

From environment to sustainability: mapping the three decade journey of accounting research

M.P. Akhil

*Department of Commerce/Management, Gulati Institute of Finance and Taxation,
Thiruvananthapuram, India, and*

Astha Badjatia

Department of Finance, Alliance University, Bengaluru, India

374

Received 4 May 2024
Revised 3 April 2025
22 October 2025
18 December 2025
Accepted 9 February 2026

Abstract

Purpose – This paper aims to provide a comprehensive examination of the evolution, trends and impact of sustainable accounting literature over the past three decades. Through bibliometric analysis, thematic mapping and co-citation analysis, the study seeks to elucidate key themes, influential authors, prolific nations and emerging trends within the field.

Design/methodology/approach – The study employs a mixed-methods approach, combining bibliometric analysis with thematic mapping and co-citation analysis. Data are extracted from the Scopus database, focusing on English-language peer-reviewed journal articles, book chapters and conference papers related to sustainable accounting published from 1995 to 2024. The bibliometric analysis is conducted using the Bibliometrix R package, while thematic mapping and co-citation analysis provide qualitative insights into the thematic landscape and scholarly connections within the field.

Findings – The findings reveal significant growth in sustainable accounting literature over the study period, with increasing global interest and diverse thematic focuses. Driving themes such as corporate governance and sustainability assessment emerge as central pillars, while emerging trends such as green accounting and environmental, social reporting indicate evolving priorities within the field. Influential authors and prolific nations are identified, providing insights into the scholarly landscape and international collaboration patterns.

Originality/value – This paper contributes to the existing literature by offering a comprehensive analysis of sustainable accounting literature spanning three decades. By combining quantitative bibliometric analysis with qualitative thematic mapping and co-citation analysis, this study provides a nuanced understanding of the field's evolution, trends and impact. The identification of key themes, influential authors and emerging trends adds original insights to the scholarly discourse on sustainable accounting.

Keywords Sustainable accounting, Bibliometric analysis, Sustainability assessment, Corporate governance, ESG reporting

Paper type Research article

1. Introduction

In the past three decades, the discourse surrounding sustainable accounting has undergone considerable evolution, emerging as a vital instrument for addressing the intricate intersections between economic activities, environmental stewardship and social responsibility (Hendijani Zadeh, 2021; Tettamanzi, Venturini, & Murgolo, 2022). Within the global context, where the imperative to reconcile economic growth with ecological preservation and societal well-being is increasingly pressing, sustainable accounting has ascended to a position of paramount importance (Scoones, 2016; Hariram, Mekha, Suganthan, & Sudhakar, 2023).

Also known as environmental, social and governance (ESG) accounting, sustainable accounting transcends conventional financial reporting methodologies by incorporating non-financial metrics into the evaluation of organizational performance (Biddle, Hilary, & Verdi,



2009; Aouadi & Marsat, 2018; Seker & Sengür, 2021). This holistic approach recognizes that the efficacy of a company cannot be solely assessed through economic profitability metrics but must also consider its broader impact on the environment and society (Truant, Borlatto, Crocco, & Sahore, 2024; Boyer, Peterson, Arora, & Caldwell, 2016).

The trajectory of sustainable accounting over the past three decades has been marked by notable milestones, transitioning from a peripheral concept to a mainstream practice embraced by businesses, investors and policymakers worldwide (Ozili, 2021). This evolution underscores the shifting landscape of corporate responsibility, wherein sustainable accounting has progressed from the margins to become a foundational principle of contemporary business strategies (Atkins, Atkins, Thomson, & Maroun, 2015; Kwakye, Welbeck, Owusu, & Anokye, 2018). Such a journey not only underscores the escalating awareness of the interconnectedness between economic, environmental social dimensions but also serves as a clarion call for concerted action by both corporate entities and society at large towards a sustainable future (Miralles-Quirós, Miralles-Quirós, & Redondo-Hernández, 2019; Kalbouneh, Aburisheh, Shaheen, & Aldabbas, 2023).

A bibliometric analysis of sustainable accounting provides a quantitative and systematic exploration of the scholarly landscape, offering valuable insights into the growth, trends and impact of research in this dynamic field (Ascani, Ciccola, & Chiucchi, 2021; Vysochan, Hyk, Vysochan, & Olshanska, 2021; Gil-Marín *et al.*, 2022; Moral-Muñoz, Herrera-Viedma, Santisteban-Espejo, & Cobo, 2020). Through this rigorous examination, we seek to contribute to a nuanced understanding of the trends, patterns and scholarly contributions within sustainable accounting research (Xu, Wang, Yi, Xie, & Yao, 2022). By meticulously mapping the intellectual terrain, this study aims to furnish insights beneficial to researchers, policymakers and practitioners alike, facilitating their navigation and contribution to the ongoing discourse surrounding sustainable accounting.

1.1 Motivation

Despite the growing body of literature on sustainable accounting, the field still lacks a comprehensive review that synthesizes its intellectual foundations, thematic evolution and future research directions. While several bibliometric studies have explored related concepts, they often have limitations in scope or methodology that our review aims to address. For instance, some existing reviews, such as Zheng, Wang, Sun, and Li (2022) and Thotoli, Ahmed, and Thomas (2022), have focused on narrower sub-disciplines like carbon accounting and environmental accounting, respectively. Similarly, while Owusu and Ofori-Owusu (2024) provide a 41-year review, they do not provide the detailed cluster analysis or integrated framework that our study offers.

Our study distinguishes itself by providing a holistic perspective on the sustainable accounting literature from 1995 to 2024. We specifically address the existing gaps by:

- (1) Employing a broader search strategy that incorporates multiple, comprehensive, interrelated terms to provide a more comprehensive scope. This avoids the limitations of relying on a single search term.
- (2) Providing a detailed cluster analysis and thematic mapping that identifies major sub-themes within the field, which allows for a more effective framing of policy implications.
- (3) Developing a unique integrated framework that connects the theoretical foundations of the field with its thematic development and proposes specific avenues for future research. This is a crucial element that previous reviews have overlooked.

By addressing these limitations, our research offers a more nuanced understanding of the sustainable accounting landscape. The findings will be invaluable for both academics and practitioners, helping to guide future research and inform policy decisions in a rapidly evolving field.

2. Sustainable accounting- an overview

Sustainable accounting, also referred to as ESG accounting, embodies a comprehensive methodology for evaluating and reporting an organization's performance that extends beyond conventional financial metrics (Tettamanzi *et al.*, 2022; Lehner & Harrer, 2019). It encompasses a wider spectrum of considerations, integrating assessments of environmental impact, social responsibility and governance practices (Patten & Shin, 2019; Gulluscio, Puntillo, Luciani, & Huisingh, 2020). The overarching objective of sustainable accounting is to furnish stakeholders, including investors, regulators, employees and the broader community, with a more nuanced comprehension of an entity's operations and their ramifications for sustainability (Adams & Larrinaga, 2019; Mäkelä & Olkkonen, 2021).

The key components and principles of sustainable accounting are:

(1) Triple Bottom Line Reporting:

Sustainable accounting operates on the principle of the triple bottom line, which entails the evaluation of three fundamental dimensions:

- Environmental (Planet): This dimension encompasses an organization's effects on the natural environment, encompassing factors such as resource consumption, emissions and biodiversity (Hariram *et al.*, 2023).
- Social (People): This dimension focuses on the social dimensions of a business, including considerations of human rights, labor practices, community engagement and diversity and inclusion (Kim, 2018).
- Governance (Profit): Examination of the governance structure and practices, encompassing aspects such as board composition, executive compensation and adherence to ethical principles (Affes & Jarboui, 2023).

(2) Integration with Financial Reporting:

Sustainable accounting endeavors to integrate ESG factors into financial reporting processes (Mohammad & Wasiuzzaman, 2021). This integration enables stakeholders to assess the long-term sustainability and resilience of a business, transcending mere short-term financial performance indicators (Ahmad, Yaqub, & Lee, 2023; Adur, Srivastava, Vinaya Laxmi, Mishra, & Jagdish Mohan Rao, 2023).

(3) Global Reporting Initiatives:

Various international frameworks and standards serve as guides for sustainable accounting practices. Prominent among these is the Global Reporting Initiative (GRI), which furnishes guidelines for reporting on economic, environmental and social aspects (Ferreira Quilice, Oranges Cezarino, Fernandes Rodrigues Alves, Bartocci Liboni, & Ferreira Caldana, 2018). Other frameworks include the Sustainability Accounting Standards Board and the Task Force on Climate-related Financial Disclosures (TCFD) (Achenbach, 2021; Ngo, Le, Ullah, & Trinh, 2023).

(4) Stakeholder Engagement:

Sustainable accounting underscores the significance of engaging with stakeholders to identify and prioritize key sustainability concerns (Hörisch, Freeman, & Schaltegger, 2014). This engagement aids in shaping reporting metrics that are relevant to the interests of diverse stakeholders, thereby fostering transparency and accountability (Hörisch, Schaltegger, & Freeman, 2020).

(5) Regulatory Landscape:

Governments and regulatory bodies across jurisdictions are increasingly recognizing the importance of sustainable accounting (Moss *et al.*, 2019). Some regions have enacted

mandatory reporting mandates for environmental and social disclosures, thereby reinforcing the imperative of integrating sustainability considerations into corporate reporting practices (Al-Adeem, 2023).

(6) Materiality Assessment:

Organizations conduct materiality assessments to pinpoint and prioritize the most salient ESG issues pertinent to their operations and stakeholders (Garst, Maas, & Suijs, 2022). This process ensures that reporting efforts concentrate on matters most material to the organization and its stakeholders (Jørgensen, Mjøs, & Pedersen, 2022).

(7) Technology and Data Analytics:

The utilization of technology, encompassing data analytics and blockchain, is gaining traction in sustainable accounting practices (Banta, Rindasu, Tanasie, & Cojocar, 2022; Di Vaio, Palladino, Hassan, & Escobar, 2020). These tools enhance the precision, transparency and traceability of sustainability data, addressing challenges associated with data quality and reliability (Pappas, Mikalef, Dwivedi, Jaccheri, & Krogstie, 2023).

(8) Investor and Consumer Focus:

Investors are increasingly factoring sustainability considerations into their decision-making processes. Sustainable accounting information is invaluable for investors aiming to align their portfolios with environmental and social responsibility objectives (Volz, 2018; Maltais & Nykvist, 2020). Moreover, consumers are displaying heightened awareness of the sustainability practices of the companies they patronize, influencing purchasing decisions accordingly (Taghizadeh-Hesary & Yoshino, 2020; Deschryver & de Mariz, 2020).

Sustainable accounting signifies a paradigm shift in how organizations gauge and communicate their overall performance. It transcends financial indicators to furnish a holistic perspective of a company's impact on the environment, society and governance. As businesses navigate the complexities of an ever-evolving landscape, sustainable accounting assumes a pivotal role in fostering transparency, accountability and responsible corporate citizenship.

3. Research questions

This study is guided by three main research questions that aim to systematically explore the sustainable accounting literature:

- RQ1. What are the key thematic areas and intellectual foundations of sustainable accounting research? This question guides our bibliometric analysis to identify the core topics, impactful sources and foundational works that have shaped the field over the past three decades.
- RQ2. How has the field of sustainable accounting evolved over time? This question focuses on the temporal dynamics of the field, examining shifts in research trends, the emergence of new themes and changes in the focus of scholarly work.
- RQ3. What are the potential future research directions and gaps in the sustainable accounting literature? This question is addressed where we synthesize our findings to propose new avenues for research for future scholars and practitioners, thereby contributing to the future development of the field.

4. Methodology

To address these research questions, a bibliometric analysis of the published material pertinent to sustainable accounting was carried out. A methodical arrangement of publications was developed by measuring and examining the bibliographic information produced for that particular subject.

The publication period was restricted to the years 1995 through 2024 in order to evaluate the recent explosive growth of the sustainable accounting field. Because the study was cross-disciplinary and multidisciplinary, it covered a wide range of topics. Only peer-reviewed journal articles, book chapters and conference papers were considered for analyzing the publication's source categories because it was thought that these sources would yield more accurate results. For the purposes of this inquiry, only English-language publications were used.

The researcher installed the bibliometrix package in the R environment and the latest version of R Studio on Windows 11 in order to analyze and map bibliographic data. The desired outcomes were subsequently obtained by utilizing the bibliometrix features such as *biblioshiny* (Akhil, 2022).

This study utilized the Scopus database for data collection due to its comprehensive coverage and robust indexing capabilities. Scopus provides a wide range of indexed journals, conference proceedings and books, making it a reliable and extensive resource for bibliometric analysis. While we acknowledge that other valuable databases such as Web of Science (WoS) exist, we chose to focus on Scopus to ensure a consistent and high-quality dataset. Research has shown that Scopus's coverage, particularly in business and social sciences, is comparable to and in some cases, broader than, that of WoS. Furthermore, restricting the search to a single, high-quality database helps maintain a consistent quality of data, thereby ensuring the integrity and reliability of our analysis.

To ensure a comprehensive capture of sustainable accounting scholarship, a structured search query was developed encompassing a wide range of related concepts and terminologies. The final search string used was as follows:

```
(TITLE-ABS-KEY("sustainable accounting" OR "sustainability accounting" OR "environmental accounting" OR "green accounting" OR "ESG reporting" OR "non-financial reporting" OR "sustainability reporting" OR "triple bottom line" OR "carbon accounting" OR "GRI" OR "Integrated Reporting" OR "sustainability disclosure standards")) AND PUBYEAR >1995 AND PUBYEAR <2024 AND (LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "ENVI") OR LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "PSYC")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English"))
```

This query was designed to identify academic articles addressing sustainability-oriented accounting practices, including environmental accounting, ESG reporting, integrated reporting (IR) and related disclosure frameworks. The search was restricted to journal articles published in English between 1995 and 2024, and to subject areas relevant to social sciences, environmental science, business, management, accounting and psychology, to maintain focus on socially and economically grounded sustainability research.

The initial search yielded 8,128 documents from Scopus. These records were exported in Comma-Separated Values (CSV) format, including metadata such as author names, titles, abstracts, keywords, source journals, affiliations and citation counts. The screening process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) framework to ensure transparency and reproducibility. There are **2,261** documents that were purely empirical, technical, duplicate, or unrelated to sustainability accounting were excluded and the final count became 5,867.

5. Results and discussion

The key characteristics of the data extraction are displayed in [Table 1](#). The dataset spans 30 years (1995–2024) and includes 5,867 documents sourced from 1,245 journals, books and other academic outlets. This indicates that sustainable accounting has evolved into a mature and diverse research field, drawing attention across multiple disciplines such as business, environmental studies and the social sciences.

The annual growth rate of 15.95% reflects strong and accelerating interest, particularly in the past decade, as sustainability and ESG topics have gained prominence in corporate and

Table 1. Main information

Description	Results
<i>Main information about data</i>	
Timespan	1995:2024
Sources (Journals, Books, etc)	1,245
Documents	5,867
Annual Growth Rate %	15.95
Document Average Age	6.73
Average citations per doc	44.79
References	0
<i>Document contents</i>	
Keywords Plus (ID)	7,107
Author's Keywords (DE)	11,563
<i>Authors</i>	
Authors	10,684
Authors of single-authored docs	0
<i>Authors collaboration</i>	
Single-authored docs	0
Co-Authors per Doc	5.74
International co-authorships %	26.38
<i>Document types</i>	
article	5,867

policy discourse. The average document age of 6.73 years suggests that much of the literature is relatively recent, indicating the field's ongoing relevance and expansion. Meanwhile, an average of 44.79 citations per document shows that the works in this area are highly cited, signaling both academic impact and policy importance. The dataset contains 7,107 "Keywords Plus" and 11,563 author-provided keywords, showing a rich conceptual diversity. This implies that sustainable accounting research intersects with numerous themes such as environmental disclosure, ESG performance, IR and corporate responsibility. The large number of unique keywords demonstrates methodological and thematic pluralism, indicating that the field encompasses multiple theoretical frameworks and applications across sectors. A total of 10,684 authors contributed to these publications, with no single-authored documents. This highlights the collaborative nature of sustainability research, which often requires interdisciplinary expertise—combining accounting, environmental science and management to show significant cross-border collaboration and a global research network around sustainable accounting.

The annual scientific production in sustainable accounting research from 1995 to 2024 reveals a pronounced upward trajectory, indicating the rapid maturation and expansion of the field over the past three decades (Figure 1). Between 1995 and 2005, publication activity remained modest, with annual outputs fluctuating between 10 and 35 articles. This period reflects the formative stage of sustainable accounting scholarship, characterized by early conceptual discussions on environmental accounting, social reporting and the triple bottom line framework. Academic attention during this decade was sporadic, as sustainability discourse was still emerging within mainstream accounting research. From 2006 to 2015, the field began to consolidate, with the number of publications increasing from 65 articles in 2006 to 223 in 2015. This period marks a steady and consistent growth trend, largely driven by the formalization of sustainability reporting frameworks such as the GRI and the introduction of IR principles. This steady growth also corresponds to a rise in institutional interest, corporate responsibility mandates and the integration of sustainability topics in business education and policy.

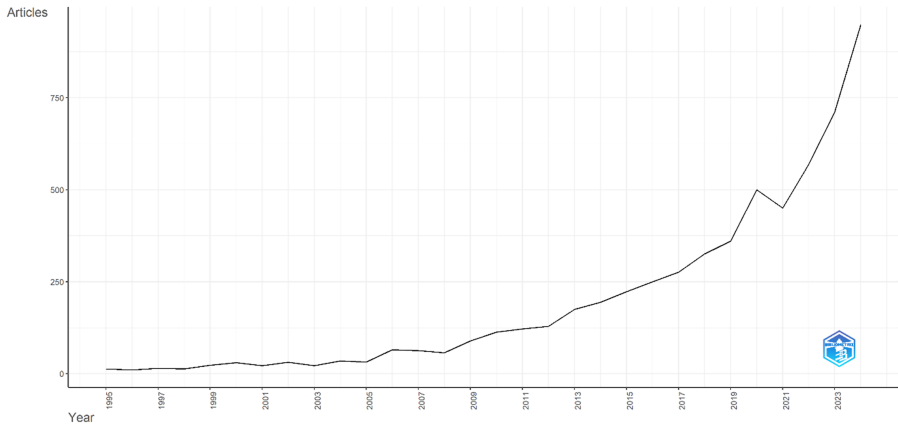


Figure 1. Annual scientific production

The years 2016 to 2019 witnessed a strong acceleration, with publications rising from 250 to 360 articles. This surge reflects the mainstreaming of sustainability accounting, with increasing scholarly attention on ESG performance measurement, non-financial disclosure and assurance practices. The adoption of the UN Sustainable Development Goals (SDGs) in 2015 also acted as a significant catalyst for academic and corporate engagement in sustainability reporting research.

From 2020 onwards, the field entered a phase of exponential growth. Publications more than doubled from 450 in 2021 to 949 in 2024, reflecting an unprecedented surge in global research output. This spike aligns with heightened corporate accountability pressures during the post-pandemic recovery, increased regulatory focus on ESG disclosures and the institutionalization of sustainability standards such as the International Financial Reporting Standards (IFRS) Sustainability Disclosure Standards (ISSB) and the EU Corporate Sustainability Reporting Directive.

The peak in 2024 marks the highest publication output in the dataset, underscoring sustainable accounting's evolution into a core interdisciplinary research domain bridging accounting, environmental management and corporate governance.

Figure 2 shows the list of 10 most cited documents based on the number of total citations. The documents are ranked by the number of Global Citations they have received, which is plotted on the horizontal axis. The most impactful document is (Clarkson, Li, Richardson, & Vasvari, 2008) with 2,503 citations, followed by (Purvis, Mao, & Robinson, 2019) with 2,215 citations. These two papers stand out significantly, forming a clear tier of high-impact research. The third-ranked paper, (Boyd & Banzhaf, 2007), has a noticeably lower count of 1,638 citations, indicating a significant drop-off in influence after the top two. The majority of the listed documents, from the fifth document onward, fall below the 1,000-citation mark. The journal “*Accounting, Organizations and Society*” is represented three times, suggesting that it publishes highly influential work within this dataset.

Figure 3 illustrates the fluctuating but generally increasing influence of publications over a three-decade period, from 1995 to 2024. The average citations per document started low, hitting a trough of 0.67 in 1998, but then experienced a period of strong, sustained growth, climbing to a peak of 7.70 in 2008. While the average rate remained high, generally fluctuating between 4 and 8 citations in the years that followed, it briefly hit another peak of 7.31 in 2021. However, the most recent years (2022–2024) show a sharp decline, bottoming out at 3.71 in 2024. This recent drop is likely an artifact of citation window lag, as newer publications have not yet had sufficient time to accumulate their full citation potential. Concurrently, the

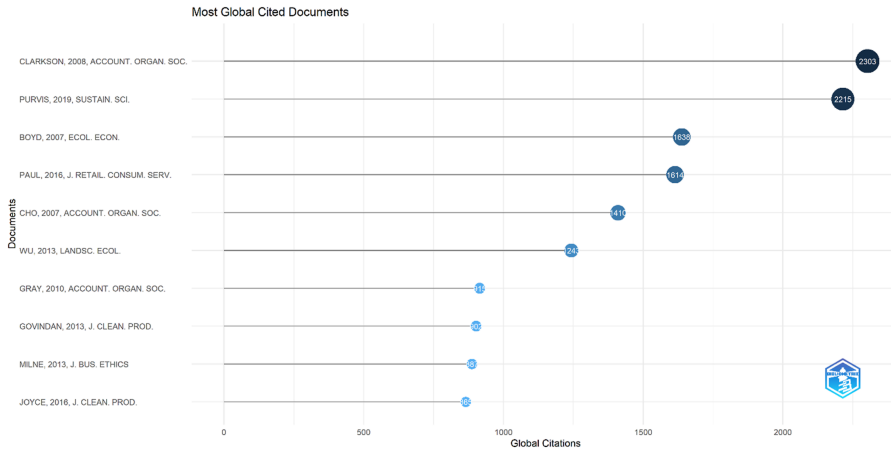


Figure 2. Top cited documents

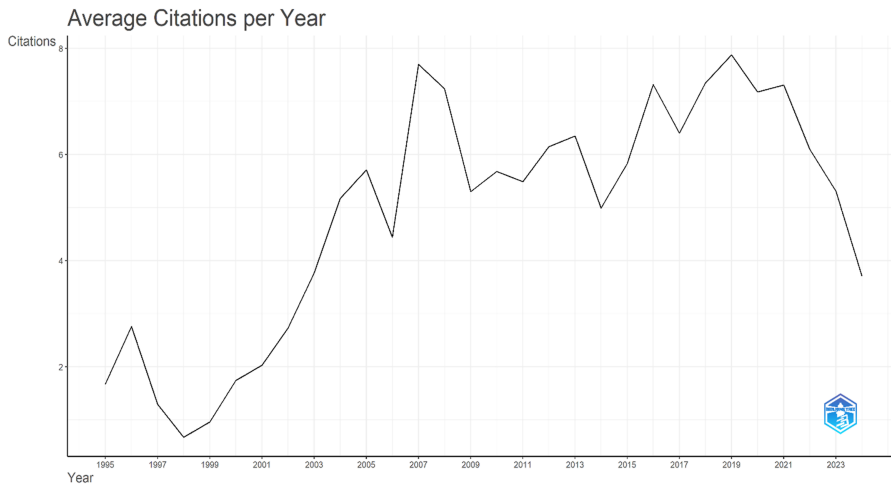


Figure 3. Average article citation per year

underlying data shows a massive increase in the number of documents (N) published, soaring from under 50 per year in the 1990s to over 900 in 2024, demonstrating an exponential growth in scholarly output.

The analysis of core sources using Bradford’s Law of Scattering identifies the most central and productive journals for the specific field under study. The data divides the journals into zones based on their contribution to the total number of articles, with Zone 1 representing the Core Sources that collectively account for the first third (1767 cumulative articles) of all published research. This core is heavily dominated by two journals: “Sustainability” (Switzerland), which is the clear leader with 546 articles, and the “Journal of Cleaner Production”, contributing a close second with 407 articles. The remaining eight journals in the top ten core list—such as *Sustainability Accounting, Management and Policy Journal* (142 Articles) And *Business Strategy and the Environment*. (139 articles)—have significantly lower but still essential contributions, highlighting a focused yet hierarchical distribution of key research output within this domain. Details are there in Figure 4.

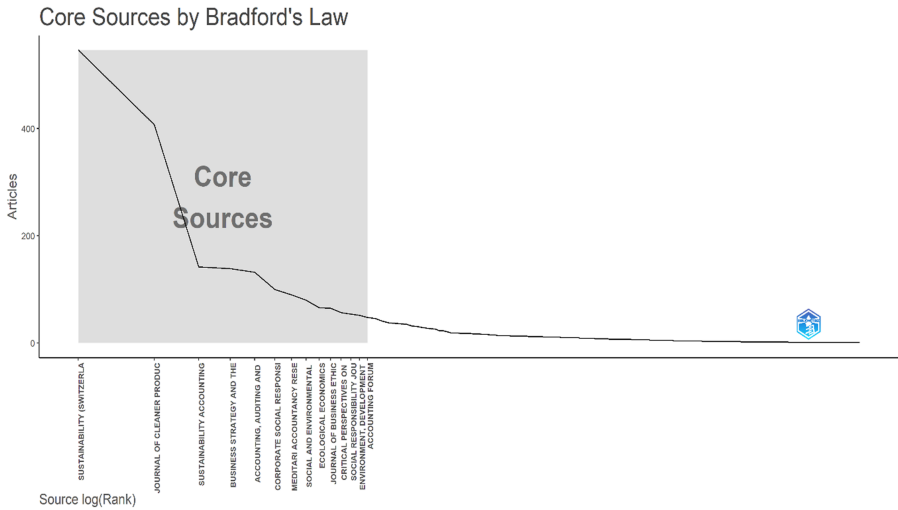


Figure 4. Bradford's law

Figure 5 illustrates the Country Scientific Production using a choropleth map ranking countries at the frequency of their scientific output in the field under study. The USA is the global leader in production with 1,573 articles, closely followed by Australia (1,319) and the UK (1,217), with these three countries forming the top tier of output. Italy and China also show high production, each exceeding 1,100 articles. The map visually reinforces this, with these leading nations shaded in the darkest blue. Scientific output is significant across multiple regions, including major contributions from India (755) and Indonesia (653) in Asia, Germany (587) and other European nations and Brazil (480) in South America, highlighting that while a few countries dominate, research activity is globally distributed across various continents.

Figure 6 provides Thematic analysis via the map provides a detailed strategic overview of the research field by categorizing themes based on their Relevance degree (centrality), which measures connectivity to other themes and their development degree (density), which

Country Scientific Production

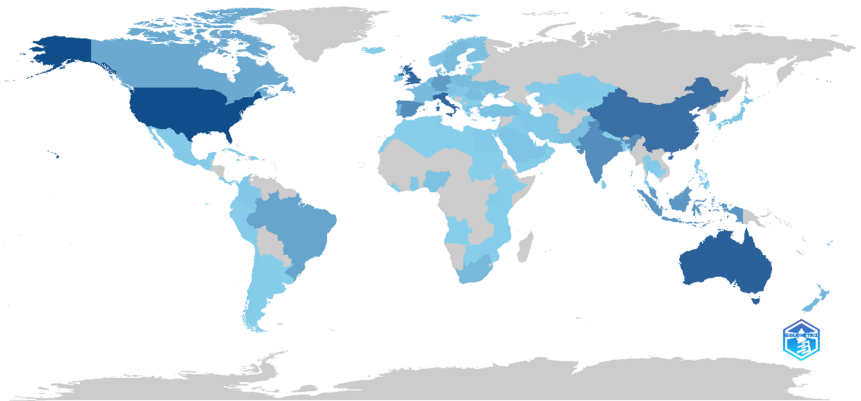


Figure 5. Country-specific scientific production

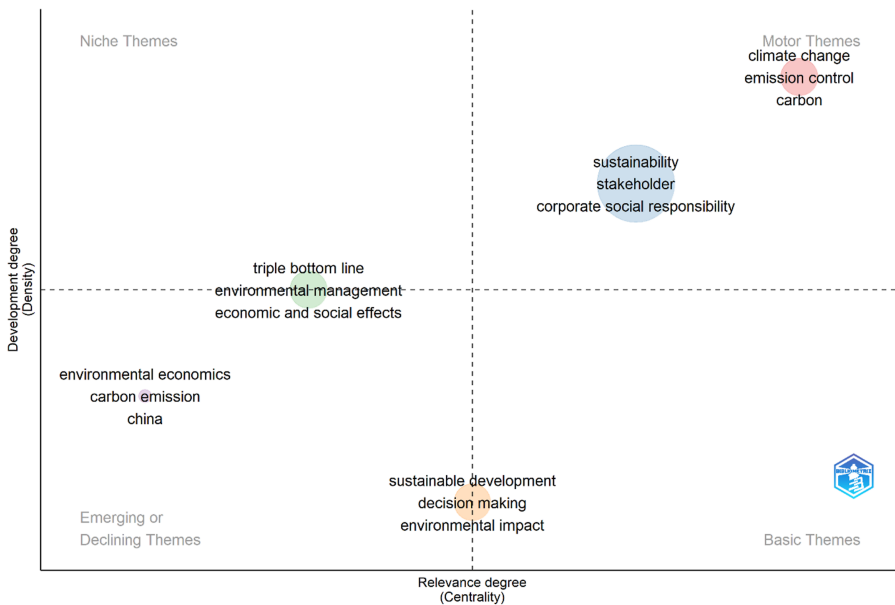


Figure 6. Thematic map

measures internal research maturity. The Motor Themes (upper-right quadrant) are the current research drivers, exhibiting both high density and high centrality. This cluster is focused on climate change, emission control and carbon, signifying they are complex, mature subjects that are also critical to the field's overall structure. Conversely, Basic Themes (lower-right), including fundamental concepts like sustainability, stakeholder and corporate social responsibility (CSR), possess high centrality but low density, meaning they are the foundational, essential concepts that link the field together, but current research is not deeply developing their internal structures. In the Emerging or Declining Themes quadrant (lower-left), themes such as environmental economics, carbon emission and china show low scores for both metrics, indicating they are either nascent topics yet to build substantial literature or areas where academic interest is diminishing. Finally, themes like environmental management and triple bottom line are positioned near the center, suggesting moderate development and relevance, potentially acting as important transitional or bridging areas within the research domain.

Figure 7 illustrates a co-occurrence network visualization of keywords within the research field, revealing three main clusters of interconnected themes. The largest and most central cluster (blue) is dominated by the highly co-occurring terms sustainability and reporting, which are strongly linked to themes like corporate, social, accounting, performance, disclosure, governance and environmental, signifying that the core of the research focuses on the practice and accountability mechanisms of corporate sustainability and reporting standards. A second, significant cluster (red) is concentrated around the keyword sustainable, linking to concepts such as development, framework, supply chain, business, assessment and management. This cluster appears to represent the strategic and conceptual application of sustainability. The third, smaller cluster (green) highlights the theme of the triple bottom line, with the three words triple, line and bottom connected, indicating its role as a specific, but less central, framework within the broader discourse. Overall, the network clearly positions the nexus of *sustainability accounting* as the most cohesive and central area, around which all other related concepts are organized.

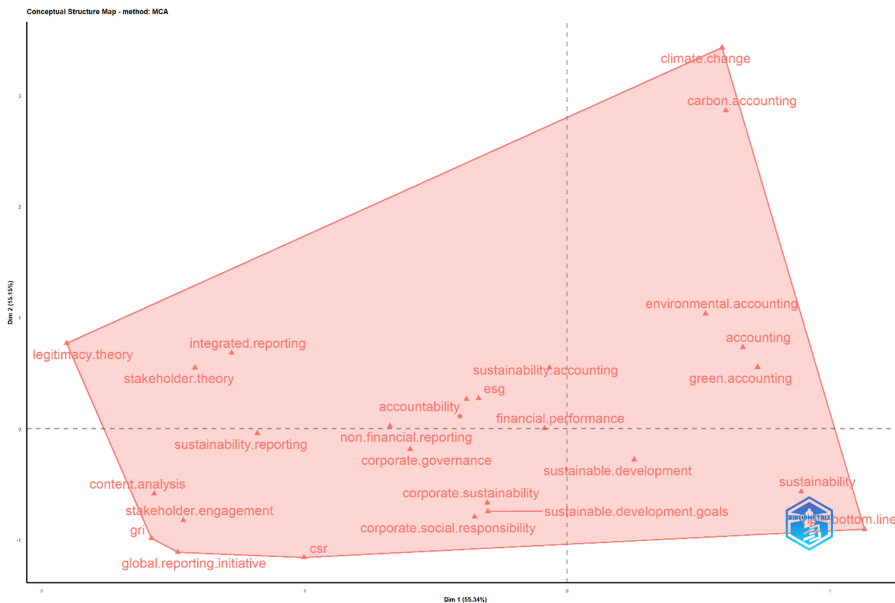


Figure 9. Factorial analysis

from micro-level, social and practical themes (bottom). Specifically, the upper-right area is dominated by high-level environmental and technical concepts like climate change, carbon accounting, environmental accounting and green accounting. Conversely, the lower area emphasizes practical, corporate and social aspects, including CSR, stakeholder engagement, GRI and CSR. The horizontal axis generally separates theoretical/relational themes on the left, i.e. legitimacy theory, stakeholder theory, IR from core foundational concepts on the right, i.e. sustainability, triple bottom line, sustainable development. The central region acts as a bridge, containing terms like ESG, financial performance, sustainability accounting and non-financial reporting, which connect the theoretical and social dimensions to the environmental and core conceptual frameworks.

The word cloud in Figure 10 represents the dominant themes and keywords within the research field, with the size of the text corresponding to the frequency of the term. The field is overwhelmingly centered on the intertwined concepts of sustainability and sustainability reporting, which are the largest and most prominent terms. These core concepts are strongly linked to CSR, which is also a very large theme. Other highly significant, mid-sized themes forming the foundation of the field include the triple bottom line, sustainable development and environmental accounting. Supporting and detailing these central ideas are numerous smaller but crucial terms that provide context, such as corporate governance, non-financial reporting, ESG, financial performance, climate change, IR and carbon accounting. In essence, the cloud reveals that the research focus is firmly on the disclosure, measurement and accountability of corporate social and environmental performance within the overarching framework of sustainability.

6. Conclusion

The exploration of sustainable accounting over the past three decades has revealed a compelling narrative of evolution and significance within the realms of corporate responsibility, environmental stewardship and social accountability. As demonstrated by a



Figure 10. Word cloud

number of investigations, sustainable accounting has become an essential tool for managing the complex relationships that exist between economic activity, environmental protection and social welfare. Beginning with a broad overview of sustainable accounting’s journey, it becomes evident that its evolution from a niche concept to a mainstream practice underscores the growing recognition of the interconnectedness between economic prosperity, environmental health and social equity.

Based on the comprehensive bibliometric analysis, the research field under study is characterized by a high volume of output, intense global collaboration and a distinct evolution toward highly specialized, quantitative metrics. Geographically, scientific production is dominated by the USA, Australia and the UK, although research activity is widely distributed globally. Thematically, the field is currently driven by the powerful nexus of sustainability and reporting, with CSR acting as a highly central concept. The trend analysis shows a clear shift away from broad, foundational concepts like the triple bottom line toward granular, performance-focused topics such as ESG reporting, ESG performance and firm value, indicating a move towards standardization and financial integration.

The sustainable accounting domain has transitioned from a primarily conceptual and ethical focus to a highly technical and metric-driven field. The most influential research and current momentum are directed at developing and applying robust reporting mechanisms such as carbon accounting and non-financial reporting that link corporate sustainability performance directly to governance and financial outcomes, thereby embedding sustainability at the heart of corporate decision-making and public accountability.

7. Implications

This study contributes significantly to the sustainable accounting literature by providing a systematic and up-to-date quantitative analysis and an integrated framework. Beyond theoretical contributions, our findings offer several clear implications for practitioners, policymakers and future scholars.

Based on the thematic mapping, the primary implication for practitioners is the urgent need to integrate non-financial data with core financial reporting. Companies must move beyond siloed ESG reports to embrace IR models that demonstrate how sustainability strategies contribute to financial performance. Specifically, the identified gap in digital integration implies that accounting departments must invest in data science capabilities to manage and assure the veracity of complex, real-time sustainability data.

Our findings on global regulatory divergence highlight a critical need for standardization and harmonization. Policymakers should focus on developing mandatory, globally aligned reporting standards to enhance comparability and reduce compliance burdens. The current emphasis on “E” factors in the literature suggests that regulators should increase scrutiny and provide clear guidelines for reporting social and governance risks, moving the field toward a genuinely holistic view of sustainability performance. Our study identifies specific avenues to advance the field. Future research should prioritize qualitative, context-specific studies to complement our quantitative findings. Scholars are encouraged to investigate the practical implementation of emerging technologies, address the measurement challenges in social and governance accounting and conduct cross-country analyses of regulatory effectiveness.

8. Study constraints

Notwithstanding the extensive scope of this research on sustainable accounting, a number of limitations need to be recognized. First off, this study’s reliance on a single database, Scopus, represents a limitation. Although Scopus is a leading academic database with extensive coverage, its exclusive use may exclude relevant studies indexed only in other databases, such as the WoS. Future research could replicate this study using a multi-database approach to provide an even more comprehensive overview of the sustainable accounting literature. Furthermore, by concentrating only on English-language publications, the study may overlook important contributions that have been published in other languages. Additionally, despite the fact that every effort was taken to guarantee the precision and dependability of the bibliometric analysis, the results are susceptible to intrinsic constraints related to the techniques used for data collection and analysis. Furthermore, the study’s three-decade timeline (1995–2024) may have missed earlier foundational works and later developing patterns. Finally, there is a chance that biases in the interpretation of the data will arise from the subjective interpretation of citation patterns and theme analysis. These limitations underline the significance of future research efforts to address these limitations for a more thorough understanding of sustainable accounting literature and emphasize the necessity for cautious interpretation of findings.

9. Areas for future research

Based on our comprehensive bibliometric analysis, we propose an integrated framework that connects the historical intellectual foundations of sustainable accounting with a clear roadmap for future research. This framework addresses the limitations of previous studies and helps to identify critical gaps in the literature.

- (1) Gaps in methodology: While bibliometric analysis provides a quantitative overview, future studies could benefit from a qualitative approach, such as a systematic literature review focused on the thematic content of the most cited papers.
- (2) Gaps in theoretical application: There is a need for more research that applies established theories (e.g. legitimacy theory, stakeholder theory) to emerging topics in sustainable accounting like digital reporting and artificial intelligence.

Gaps in emerging topics: Future research should explore nascent but important areas such as the accounting and reporting of social and governance (ESG) factors, the impact of climate change legislation on corporate disclosures and the role of sustainable accounting in achieving the United Nations SDGs.

About the authors

Dr M.P. Akhil is assistant professor of commerce/management at Gulati Institute of Finance and Taxation (GIFT). He earned his PhD from the University of Kerala, specializing in commerce, with a focus on the challenges and potential implications of the newly implemented Goods and Services Tax (GST) regime on the economy. Demonstrating his scholarly dedication, Dr Akhil has successfully cleared the UGC junior research fellowship (JRF) and the National Eligibility Test (NET). With a master of commerce

degree, where his specialization lies in Finance, Dr Akhil also brings valuable industry experience from the Central School Education sector to his academic endeavors. He has presented papers at numerous esteemed National and International conferences and forums. Moreover, Dr Akhil has authored research papers, articles and book chapters in esteemed journals and publications, spanning a wide array of business studies and multidisciplinary topics. His current research interests encompass diverse areas, including taxation, sustainable development goals (SDG), sustainable accounting, green finance, climate finance, circular economy and emerging domains like the metaverse.

Dr Astha Badjatia currently works as assistant professor (finance and accounting) in Alliance School of Business, Alliance University, Bengaluru. Dr Badjatia holds Ph.D. in management (finance) and MBA in finance and marketing from Devi Ahilya Vishwavidyalaya (DAVV), Indore. She was gold medalist and received the best research project during her MBA. She has worked with the Deloitte USI after her MBA as tax consultant. Dr Badjatia's areas of expertise are financial management, financial accounting, cost accounting and research methodology. Her current research areas are environmental social and governance (ESG), corporate governance, non-financial parameters of firm performance, conscious capitalism, integrated reporting, etc. She has published many research papers in journals of national repute and has presented papers at national and international conferences. She has also conducted hands-on training and workshops in the research methodology domain.

References

- Achenbach, M. (2021). Transparency of climate-related risks and opportunities: Determinants influencing the disclosure in line with the Task Force on climate-related financial disclosures. *Glocality*, 4(1), 1. doi: [10.5334/GLO.32](https://doi.org/10.5334/GLO.32).
- Adams, C. A., & Larrinaga, C. (2019). Progress: Engaging with organisations in pursuit of improved sustainability accounting and performance. *Accounting, Auditing and Accountability Journal*, 32(8), 2367–2394. doi: [10.1108/AAAJ-03-2018-3399](https://doi.org/10.1108/AAAJ-03-2018-3399).
- Adur, A. J., Srivastava, N., Vinaya Laxmi, D., Mishra, A., & Jagdish Mohan Rao, A. (2023). Accounting for sustainability: Integrating environmental, social, and governance (ESG) factors in financial reporting section A—research paper. *Eur. Chem. Bull.*, 12, 1136–1146. doi: [10.48047/ecb/2023.12.si12.100](https://doi.org/10.48047/ecb/2023.12.si12.100).
- Affes, W., & Jarboui, A. (2023). The impact of corporate governance on financial performance: A cross-sector study. *International Journal of Disclosure and Governance*, 20(4), 374–394. doi: [10.1057/S41310-023-00182-8/TABLES/25](https://doi.org/10.1057/S41310-023-00182-8/TABLES/25).
- Ahmad, H., Yaqub, M., & Lee, S. H. (2023). Environmental-social-and governance-related factors for business investment and sustainability: A scientometric review of global trends. *Environment, Development and Sustainability*, 1–23. doi: [10.1007/S10668-023-02921-X/TABLES/2](https://doi.org/10.1007/S10668-023-02921-X/TABLES/2).
- Akhil, M. P. (2022). Employing bibliometric analysis to identify emerging technologies in the insurance industry. *Big Data Analytics in the Insurance Market*, 207–220. doi: [10.1108/978-1-80262-637-720221011/FULL/XML](https://doi.org/10.1108/978-1-80262-637-720221011/FULL/XML).
- Al-Adeem, K. R. (2023). Accounting as a sustainable crafted technology for human exchange activities with nature: A defense of accounting continuity. *Frontiers in Environmental Science*, 11, 1165247. doi: [10.3389/FENVS.2023.1165247](https://doi.org/10.3389/FENVS.2023.1165247).
- Aouadi, A., & Marsat, M. (2018). Do ESG controversies matter for firm value? Evidence from international data. *Journal of Business Ethics*, 151(4), 1027–1047.
- Ascani, I., Ciccola, R., & Chiuicchi, M. S. (2021). A structured literature review about the role of management accountants in sustainability accounting and reporting. *Sustainability (Switzerland)*, 13(4), 1–25. doi: [10.3390/SU13042357](https://doi.org/10.3390/SU13042357).
- Atkins, J., Atkins, B. C., Thomson, I., & Maroun, W. (2015). 'Good' news from nowhere: Imagining utopian sustainable accounting. *Accounting, Auditing and Accountability Journal*, 28(5), 651–670. doi: [10.1108/AAAJ-09-2013-1485/FULL/HTML](https://doi.org/10.1108/AAAJ-09-2013-1485/FULL/HTML).
- Banta, V. C., Rindasu, S. M., Tanasie, A., & Cojocaru, D. (2022). Artificial intelligence in the accounting of international businesses: A perception-based approach. *Sustainability*, 14(11), 6632. doi: [10.3390/su14116632](https://doi.org/10.3390/su14116632).

- Biddle, G. C., Hilary, G., & Verdi, R. S. (2009). How does financial reporting quality relate to investment efficiency? *Journal of Accounting and Economics*, 48(2–3), 112–131.
- Boyd, J., & Banzhaf, S. (2007). What are ecosystem services? The need for standardized environmental accounting units. *Ecological Economics*, 63(2–3), 616–626. doi: [10.1016/J.ECOLECON.2007.01.002](https://doi.org/10.1016/J.ECOLECON.2007.01.002).
- Boyer, R. H. W., Peterson, N. D., Arora, P., & Caldwell, K. (2016). Five approaches to social sustainability and an integrated way forward. *Sustainability (Switzerland)*, 8(9), 878. doi: [10.3390/SU8090878](https://doi.org/10.3390/SU8090878).
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, 33(4–5), 303–327. doi: [10.1016/J.AOS.2007.05.003](https://doi.org/10.1016/J.AOS.2007.05.003).
- Deschryver, P., & de Mariz, F. (2020). What future for the green bond market? How can policymakers, companies, and investors unlock the potential of the green bond market?. *Journal of Risk and Financial Management*, 13(3), 61. doi: [10.3390/jrfm13030061](https://doi.org/10.3390/jrfm13030061).
- Di Vaio, A., Palladino, R., Hassan, R., & Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. *Journal of Business Research*, 121, 283–314. doi: [10.1016/j.jbusres.2020.08.019](https://doi.org/10.1016/j.jbusres.2020.08.019).
- Ferreira Quilice, T., Oranges Cezarino, L., Fernandes Rodrigues Alves, M., Bartocci Liboni, L., & Ferreira Caldana, A. C. (2018). Positive and negative aspects of GRI reporting as perceived by Brazilian organizations. *Environmental Quality Management*, 27(3), 19–30. doi: [10.1002/TQEM.21543](https://doi.org/10.1002/TQEM.21543).
- Garst, J., Maas, K., & Suijs, J. (2022). Materiality assessment is an art, not a science: Selecting ESG topics for sustainability reports. *California Management Review*, 65(1), 64–90. doi: [10.1177/00081256221120692/ASSET/IMAGES/LARGE/10.1177_00081256221120692-FIG3.JPEG](https://doi.org/10.1177/00081256221120692/ASSET/IMAGES/LARGE/10.1177_00081256221120692-FIG3.JPEG).
- Gil-Marín, M., Vega-Muñoz, A., Contreras-Barraza, N., Salazar-Sepúlveda, G., Vera-Ruiz, S., & Losada, A. V. (2022). Sustainability accounting studies: A metasynthesis. *Sustainability*, 14(15), 9533. doi: [10.3390/SU14159533](https://doi.org/10.3390/SU14159533).
- Gulluscio, C., Puntillo, P., Luciani, V., & Huisingh, D. (2020). Climate change accounting and reporting: A systematic literature review. *Sustainability (Switzerland)*, 12(13), 5455. doi: [10.3390/SU12135455](https://doi.org/10.3390/SU12135455).
- Hariram, N. P., Mekha, K. B., Suganthan, V., & Sudhakar, K. (2023). Sustainalism: An integrated socio-economic-environmental model to address sustainable development and sustainability. *Sustainability*, 15(13), 10682. doi: [10.3390/SU151310682](https://doi.org/10.3390/SU151310682).
- Hendijani Zadeh, M. (2021). The effect of corporate social responsibility transparency on corporate payout policies. *International Journal of Managerial Finance*, 17(5), 708–732. doi: [10.1108/IJMF-07-2020-0386/FULL/HTML](https://doi.org/10.1108/IJMF-07-2020-0386/FULL/HTML).
- Hörisch, J., Freeman, R. E., & Schaltegger, S. (2014). Applying stakeholder theory in sustainability management: Links, similarities, dissimilarities, and a conceptual framework. *Organization and Environment*, 27(4), 328–346. doi: [10.1177/1086026614535786](https://doi.org/10.1177/1086026614535786).
- Hörisch, J., Schaltegger, S., & Freeman, R. E. (2020). Integrating stakeholder theory and sustainability accounting: A conceptual synthesis. *Journal of Cleaner Production*, 275, 124097. doi: [10.1016/J.JCLEPRO.2020.124097](https://doi.org/10.1016/J.JCLEPRO.2020.124097).
- Jørgensen, S., Mjøs, A., & Pedersen, L. J. T. (2022). Sustainability reporting and approaches to materiality: Tensions and potential resolutions. *Sustainability Accounting, Management and Policy Journal*, 13(2), 341–361. doi: [10.1108/SAMPJ-01-2021-0009/FULL/PDF](https://doi.org/10.1108/SAMPJ-01-2021-0009/FULL/PDF).
- Kalbouneh, A., Aburishah, K., Shaheen, L., & Aldabbas, Q. (2023). The intellectual structure of sustainability accounting in the corporate environment: A literature review. *Cogent Business and Management*, 10(2), 2211370. doi: [10.1080/23311975.2023.2211370](https://doi.org/10.1080/23311975.2023.2211370).
- Kim, J. (2018). Social dimension of sustainability: From community to social capital. *Journal of Global Scholars of Marketing Science: Bridging Asia and the World*, 28(2), 175–181. doi: [10.1080/21639159.2018.1436982](https://doi.org/10.1080/21639159.2018.1436982).

- Kwakye, T. O., Welbeck, E. E., Owusu, G. M. Y., & Anokye, F. K. (2018). Determinants of intention to engage in sustainability accounting and reporting (SAR): The perspective of professional accountants. *International Journal of Corporate Social Responsibility*, 3(1), 11. doi: [10.1186/S40991-018-0035-2](https://doi.org/10.1186/S40991-018-0035-2).
- Lehner, O. M., & Harrer, T. (2019). Accounting for economic sustainability: Environmental, social and governance perspectives. *Journal of Applied Accounting Research*, 20(4), 365–371. doi: [10.1108/JAAR-06-2019-0096](https://doi.org/10.1108/JAAR-06-2019-0096).
- Mäkelä, M., & Olkkonen, L. (2021). Sustainability activism: A review of the state of the art. In *Research Handbook of Sustainability Agency*, 140–154. doi: [10.4337/9781789906035.00015](https://doi.org/10.4337/9781789906035.00015).
- Maltais, A., & Nykvist, B. (2020). Understanding the role of green bonds in advancing sustainability. *11(3)*, 233–252. doi: [10.1080/20430795.2020.1724864](https://doi.org/10.1080/20430795.2020.1724864).
- Miralles-Quirós, M. M., Miralles-Quirós, J. L., & Redondo-Hernández, J. (2019). The impact of environmental, social, and governance performance on stock prices: Evidence from the banking industry. *Corporate Social Responsibility and Environmental Management*, 26(6), 1446–1456. doi: [10.1002/CSR.1759](https://doi.org/10.1002/CSR.1759).
- Mohammad, W. M. W., & Wasiuzzaman, S. (2021). Environmental, Social and Governance (ESG) disclosure, competitive advantage and performance of firms in Malaysia. *Cleaner Environmental Systems*, 2, 100015. doi: [10.1016/J.CESYS.2021.100015](https://doi.org/10.1016/J.CESYS.2021.100015).
- Moral-Muñoz, J. A., Herrera-Viedma, E., Santisteban-Espejo, A., & Cobo, M. J. (2020). Software tools for conducting bibliometric analysis in science: An up-to-date review. *Profesional de La Informacion*, 29(1), 1–20. doi: [10.3145/epi.2020.ene.03](https://doi.org/10.3145/epi.2020.ene.03).
- Moss, R. H., Avery, S., Baja, K., Burkett, M., Chischilly, A. M., Dell, J., ... Zimmerman, R. (2019). Evaluating knowledge to support climate action: A framework for sustained assessment. Report of an independent advisory committee on applied climate assessment. *Weather, Climate, and Society*, 11(3), 465–487. doi: [10.1175/WCAS-D-18-0134.1](https://doi.org/10.1175/WCAS-D-18-0134.1).
- Ngo, T., Le, T., Ullah, S., & Trinh, H. H. (2023). Climate risk disclosures and global sustainability initiatives: A conceptual analysis and agenda for future research. *Business Strategy and the Environment*, 32(6), 3705–3720. doi: [10.1002/BSE.3323](https://doi.org/10.1002/BSE.3323).
- Owusu, G. M. Y., & Ofori-Owusu, C. (2024). Analysis of the structure and evolution of sustainability accounting research: A 41-year review. *Meditari Accountancy Research*, 32(4), 1445–1492. doi: [10.1108/MEDAR-11-2022-1846](https://doi.org/10.1108/MEDAR-11-2022-1846).
- Ozili, P. K. (2021). Sustainability accounting. *SSRN Electronic Journal*. doi: [10.2139/SSRN.3803384](https://doi.org/10.2139/SSRN.3803384).
- Pappas, I. O., Mikalef, P., Dwivedi, Y. K., Jaccheri, L., & Krogstie, J. (2023). Responsible digital transformation for a sustainable society. *Information Systems Frontiers*, 25(3), 945–953. doi: [10.1007/s10796-023-10406-5](https://doi.org/10.1007/s10796-023-10406-5).
- Patten, D. M., & Shin, H. (2019). Sustainability accounting, management and policy journal's contributions to corporate social responsibility disclosure research: A review and assessment. *Sustainability Accounting, Management and Policy Journal*, 10(1), 26–40. doi: [10.1108/SAMPJ-01-2018-0017](https://doi.org/10.1108/SAMPJ-01-2018-0017).
- Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: In search of conceptual origins. *Sustainability Science*, 14(3), 681–695. doi: [10.1007/S11625-018-0627-5/FIGURES/1](https://doi.org/10.1007/S11625-018-0627-5/FIGURES/1).
- Scoones, I. (2016). The politics of sustainability and development. *41(1)*, 293–319. doi: [10.1146/Annurev-Environ-110615-090039](https://doi.org/10.1146/Annurev-Environ-110615-090039).
- Seker, Y., & Sengür, E. D. (2021). The impact of environmental, social, and governance (esg) performance on financial reporting quality: International evidence. *Ekonomika*, 100(2), 190–212. doi: [10.15388/EKON.2021.100.2.9](https://doi.org/10.15388/EKON.2021.100.2.9).
- Taghizadeh-Hesary, F., & Yoshino, N. (2020). Sustainable solutions for green financing and investment in renewable energy projects. *Energies*, 13(4), 788. doi: [10.3390/EN13040788](https://doi.org/10.3390/EN13040788).
- Tettamanzi, P., Venturini, G., & Murgolo, M. (2022). Sustainability and financial accounting: A critical review on the ESG dynamics. *Environmental Science and Pollution Research*, 29(11), 16758–16761. doi: [10.1007/S11356-022-18596-2](https://doi.org/10.1007/S11356-022-18596-2).

-
- Thottoli, M. M., Ahmed, E. R., & Thomas, K. (2022). Emerging technology and auditing practice: Analysis for future directions. *European Journal of Management Studies*, 27(1), 99–119. doi: [10.1108/EJMS-06-2021-0058](https://doi.org/10.1108/EJMS-06-2021-0058).
- Truant, E., Borlatto, E., Crocco, E., & Sahore, N. (2024). Environmental, social and governance issues in supply chains. A systematic review for strategic performance. *Journal of Cleaner Production*, 434, 140024. doi: [10.1016/J.JCLEPRO.2023.140024](https://doi.org/10.1016/J.JCLEPRO.2023.140024).
- Volz, U. (2018). Fostering green finance for sustainable development in Asia, (ADBI Working Paper Series). Available from: www.adbi.org
- Vysochan, O., Hyk, V., Vysochan, O., & Olshanska, M. (2021). Sustainability accounting: A systematic literature review and bibliometric analysis. *Quality - Access to Success*, 22(185), 95–102. doi: [10.47750/QAS/22.185.14](https://doi.org/10.47750/QAS/22.185.14).
- Xu, T. Y., Wang, F. M., Yi, Q. X., Xie, L. L., & Yao, X. P. (2022). A bibliometric and visualized analysis of research progress and trends in rice remote sensing over the past 42 Years (1980-2021). *Remote Sensing*, 14(15), 3607. doi: [10.3390/rs14153607](https://doi.org/10.3390/rs14153607).
- Zheng, Y., Wang, B., Sun, X., & Li, X. (2022). ESG performance and corporate value: Analysis from the stakeholders' perspective. *Frontiers in Environmental Science*, 10, 1084632. doi:[10.3389/fenvs.2022.1084632](https://doi.org/10.3389/fenvs.2022.1084632).

Corresponding author

M.P. Akhil can be contacted at: drakhilmp@gmail.com