurement in education	ESG-related indicators can support long-term institutional sustainability	Extends ESG-BSC application beyond business organizations
Al-Dhubaibi	2025	BSC and sustainable performance	Integrating BSC with complementary management	Supports broader performance management integration

			tools enhances sustainable performance	
Yadav et al.	2024	ESG reporting in Industry 5.0	Existing ESG reporting frameworks require greater transparency and consistency	Positions topic within future ESG measurement developments

Source: Own elaboration, 2026.

3. Literature Review

3.1. From Traditional Balanced Scorecard to Sustainability Balanced Scorecard

The Balanced Scorecard was created to add other dimensions to the financial scorecard, namely customer, internal process, learning and growth. As time went on, it was noticed that organizations were under increasing pressure that could not be met by the traditional dimensions of performance alone. With sustainability gaining importance as a strategic priority, the Balanced Scorecard was expanded to include environmental and social objectives alongside traditional business metrics (Kumar et al., 2022). The past decade of research shows that there is a gradual transition from past performance-based measurement to more sustainable management systems. The long-term value of the Balanced Scorecard has been largely hinged on its capacity to adjust to the new managerial challenges (Tawse & Tabesh, 2022). Al-Dhubaibi (2025) also proposes that the Balanced Scorecard must be integrated with other management approaches to ensure it continues to support sustainable performance objectives. Similarly, Mio et al. (2022) demonstrate that the Sustainability Balanced Scorecard (SBSC) enables organizations to integrate sustainability objectives into strategy implementation and performance evaluation processes. These developments indicate that sustainability activities are not marginal activities anymore and are gradually becoming an integral component of organizational performance management systems. The introduction of the SBSC is thus a significant step in the development of performance measurement. Incorporating sustainability objectives into traditional thinking helps organizations better focus their strategy on long-term economic, environmental, and social outcomes.

3.2. ESG Integration into Balanced Scorecard Frameworks

The Sustainability Balanced Scorecard concept has been extended in recent developments by integrating environmental, social and governance (ESG) metrics. There has been a growing trend for organizations to be held accountable for their environmental stewardship, social responsibility and governance effectiveness as well as their financial results. As a result, ESG measures are gaining traction as part of strategic performance management. Research indicates that incorporating ESG into BSC frameworks can enhance strategic value. The recent regulatory changes have only further enhanced the interest in performance measurement systems related to ESG. Increasingly, sustainability disclosure is becoming more stringent and is now calling for the organization to not only perform financially, but also environmentally, socially and governance-wise. New sustainability reporting requirements, in particular, have created a greater need for management systems that can integrate reporting processes with strategic goals and performance evaluation systems. This has further reinforced the relevance of ESG-integrated Balanced Scorecard as companies look for more formalized ways of handling sustainability. Hristov and Searcy (2024) suggest that the Balanced Score Card (BSC) systems can help implement the requirement for sustainability reporting by connecting governance goals with measurable performance indicators. Likewise, Sustainability-oriented scorecards have been shown by Santos et al. (2024) to be able to transform the goals of sustainability into action and measurable results. Evidence from the pharmaceutical industry further indicates that environmental and social indicators are effective in evaluating the performance of sustainability when integrated into a Balanced Scorecard framework (Deng et al., 2025). In addition to reporting, performance systems are also oriented towards ESG, which have an impact on organizational results. Dong et al. (2025) discovered that performance measurement systems are important in transforming strategic sustainability efforts into ESG performance gains. Together, these studies suggest that ESG-integrated Balanced Score Cards may be used as tools to connect sustainability goals with strategy and

performance management in an organization.

3.3. Perspectives on ESG Integration within the Balanced Scorecard

One of the key questions that has arisen from the literature is how environmental, social, and governance (ESG) objectives should be integrated into Balanced Scorecard systems. Previous research has confirmed the feasibility of integrating ESG, but there are varying perspectives on the placement of ESG in the scorecard framework (Mio et al., 2022; Hristov & Searcy, 2024; Santos et al., 2024). One opinion is that the ESG indicators should be allocated to the conventional Balanced Scorecard dimensions (Mio et al., 2022; Santos et al., 2024; Dong et al., 2025). In this way, environmental and governance goals can influence finances through risk management, long-term value generation; and social objectives can influence customer relationships, internal processes and organizational learning. This perspective is based on the idea that sustainability issues are not distinct separate organisational activities but are related to all dimensions of performance management (Mio et al., 2022; Santos et al., 2024). The second approach focuses more on the clarity of sustainability targets, and suggests that sustainability should be presented as a separate perspective within the scorecard, via ESG. Advocates of this approach argue that an ESG dimension could enhance accountability, monitoring and management of sustainability-related targets (Hristov & Searcy, 2024; Michalski, 2024). This is especially helpful in organisations with a high volume of sustainability reporting needs and stakeholder pressure (Deng et al., 2025). There is no clear consensus on the best practice model for integrating ESG. Instead, it seems to be driven by organisational priorities, reporting needs and strategic goals. However, the evidence analysed indicates that integrating ESG objectives into the existing scorecard perspectives can help to create a deeper link between sustainability efforts and the actions of managers in their daily work. Meanwhile, companies with more sophisticated sustainability programs could benefit from creating more visibility of ESG metrics by establishing dedicated measurement frameworks.

3.4. Future Directions in ESG-Oriented Performance Measurement

New research has emerged indicating that performance measurement systems that focus on environmental, social, and governance (ESG) are likely to keep changing as technology and regulations change. Digital transformation is driving the way that organisations gather, analyse and report performance data. Today's performance measurement systems are becoming more flexible, data based, and adaptive, according to Cosa and Torelli (2024). These changes present an opportunity for more innovative and dynamic forms of ESG monitoring and reporting. The rise in digital technologies also gives new impetus to the development of more complex ESG measurement practices. Wang and Hou (2024) found that positive links exist between the digital transformation efforts and the ESG performance outcomes. Meanwhile, the new reporting requirements that come with Industry 5.0 have also raised the bar for transparency, consistency, and stakeholder engagement for ESG reporting (Yadav et al., 2024). The use of sustainability-oriented performance measurement is also spreading beyond the traditional business context. Hekimoğlu et al. (2025) indicate that sustainability indicators have the potential for use in the evaluation of the performance of educational institutions and long-term planning, which indicates a broader application potential for ESG-oriented scorecard applications. A future performance management system is therefore likely to shift from a periodic reporting system to a continuous sustainability monitoring system. In addition, organizational attributes like agility may enhance the performance gains of ESG activities, as proposed by Mariani et al. (2025). These developments have highlighted the need for increased embedding of sustainability metrics, digital technologies and strategic decision making processes in future ESG focused Balanced Scorecard frameworks.

4. Discussion

The studies reviewed above clearly show a shift in the traditional performance measurement methods to sustainability-based management systems. The Balanced Scorecard was conceived to include financial and nonfinancial measures, and recent trends show that this has now extended to the inclusion of environmental, social, and governance (ESG) perspectives in the strategic performance management framework (Kumar et al. 2023; Hristov & Searcy, 2024). This change is reflected in the introduction of the Sustainability Balanced Scorecard, which builds on existing scorecard perspectives and incorporates more holistic sustainability goals (Deng et al., 2025). The literature also indicates that the integration of ESG is becoming an integral part of the organisation's strategy and not an additional reporting process. The current evidence is fragmented, however, in that it is unclear, in particular, how standardized ESG metrics are being developed that can be applied consistently across industries (Martiny et al., 2024; Yadav et al., 2024). Moreover, the analyzed literature does not share a clear consensus on the integration of ESG goals within the current Balanced Score Card perspectives, nor on the inclusion of an ESG-specific dimension. This indicates that the practice and design of ESG scorecards is a growing field of research and practice. In the same way, sustainability reporting requirements have been increasing, but very little work has been done to systematically integrate sustainability reporting into the implementation of Balanced Scorecard (BSC) processes (Hristov & Searcy, 2024). The digital transformation also offers new potential for enhancing the measurement of ESG by creating more flexible, data-driven, and real-time performance management systems (Cosa & Torelli, 2024; Wang & Hou, 2024). Based on the above findings, integrated frameworks that can integrate ESG metrics, strategic goals, and organizational performance should be further investigated for future research.

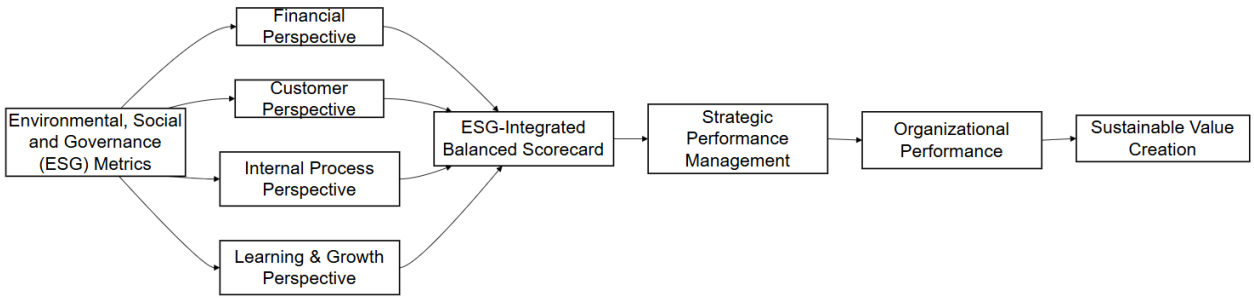


Fig. 1. ESG-Integrated Balanced Scorecard Framework for Strategic Performance Management
Source: Own elaboration, 2026

Figure 1 summarizes the relationships identified in the reviewed studies. The framework suggests that environmental, social, and governance (ESG) metrics influence the traditional Balanced Scorecard perspectives, such as financial, customer, internal process, and learning and growth. These perspectives collectively help form an ESG-integrated Balanced Scorecard for strategic performance management. In this manner, sustainability objectives can be linked to the outcomes of the organisation’s performance and eventually, to the creation of value over a longer period. Thus, the framework demonstrates the integration of ESG principles into a single framework for performance measurement and strategic management.

5. Conclusion

The review in this paper focused on the adoption of environmental, social, and governance (ESG) indicators in Balanced Scorecards (BSCs) and identified how Balanced Scorecards have increasingly evolved to become Sustainability Balanced Scorecards. As seen in the literature, organizations are more and more turning to performance measurement systems, which focus on ESG, to make sustainability objectives consistent with strategic management processes. This has led to the Balanced Scorecard becoming more than just a way to measure performance – it is also a tool for sustainability reporting, governance needs, and value creation in the long-term (Kumar et al., 2023; Hristov & Searcy, 2024). The results additionally indicate that ESG-integrated BSC can help to establish a closer link between ESG efforts and organizational metrics by linking strategic goals with measurable outcomes (Dong et al., 2025). There are, however, challenges to be addressed in the areas of standardized ESG metrics, digital performance measurement capabilities, and the establishment of combined implementation frameworks. Further research is thus needed to develop more uniform ESG measurement structures, the application of digital technologies for enhancing ESG-oriented performance measurement systems as well as the incorporation of sustainability-oriented dimensions versus existing perspectives of the Balanced Scorecard.

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