



From Cost to Value: A Scientometric Exploration of Sustainable Supply Chain Management

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Abstract

Purpose: This study aims to map the scientific landscape of Sustainable Supply Chain Management (SSCM), particularly its implications for modern distribution systems and its linkage to accounting and finance. This research addresses the limited evidence on how sustainability practices are integrated into corporate reporting and financial performance measurement. **Research design, data and methodology:** A combined Systematic Literature Review (SLR) and scientometric analysis was conducted using the Scopus database and WataSe Uake software. Following the PRISMA protocol, 39 peer-reviewed articles published between 2015 and 2025 were identified. **Results:** Findings reveal a growing body of SSCM research, with China, Italy, and the United Kingdom as leading contributors. Three thematic clusters dominate the field: green supply chain and environmental performance; sustainability disclosure and corporate governance; and financial implications of SSCM practices. Thematic evolution shows a shift from cost-efficiency to value-based sustainability, although empirical findings on the relationship between sustainability disclosure and financial indicators remain inconsistent. **Conclusion:** This study highlights the underexplored accounting–finance dimension of SSCM and identifies potential mediating and moderating mechanisms, including corporate reputation, governance quality, and investor perceptions. The findings provide insights for policymakers and firms to enhance transparency and accountability in sustainability reporting, particularly in emerging economies.

Keywords: Sustainable Supply Chain Management, Distribution Systems, ESG Disclosure, SDG's, Value-Based Sustainability

JEL Classification Code: M11, Q56, L23, O32

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1. Introduction

Sustainable Supply Chain Management (SSCM) has evolved into a crucial corporate strategy in addressing the challenges of climate change, global regulatory pressures, and stakeholder demands for transparency. The paradigm shift from cost efficiency to sustainability-based value creation underscores the importance of integrating Environmental, Social, and Governance (ESG) aspects into supply chain management (Dubey et al., 2021; Govindan et al., 2017; Abusalma et al., 2025). In Indonesia, the sustainability reporting obligation through POJK No. 51/2017 demonstrates how the national regulatory framework is in line with international commitments to the Sustainable Development Goals (SDGs).

Although SSCM research has developed rapidly, most scientometric and bibliometric studies still focus on environmental aspects, green logistics, and the circular economy (Bag & Pretorius, 2022; Tseng et al., 2019). The accounting and financial dimensions have received relatively little attention, even though these aspects play an important role in linking sustainability practices with corporate financial performance. Research on sustainable supply chain finance (Alqahtani et al., 2025; Jia et al., 2020; Liao et al., 2025) does highlight financial mechanisms, but has not yet systematically linked them to ESG disclosure or corporate accounting frameworks.

In addition, empirical evidence regarding the relationship between sustainability reporting and financial performance shows contradictory results. Several studies have found a positive relationship with ROA, ROE, and Tobin's Q indicators (Buallay, 2019; Wan Ahmad et al., 2016), while other studies have shown a weak or insignificant effect (Ferjančič et al., 2024). This inconsistency indicates the existence of mediating and moderating mechanisms such as governance quality, corporate reputation, or investor perceptions that have not been fully mapped. From a theoretical perspective, these contradictions can be explained through stakeholder theory (accountability to stakeholder interests), legitimacy theory (the search for social legitimacy through ESG reporting), and the resource-based view (the competitive advantage of green innovation and sustainable governance).

To bridge these theoretical and empirical discrepancies, this study presents itself as an integrative review that links sustainability practices with accounting and finance viewpoints within the SSCM field. By integrating scientometric mapping and systematic synthesis, it aims to elucidate the conceptual development of prior research and how this progression reflects the transition from cost efficiency to value-based sustainability.

To fill this gap, this study combines a Systematic Literature Review (SLR) and scientometric analysis based

on Scopus with the help of WataSe Uake software. This approach enables the mapping of publication trends, collaboration networks, and the thematic evolution of SSCM from a cost orientation towards value creation, with an emphasis on the interrelationship between sustainability practices, accounting reporting, and financial performance. This integration helps show a clearer path from the research gaps that were found to the goals and questions of this study.

Based on this background, this study formulates the following research questions:

- RQ1: What are the publication trends, key contributors, and collaboration networks in SSCM research?
- RQ2: What are the dominant themes and research clusters in SSCM literature, and how do they reflect theoretical perspectives such as stakeholder theory and legitimacy theory in linking ESG disclosure to financial performance?
- RQ3: How has the thematic focus of SSCM evolved from cost efficiency to value-based sustainability, and to what extent can mechanisms suggested by stakeholder, legitimacy, and resource-based theories explain the contradictory empirical findings on ESG disclosure and firm performance?

2. Literature Review

Sustainable Supply Chain Management (SSCM) has evolved as a strategic response to global sustainability challenges. Early studies primarily emphasized environmental and operational efficiency through green logistics and circular economy principles (Govindan et al., 2017; Tseng et al., 2019). More recent works expand SSCM toward social and governance dimensions, positioning it as a holistic approach that links environmental responsibility, ethical sourcing, and transparent reporting (Bag & Pretorius, 2022; Dubey et al., 2021).

From a theoretical perspective, the integration of Environmental, Social, and Governance (ESG) disclosure in SSCM can be interpreted through three complementary frameworks. Stakeholder theory highlights how firms respond to diverse stakeholder expectations through transparent reporting. Legitimacy theory explains sustainability disclosure as a means to secure social approval and institutional trust. The resource-based view (RBV) positions green innovation and governance quality as strategic resources that generate competitive advantage (Buallay, 2019; Wan Ahmad et al., 2016). Together, these theories illustrate that SSCM not only supports environmental outcomes but also strengthens corporate governance and financial resilience.

Empirical findings, however, remain inconsistent. Several studies show positive effects of sustainability reporting on financial indicators such as ROA, ROE, and

Tobin’s Q (Buallay, 2019; Oprean-Stan et al., 2020), while others report insignificant relationships (Ferjančić et al., 2024). Such discrepancies suggest that contextual factors governance quality, regulatory enforcement, and investor perception may moderate the link between sustainability and firm performance.

3. Research Methods

This study employs a combined Systematic Literature Review (SLR) and scientometric analysis to explore the development of Sustainable Supply Chain Management (SSCM) with a particular focus on its connection to accounting and finance. The integration of SLR and scientometric analysis provides both methodological rigor in article selection and quantitative-visual insights into the intellectual structure of the field (Donthu et al., 2021). To ensure transparency and replicability, the review process followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol as recommended by (Page et al., 2021).

The main data source for this study is Scopus, selected for its wide disciplinary coverage, consistent metadata structure, and strong indexing of peer-reviewed journals. Using Scopus alone is methodologically justified for three reasons. First, it provides the most comprehensive coverage of management, accounting, and finance outlets, where SSCM research is predominantly published. Second, Scopus integrates journal quality rankings (Q1–Q4 via Scimago), enabling the systematic inclusion of high-quality and impactful publications. Third, its citation data and metadata are more consistent than those of other databases, minimizing duplication and increasing the reliability of bibliometric mapping. Although Web of Science (WoS) is commonly used in multi-database studies, comparative evidence, Donthu et al. (2021) shows that Scopus captures a broader range of SSCM-related research, particularly in interdisciplinary areas such as ESG disclosure, sustainability reporting, and corporate finance. For these reasons, Scopus-only was deemed sufficient and methodologically appropriate for this study.

Figure 1 presents the keyword identification process used in the screening stage.

The search strategy employed the following explicit search string: “sustainable supply chain,” “sustainable supply chain management,” “accounting,” “finance,” “ESG,” and “sustainability reporting.” The scope was limited to peer-reviewed journal articles published in English between 2015 and 2025. Inclusion criteria required that articles explicitly address SSCM in relation to accounting, finance, ESG disclosure, or sustainability reporting, and be indexed in Scimago Q1–Q4. Articles were

excluded if they were conference proceedings, book chapters, editorials, or lacked thematic relevance to the research focus.

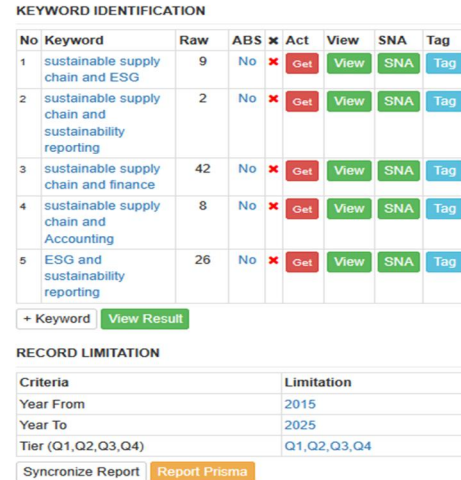
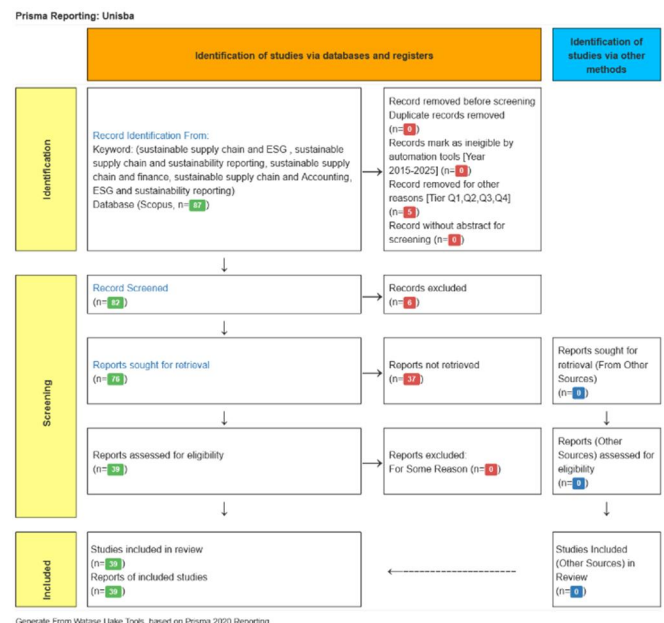


Figure 1: Keyword Identification

The PRISMA screening process started with 87 articles identified from Scopus. After eliminating duplicates and applying inclusion/exclusion criteria, 82 articles were left. Further screening of abstracts and full texts excluded 43 articles that did not meet quality or thematic criteria, resulting in a final sample of 39 articles. This process is illustrated in Figure 2 (PRISMA Flow Diagram) to enhance transparency and replicability.



Source: Watase Uake Output (2025)

Figure 2: PRISMA Flow Diagram

To ensure transparency and consistency with the SLR protocol, a comprehensive summary of all 39 reviewed articles, including authors, year, research focus and key findings is provided in Appendix A. This appendix reinforces the systematic nature of the review and aligns the literature analysis with the methodological scope outlined in the PRISMA process.

Scientometric analysis was conducted using Watase Uake software which enables visualization and clustering of bibliometric data, as explained by Wahyudi (2024). Tools such as VOSviewer and Biblioshiny are frequently utilized, but Watase Uake was chosen for its integrated features in co-citation, co-word, and thematic evolution mapping, enabling simultaneous analysis of publication trends, intellectual networks, and thematic changes. Three complementary approaches were employed: first, co-citation analysis was used to identify influential authors, journals, and intellectual linkages, visualized through network maps that highlight citation strength and clustering. Second, co-word analysis was performed to detect dominant keywords and thematic clusters, producing density maps and co-occurrence networks that reveal the conceptual structure of SSCM literature. Third, thematic evolution mapping was applied to trace the shift in SSCM research from cost efficiency toward value-based sustainability, represented through a quadrant map that categorizes themes into motor themes, niche themes, emerging/declining themes, and basic/transversal themes (Aritonang et al., 2024).

This approach brings together different methods to give a full view of SSCM research, showing how ideas are organized and what main topics are covered. It helps pick articles carefully and gives a deeper understanding of how SSCM studies have changed over time, how they connect with accounting and finance, and where more research is needed.

4. Results and Discussion

4.1. Results

The scientometric analysis identified 39 relevant publications on Sustainable Supply Chain Management (SSCM) intersecting with accounting and finance from 2015 to 2025. The publication trend shows a steady growth starting from 2019, peaking in 2024, reflecting the global emphasis on ESG-driven corporate responsibility, particularly in response to the post-pandemic shift focusing on supply chain resilience, green transformation, and sustainability reporting.

The descriptive trend highlights an increasing number of publications that align with growing global priorities on sustainable practices. Among the 39 identified, three

overarching patterns emerge: Geographical focus, China leads with 12 publications, followed by Italy and the UK (each with three publications). Thematic shifts: The literature evolved from emphasizing cost efficiency (2016–2018) to focusing on value-based sustainability (2019–2025). Methodological reliance: The dominance of quantitative studies (26 out of 39) indicates a trend of prioritizing empirical research over theoretical focus.

The thematic evolution indicates a shift from cost efficiency to value-based sustainability. The article also highlights a growing emphasis on the practical validation of theories through empirical studies.

The scientometric analysis revealed a steady growth of SSCM publications from 2016 to 2025, with a peak in 2024. China emerged as the leading contributor, followed by Italy and the United Kingdom. Influential publications include (Buallay, 2019), which examined ESG disclosure and financial performance, and Jia et al., (2020), which called for a research agenda on sustainable supply chain finance. Journals such as *Sustainability*, *Journal of Cleaner Production*, and *International Journal of Production Economics* dominate the discourse, reflecting the interdisciplinary nature of SSCM research.

Keyword co-occurrence analysis identified three main clusters: (1) green supply chain management and environmental performance, (2) sustainability disclosure and corporate governance, and (3) financial impacts of SSCM practices. Thematic evolution highlights a transition from cost-oriented efficiency to value-based sustainability, with increasing emphasis on transparency, ESG disclosure, and green innovation. This analysis shows how papers about SSCM have changed to include multiple areas like sustainability, accounting and finance, showing that the field is becoming more interdisciplinary over time.

4.1.1. Most Influential Publications

Table 1 below shows the top ten articles related to sustainability and corporate performance, based on the number of citations. These articles were published in various reputable journals such as *Management of Environmental Quality*, *Technological Forecasting and Social Change*, *International Journal of Production Economics*, *Sustainability*, and *Journal of Cleaner Production*.

The article with the highest number of citations (541 citations) was written by Buallay (2019) which discusses the relationship between ESG reporting and corporate performance in the European banking sector (Buallay, 2019). In addition, articles by Soni et al. (2022) ran second with 198 citations, discussing the integration of environmentally friendly technology into environmental management systems (Soni et al., 2022). Most of the other articles discuss topics such as sustainable supply chains, environmental and social performance, and the use of data-driven analysis and

quantitative methods to evaluate sustainability strategies.

These articles show that the focus of current research is not only on sustainability reporting, but also on the integration of environmental strategies into business processes and their impact on corporate efficiency and performance. The high number of citations in these articles

reflects the importance of sustainability issues in current scientific literature and managerial practice.

The focus on Chinese authors and their teamwork shows a research culture shaped by policies. These policies, like requirements for ESG reporting and support for green finance, are affecting how much research gets published.

Table 1: Top Ten Most Influential Publications

No	Author	Title	Journal	Citation
1	Buallay, Amina (Buallay, 2019)	Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector.	Management of Environmental Quality	541
2	Soni, Gunjan; Kumar, Satish; Mahto, Raj V.; Mangla, Sachin K.; Mittal, M.L.; Lim, Weng Marc (Soni et al., 2022)	A decision-making framework for Industry 4.0 technology implementation: The case of FinTech and sustainable supply chain finance for SMEs.	Technological Forecasting and Social Change	198
3	Tseng, Ming-Lang; Wu, Kuo-Jui; Hu, Jiayao; Wang, Chin-Hsin (Tseng et al., 2018)	Decision-making model for sustainable supply chain finance under uncertainties.	International Journal of Production Economics	153
4	Lahkani, Marjaneh Jahangiri; Wang, Shouyang; Urbaski, Mariusz; Egorova, Mariya (Lahkani et al., 2020)	Sustainable B2B E-commerce and blockchain-based supply chain finance.	Sustainability	142
5	Abdel-Basset, Mohamed; Mohamed, Rehab; Sallam, Karam; Elhoseny, Mohamed (Abdel-Basset et al., 2020)	A novel decision-making model for sustainable supply chain finance under uncertainty environment.	Journal of Cleaner Production	134
6	Jia, Fu; Zhang, Tianyu; Chen, Lujie (Jia et al., 2020)	Sustainable supply chain Finance: Towards a research agenda.	Journal of Cleaner Production	100
7	Tseng, Ming-Lang; Lim, Ming K.; Wu, Kuo-Jui (Tseng et al., 2019)	Improving the benefits and costs on sustainable supply chain finance under uncertainty.	International Journal of Production Economics	93
8	Oprean-Stan, Camelia; Oncioiu, Ionica; Iuga, Iulia Cristina; Stan, Sebastian (Oprean-Stan et al., 2020)	Impact of sustainability reporting and inadequate management of esg factors on corporate performance and sustainable growth.	Sustainability	84
9	Olan, Femi; Liu, Shaofeng; Suklan, Jana; Jayawickrama, Uchitha; Arakpogun, Emmanuel Ogiemwonyi (Olan et al., 2022)	The role of Artificial Intelligence networks in sustainable supply chain finance for food and drink industry.	International Journal of Production Research	76
10	Wan Ahmad, Wan Nurul Karimah; de Brito, Marisa P.; Tavasszy, Lóránt A.(Wan Ahmad et al., 2016)	Sustainable supply chain management in the oil and gas industry: A review of corporate sustainability reporting practices.	Benchmarking	75

4.1.2. Journal Citation

Table 2 below presents the distribution of scientific journals that were sources in the systematic literature review related to the topics of Sustainable Supply Chain and Corporate Governance. Twenty journals were identified, with varying numbers of articles and citations. The journal Sustainability holds the most dominant position with 9 articles and 309 citations, reflecting its significant contribution to the development of academic discourse in this field. It is followed by the International Journal of Production Economics and the Journal of Cleaner Production, each with 3 articles and a high number of citations (246 and 235), indicating a strong influence on the scientific landscape.

Most of the identified journals contributed only one article, but some of them had high citations, such as Management of Environmental Quality: An International Journal with 541 citations, indicating that despite their

limited contribution in terms of article numbers, their scientific quality and impact were high. Conversely, journals such as Society and Business Review or Administrative Sciences, despite having a large number of articles, show relatively low citation counts, suggesting that there is still room for improvement in academic visibility. Overall, this table illustrates the landscape of literature dissemination in the field under study and identifies key journals that are highly relevant in terms of both the quantity and quality of citations.

A high number of citations in journals like Sustainability and Journal of Cleaner Production shows that scholarly work on sustainable supply chain management is focusing more on environmental and financial responsibility.

No	ISSN	Journal	Tier	Citation	Total Article
1	20711050	Sustainability	1	309	14
2	9255273	International Journal of Production Economics	1	246	3
3	9596526	Journal of Cleaner Production	1	235	3
4	0007070X	British Food Journal	3	0	1
5	14635771	Benchmarking: An International Journal	3	75	1
6	0955534X	European Business Review	2	0	1
7	1618954X	Clean Technologies and Environmental Policy	2	10	1
		Management of Environmental Quality: An International Journal	4	541	1
8	14777835	Society and Business Review	1	36	1
9	17465680	Frontiers in Environmental Science	1	23	1
10	2296665X	Administrative Sciences	2	5	1
11	20763387	International Journal of Production Research	1	76	1
12	207543	Technological Forecasting and Social Change	1	198	1
13	401625	Annals of Operations Research	1	32	1
14	2545330	Environment, Development and Sustainability	3	44	1
15	1387585X	Operations Management Research	2	21	1
16	19369735	Journal of the Knowledge Economy	1	5	1
17	18687873	Economic Modelling	2	28	1
18	2649993	International Review of Financial Analysis	2	4	1
19	10575219	Journal of Purchasing and Supply Management	1	20	1
20	14784092				

Figure 3: Journal Citation

4.1.3. Research Gap Identification

The scientometric results in Figure 4 generated using WataSe Uake reveal several contradictory empirical findings, indicating a clear moderation gap in the SSCM literature. The link between Supply Chain Finance and Corporate Green Innovation often theorized through agency cost reduction shows weak or even negative effects in certain studies. This suggests the need to examine moderating variables that could clarify these inconsistencies.

Similar contradictions emerge in the relationships between corporate governance and environmental performance, as well as between CSR disclosure and financial indicators such as ROE and Tobin’s Q, where effects are frequently limited or insignificant. These patterns imply that direct relationships are shaped by contextual factors, including governance quality, regulatory pressure, firm size, and investor perceptions.

NO	IV	DV	MODERATION	ARTICLE	HIGH	LOW	EXPLORE
1	Supply Chain Finance	Corporate Green Innovation		2	2		
2	Supply Chain Finance	Corporate Green Innovation Via R&d Investment		2	2		
3	Supply Chain Finance	Corporate Green Innovation Via Reduced Agency Cost		2		2	Moderation
4	Corporate Governance	Economic Performance		1		1	Moderation
5	Corporate Governance	Environmental Performance		1		1	Moderation
6	Corporate Governance	Social Performance		1	1		
7	Corporate Social Responsibility Disclosure	Return On Equity		1		1	Moderation
8	Corporate Social Responsibility Disclosure	Tobin's Q		1		1	Moderation
9	Environmental Disclosure	Tobin's Q		1	1		
10	Environmental Performance	Economic Performance		1		1	Moderation

Figure 4: Research Gap Identification I

Future research should integrate theory-driven moderators to enhance the explanatory power of sustainability–finance models and develop a more coherent understanding of corporate sustainability outcomes.

Persistent inconsistencies in ESG–performance relationships also highlight methodological issues, including heterogeneous data sources, context-specific biases, and omitted variables such as corporate reputation or governance strength.

To address these gaps, cross-country and longitudinal studies are needed, particularly those examining the intersection of sustainable supply chain management and financial performance.

4.1.4. Keyword co-occurrences

Keyword mapping shows three main groups: (1) Green Supply Chain and Environmental Performance; (2) ESG Disclosure and Corporate Governance; (3) Financial Impacts of Sustainable Supply Chain Management. This shows a clear path from improving daily operations to focusing on long-term sustainability strategies.



Figure 5: WordCloud

Figure 5 shows the visualisation of co-occurrence keywords that describe the most frequently occurring and interrelated keywords in literature related to supply chain finance, sustainability, and corporate performance. The most dominant keywords, such as Supply Chain Finance, Sustainable Supply Chain Finance, and Supply Chain Ratio, indicate that supply chain finance is the focus of attention in various studies.

In addition, the emergence of keywords such as Environmental Performance, Financial Performance, and Economic Performance reflects that company performance is viewed from various dimensions, including environmental, financial, and economic aspects. The emergence of terms such as Corporate Governance Disclosure, Sustainability Reporting, and ESG Disclosure indicates the importance of transparency and accountability in corporate sustainability strategies.

Other keywords such as Tobin’s Q, Return on Equity, Number of Employees, and Profitability indicate a

quantitative approach to measuring the impact of sustainability policies on a company's internal and external performance. On the other hand, the presence of keywords such as Corporate Green Innovation via R&D Investment and Environmental Disclosure indicates an innovative push towards green transformation. Overall, this visualization underscores that research in this field is multidisciplinary, involving financial, operational, governance, and sustainability aspects that are integrated into the modern supply chain.

4.1.5. Year Publication

Figure 7 shows the Year Article Classification publication, which presents the distribution of scientific articles based on the year of publication from 2016 to 2025. In general, the publication trend shows a consistent increase, reflecting the growing academic interest in issues related to the topic of sustainable supply chains. In the early phase from 2016 to 2018, the number of articles was still very limited, with only 1–2 articles per year, which can be interpreted as an initial exploration period for this topic.

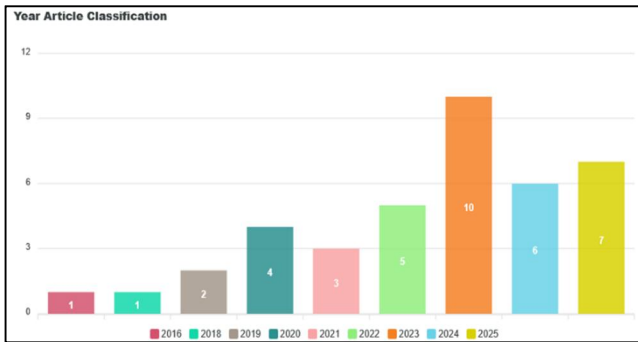


Figure 6: Year Publication

A significant increase began to be seen in 2020 and continued, in line with the growing global urgency for supply chain efficiency and digital transformation due to the COVID-19 pandemic. The year 2024 was the peak with 10 publications, marking the peak of scientific interest and activity in discussing this theme. This trend indicates that literature over the past decade has increasingly focused on sustainability, supply chain resilience, and the integration of technology into corporate governance.

The high number of publications in 2025, amounting to 7 articles, even though the year is not yet over, shows that this topic is still very relevant and continues to evolve. This is in line with increasing pressure from international regulations, the need for ESG (Environmental, Social, and Governance) transparency, and the push for the adoption of green technology and ethical business practices on a global scale.

Thus, the growth trend of articles over time not only

illustrates a surge in quantity, but also reflects a shift in global research priorities that are adaptive to the environmental, social, and technological challenges of the 21st century. After 2019, there was a big increase in publications, which matches the growing interest in ESG around the world and the faster development of sustainability finance after the pandemic. This shows that sustainable supply chain management is becoming a rapidly growing area of research.

4.1.6. Year Article Classification Citation

The current focus on quantitative methods highlights an empirical bias in SSCM research, with qualitative and mixed methods remaining underutilized offering potential for more comprehensive and contextually rich exploration.

Figure 8, Year Article Classification Citation, illustrates the distribution of article citations based on publication year. It can be seen that articles published in 2019 received the highest number of citations, namely 634 citations, followed by articles from 2020 with 460 citations, and 2022 with 302 citations. This trend indicates that articles published longer ago have a greater chance of being cited, reflecting the citation aging effect.

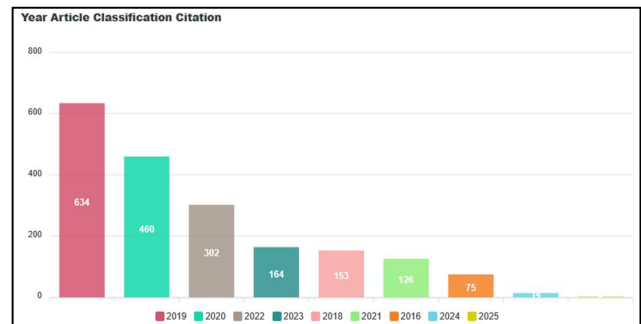


Figure 7: Year Article Classification Citation

The high number of citations in 2019 and 2020 also indicates that articles published during this period have significant novelty and scientific contribution value and are likely to become key references in the development of theory or practice in fields such as sustainable supply chains, digital governance, or resilient systems. Meanwhile, more recent articles, such as those published in 2024 and 2025, have significantly lower citation counts, with fewer than 50 citations, which is reasonable given their recent publication dates and limited use in subsequent research. Overall, this graph emphasizes the importance of considering publication time when evaluating the scientific impact of an article. Articles from earlier years tend to form the theoretical or methodological basis for subsequent research, while more recent articles are still in the process of dissemination and adoption within the academic community.

4.1.7. Country Study

The country-based research trend illustrates the geographical concentration of studies included in this review. China leads with 12 publications, indicating its strong academic commitment and dominant role in advancing SSCM and ESG-related scholarship. Italy and the United Kingdom follow with three studies each, while India, France, and Taiwan contribute two. Countries such as Hungary, Romania, the United Arab Emirates, and Lithuania appear with only a single study.

This distribution shows that although sustainability and corporate governance are global concerns, the most active contributions come from countries with strong research capacity, large economic influence, or stringent sustainability regulations. The imbalance also highlights significant opportunities for expanding research in underrepresented regions particularly Southeast Asia, Africa, and Latin America.

China's dominance is largely driven by regulatory momentum and robust data infrastructure, whereas European countries tend to focus on theoretical refinement reflecting a contrast between practice-oriented and concept-driven research traditions.

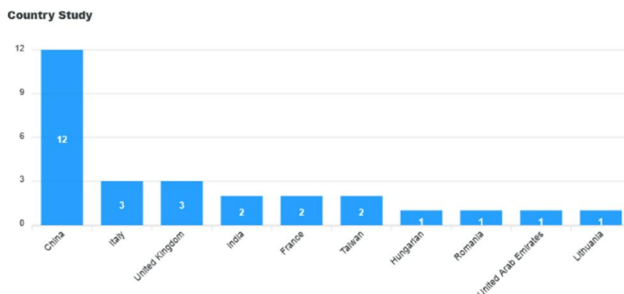


Figure 8: Country Study

4.2. Discussion

These findings confirm that SSCM has moved beyond operational efficiency toward a broader legitimacy and value-creation function. From a stakeholder theory perspective, ESG disclosure is a mechanism through which firms respond to stakeholder demands for accountability, thereby enhancing legitimacy. This aligns with legitimacy theory, which suggests that sustainability reporting serves to maintain or repair the social contract between corporations and society. Meanwhile, resource-based view (RBV) explains why SSCM practices such as integrating green innovation and transparent reporting become strategic resources that provide competitive advantage.

Compared with prior bibliometric and scientometric reviews on SSCM, this study offers several distinct contributions. For instance, Tseng et al. (2018) mapped the intellectual structure of green supply chain management but focused primarily on environmental and operational efficiency. Similarly, Jia et al. (2020) highlighted sustainable supply chain finance but gave limited attention to its integration with ESG disclosure and corporate reporting. Oprean-Stan et al. (2020) analysed ESG disclosure and corporate performance but relied on empirical testing rather than scientometric mapping, leaving the broader research landscape underexplored. More recently, Liao et al. (2025) examined the finance ecosystem within SSCM but concentrated on financial mechanisms without linking them to accounting frameworks. In contrast, the present study advances the field by explicitly situating SSCM within the accounting-finance perspective, systematically mapping how sustainability disclosure, corporate governance, and financial outcomes are interrelated. This approach not only extends previous reviews but also identifies specific theoretical and methodological gaps that remain underdeveloped in the existing literature.

The research gaps identified are threefold. First, the relationship between sustainability disclosure and financial performance indicators (ROA, ROE, Tobin's Q) remains inconsistent, reflecting a conceptual gap that requires deeper theorization. Second, SSCM research is geographically concentrated in developed economies, leaving contextual gaps in emerging markets where institutional pressures and regulatory frameworks differ significantly. Third, methodological dominance of quantitative approaches indicates a methodological gap; mixed methods and longitudinal studies could capture the complex interplay between sustainability practices, governance, and financial outcomes.

4.2.1. Publication Trends and Key Contributors (RQ1)

Scientometric analysis shows a significant increase in scientific attention to the topic of Sustainable Supply Chain Management (SSCM) from 2019 to 2024, with peak publication occurring in 2024. This surge aligns with the growing global awareness of sustainability issues and the adoption of Environmental, Social, and Governance (ESG) standards in supply chain management.

Based on the analyzed data, the country with the highest number of publications is China (12 articles), followed by Italy and the United Kingdom (each with 3 articles). Below are the contributors and their respective countries:

Table 2: Contributing Countries

NO	SOURCE	COUNTRY	NO	SOURCE	COUNTRY
1	Reza-Gharehbagh et al. (2023)	Australia	21	Diwan & Sreeraman (2024)	India
2	Wang et al. (2025)	China	22	Soni et al. (2022)	India
3	Zhou & Masi (2025)	China	23	Pujiyono et al. (2025)	Indonesia
4	Dong & Zhang (2024)	China	24	Liao et al. (2025)	Italy
5	Li et al. (2023)	China	25	Ferri et al. (2023)	Italy
6	Lu et al. (2023)	China	26	Medina et al. (2023)	Italy
7	Mahmoudi et al. (2024)	China	27	Slavinskaitė et al. (2025)	Lithuania
8	Qin & Hong (2023)	China	28	Wan Ahmad et al. (2016)	Malaysia
9	Zhao (2023)	China	29	Gelsomino et al. (2025)	Netherland
10	Liu et al. (2022)	China	30	Bunclark & Barcellos (2021)	Peru
11	Xia et al. (2022)	China	31	Moreira et al. (2025)	Portugal
12	Yang et al. 2021)	China	32	Oprean-Stan et al. (2020)	Romania
13	Lahkani et al. (2020)	China	33	Ferjančič et al. (2024)	Slovenia
14	Balogh et al. (2022)	Czech Republic	34	Tseng et al. (2019)	Taiwan
15	Witt et al. (2025)	Denmark	35	Tseng et al. (2018)	Taiwan
16	Abdel-Basset et al. (2020)	Egypt	36	Abubakr et al. (2024)	United Arab Emirates
17	Fracarolli Nunes et al. (2024)	France	37	Olan et al. (2022)	United Kingdom
18	Hoang et al. (2023)	France	38	Jia et al. (2020)	United Kingdom
19	Tózsér et al. (2024)	Hungarian	39	Buallay (2019)	United Kingdom
20	Molnár et al. (2024)	Hungary			

The most influential writer is Buallay (2019), with 541 citations, through research on ESG disclosure and financial performance in the banking sector. In addition, important contributions also came from Soni which examines the integration of management accounting and sustainability practices in the manufacturing sector. Although publication trends are increasing, scientific collaboration patterns between countries are still focused on certain clusters, so strengthening cross-country and cross-disciplinary cooperation is needed in the development of SSCM literature in the future. Thus, Request Question 1 is answered with evidence of a surge in publications, the dominance of contributions from Asia and Europe, and the identification of key authors along with their collaboration patterns.

China's success in this area isn't by chance but because of government policies. The 2018 Green Credit Guidelines and the 2020 ESG disclosure requirements gave institutions reasons to support and study sustainable supply chain management. These results show how government-driven environmental rules influence both education and industry to change and adapt.

4.2.2. Thematic Clusters and Keyword Network in SSCM Research (RQ2)

Keyword co-occurrence analysis shows that the dominant themes in SSCM research include: “supply chain finance”, “ESG disclosure”, “sustainability reporting”, “corporate governance disclosure”, as well as financial performance indicators such as “return on equity”, “Tobin’s

Q”, and “profitability”. These themes reflect the strong interconnection between sustainability in the supply chain and accounting practices as well as corporate financial performance reporting. The three main clusters identified are Green Supply Chain Management and Environmental Performance, Sustainability Disclosure and Corporate Governance, and Financial Impact of SSCM Practices.

In addition, keywords such as stakeholder theory, investment efficiency, and number of employees also indicate an increased focus on the social and structural dimensions of organisations. This reinforces the position of SSCM not only as a managerial tool but also as a corporate strategy that supports transparency, accountability, and long-term competitive advantage. Thus, through the finding that SSCM is now closely integrated with the dimensions of reporting, transparency, and financial accountability, RQ2 is answered.

Cluster 1 shows the stage where technical efficiency is important; Cluster 2 focuses on being fair and working with different groups; Cluster 3 is about combining resources in a smart way, based on the Resource-Based View. This change shows a move from just following rules for sustainability to using a more thoughtful approach in how supply chains and finance work together.

4.2.3. Thematic Evolution from Cost Efficiency to Value-Based Sustainability (RQ3)

The thematic evolution in SSCM research shows a shift from the initial focus on cost efficiency and operational optimization to a new approach based on sustainability and

value creation. In the early period before 2015, the literature focused more on topics such as lean supply chains and logistics cost reduction. However, in the last decade, the focus of research has shifted to concepts such as ESG disclosure, sustainability reporting, green innovation, and value creation.

Publications such as Buallay and Oprean-Stan, this represents a transformation in which sustainability is seen as a source of strategic advantage, market reputation, and investor confidence. However, there is still an evidence gap, particularly regarding the inconsistency of results concerning the impact of SSCM on financial performance.

The results of the study also show an evidence gap, where the relationship between sustainability disclosure and financial indicators such as ROA, ROE, and Tobin's Q is often inconsistent. This indicates the need for further research that tests mediating and moderating variables so that the relationship between SSCM and financial performance can be explained more comprehensively to explain this inconsistency. This gap opens up opportunities for mixed-methods approaches and longitudinal studies to address the complexity of sustainability phenomena in supply chains.

Using Stakeholder Theory, Legitimacy Theory, and the Resource-Based View shows that Supply Chain Sustainability Management is becoming more developed as a concept. Future studies should use long-term and multi-sector models to check how these theories connect. The mixed results in ESG and performance also show that using different methods and situations is important.

Thus, RQ3 is answered by evidence of a paradigm shift in SSCM from a cost orientation to a sustainable value creation strategy, although there are still empirical gaps that need to be explored further.

5. Conclusion

This study conducted a scientometric analysis of Sustainable Supply Chain Management (SSCM) literature focusing on its financial and ESG dimensions between 2015 and 2025. The findings confirmed that SSCM research has rapidly evolved from an operational, efficiency-driven perspective toward a strategic, value-based sustainability paradigm. China, Europe, and other emerging economies have played central roles in shaping this trajectory, with thematic growth around green finance, ESG disclosure, and sustainable innovation.

These results show a clear connection within the SSCM area, but it's also important to look at them in a wider academic and real-world sense. The next part explains the main points of the study, its limits in terms of methods, and possible directions for future work.

This study demonstrates the paradigm shift of

Sustainable Supply Chain Management (SSCM) from cost-oriented efficiency toward value-based sustainability, highlighting its growing intersection with accounting and finance. Using a combined Systematic Literature Review (SLR) and scientometric analysis of 39 Scopus-indexed articles (2015–2025), the findings reveal that themes such as ESG disclosure, corporate governance, and green innovation increasingly dominate the discourse, while inconsistencies remain regarding the relationship between sustainability reporting and financial performance.

Theoretically, the study enriches SSCM scholarship by integrating stakeholder theory, legitimacy theory, and the resource-based view to explain how sustainability disclosure enhances legitimacy, competitiveness, and value creation. Practically, the results suggest that firms should embed sustainability reporting in supply chain strategies to strengthen transparency, regulators can design more effective ESG policies to foster accountability, and investors may benefit from improved disclosure quality in decision-making.

6. Contribution

This research adds to the existing knowledge about sustainable supply chain management by combining a scientometric analysis with a thematic review. It shows how sustainability, finance, and governance are connected. The study explains how theories like Stakeholder Theory, Legitimacy Theory, and the Resource-Based View together help understand how ESG practices become established in global supply chains. In real-world terms, the research gives policymakers and business leaders useful information on how sustainable finance can improve competitiveness without losing public support.

7. Limitations

The review was conducted using all Scopus-indexed literature published between 2015 and 2025, which may exclude emerging or non-English works on sustainable supply chain management and sustainable finance. The scientometric approach identifies publication trends and network structures but does not investigate causal or behavioral mechanisms. Future studies should integrate bibliometric findings with empirical or qualitative validations to strengthen theoretical foundations.

8. Future Research Directions

Future studies should employ long-term, cross-regional

designs and mixed methods to examine how institutional development, digital transformation, and stakeholder diversity interact within supply chain management. Greater attention to SMEs and developing economies will improve contextual understanding and strengthen policy relevance. The use of AI-driven text analytics and sustainability measurement tools can also enhance predictive insights regarding the interplay of environmental, social, and governance factors and their contribution to the Sustainable Development Goals.

Overall, this conclusion integrates existing research while directing future inquiry toward interdisciplinary approaches, robust methodologies, and policy-oriented outcomes shifting SSCM research from descriptive analysis toward shaping a more sustainable and impactful supply chain ecosystem.

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Declarations

Ethics Approval and Consent to Participate

This study did not involve human participants or animal subjects.

Competing Interests / Conflicts of Interest

The authors declare that they have no competing interests.

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Author Contributions

I.S.: Conceptualization, methodology, supervision, project administration.

M.S.: Methodology, formal analysis, data curation, writing – original draft.

L.A.N.S.: Investigation, visualization, data curation.

S.S.: Supervision, validation, writing – review & editing.

S.K.W.: Validation, resources, writing – review & editing.

V.P.: Investigation, writing – review & editing.

T.B.K.: Data curation, investigation.

D.A.D.: Supervision, writing – review & editing.

All authors have read and approved the final version of the manuscript.

Data Availability Statement

No new data were created or analyzed in this study.

Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this work, the authors used ChatGPT (OpenAI) to improve the clarity and readability of the manuscript. All AI-assisted outputs were carefully reviewed and edited by the authors, who take full responsibility for the final content.

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Appendixes

Appendix 1: Election Results Article

No	Author & Year	Title	Research Focus	Method	Key Findings	Notes / Gap
1	Wang et al. (2025)	Towards Sustainable Supply Chains: Evaluating the Role of Supply Chain Diversification in Enhancing Corporate ESG Performance	ESG performance and diversification in SSCM	Quantitative	Supply-chain diversification enhances ESG scores via resilience	Needs broader sector validation
2	Zhou and Masi (2025)	Sustainable Supply Chain Finance: A Multiple Case Study	SSCF conceptual framework	Qualitative case	Identifies mechanisms of SSCF in different contexts	Limited sample; lacks cross-country analysis
3	Pujiyono et al. (2025)	An ESG-Oriented Sustainable Business Model for Paint Industry Supply Chain in Indonesia	ESG integration in manufacturing	Case study	ESG model improves resource efficiency	Context-specific; low generalizability
4	Moreira et al. (2025)	Where Is Human Resource Management in Sustainability Reporting: ESG and GRI Perspectives	HRM and sustainability reporting	Review	HRM inclusion strengthens ESG disclosure quality	Lacks financial performance linkage
5	Slavinskaitė et al. (2025)	Assessment of the Sustainable Supply Chain Finance Factors	SSCF factors and measurement	Quantitative	Key factors: governance, cost, innovation	Needs longitudinal validation
6	Liao et al. (2025)	A Sustainable Supply Chain Finance Ecosystem: A Review and Conceptual Framework	SSCF ecosystem mapping	Systematic review	Integrates finance–sustainability linkages	Empirical testing required
7	Witt et al. (2025)	ESG Reporting Meets Farmer – Implications of the European Corporate Sustainability Reporting Directive for the Agrifood Sector	ESG directive impacts	Policy analysis	CSRD influences agrifood reporting practices	Need for developing-country cases
8	Gelsomino et al. (2025)	The (Un)Sustainable Mix: Supply Chain Finance, Sustainability Ratings and Liquidity	SSCF vs liquidity	Quantitative	Ratings influence liquidity via ESG integration	Mixed results across industries
9	Abubakr et al. (2024)	Challenges of Disclosing Environmental Accounting Performance and Its Impact on Quality Supply Chains	Environmental accounting disclosure	Survey	Disclosure improves supply-chain quality	Context limited to GCC firms
10	Dong and Zhang (2024)	Sustainable Development of the Real Economy: Supply Chain Finance and Enterprise Financialization	SSCF and financialization	Econometric	SSCF mitigates excessive financialization	Mechanisms remain unclear
11	Tózsér et al., (2024)	Disclosure Compliance with Different ESG Reporting Guidelines	ESG reporting compliance	Comparative study	Banks differ across EU guidelines	Limited sample; short period
12	Fracarolli Nunes et al. (2024)	Strategic Incentives and Natural Capital Accounting for Sustainable Supply Chain Management	Reputational impacts in SSCM	Experimental	Reputation mediates consumer response	Needs long-term assessment
13	Ferjančič et al. (2024)	Textual Analysis of Corporate Sustainability Reporting and Corporate ESG Scores	Text mining of ESG reports	Quantitative textual analysis	Text tone correlates with ESG scores	Need for cross-sector comparison
14	Medina et al. (2023)	Framing Sustainable Supply Chain Finance	SSCF–sustainability integration	Conceptual framework	Aligns financial and sustainability flows	Empirical proof limited
15	Diwan and Sreeraman (2024)	From Financial Reporting to ESG Reporting: A Bibliometric Analysis	Evolution of ESG reporting	Bibliometric	Identifies research clusters in ESG reporting	Needs SSCM integration
16	Mahmoudi et al. (2024)	Blockchain and Supply Chain Finance for Sustainable Construction Industry	Blockchain in SSCF	Quantitative	Blockchain enhances transparency	Retracted; data integrity issues
17	Lu et al. (2023)	Can Supply Chain Finance Promote Corporate Green Innovation?	SSCF–innovation link	Regression	Positive relation via R&D investment	Limited to Chinese context
18	Hoang et al. (2023)	Does Country Sustainability Improve Firm ESG Reporting Transparency?	ESG transparency drivers	Econometric	National CSR norms strengthen disclosure	Industry moderating effects

No	Author & Year	Title	Research Focus	Method	Key Findings	Notes / Gap
19	Li et al. (2023)	Supply-Chain Finance and Investment Efficiency	SSCF → investment efficiency	Empirical study	SSCF boosts investment efficiency	Mediators not tested
20	Molnár et al. (2024)	Sustainability Accounting for Greenhouse Gas Emissions Measurement	ESG measurement in auto sector	Practical review	GREET LCA improves accuracy	Needs comparative validation
21	Zhao, (2023)	Risk Management of Supply Chain Green Finance Based on Sustainable Ecological Environment	Risk control in green finance	Quantitative	Builds risk-management model	Lacks empirical validation
22	Ferri et al. (2023)	Sustainability Disclosure and IPO Performance	ESG disclosure & IPO	Quantitative	ESG transparency enhances IPO returns	Sectoral scope limited
23	Qin and Hong (2023)	Quadripartite Evolutionary Game of Sustainable Development of Supply Chain Finance	Game theory SSCF	Theoretical model	Gov. support improves SSCF outcomes	Model lacks empirical test
24	Reza-Gharehbagh et al. (2023)	Sustainable Supply Chain Finance through Digital Platforms	Digital finance & SSCF	Conceptual	Platforms enable green entrepreneurship	Empirical support needed
25	Xia et al., (2022)	Farmers' Credit Risk Assessment Based on Sustainable Supply Chain Finance	Credit risk in agri-finance	Quantitative	Green finance lowers farmer risk	Geographic limitation
26	Liu et al., (2022)	Supply Chain Finance and Sustainable Growth of Chinese Firms	Digital finance moderation	Econometric	Digital finance moderates SSCF → growth	Limited to China
27	Balogh et al. (2022)	Comprehensive Corporate Sustainability Reporting	ESG reporting factors	Empirical	Firm size & governance drive disclosure	Needs cross-industry validation
28	Soni et al. (2022)	Industry 4.0 Technology Implementation: FinTech and SSCF for SMEs	Tech adoption in SSCF	Decision framework	FinTech supports SME sustainability	Integration with ESG pending
29	Yang et al. (2021)	Credit Risk of SMEs in Sustainable Supply Chain Finance	SME risk prediction	Quantitative model	Predictive accuracy high	Model generalization limited
30	Olan et al. (2022)	AI Networks in Sustainable Supply Chain Finance for Food and Drink Industry	AI in SSCF	Quantitative modelling	AI improves credit decision speed	Early-stage implementation
31	Bunclark and Barcellos-Paula (2021)	Sustainability Reporting for Sustainable Supply Chain Management in Peru	SSCM reporting practice	Case study	Local ESG reporting improves accountability	Single-country scope
32	Oprean-Stan et al., (2020)	Impact of Sustainability Reporting and Inadequate Management of ESG Factors on Corporate Performance	ESG disclosure impact	Quantitative	ESG management drives performance	Lacks sector diversity
33	Lahkani et al. (2020)	Sustainable B2B E-Commerce and Blockchain-Based Supply Chain Finance	Blockchain & E-commerce	Conceptual	Blockchain improves transparency & speed	Empirical validation absent
34	Jia et al. (2020)	Sustainable Supply Chain Finance: Towards a Research Agenda	SSCF research agenda	Conceptual review	Calls for integrated finance–sustainability framework	Serves as base for future studies
35	Abdel-Basset et al. (2020)	A Novel Decision-Making Model for Sustainable Supply Chain Finance under Uncertainty	SSCF decision models	Quantitative	Introduces new optimization approach	Theoretical; needs empirical data
36	Buallay (2019)	Is Sustainability Reporting (ESG) Associated with Performance?	ESG–performance link	Quantitative	Positive ESG–performance relation	Inconsistent across sectors
37	Tseng et al. (2019)	Improving the Benefits and Costs on Sustainable Supply Chain Finance under Uncertainty	SSCF cost–benefit trade-offs	Quantitative	Balances risk and performance metrics	Needs cross-validation
38	Tseng et al. (2018)	Decision-Making Model for Sustainable Supply Chain Finance under Uncertainties	SSCF model design	Quantitative	Framework improves decision robustness	Early theoretical stage
39	Wan Ahmad et al. (2016)	Sustainable Supply Chain Management in the Oil and Gas Industry	SSCM reporting practices	Review	ESG disclosure improves corporate image	Old data; limited scope