

Review

Unveiling triple bottom line's influence on business performance

Elisabete Nogueira¹  · Sofia Gomes¹  · João M. Lopes² 

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Abstract

Addressing environmental, social, and economic challenges has become a pressing global priority. The Triple Bottom Line (TBL) framework offers a holistic approach for evaluating corporate performance by integrating economic, environmental, and social perspectives. Despite its increasing adoption in both managerial and academic research, there remains a significant gap in understanding how the TBL framework influences business performance. To address this, the study conducts a bibliometric review of 207 publications from the Web of Science database. The review highlights the multifaceted impact of practices linked to the TBL dimensions on business performance while introducing the TBL Influence on Business Performance model. This model provides valuable insights into how businesses can effectively apply TBL principles to address socio-environmental challenges, foster innovation, and achieve sustained long-term performance. The findings contribute valuable theoretical and practical insights into how organizations can utilize TBL principles to strengthen resilience, innovation, and performance in the face of global socio-environmental challenges.

Keywords Triple bottom line · Performance · Sustainability · Economic dimension · Environmental dimension · Social dimension

1 Introduction

Recent events impacting our planet have shattered the conception of a sustainable society. The repercussions of COVID-19 and geopolitical tensions have sparked widespread concern and pain. It not only brought about economic and political doubt but also incurred social and economic costs that will persist in the forthcoming years [1]. Political and economic uncertainty emerged, along with the apprehension of a broader shift in the economy, resulting in a loss of employment and an increase in poverty [2]. A fluctuation in commodities values derived from resources found in nature also ensued from these events [3]. Many nations are grappling with an energy crisis due to the instability in prices and the scarcity of natural resources [4]. The shifting public focus on conserving and improving the natural environment has transformed environmental accountability into a new strategic method to enhance enterprise edge [5, 6], marked by the rising significance of embracing eco-friendly practices [7, 8] and the mounting corporate obligation to convey their advancements in sustainable development [9]. Simultaneously, innovation emerges as a vital determinant for enterprise resilience, driving strides in sustainability and the integration of cleaner methods [10]. Countries worldwide are tackling the climate change crisis by implementing green energy innovations and advancing environmental sustainability to

✉ Elisabete Nogueira, elisabete.s.nogueira@gmail.com; Sofia Gomes, sofia.gomes@upt.pt; João M. Lopes, joao.lopes.1987@gmail.com |

¹Research on Economics, Management and Information Technologies, REMIT, Portucalense University, Rua Dr. António Bernardino Almeida, 541-619, 4200-072 Porto, Portugal. ²Instituto Superior Miguel Torga, Coimbra, Portugal & NECE-UBI – Research Unit in Business Sciences, University of Beira Interior, Covilhã, Portugal.



support a sustainable future [11, 12]. Furthermore, the climate change discourse is increasingly aligned with Industry 5.0, highlighting the essential role of green finance within this paradigm [13].

Nevertheless, divergent viewpoints on sustainability and the progression of economic activity have persisted [14]. These circumstances have highlighted the importance of sustainable initiatives' application for an economic development that's sustainable [15]. In a time of significant environmental challenges, social inequality, and transforming consumer expectations, the traditional corporate approach of solely focusing on profit maximization is proving inadequate.

In a time of significant environmental challenges, social inequality, and transforming consumer expectations, the traditional corporate approach of solely focusing on profit maximization is proving inadequate. According to the most recent international guidelines, a comprehensive and unified approach is necessary to address the traditional consequences of business activity on economic, environmental, and societal aspects [16]. The TBL framework is one of the tools available to companies to address the sustainability issues. That, must be considered when evaluating firms' performance [17, 18]. TBL encompassing perspective goes beyond the narrow scope of financial metrics and prompts companies to consider broader implications. Presented as a framework, TBL achieves business success by balancing the economic, environmental, and social dimensions [17, 19]. The TBL concept asserts that the treatment of the three dimensions holds equal significance [20–26]. It is imperative to take them into account when conducting a comprehensive analysis of sustainability [22, 23, 27]. TBL is recognized as a transformative force within the corporate world. Its holistic approach addresses the interactions among various economic, environmental, and social factors, fostering sustainability, resilience, and innovation. It should be incorporated into the language of the companies [28]. Business should understand the opportunities TBL activities provide for enhance their competitive edge and strategic position [29]. As businesses recognize the symbiotic relationship between their success and societal well-being, embracing TBL principles becomes more than just a moral obligation; it's a strategic imperative for a harmonious and prosperous future.

While the TBL has gained significant attention for its perceived positive impact on business competition [30] understanding its core components remains essential [31]. Growing concerns surround the analysis of factors influencing company profitability and sustainability [32]. Despite its rising relevance across various disciplines, TBL has been largely neglected in the context of economic development [33]. Moreover, limited research exists on integrating TBL into sustainable development, even though its holistic objectives emphasize exploring the relationship between implemented strategies and their outcomes [34].

Understanding how the economic dimension of the TBL functions is critical [35]. Further research is needed to explore corporate financial mechanisms that support sustainability profitability [36], analyze the link between financial performance and environmentally conscious practices [37], and evaluate financial sustainability in companies [38] [39]. Additionally, further investigation into the environmental dimension of TBL is necessary, particularly regarding the link between eco-friendly practices and company performance, which remains unclear [40–42] [43]. [44]. Research has yet to determine whether adopting green approaches is beneficial [45], and ongoing debates around the complexities of assessing sustainability performance must continue [46]. Furthermore, there is a gap in understanding the differing perspectives on how green initiatives and the TBL approach affect business value and organizational performance [47]. The social dimension of TBL remains underexplored in management theories and practices [48]. Previous research highlights a lack of analysis on the influence of social value on companies [49–52], despite the heightened interest of academics in organisational performance over the past decade [53]. Thus, understanding social sustainability is essential [54].

In this context, multiple avenues for future research exist, with the primary research gap being the need to conduct a comprehensive examination of how the practices associated with the three dimensions of the TBL—economic, environmental, and social—influence business performance.

Identifying and consolidating strategies that policymakers can implement within the corporate sector is essential to facilitate the transition toward sustainable development by establishing supportive regulatory frameworks, addressing environmental and social challenges, promoting market-based transformation, mitigating systemic risks, and setting a precedent through the adoption of sustainable practices within public administration. Furthermore, central administration should be aware of these strategies and adopt them within their own organizations, serving as both an example and a catalyst for sustainable transformation.

Stakeholder theory is of utmost importance in navigating these intricate issues, as it serves as a bridge connecting labour practices, organizational performance, and social sustainability [55]. Understanding the impact of the triple bottom line on economic development is crucial for companies. It broadens their scope beyond solely financial outcomes to encompass societal and environmental ramifications. This broader perspective facilitates the formulation of balanced decisions that consider long-term viability and risk management. Additionally, it enhances companies' reputation, attracts conscious consumers and investors, and drives innovation. By embracing the triple bottom line, corporations can align

with global goals, comply with regulations, and contribute to a more sustainable future, ultimately ensuring their own success in an interconnected world.

This study aims to contribute to the advancement of understanding regarding the complexities surrounding sustainability issues, providing a distinct perspective on the TBL, its contributions to economic development, and the challenges it presents for academia, the business world, and society. Within this context, this bibliometric review systematically investigates the multifaceted impact of the TBL on economic development. Consequently, the primary research question guiding this study is: How does the TBL influence business performance?

The research presented herein enhances understanding of the impact of the TBL upon the tenets of sustainable development, thereby facilitating the cultivation of a comprehensive vantage point regarding societal advancement that transcends mere economic metrics. This understanding empowers us to formulate judicious choices that guarantee a harmonized equilibrium among economic, social, and environmental deliberations, thereby culminating in a future characterized by enhanced prosperity and heightened resilience. The reasoning underlying the cluster analysis enabled the identification of key patterns and relationships within the reviewed literature, culminating in the proposal of the TBL Influence on Business Performance model.

Several contributions are made by this research, as the study confirms that integrating environmental, social, and economic strategies supports sustainable development and economic growth, aligning with global efforts such as CSR frameworks and climate change mitigation strategies. However, there are gaps where current policies fall short, particularly in fully embracing a holistic TBL approach and focusing on social sustainability dimensions. To address these gaps, the study identifies potential new policy initiatives, including the development of comprehensive TBL implementation frameworks, incentives for gender diversity in corporate governance, support for green innovation and digitalization, and the enhancement of ESG disclosure standards. These insights provide policymakers, corporate leaders, and international organizations with pathways to design forward-thinking, multidimensional strategies that ensure long-term economic success while advancing environmental preservation and social equity.

This paper is structured into five main sections: First, Introduction provides the background and objectives; next, Materials and Methods outlines the research framework and methodology; followed by Results, which presents the key findings from the literature review; then Discussion, which interprets the findings and explores their implications; and finally, Conclusions, which summarizes the main insights and contributions of the study.

2 Materials and methods

This research utilized bibliometric analysis as its foundation. Researchers employ bibliometric methodologies to collect bibliographic data and quantitatively validate derived categories from published literature [56]. This methodological choice is underpinned by the burgeoning significance of bibliometrics as a scholarly discipline [57] and its demonstrated resilience to uncertainties inherent in keyword selection [58].

This study presents a systematic methodology for data selection aimed at investigating the relationship between TBL' environmental, economic, and social dimensions and business performance.

2.1 Research framework

In the step 1, utilizing the Web of Science database, a comprehensive search was conducted on December 13, 2024. The Web of Science database was selected due to its recognition as a key repository for bibliometric research in the social sciences [59]. Furthermore, its rigorous processes for data selection, organization, and curation ensure its reliability as a resource for academic investigations [60]. Sample retrieval was conducted in accordance with the methodologies delineated by various authors. The exploration was conducted based on topic [61]. In the step 2, publications were filtered based on the following search keywords: "environmental dimension" or "economic dimension" or "social dimension" or "triple bottom line" and "compan* performance" or "firm performance" or "corporate performance" or "business performance" or "financial performance" or "account* performance" or "market performance" or "economic performance" or "operational performance". This process yielded a total of 456 publications. During the step 3, publications that did not meet the criteria of being articles or reviews were excluded from consideration [62], resulting in the removal of 29 publications. This process left a total of 427 publications. In step 4, only articles composed in the English language were included in the selection process. Consequently, five publications were deemed ineligible and were thus excluded, resulting in a total of 422 publications remaining for subsequent analysis. Further refinement was achieved, in step 5 by

Fig. 1 Steps of the data selection process

Steps	Number of publications
Step 1	-
Step 2	456
Step 3	427 (29 excluded)
Step 4	422 (5 excluded)
Step 5	207 (215 excluded)

focusing on publications categorized under business, management, and economics [63], resulting in the exclusion of an additional 215 publications. The systematic application of these selection criteria culminated in a final dataset comprising 207 publications for analysis (Fig. 1). The methodology outlined in this study ensures the robust selection of relevant literature, laying the groundwork for a comprehensive investigation into the relationship between TBL' environmental, economic, and social dimensions and business performance.

3 Results

3.1 Evolution of publications and citations, journals and publishers

Investigating the evolution of the number of publications from 1995 to December 2024 reveals interesting trends and patterns (Fig. 2). Initially, in 1995, the first publication that met the inclusion criteria of the study, titled *Developing a Green Business Portfolio* [64], was recorded. From 2000 to 2004, the number of publications remained consistently low, with only one or two publications per year. However, starting from 2005, there was a noticeable increase in the number of publications, albeit with occasional fluctuations. The years 2008 and 2011 marked significant spikes, with four publications each. This upward trend continued into the following years, with a steady rise observed until 2015, where the number of publications reached eight. From 2016 onwards, the growth trajectory became more pronounced, with a sharp increase in the number of publications each year. The years 2022, 2023 and 2024 saw particularly remarkable spikes, with 26, 39 and 26 publications respectively.

The analysis of the evolution of the number of citations exhibits a comparable pattern (Fig. 2). The number of citations for the years 1999 to December 2024 reveals a steady and remarkable increase over time. From 1999 and 2002, only one citation was recorded each year. The trend remained relatively low with only two citations in 2004. However, from 2005 onwards, there was a noticeable surge in citations, with a significant increase each year. By 2017, the number of citations had soared to 585, continuing to rise to 829 in 2018, 999 in 2019, and exceeding 1000 in 2020. The growth continued unabated, reaching 1435 citations in 2021 and 1528 in 2022. As of 2023, the number of citations has continued to increase, reaching a total of 1,596. By December 9, 2024, this figure has further risen to 1,649. Overall, the analysis illustrates a consistent upward trend in the number of publications and citations over the past two decades, reflecting the increasing impact and relevance of the subject matter over time.

The analysis of journals with significant contributions to the studied theme has revealed various publication titles (Table 1). The following twelve publications contributed to 39.24% of the total publications. Corporate Social Responsibility and Environmental Management stands out with the highest record count, publishing 17 articles, constituting 8.21% of the total. Following closely are the Business Strategy and The Environment and the Journal of Business Ethics, with 12 articles, representing 5.80% of the total articles. Other noteworthy journals include the Journal of Manufacturing Technology Management (6 articles, 2.90%), International Journal of Operations Production Management and International

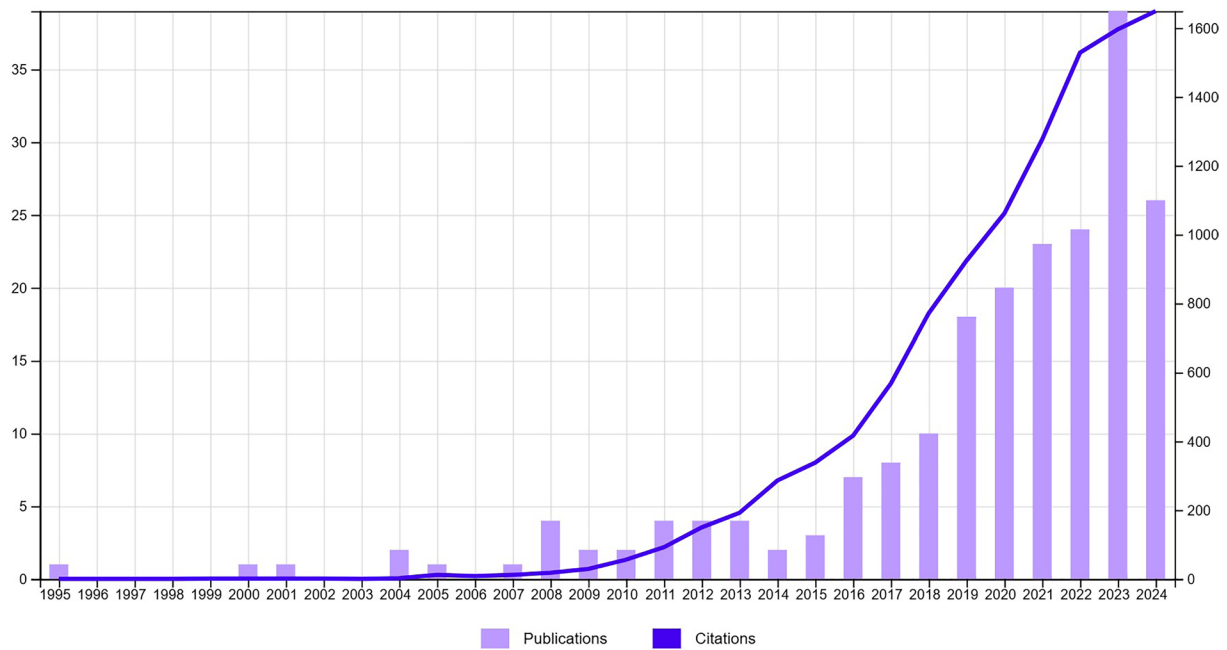


Fig. 2 Evolution of publications and citations

Table 1 Journals analysis

Journals	Record Count	% of 198
Corporate social responsibility and environmental management	17	8.21
Business strategy and the environment	12	5.80
Journal of business ethics	12	5.80
Journal of manufacturing technology management	6	2.90
International journal of operations production management	5	2.53
International journal of productivity and performance management	5	2.42
Cogent business management	4	1.93
Industrial marketing management	4	1.93
International journal of logistics management	4	1.93
International journal of physical distribution logistics management	4	1.93
Journal of business research	4	1.93
Sustainability accounting management and policy journal	4	1.93

Journal of Productivity and Performance Management (5 articles, 2.42%). Finally, Cogent Business Management, Industrial Marketing Management, International Journal of Logistics Management, International Journal of Physical Distribution Logistics Management, Journal of Business Research and Sustainability Accounting Management and Policy Journal have each published four articles, accounting for 1.93% of the total publications.

In the realm of publisher demographics, there are 32 entities in total, with the top five publishers collectively contributing 78.74% of the overall publication count (Table 2). The distribution of publications across different publishers reveals interesting trends within the academic landscape. Among the top publishers, Emerald Group Publishing leads with the highest record count, constituting approximately 35.75% of the total publications analysed. Following closely behind is Wiley, comprising 16.91% of the records, while Elsevier and Springer Nature contribute 11.11% and 8.21%, respectively. Taylor & Francis also play a significant role, accounting for 6.76% of the publications. This distribution highlights the diverse range of publishing platforms utilized by researchers, with each publisher contributing uniquely to the dissemination of scholarly knowledge across various fields.

Table 2 Publishers analysis

Publishers	Record Count	% of 207
Emerald group publishing	74	35.75
Wiley	35	16.91
Elsevier	23	11.11
Springer nature	17	8.21
Taylor & francis	14	6.76

3.2 Comparative analysis with existing reviews

The sample comprises 14 review studies (Table 3), highlighting the diversity of issues associated with the TBL and its broad applicability. These studies demonstrate how the TBL framework addresses both challenges and solutions to the most pressing concerns of society and business. Key studies explore themes such as the role of operations strategy in competitive advantage [65], circular economy practices in supply chain finance [66], and developments in environmental accounting in the public sector [67]. Others examine green trade credit and its link to sustainable business performance during COVID-19 [68], and the influence of board mechanisms on sustainability performance [69]. Research also integrates foundational concepts like corporate social responsibility with the TBL [70], investigates social sustainability in supply chain management [71], and assesses environmental competences and capabilities [72]. Empirical studies highlight corporate environmental accountability [73] and propose frameworks for sustainable supply chains [74, 75]. Additional work examines social issues in supply chains [76], the green impacts of Lean methodologies [77], and sustainable practices in hospitality supply chain management [78]. Together, these studies enhance understanding of sustainability, advancing frameworks and practices across industries.

Nonetheless, none of the reviewed studies explicitly examines how practices associated with each dimension of the TBL distinctly influence business performance. In contrast, the present study aims to address this gap by exploring and understanding the specific ways in which TBL practices impact organizational outcomes. It is important to highlight that the analysis presented in this study possesses a critical characteristic: it integrates all three dimensions of the TBL framework, considering them as an interconnected and unified construct. This approach underscores their combined and interdependent influence on business performance.

3.3 Co-occurrence analysis

The evolution of pivotal concepts from 2016 to 2022 mirrors the evolving priorities and emergent trends within the realms of business management and sustainability. Initially, in 2016, keywords such as environment, strategy, corporate governance, corporate sustainability, and economic performance commanded the conversation, spotlighting a pronounced focus on environmental issues and corporate strategic planning. Subsequently, by 2018, a discernible shift occurred with the emergence of concepts related to corporate social responsibility, stakeholders, social performance, and the resource-based view, indicative of an escalating emphasis on social and stakeholder-centred paradigms in business management. In 2020, the narrative broadened to encompass a diverse array of topics, including innovation, dynamic capabilities, and supply chain management, underscoring the growing significance of adaptability and sustainability throughout value chains. Furthermore, concepts such as the triple bottom line, firm performance and financial performance gained prominence, signalling an increased awareness of the interdependencies among social, environmental, and economic outcomes. By 2022, CSR, governance, environmental performance, stakeholder theory, sustainability performance, competitive advantage, green initiatives, and sustainable development emerged as focal keywords, reflecting a maturing discourse concerning the assimilation of sustainability principles into corporate governance and strategy. The emphasis on sustainability performance and competitive advantage underscores the acknowledgment of sustainability as a catalyst for long-term value generation and organizational resilience (Fig. 3).

Table 3 Comparative analysis with existing reviews

Authors	Article title	Subject
Patra et al., (2024) [66]	Circular economy practices in supply chain finance: a state-of-the-art review	A review of literature on circular economy practices in supply chain finance employing bibliometric and network analysis methods
Singh, (2024) [65]	A decade of operations strategy: research issues and future research directions	A systematic bibliometric analysis of the literature on operations strategy to explore its role in driving competitive advantage
Tommasetti et al., (2023) [67]	Environmental accounting in the public sector: a systematic literature review	Systematic literature review analyzing the current state and developments in environmental accounting within the public sector
Fahim and Mahadi, (2023) [68]	Green Trade Credit and Sustainable Firm Performances During COVID-19: A Conceptual Review	This study examines the relationship between trade credit demand and sustainable firm performance through green credit using the Resource-Based View theory
Kwarteng et al. (2023) [69]	Influence of board mechanisms on sustainability performance for listed firms in Sub-Saharan Africa	A two-step system generalized method of moments approach is applied to investigate how various board characteristics influence sustainability performance
Farooq et al. (2021) [70]	Basics of macro to microlevel corporate social responsibility and advancement in triple bottom line theory	This research integrates key foundational CSR concepts with TBL theory
Arslan, (2020) [71]	Corporate social sustainability in supply chain management: a literature review	Literature review utilizing thematic analysis to examine social sustainability within the context of supply chain management
Dzhengiz & Niesten, (2020) [72]	Competences for Environmental Sustainability: A Systematic Review on the Impact of Absorptive Capacity and Capabilities	Systematic literature review examining environmental competences, defined as responsible management skills focused on enhancing environmental sustainability
Cubilla-Montilla et al. (2020) [73]	What companies do not disclose about their environmental policy and what institutional pressures may do to respect	Empirical study focused on the world's 500 largest companies in 2015, based on the Fortune Global 500 ranking
Yun and HY (2019) [74]	Interactions in sustainable supply chain management: a framework review	Systematic literature review analyzing articles from 13 leading supply chain management journals published between 2010 and 2016
Carter et al. (2019) [75]	Sustainable supply chain management: continuing evolution and future directions	Systematic review updating Carter and Easton (2011) by analyzing sustainable supply chain management literature from leading logistics and supply chain journals published between 2010 and 2018
Yáwar and Seuring, (2017) [76]	Management of Social Issues in Supply Chains: A Literature Review Exploring Social Issues, Actions and Performance Outcomes	Structured literature review examining social challenges within supply chain systems
Chugani et al. (2017) [77]	Investigating the green impact of Lean, Six Sigma and Lean Six Sigma	Systematic literature review examining the environmental aspects linked to Lean, Six Sigma, and Lean Six Sigma methodologies
Xu and Gursoy, (2015) [78]	A Conceptual Framework of Sustainable Hospitality Supply Chain Management	Hospitality supply chain framework grounded in sustainability literature, emphasizing environmental, social, and economic practices aligned with triple bottom line principles

3.4.1 The clusters were delineated as follows

Cluster 1 (red)—Perspectives and applications of TBL in business operations, encompassing 100 articles; cluster 2 (green)—Sustainable business practices and performance enhancements, comprising 61 articles; and cluster 3 (blue)—Leveraging strategic sustainability to maximize organizational potential, with 43 articles.

4 Discussion

4.1 Cluster discussion

4.1.1 Cluster 1—perspectives and applications of TBL in business operations

The TBL framework is essential for organizations pursuing sustainable success by integrating environmental, social, and economic dimensions into their strategies. This cluster examines TBL's role in corporate performance, stakeholder theory, and CSR while exploring how organizations address external pressures, adopt sustainability practices, and prioritize social and environmental challenges. Vhatkar et al. [81] argue that the TBL framework is a crucial component in a company's pursuit of sustainable success. Moreover, stakeholder theory, corporate performance, and the TBL are essential research domains within sustainability [27]. According to El Akremi et al. [82] TBL forms the cornerstone of corporate stakeholder responsibility, shaping an organization's bespoke initiatives and policies directed towards improving the well-being of various stakeholder groups, thereby fostering mutual benefit and strengthening the business's competitive edge. Grudzien et al. [83] emphasize that external pressures drive organizations to prioritize sustainable operations as a central component of their organizational strategy. Nogueira et al. [55] underscore that integrating social sustainability into corporate labor practices leads to significant organizational performance improvements. Wu and Amoasi [84] demonstrate that corporate social responsibility (CSR) efforts positively influence social, environmental, and brand sustainability frameworks. Escamilla-Solano et al. [85] argue that transparent communication of social and environmental initiatives aligned with economic standards has the potential to enhance financial performance. Menz [86] adds that companies committed to CSR are generally associated with greater economic success and reduced risk exposure. Galletta et al. [87] report that increasing the proportion of female directors improves financial and environmental performance, while Dakhli [88] shows that having more women on corporate boards reduces tax evasion behaviours. Furthermore, Menicucci and Paolucci [89] emphasize that gender diversity contributes positively to the social dimension, underscoring the strategic advantages of socially sustainable business practices. Zubeltzu-Jaka et al. [90] found that CSR-oriented boards enhance corporate social performance, with gender diversity specifically improving financial outcomes. According to Rath et al.'s [91] research, the environmental, social, and governance (ESG) disclosure score has a significant impact on CEO compensation. According to Lu et al. [92], enhanced sustainability performance is positively correlated with increased future profitability, while financial performance also strengthens subsequent sustainability outcomes, demonstrating a reciprocal relationship. Turker and Ozmen [93] note that proactive engagement in environmental assessments highlights emerging sustainability challenges, driving organizations toward transformative social responsibility outcomes through collaboration and learning. Nagiah and Suki's [94] research identifies the significant influence of corporate reputation, environmental sustainability, and social sustainability on business performance. From a macroeconomic perspective, Vargas-Santander et al. [95] provide evidence that a nation's sustainability significantly and positively affects corporate financial performance. Additionally, Jaiwani & Gopalkrishnan [96] identify a significant association between environmental ratings and return on equity as well as non-performing assets, in public sector banks. Moreover, Alcouffe et al., [97] argue that adopting multicapital accounting enhances transparency, promotes accountability, and fosters sustainable business practices, leading to societal benefits. According to De Pilla et al. [98], state ownership has a positive effect on the social dimension of corporate social performance, provided that the state holds a majority ownership stake and a sustainable entrepreneurial ethos can serve as a catalyst for harmonizing business objectives and organizational performance with environmental preservation and societal well-being [99].

4.1.2 Cluster 2—sustainable business practices and performance enhancements

This cluster explores how integrating sustainability strategies enhances organizational performance across environmental, social, and economic dimensions. It highlights the role of environmental management, lean manufacturing, green

procurement, sustainable supply chain practices, and corporate environmental orientation in improving operational efficiency, social commitment, and financial performance. These interconnected strategies emphasize the importance of a holistic approach to achieving long-term organizational success and competitiveness. Arda et al. [100] argue that environmental management practices serve as mediators that positively impact operational, social, and financial performance, underscoring their importance in achieving sustainability and financial success.

Expanding on this, Tran et al. [101] highlight the role of lean manufacturing practices, which bolster environmental and social performance, thus reinforcing the TBL framework. Khan et al. [102] advocate for green procurement strategies, noting their significant contributions to economic and environmental outcomes. Saglam [103] underscores the benefits of sustainable reverse logistics capabilities, which yield improvements across environmental, economic, and social aspects. Saglam [103] also highlights the strong relationship between a culture of sustainability and enhanced environmental and social performance. Addressing the social dimension of supply chains, Yawar and Seuring [76] argue that trust and collaborative commitment are essential for effectively tackling social concerns through cooperative initiatives. In the context of internal practices, De Giovanni [104] demonstrates that internal environmental management directly enhances environmental and social outcomes, while also indirectly benefiting economic performance within the TBL framework. According to Ahmad et al. [105], sustainable supply chain management practices have a significant and positive impact on both sustainability performance and supply chain ambidexterity. Moreover, Carter and Easton [106] describe the evolution of sustainable supply chain management as increasingly converging with broader sustainability paradigms. However, Oubrahim et al. [107] assert that financial performance is a vital determinant in achieving sustainable supply chain performance. Morgan et al. [108] found that sustainability performance is enhanced by strong environmental orientation, effective quality management practices, and substantial sustainability experience. It is important to note that, according to Nogueira et al. [109] environmental sustainability initiatives have a beneficial impact on a company's performance, regardless of whether environmental preservation is the main driving factor behind their adoption. These interconnected ideas collectively advocate for a holistic adoption of TBL principles. The integration of these practices ensures long-term success by balancing environmental, social, and economic priorities.

4.1.3 Cluster 3—leveraging strategic sustainability to maximize organizational potential

This cluster explores how leveraging strategic sustainability enables organizations to optimize their performance, enhance long-term competitiveness, and unlock their full growth potential by integrating environmental, social, and economic considerations into core business strategies. A significant body of research has investigated this area, highlighting its complex and multidimensional impact, as well as the range of strategic approaches that organizations can adopt to achieve sustainable success. According to Ertz et al. [110], Big Data Analytics is positively associated with all three dimensions of the TBL framework: economic, social, and environmental. Additionally, Li et al. [111] identified a positive impact of digitalization on sustainability performance. Huang et al. [112] highlight that dimensions of CSR play a key role in building trust, which in turn drives repurchase intentions and lowers customer switching behaviours. Similarly, Carter and Rogers [113] emphasize the importance of integrating environmental, social, and economic criteria into supply chain management, arguing that this integration is essential for achieving long-term economic viability. Furthermore, Karman et al. [47] highlight that, despite the COVID-19 pandemic's significant disruptions to global stock markets and financial challenges, organizations with robust green initiatives tend to exhibit superior TBL performance under normal conditions. Moreover, Grudzien et al. [83] argue that the intersection of economic, environmental, and social sustainability has become a pressing concern for organizations, externally compelling them to prioritize sustainable operations as a strategic foundation. Torugsa et al. [114] demonstrate that when economic, social, and environmental aspects of proactive corporate social responsibility are implemented through a unified and collaborative strategy, they significantly enhance an SME's financial performance. Additionally, Coelho et al. [115] emphasize that TBL dimensions are strengthened by green entrepreneurial orientation, which prioritizes environmental protection and business growth, underscoring the role of sustainability in fostering organizational competitiveness. González-Ramos et al. [116] stress that stakeholders are essential in enhancing innovation capabilities when a business's economic, social, and environmental dimensions are strategically aligned to leverage specific knowledge. According to Lee et al. [117], businesses adopt ESG strategies to address regulatory pressures, with the goal of securing legitimacy and enhancing TBLP through strategic actions rather than simple compliance. Marzouk and El Ebrashi [118] point out that numerous studies have established a connection between organizational learning and overall business performance. Furthermore, Nogueira et al. [119] demonstrate that TBL's economic dimension positively impacts financial performance, contributing to both, value creation and organizational continuity.

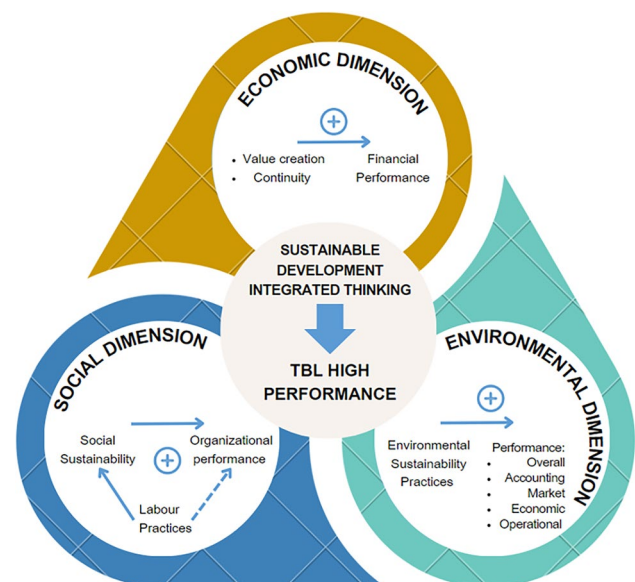
In conclusion, each cluster contributes uniquely to the advancement of TBL research by addressing distinct yet interrelated dimensions of the TBL framework. Cluster 1 examines the theoretical underpinnings of TBL within business operations by exploring concepts such as corporate stakeholder responsibility, CSR, gender diversity, and strategic responses to external pressures, thereby emphasizing the role of TBL as a foundational framework for aligning organizational strategies with environmental, social, and economic objectives. Cluster 2 investigates practical sustainability strategies—such as lean manufacturing, green procurement, sustainable supply chain management, and environmental management—demonstrating their role in enhancing operational efficiency, social engagement, and financial performance through a comprehensive and integrated TBL approach. Cluster 3 focuses on strategic sustainability by exploring advanced mechanisms like Big Data Analytics, digitalization, green entrepreneurial orientation, and ESG strategies, highlighting their capacity to drive organizational resilience, innovation, and competitiveness by aligning environmental, social, and economic dimensions. Collectively, these clusters enrich TBL research by integrating theoretical insights, practical applications, and strategic innovations, thereby expanding the conceptual understanding and operationalization of TBL principles to address complex sustainability challenges.

4.2 Building the model

The analysis of studies across various clusters provides a comprehensive understanding of the relationship between the TBL framework and business performance. By synthesizing findings from multiple research perspectives, this study offers valuable insights into the positive association between TBL's holistic sustainability approach and business performance. TBL emphasizes prioritizing both planetary and human interests, catalysing sustainable processes and economic progress. Effective sustainability management integrates economic, environmental, and social dimensions, fostering development. Human well-being activities drive economic growth, while stakeholder value creation and proactive social strategies are pivotal for success. Companies address sustainability concerns through critical environmental decisions, enhancing efficiency and preservation.

Upon reviewing the findings, it is suggested that TBL serves as a valuable ally in advancing economic development and promoting sustainable outcomes. The three dimensions within TBL converge toward a shared goal, thereby bolstering companies' overall performance. These findings have led to the formulation of the Triple Bottom Line Influence on Business Performance model, as illustrated in Fig. 5.

Fig. 5 TBL Influence on Business Performance model



4.3 Implications

4.3.1 Theoretical Implications

This paper presents seven theoretical implications. Through rigorous analysis and synthesis of existing literature, it offers valuable insights into the multifaceted relationship between TBL and companies' performance. Firstly, the proposal of the TBL Influence on Business Performance model marks a pivotal advancement over existing frameworks by providing an integrated and systematic perspective. Unlike prior models that often focus on isolated dimensions of sustainability, this model encapsulates the dynamic interconnections among TBL components, demonstrating how their alignment drives long-term organizational performance, competitiveness, and societal advancement. It bridges theoretical gaps by linking TBL principles directly to measurable business outcomes, such as financial performance, stakeholder engagement, and operational efficiency. By recognizing the interconnectedness of economic, environmental, and social factors, organizations can better navigate complex business landscapes and achieve sustainable growth [46]. Secondly, the study strengthens the association between TBL and performance, advocating for a broader consideration of TBL across diverse dimensions of well-being [35]. This expanded perspective underscores the importance of integrating TBL principles into decision-making processes to foster long-term sustainability and resilience. Thirdly, a focused examination of the economic dimension of TBL reveals the need to delineate specific conditions for companies to attain economic sustainability. By emphasizing the integration of relevant accounting indicators into business frameworks, organizations can effectively monitor and evaluate their financial performance within the context of TBL. Fourthly, the paper delves into the environmental dimension of TBL, highlighting the mutual benefits of environmental sustainability practices for both the environment and company performance. It underscores the importance of developing robust indicators to assess the efficacy of these practices and their impact on organizational outcomes [109]. Fifthly, the study scrutinizes the social dimension of TBL, uncovering its positive influence on organizational performance. By recognizing workers as pivotal stakeholders in decision-making processes, organizations can enhance employee engagement, satisfaction, and overall performance [55]. Lastly, the seventh implication pertains to stakeholder theory, emphasizing the significance of aligning sustainable strategic management with stakeholder objectives and recognizing the considerable impact of employees on business strategies and outcomes, organizations can foster stronger relationships and achieve sustainable success [55].

4.3.2 Practical implications

This paper elucidates six practical implications that underscore the significance of the TBL for companies' performance, based on the reasoning developed in the articles analysed in this research. Firstly, TBL emerges as an invaluable ally in propelling economic development while fostering sustainable outcomes, culminating in the development of the TBL Influence on Business Performance model. Secondly, it advocates for the prioritization of economic, environmental, and social measures integration within companies' operational frameworks to facilitate balanced decision-making and ensure sustained viability [46]. Thirdly, it accentuates the imperative of aligning environmental preservation endeavours with economic objectives, thereby enhancing human well-being and safeguarding natural resources for future generations [35]. Fourthly, it underscores the necessity of implementing comprehensive TBL strategies, entailing active stakeholder engagement, tailored dissemination of economic impact insights, systematic data collection on value creation, and provision of managerial training to cultivate critical thinking and stakeholder involvement, thus fostering holistic sustainability across organizational spheres. Fifthly, it emphasizes the pivotal role of government regulations and educational initiatives in catalysing the adoption of environmentally conscious practices, fostering green supply chain management, and driving technological advancements, thereby necessitating concerted efforts from companies to advocate for regulatory compliance and invest in educational endeavours to promote sustainability [109]. Sixthly, it underscores the importance of prioritizing the social dimension of TBL, advocating for inclusive human resources policies, diminishing social hierarchy disparities, fostering employee development initiatives, and establishing transparent performance evaluation and reward mechanisms to cultivate a positive work environment conducive to enhancing employee satisfaction and organizational success within the overarching framework of TBL principles [55]. Finally, this paper extends the discussion of implications to include the role of digital transformations and sustainable practices in the context of Industry 5.0. Companies are

increasingly integrating digital tools, advanced analytics, artificial intelligence, and smart technologies to address socio-environmental challenges. This integration provides opportunities to optimize resource use, improve operational efficiency, and implement innovative strategies aligned with TBL principles.

4.3.3 Policy implications

Based on the findings and the relationships highlighted between the TBL framework and business performance, several important policy implications emerge. First, there is a need for the integration of holistic sustainability strategies into business policies. Policymakers and corporate leaders should prioritize embedding the three dimensions of the TBL—economic, social, and environmental—into core organizational strategies. This can be achieved by developing policies that support sustainable business practices, such as green procurement, lean manufacturing, environmental management, and CSR initiatives, within operational procedures. Second, promoting gender diversity within corporate leadership is critical. Evidence from the research demonstrates that gender diversity on corporate boards is positively associated with improved financial and environmental performance. Therefore, policies should be introduced to increase gender diversity in leadership positions. These policies could include implementing diversity quotas, establishing leadership development programs for women, and offering financial incentives for organizations that ensure gender equality in their decision-making processes. Third, there is a strong need to support technological innovation and digital transformation as strategic tools for sustainability. The findings show that tools such as Big Data Analytics and digitalization have a positive correlation with TBL performance. Policymakers should implement measures to support technological advancements, such as tax incentives, subsidies, or funding programs aimed at encouraging the adoption of innovative sustainability technologies. Fourth, strengthening ESG disclosure and accountability mechanisms is crucial. Transparent environmental, social, and governance (ESG) reporting has been shown to positively impact business performance. As such, governments and regulatory bodies should establish clear and enforceable standards for ESG reporting and implement accountability mechanisms. This could involve mandatory reporting, auditing processes, and offering incentives to companies that demonstrate strong ESG performance. Finally, fostering multistakeholder collaboration is vital for addressing complex social and environmental challenges. Policymakers should encourage partnerships between the private sector, public sector, and nonprofit organizations to strengthen sustainable supply chain practices and CSR initiatives. Funding programs, public–private partnerships, and shared research initiatives could facilitate these collaborations, creating opportunities to enhance collective sustainability outcomes.

5 Conclusions

This research highlights the critical significance of the TBL framework and its influence on business performance. Building upon the research question, How does the TBL influence business performance? the findings demonstrate that the TBL serves as a critical conceptual framework for driving economic development while promoting sustainable outcomes. The alignment of its three dimensions—economic, social, and environmental—toward a unified strategic objective significantly contributes to the enhancement of business performance, supporting the pursuit of long-term sustainability and value creation. By analysing the intersection of economic, environmental, and social dimension, it provides valuable insights for organizations seeking to enhance their performance and sustainability. It highlights how environmental practices play a pivotal role in positively influencing several measures of performance, thereby emphasizing the overarching significance of sustainability initiatives. Furthermore, organizational strategies are increasingly geared towards prioritizing economic, environmental, and social sustainability, which in turn nurtures competitiveness within the market landscape. The relation between a strong green entrepreneurial orientation and positive TBL outcomes is also emphasized, showcasing the symbiotic relationship between sustainable practices and organizational success. By integrating sustainable initiatives, companies can better align their objectives with environmental and societal well-being, thus driving long-term value creation. Moreover, the application of stakeholder theory is highlighted as a means to elucidate corporate performance vis-à-vis TBL sustainability, fostering mutual benefit and sustainable growth. Overall, the integration of the TBL framework serves as a catalyst for sustainable development and long-term success within the corporate sphere. The study's findings align with existing sustainability and economic development policies but highlight opportunities to expand and strengthen these frameworks through integrated TBL strategies. They also point toward new policy initiatives that focus on social sustainability, gender diversity, innovation, and transparency to address gaps in current strategies and ensure a comprehensive, multi-dimensional approach to sustainability.

However, it is important to acknowledge the limitations of this study. While the sample was drawn from the Web of Science, a widely recognized and comprehensive database of peer-reviewed publications, it is essential to recognize that it may not encompass all relevant literature sources, potentially excluding important contributions to the topic. This limitation arises because the database primarily indexes publications from journals that meet its stringent selection criteria, which may overlook high-quality research from emerging, regional, or niche journals. Consequently, there is a possibility that certain valuable studies were overlooked during the filtering process. Future research should prioritize validating and refining the TBL Influence on Business Performance model across industries. Studies should explore how integrating economic, environmental, and social measures affects decision-making and organizational performance. Long-term outcomes of aligning environmental preservation with economic goals should also be examined. Further investigations could assess the practical implementation of TBL strategies, the role of government regulations, and educational initiatives in promoting sustainable practices. The effects of technological advancements like digital transformation on TBL dimensions and cross-industry collaborations should be explored. Longitudinal studies could evaluate how TBL dimensions interact over time in response to environmental and socio-economic changes. Additionally, research should focus on organizational culture, leadership styles, and their role in TBL adoption, as well as employee attitudes, stakeholder behaviour, and the intersection of gender diversity with TBL performance. Finally, understanding the impact of global challenges—climate change, resource scarcity, and geopolitical risks—on TBL strategies could provide deeper insights into resilience-building and sustainability. These areas promise to enhance both theoretical and practical understandings of TBL for long-term sustainability and organizational competitiveness.

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Declarations

Competing interests The authors declare no competing interests.

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References

1. Cooke FL, Dickmann M, Parry E. Building sustainable societies through human-centred human resource management: emerging issues and research opportunities. *Int J Hum Resour Manag.* 2022;33:1–15. <https://doi.org/10.1080/09585192.2021.2021732>.
2. Grum DK, Babnik K. The psychological concept of social sustainability in the workplace from the perspective of sustainable goals: a systematic review. *Front Psychol.* 2022. <https://doi.org/10.3389/fpsyg.2022.942204>.
3. Liu W, Chen X. Natural resources commodity prices volatility and economic uncertainty: evaluating the role of oil and gas rents in COVID-19. *Resour Policy.* 2022. <https://doi.org/10.1016/j.resourpol.2021.102338>.
4. Chofreh AG, Goni FA, Klemeš JJ, et al. Covid-19 shock: development of strategic management framework for global energy. *Renew Sustain Energy Rev.* 2021. <https://doi.org/10.1016/j.rser.2020.110643>.
5. Larran Jorge M, Herrera Madueno J, Martinez-Martinez D, Lechuga Sancho MP. Competitiveness and environmental performance in Spanish small and medium enterprises: is there a direct link? *J Clean Prod.* 2015;101:26–37. <https://doi.org/10.1016/j.jclepro.2015.04.016>.
6. Ammer MA, Aliedan MM, Alyahya MA. Do corporate environmental sustainability practices influence firm value? the role of independent directors: Evidence from Saudi Arabia. *Sustainability.* 2020;12:1–21. <https://doi.org/10.3390/su12229768>.

7. Mitra S. An exploratory study of sustainability and firm performance for Indian manufacturing small and medium enterprises. *J Clean Prod.* 2022;371: 133705. <https://doi.org/10.1016/j.jclepro.2022.133705>.
8. D'Souza C, Ahmed T, Khashru MA, et al. The complexity of stakeholder pressures and their influence on social and environmental responsibilities. *J Clean Prod.* 2022;358: 132038. <https://doi.org/10.1016/j.jclepro.2022.132038>.
9. Subramaniam N, Akbar S, Situ H, et al. Sustainable development goal reporting: contrasting effects of institutional and organisational factors. *J Clean Prod.* 2023;411: 137339.
10. Paruzel A, Schmidt L, Maier GW. Corporate social responsibility and employee innovative behaviors: a meta-analysis. *J Clean Prod.* 2023;393: 136189. <https://doi.org/10.1016/j.jclepro.2023.136189>.
11. Dhayal KS, Agrawal S, Agrawal R, et al. Green energy innovation initiatives for environmental sustainability: current state and future research directions. *Environ Sci Pollut Res.* 2024;31:31752–70.
12. Dhayal KS, Giri AK, Esposito L, Agrawal S. Mapping the significance of green venture capital for sustainable development: a systematic review and future research agenda. *J Clean Prod.* 2023. <https://doi.org/10.1016/j.jclepro.2023.136489>.
13. Dhayal KS, Giri AK, Kumar A, et al. Can green finance facilitate industry 5.0 transition to achieve sustainability? a systematic review with future research directions. *Environ Sci Pollut Res.* 2023;30:102158–80.
14. Peng B, Sheng X, Wei G. Does environmental protection promote economic development? from the perspective of coupling coordination between environmental protection and economic development. *Environ Sci Pollut Res.* 2020;27:39135–48. <https://doi.org/10.1007/s11356-020-09871-1>.
15. Polcyn J, Us Y, Lyulyov O, et al. Factors influencing the renewable energy consumption in selected European countries. *Energies.* 2022;15:1–27. <https://doi.org/10.3390/en15010108>.
16. Chen VZ, Zhong M, Duran P, Sauerwald S. Multistakeholder benefits: a meta-analysis of different theories. *Bus Soc.* 2022. <https://doi.org/10.1177/00076503221110181>.
17. Elkington J. Governance for sustainability. *Corp Gov.* 2006;14:522–9. <https://doi.org/10.1111/j.1467-8683.2006.00527.x>.
18. Elkington J. *Cannibals With Forks: The Triple Bottom Line of 21st Century Business.* Oxford, United Kingdom: Capstone Publishing Limited; 1997.
19. Gariba MI, Arthur EE, Odei SA. Assessing the impact of public digitalization on sustainability: the mediating role of technological innovation in the context of the EU. *Disc Sustain.* 2024. <https://doi.org/10.1007/s43621-024-00397-x>.
20. Montabon F, Pagell M, Wu ZH. Making sustainability sustainable. *J Supply Chain Manag.* 2016;52:11–27. <https://doi.org/10.1111/jscm.12103>.
21. Kiel D, Muller JM, Arnold C, Voigt KI. Sustainable industrial value creation: benefits and challenges of industry 4.0. *Int J Innov Manag.* 2017. <https://doi.org/10.1142/S1363919617400151>.
22. Hahn T, Pinkse J, Preuss L, Figge F. Tensions in corporate sustainability: towards an integrative framework. *J Bus Ethics.* 2015;127:297–316. <https://doi.org/10.1007/s10551-014-2047-5>.
23. Hubbard G. Measuring organizational performance: beyond the triple bottom line. *Bus Strateg Environ.* 2009;18:177–91. <https://doi.org/10.1002/bse.564>.
24. Howard M, Bohm S, Eatherley D. Systems resilience and SME multilevel challenges: a place-based conceptualization of the circular economy. *J Bus Res.* 2022;145:757–68. <https://doi.org/10.1016/j.jbusres.2022.03.014>.
25. Gu WT, Wang JY. Research on index construction of sustainable entrepreneurship and its impact on economic growth. *J Bus Res.* 2022;142:266–76. <https://doi.org/10.1016/j.jbusres.2021.12.060>.
26. Raza A, Alavi AB, Asif L. Sustainability and financial performance in the banking industry of the United Arab Emirates. *Disc Sustain.* 2024. <https://doi.org/10.1007/s43621-024-00414-z>.
27. Chabowski BR, Mena JA, Gonzalez-Padron TL. The structure of sustainability research in marketing, 1958–2008: a basis for future research opportunities. *J Acad Mark Sci.* 2011;39:55–70. <https://doi.org/10.1007/s11747-010-0212-7>.
28. Kumar G, Goswami M. Sustainable supply chain performance, its practice and impact on barriers to collaboration. *Int J Product Perform Manag.* 2019;68:1434–56. <https://doi.org/10.1108/IJPPM-12-2018-0425>.
29. Ferro C, Padin C, Hogevoold N, et al. Validating and expanding a framework of a triple bottom line dominant logic for business sustainability through time and across contexts. *J Bus Indust Mark.* 2019;34:95–116. <https://doi.org/10.1108/JBIM-07-2017-0181>.
30. He Q, Gallear D, Ghobadian A, Ramanathan R. Managing knowledge in supply chains: a catalyst to triple bottom line sustainability. *Prod Plan Contl.* 2019;30:448–63. <https://doi.org/10.1080/09537287.2018.1501814>.
31. Rosli N, Ha NC, Ghazali EM. Bridging the gap between branding and sustainability by fostering brand credibility and brand attachment in travellers' hotel choice. *Bottom Line.* 2019;32:308–39. <https://doi.org/10.1108/BL-03-2019-0078>.
32. Lajnef K, Ellouz S. Nonlinear causality between CSR and firm performance using NARX model: evidence from France. *J Sustain Finance Invest.* 2022. <https://doi.org/10.1080/20430795.2022.2112140>.
33. Hammer J, Pivo G. The triple bottom line and sustainable economic development theory and practice. *Econ Dev Q.* 2017;31:25–36. <https://doi.org/10.1177/0891242416674808>.
34. Collste D, Pedercini M, Cornell SE. Policy coherence to achieve the SDGs: using integrated simulation models to assess effective policies. *Sustain Sci.* 2017;12:921–31. <https://doi.org/10.1007/s11625-017-0457-x>.
35. Nogueira E, Gomes S, Lopes JM. The key to sustainable economic development: a triple bottom line approach. *Resources.* 2022;11:46. <https://doi.org/10.3390/resources11050046>.
36. Cupertino S, Vitale G, Taticchi P. Interdependencies between financial and non-financial performances: a holistic and short-term analytical perspective. *Int J Product Perform Manag.* 2022. <https://doi.org/10.1108/IJPPM-02-2022-0075>.
37. Alshehhi A, Nobanee H, Khare N. The impact of sustainability practices on corporate financial performance: literature trends and future research potential. *Sustainability.* 2018. <https://doi.org/10.3390/su10020494>.
38. Zabolotnyy S, Wasilewski M. The concept of financial sustainability measurement: a case of food companies from Northern Europe. *Sustainability.* 2019;11:5139. <https://doi.org/10.3390/su11185139>.
39. Gleißner W, Günther T, Walkshäusl C. Financial sustainability: measurement and empirical evidence. *J Bus Econ.* 2022. <https://doi.org/10.1007/s11573-022-01081-0>.

40. Li EL, Zhou LX, Wu AQ. The supply-side of environmental sustainability and export performance: the role of knowledge integration and international buyer involvement. *Int Bus Rev.* 2017;26:724–35. <https://doi.org/10.1016/j.ibusrev.2017.01.002>.
41. Agyabeng-Mensah Y, Afum E, Ahenkorah E. Exploring financial performance and green logistics management practices: examining the mediating influences of market, environmental and social performances. *J Clean Prod.* 2020;258: 120613. <https://doi.org/10.1016/j.jclepro.2020.120613>.
42. Agyabeng-Mensah Y, Ahenkorah E, Afum E, Owusu D. The influence of lean management and environmental practices on relative competitive quality advantage and performance. *J Manuf Technol Manag.* 2020;31:1351–72. <https://doi.org/10.1108/JMTM-12-2019-0443>.
43. Khan M, Rahman HU, Baloch QB, et al. Is there any difference between the theory and practice for the association between environmental sustainability and firm performance in Pakistan? *Bus Strat Dev.* 2021;4:371–82. <https://doi.org/10.1002/bsd2.164>.
44. Malesios C, De D, Moursellas A, et al. Sustainability performance analysis of small and medium sized enterprises: criteria, methods and framework. *Socio-Econ Plan Sci.* 2021. <https://doi.org/10.1016/j.seps.2020.100993>.
45. van Emous R, Krušinskas R, Westerman W. Carbon emissions reduction and corporate financial performance: the influence of country-level characteristics. *Energies.* 2021;14:6029. <https://doi.org/10.3390/en14196029>.
46. Nogueira E, Gomes S, Lopes JM. Triple bottom line, sustainability, and economic development: what binds them together? *A Bibliometric Appr Sustain.* 2023;15:6706. <https://doi.org/10.3390/su15086706>.
47. Karman A, Prokop V, Giglio C, Rehman FU. Has the Covid-19 pandemic jeopardized firms' environmental behavior Bridging green initiatives and firm value through the triple bottom line approach. *Corporate Soc Respons Environ Manag.* 2023. <https://doi.org/10.1002/csr.2575>.
48. Tate WL, Bals L. Achieving shared triple bottom line (TBL) value creation: toward a social resource-based view (SRBV) of the firm. *J Bus Ethics.* 2018;152:803–26. <https://doi.org/10.1007/s10551-016-3344-y>.
49. Mair J, Martí I. Social entrepreneurship research: a source of explanation, prediction, and delight. *J World Bus.* 2006;41:36–44. <https://doi.org/10.1016/j.jwb.2005.09.002>.
50. Murphy PJ, Coombes SM. A model of social entrepreneurial discovery. *J Bus Ethics.* 2009;87:325–36. <https://doi.org/10.1007/s10551-008-9921-y>.
51. Certo ST, Miller T. Social entrepreneurship: key issues and concepts. *Bus Horiz.* 2008;51:267–71. <https://doi.org/10.1016/j.bushor.2008.02.009>.
52. Narangajavana Y, Gonzalez-Cruz T, Garrigos-Simon FJ, Cruz-Ros S. Measuring social entrepreneurship and social value with leakage. definition, analysis and policies for the hospitality industry. *Int Entre Manag J.* 2016;12:911–34. <https://doi.org/10.1007/s11365-016-0396-5>.
53. Fetрати MA, Hansen D, Akhavan P. How to manage creativity in organizations: connecting the literature on organizational creativity through bibliometric research. *Technovation.* 2022;115: 102473. <https://doi.org/10.1016/j.technovation.2022.102473>.
54. Ajmal MM, Khan M, Hussain M, Helo P. Conceptualizing and incorporating social sustainability in the business world. *Int J Sust Dev World.* 2018;25:327–39. <https://doi.org/10.1080/13504509.2017.1408714>.
55. Nogueira E, Gomes S, Lopes JM. The contribution of the labour practices to organizational performance: the mediating role of social sustainability. *Bus Ethics Environ Respons.* 2024. <https://doi.org/10.1111/beer.12682>.
56. Zupic I, Čater T. Bibliometric methods in management and organization. *Organ Res Methods.* 2015;18:429–72. <https://doi.org/10.1177/1094428114562629>.
57. Milojevic S, Sugimoto CR, Yan EJ, Ding Y. The cognitive structure of library and information science: analysis of article title words. *J Am Soc Inform Sci Technol.* 2011;62:1933–53. <https://doi.org/10.1002/asi.21602>.
58. Zhi W, Yuan L, Ji GD, et al. A bibliometric review on carbon cycling research during 1993–2013. *Environ Earth Sci.* 2015;74:6065–75. <https://doi.org/10.1007/s12665-015-4629-7>.
59. Liu Z, Yin Y, Liu W, Dunford M. Visualizing the intellectual structure and evolution of innovation systems research: a bibliometric analysis. *Scientometrics.* 2015;103:135–58. <https://doi.org/10.1007/s11192-014-1517-y>.
60. Franceschini S, Faria LGD, Jurawetzki R. Unveiling scientific communities about sustainability and innovation. a bibliometric journey around sustainable terms. *J Clean Prod.* 2016;127:72–83. <https://doi.org/10.1016/j.jclepro.2016.03.142>.
61. Lopes JM, Laurett R, Antunes H, Oliveira J. Entrepreneurial marketing: a bibliometric analysis of the second decade of the 21st century and future agenda. *J Res Mark Entrep.* 2021;23:295–317. <https://doi.org/10.1108/JRME-02-2019-0019>.
62. Lopes JM, Gomes S, Durão M, Pacheco R. The holy grail of luxury tourism: a holistic bibliometric overview. *J Qual Assur Hosp Tour.* 2022. <https://doi.org/10.1080/1528008X.2022.2089946>.
63. Thirumaran K, Jang HJ, Pourabedin Z, Wood J. The role of social media in the luxury tourism business: a research review and trajectory assessment. *Sustainability.* 2021;13:1–13. <https://doi.org/10.3390/su13031216>.
64. Ay I, Sc S. Developing a green business portfolio. *Long Range Plan.* 1995;28:29–38. [https://doi.org/10.1016/0024-6301\(95\)98587-I](https://doi.org/10.1016/0024-6301(95)98587-I).
65. Singh A. A decade of operations strategy: research issues and future research directions. *Compet Rev.* 2024. <https://doi.org/10.1108/CR-06-2024-0116>.
66. Patra SP, Wankhede VA, Agrawal R. Circular economy practices in supply chain finance: a state-of-the-art review. *Benchmarking: An Int J.* 2024. <https://doi.org/10.1108/BIJ-10-2022-0627>.
67. Tommasetti A, Maione G, Bignardi A, Lentini P. Environmental accounting in the public sector: a systematic literature review. *Int J Bus Environ.* 2023;14:164–82. <https://doi.org/10.1504/IJBE.2023.129907>.
68. Fahim F, Mahadi B. Green trade credit and sustainable firm performances during COVID-19: a conceptual review. *Vision- J Bus Perspect.* 2023;27:593–603. <https://doi.org/10.1177/09722629221096050>.
69. Kwarteng P, Appiah KO, Addai B. Influence of board mechanisms on sustainability performance for listed firms in Sub-Saharan Africa. *Future Bus J.* 2023. <https://doi.org/10.1186/s43093-023-00258-5>.
70. Farooq Q, Fu PH, Liu X, Hao YH. Basics of macro to microlevel corporate social responsibility and advancement in triple bottom line theory. *Corp Soc Responsib Environ Manag.* 2021;28:969–79. <https://doi.org/10.1002/csr.2069>.
71. Arslan M. Corporate social sustainability in supply chain management: a literature review. *J Global Respons.* 2020;11:233–55. <https://doi.org/10.1108/JGR-11-2019-0108>.

72. Dzhengiz T, Niesten E. Competences for environmental sustainability: a systematic review on the impact of absorptive capacity and capabilities. *J Bus Ethics*. 2020;162:881–906. <https://doi.org/10.1007/s10551-019-04360-z>.
73. Isabel Cubilla-Montilla M, Galindo-Villardón P, Belén Nieto-Librero A, et al. What companies do not disclose about their environmental policy and what institutional pressures may do to respect. *Corp Soc Responsib Environ Manag*. 2020;27:1181–97. <https://doi.org/10.1002/csr.1874>.
74. Yun G, Yalcin MG, Hales DN, Kwon HY. Interactions in sustainable supply chain management: a framework review. *Int J Logist Manag*. 2019;30:140–73. <https://doi.org/10.1108/IJLM-05-2017-0112>.
75. Carter CR, Hatton MR, Wu C, Chen XJ. Sustainable supply chain management: continuing evolution and future directions. *Int J Phys Distrib Logist Manag*. 2019;50:122–46. <https://doi.org/10.1108/IJPDLM-02-2019-0056>.
76. Yawar SA, Seuring S. Management of social issues in supply chains: a literature review exploring social issues, actions and performance outcomes. *J Bus Ethics*. 2017;141:621–43. <https://doi.org/10.1007/s10551-015-2719-9>.
77. Chugani N, Kumar V, Garza-Reyes JA, et al. Investigating the green impact of Lean, Six Sigma and Lean Six Sigma. *Int J Lean Six Sigma*. 2017;8:7–32. <https://doi.org/10.1108/IJLSS-11-2015-0043>.
78. Xu X, Gursoy D. A conceptual framework of sustainable hospitality supply chain management. *J Hosp Market Manag*. 2015;24:229–59. <https://doi.org/10.1080/19368623.2014.909691>.
79. Liu RL. A new bibliographic coupling measure with descriptive capability. *Scientometrics*. 2017;110:915–35. <https://doi.org/10.1007/s11192-016-2196-7>.
80. Donthu N, Kumar S, Mukherjee D, et al. How to conduct a bibliometric analysis: an overview and guidelines. *J Bus Res*. 2021;133:285–96. <https://doi.org/10.1016/j.jbusres.2021.04.070>.
81. Vhatkar MS, Raut RD, Gokhale R, et al. Leveraging digital technology in retailing business: unboxing synergy between omnichannel retail adoption and sustainable retail performance. *J Retail Cons Serv*. 2024. <https://doi.org/10.1016/j.jretconser.2024.104047>.
82. El Akremi A, Gond JP, Swaen V, et al. How do employees perceive corporate responsibility? development and validation of a multidimensional corporate stakeholder responsibility scale. *J Manag*. 2018;44:619–57. <https://doi.org/10.1177/0149206315569311>.
83. Grudzien D, Pfitzenreuter T, Gallii F, et al. Sustainable strategic operations supported by I4.0 digital technologies. *J Indust Integ Manag Innov Entrepreneurship*. 2023;08:39–64. <https://doi.org/10.1142/S2424862222500270>.
84. Wu XD, Amoasi R. The role of CSR in sustaining corporate brands in the global market: the perspective of telecommunication companies in Ghana. *Corp Soc Responsib Environ Manag*. 2024. <https://doi.org/10.1002/csr.2578>.
85. Escamilla-Solano S, Fernández-Portillo A, Orden-Cruz C, Sánchez-Escobedo MC. Corporate social responsibility disclosure: mediating effects of the economic dimension on firm performance. *Corp Soc Responsib Environ Manag*. 2024. <https://doi.org/10.1002/csr.2596>.
86. Menz KM. Corporate social responsibility: is it rewarded by the corporate bond market? a critical note. *J Bus Ethics*. 2010;96:117–34. <https://doi.org/10.1007/s10551-010-0452-y>.
87. Galletta S, Mazzu S, Naciti V, Vermiglio C. Gender diversity and sustainability performance in the banking industry. *Corp Soc Responsib Environ Manag*. 2022;29:161–74. <https://doi.org/10.1002/csr.2191>.
88. Dakhli A. Do women on corporate boardrooms have an impact on tax avoidance? the mediating role of corporate social responsibility. *Corporate Governance- Int J Bus Soc*. 2022;22:821–45. <https://doi.org/10.1108/CG-07-2021-0265>.
89. Menicucci E, Paolucci G. Board gender equality and ESG performance. evidence from European banking sector. *Corporate Governance- Int J Bus Soc*. 2024;24:147–74. <https://doi.org/10.1108/CG-04-2023-0146>.
90. Zubeltzu-Jaka E, Alvarez-Etxebarria I, Aldaz-Odrozola M. Corporate social responsibility oriented boards and triple bottom line performance: a meta-analytic study. *Business Strategy and Development*. 2024. <https://doi.org/10.1002/bsd2.320>.
91. Rath C, Tripathy A, Mangla SK. How the social dimension of ESG influences CEO compensation: role of CEO and board characteristics. *Bus Strateg Environ*. 2024. <https://doi.org/10.1002/bse.4008>.
92. Lu J, Rodenburg K, Foti L, Pegoraro A. Are firms with better sustainability performance more resilient during crises? *Bus Strateg Environ*. 2022;31:1–17. <https://doi.org/10.1002/bse.3088>.
93. Turker D, Ozmen YS. Understanding how social responsibility drives social innovation: characteristics of radically innovative projects. *Eur J Innov Manag*. 2022;25:680–702. <https://doi.org/10.1108/EJIM-08-2020-0314>.
94. Nagiah GR, Suki NM. Linking environmental sustainability, social sustainability, corporate reputation and the business performance of energy companies: insights from an emerging market. *Int J Energy Sect Manag*. 2024;18:1905–22. <https://doi.org/10.1108/IJESM-06-2023-0003>.
95. Vargas-Santander KG, Alvarez-Diez S, Baixauli-Soler S, Belda-Ruiz M. Corporate social responsibility and financial performance: does country sustainability matter? *Corp Soc Responsib Environ Manag*. 2023;30:3075–94. <https://doi.org/10.1002/csr.2539>.
96. Jaiwani M, Gopalkrishnan S. Do private and public sector banks respond to ESG in the same way? some evidences from India. *Benchmarking-An Int J*. 2023. <https://doi.org/10.1108/BIJ-05-2023-0340>.
97. Alcouffe S, Boitier M, Jabot R. An integrated literature review on the adoption and diffusion of multicapital accounting innovations. *Sustain Account Manag Policy J*. 2024. <https://doi.org/10.1108/SAMPJ-12-2023-0912>.
98. de Pilla LHL, Peci A, Leite RD. Is the state a socially responsible shareholder? state-owned enterprises, political ideology, and corporate social performance. *J Bus Ethics*. 2024. <https://doi.org/10.1007/s10551-024-05751-7>.
99. Avelar S, Borges-Tiago T, Almeida A, Tiago F. Confluence of sustainable entrepreneurship, innovation, and digitalization in SMEs. *J Busi Res*. 2024. <https://doi.org/10.1016/j.jbusres.2023.114346>.
100. Arda OA, Montabon F, Tatoglu E, et al. Toward a holistic understanding of sustainability in corporations: resource-based view of sustainable supply chain management. *Supply Chain Manag*. 2023;28:193–208. <https://doi.org/10.1108/SCM-08-2021-0385>.
101. Tran T, Kim S, Son BG, Ramkumar M. Paradoxical association between lean manufacturing sustainability practices and triple bottom line performance. *IEEE Trans Eng Manag*. 2023. <https://doi.org/10.1109/TEM.2023.3290724>.
102. Khan SAR, Yu Z, Umar M, Tanveer M. Green capabilities and green purchasing practices: a strategy striving towards sustainable operations. *Bus Strateg Environ*. 2022;31:1719–29. <https://doi.org/10.1002/bse.2979>.
103. Saglam YC. Analyzing sustainable reverse logistics capability and triple bottom line: the mediating role of sustainability culture. *J Manuf Technol Manag*. 2023;34:1162–82. <https://doi.org/10.1108/JMTM-01-2023-0009>.

104. De Giovanni P. Do internal and external environmental management contribute to the triple bottom line? *Int J Oper Prod Manag.* 2012;32:265–90. <https://doi.org/10.1108/01443571211212574>.
105. Ahmad F, Khokhar SG. Examining the impact of sustainable supply chain management practices and supply chain ambidexterity on sustainability performance. *Operat Supply Chain Manag-An Int J.* 2024;17:179–90.
106. Carter CR, Easton PL. Sustainable supply chain management: evolution and future directions. *Int J Phys Distrib Logist Manag.* 2011;41:46–62. <https://doi.org/10.1108/09600031111101420>.
107. Oubrahim I, Sefiani N. An integrated multi-criteria decision-making approach for sustainable supply chain performance evaluation from a manufacturing perspective. *Int J Product Perform Manag.* 2024. <https://doi.org/10.1108/IJPPM-09-2023-0464>.
108. Morgan YC, Fok L, Zee S. Examining the impact of environmental and organizational priorities on sustainability performance in service industries. *Int J Product Perform Manag.* 2023. <https://doi.org/10.1108/IJPPM-02-2023-0053>.
109. Nogueira E, Gomes S, Lopes JM. A meta-regression analysis of environmental sustainability practices and firm performance. *J Clean Produ.* 2023. <https://doi.org/10.1016/j.jclepro.2023.139048>.
110. Ertz M, Latrous I, Dakhlaoui A, Sun SH. The impact of big data analytics on firm sustainable performance. *Corp Soc Responsib Environ Manag.* 2024. <https://doi.org/10.1002/csr.2990>.
111. Li Y, Li JY, Zhai YF. Intellectual capital and sustainability performance: the mediating role of digitalization. *J Intellect Cap.* 2024;25:867–90. <https://doi.org/10.1108/JIC-06-2023-0129>.
112. Huang SS, Wang XQ, Qu H. Impact of perceived corporate social responsibility on peer-to-peer accommodation consumers' repurchase intention and switching intention. *J Hosp Market Manag.* 2023;32:893–916. <https://doi.org/10.1080/19368623.2023.2214549>.
113. Carter CR, Rogers DS. A framework of sustainable supply chain management: moving toward new theory. *Int J Phys Distrib Logist Manag.* 2008;38:360–87. <https://doi.org/10.1108/09600030810882816>.
114. Torugsa NA, O'Donohue W, Hecker R. Proactive CSR: An empirical analysis of the role of its economic, social and environmental dimensions on the association between capabilities and performance. *J Bus Ethics.* 2013;115:383–402. <https://doi.org/10.1007/s10551-012-1405-4>.
115. Coelho A, Ferreira J, Proença C. The impact of green entrepreneurial orientation on sustainability performance through the effects of green product and process innovation: the moderating role of ambidexterity. *Bus Strateg Environ.* 2024. <https://doi.org/10.1002/bse.3648>.
116. González-Ramos MI, Donate MJ, Guadamillas F. The relationship between knowledge management strategies and corporate social responsibility: effects on innovation capabilities. *Technol Forecast Soc Chang.* 2023;188: 122287. <https://doi.org/10.1016/j.techfore.2022.122287>.
117. Lee MJ, Pak A, Roh T. The interplay of institutional pressures, digitalization capability, environmental, social, and governance strategy, and triple bottom line performance: a moderated mediation model. *Bus Strategy Environ.* 2024;33:5247–68. <https://doi.org/10.1002/bse.3755>.
118. Marzouk J, El Ebrashi R. The interplay among green absorptive capacity, green entrepreneurial, and learning orientations and their effect on triple bottom line performance. *Bus Strateg Environ.* 2024. <https://doi.org/10.1002/bse.3588>.
119. Nogueira E, Gomes S, Lopes JM. Financial sustainability: exploring the influence of the triple bottom line economic dimension on firm performance. *Sustainability.* 2024. <https://doi.org/10.3390/su16156458>.

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