Reverse Logistics Performance within Sustainable Supply Chains: A Systematic Literature Review and VOSviewer Bibliometric Mapping

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Abstract – The transition toward circular and sustainable supply chains has elevated reverse logistics from an operational function to a strategic mechanism for value recovery and resource efficiency. However, research on reverse logistics performance remains fragmented across operational optimization, sustainability, consumer behavior, carbon management, and digitalization. This study examines the intellectual structure, thematic evolution, and emerging research directions of reverse logistics performance within sustainable supply chains. Using a systematic literature review and bibliometric analysis, 2,094 Scopus documents were identified and screened through PRISMA procedures, yielding 238 relevant articles for 2015-2026. Bibliometrix and VOSviewer were employed to analyze publication trends, citation dynamics, source and disciplinary distributions, keyword co-occurrence, temporal evolution, and thematic density. Results indicate increasing research interest, with publications reaching 14 articles in 2026. Logistic growth analysis shows strong model fit ($R^2 = 0.979$) and approximately 91.3% attainment of estimated carrying capacity, indicating maturity in conventional research. The findings reveal a shift toward sustainability, carbon management, consumer behavior, resilience, and digitalization, while AI and IoT remain weakly integrated. These findings establish priorities for future smart and sustainable reverse logistics research.

Keywords: "Reverse Logistics", "Reverse Logistics Performance", "Sustainable Supply Chain", "Circular Economy", "Bibliometric Analysis".

1. Introduction

The transition from a linear production and consumption system to a more circular and sustainable model has heightened the significance of reverse logistics in supply chain management. Reverse logistics encompasses the management of reverse flows of products, components, and materials from the point of consumption to recovery, reuse, remanufacturing, recycling, or disposal processes. This concept is no longer viewed merely as an ancillary activity related to product returns; rather, it has evolved into a strategic mechanism for recovering economic value, reducing waste, enhancing resource efficiency, and supporting supply chain sustainability (Govindan & Soleimani, 2017).

In this context, reverse logistics performance has emerged as a critical issue, as the success of reverse flow management is determined not only by cost and operational efficiency, but also by an organization's capacity to increase resource recovery rates, mitigate environmental impacts, improve responsiveness, and create sustainable value (Agrawal et al., 2016). This complexity is further heightened because reverse flows are subject to uncertainties regarding the quantity, timing, product condition, recovery value, and consumer behavior. Furthermore, integrating reverse logistics with closed-loop supply chains requires companies to simultaneously coordinate forward and reverse flows while addressing environmental demands, carbon regulations, and shifting market preferences (Govindan et al., 2015).

The advancement of digital technologies has further expanded this complexity. Technologies such as artificial intelligence (AI), the Internet of Things (IoT), big data analytics, blockchain, and digital platforms offer opportunities to enhance visibility, return forecasting, product tracking, route optimization, sorting, and recovery decision-making (Moosabeiki Dehabadi et al., 2026). However, the progression of digitalization cannot be decoupled from sustainability goals. The interaction among technological capabilities, environmental performance, consumer behavior, and supply chain resilience has shaped an increasingly multidimensional reverse logistics research landscape (Oliveira et al., 2025).

Although the literature on reverse logistics has grown rapidly, its knowledge structure remains fragmented. Previous reviews have examined broad reverse logistics and closed-loop supply chain development (Mishra et al., 2022), sustainability-oriented reverse logistics performance (Maheswari et al., 2020), sustainability and bibliometric development, and more specific digital or Industry 4.0 applications (John & Rahman, 2026). These studies provide important foundations, but they do not jointly map the development of research using reverse logistics performance as the organizing focus while simultaneously examining its connections with sustainable supply chains, circular economy objectives, and emerging digital technologies. Accordingly, the present study extends previous reviews by treating performance as a central analytical lens and by examining whether sustainability and digitalization themes are structurally connected to the established reverse logistics knowledge base. This distinction is important because the bibliometric evidence can reveal not only which themes are growing, but also which emerging technologies remain weakly connected to the field's core research structure.

This gap is critical because bibliometric analysis enables the identification of the intellectual, conceptual, and temporal structures of a field that narrative reviews cannot always capture (Mishra et al., 2022). Integrating a systematic literature review with mapping using VOSviewer can reveal publication trends, inter-keyword relationships, research clusters, thematic evolution, as well as the concentration and development of research topics. This approach offers a comprehensive overview of the research shift from conventional operational optimization toward broader issues, such as the circular economy, carbon management, consumer behavior, resilience, and digitalization.

Building upon these conditions, this study conducts a Systematic Literature Review and VOSviewer Bibliometric Mapping on Reverse Logistics Performance in Sustainable Supply Chains. It analyzes the development of literature spanning the 2015-2026 period through publication trends, citation dynamics, source and subject area distributions, keyword co-occurrence, temporal evolution, as well as research density themes. This research is directed toward addressing three core research questions:

> **RQ1:** What are the publication trends, citation impacts, and research dynamics of reverse logistics over the 2015-2026 period?
> **RQ2:** What is the underlying intellectual and thematic structure of research on reverse logistics performance?
> **RQ3:** What emerging themes and knowledge gaps can serve as future research directions for digital technology-driven and sustainable reverse logistics?

This study contributes to the literature in three specific ways. First, it provides a performance-oriented bibliometric map of reverse logistics rather than a broad review of reverse logistics alone. Second, it connects reverse logistics performance with the sustainable supply chain and circular economy agendas by tracing the movement from operational optimization toward carbon management, green manufacturing, consumer behavior, and resilience. Third, it explicitly evaluates the position of emerging digital technologies, particularly AI and IoT, within the existing knowledge structure. The weak connectivity of these technologies with the core clusters identifies a specific research opportunity: developing digitally enabled reverse logistics systems that simultaneously improve operational performance, environmental outcomes, consumer participation, and supply chain resilience.

2. Literature Review

2.1 Reverse Logistics and Reverse Logistics Performance

Reverse logistics is the process of managing the reverse flow of products, components, and materials from consumers to manufacturers or recovery points for the purposes of reuse, repair, remanufacturing, recycling, or disposal. Unlike forward logistics, which focuses on distributing products to consumers, reverse logistics concentrates on how used or returned

products can be managed and repurposed optimally. The evolution of this concept demonstrates that reverse logistics is no longer viewed as a secondary operational activity, but has become a strategic component of sustainable supply chain management. In this context, reverse logistics performance reflects an organization's capability to effectively and efficiently manage reverse flows, including collection, transportation, sorting, recovery, and disposition of returned products. Such performance relates not only to cost and time efficiency, but also to a firm's capacity to recapture economic value and mitigate environmental impacts. Recent literature indicates that reverse logistics performance is increasingly influenced by demand uncertainty and product return dynamics, thereby requiring more adaptive management systems (Govindan et al., 2015).

2.2 Closed-Loop Supply Chain and Circular Economy

Reverse logistics is closely linked to the concept of the closed-loop supply chain (CLSC), a supply chain system that integrates forward and reverse flows within a single network. Through CLSC, used products, components, and materials can be returned to the production system via mechanisms such as reuse, repair, remanufacturing, or recycling. Thus, reverse logistics serves as a crucial mechanism for ensuring that materials do not immediately end up as waste following consumer use (Zengin et al., 2024). The CLSC concept is also an essential component in the transition toward a circular economy. Within a circular economy, the value of products and materials is retained for as long as possible through waste reduction, resource reuse, and value recovery. Consequently, the effectiveness of reverse logistics represents a key determinant supporting the successful implementation of the circular economy. Recent research highlights that CLSC design is becoming increasingly complex, as it must simultaneously account for demand uncertainty, product return rates, and various operational decisions (Shin et al., 2025).

2.3 Sustainability, Carbon Policy, and Consumer Behavior

The development of reverse logistics has become increasingly aligned with the sustainable supply chain management agenda. Pressures to mitigate waste and carbon emissions have impelled companies to integrate environmental considerations into their supply chain decision-making processes. Reverse logistics enables organizations to extend product lifecycles, enhance material reuse, and diminish the demand for virgin resources. Consequently, reverse logistics plays a strategic role in bridging operational efficiency with sustainability goals. Beyond environmental factors, consumer behavior has assumed growing importance, as consumers represent the primary point of origin for reverse product flows. Consumer decisions to return, reuse, or recycle products directly influence the volume and patterns of reverse flows within the supply chain (Nath & Rajeev, 2025) Concurrently, environmental policies such as carbon cap-and-trade mechanisms can influence corporate decisions in designing CLSC networks. Recent studies indicate that integrating carbon reduction policies with consumer return behavior represents a critical advancement in sustainable closed-loop supply chain research (Wang et al., 2025).

2.4 Digitalization and Smart Reverse Logistics

Digitalization represents one of the pivotal developmental trajectories in reverse logistics research. Industry 4.0 technologies such as the Internet of Things (IoT), artificial intelligence (AI), big data analytics, and other digital platforms enable firms to enhance visibility, coordination, and responsiveness toward reverse product flows. These technologies can be leveraged to monitor product conditions, augment decision-making capabilities, optimize reverse logistics networks, and support more adaptive system management in response to dynamic environments. Recent studies demonstrate that Industry 4.0 transformations can reshape the design and management of reverse logistics toward smarter and more sustainable systems, including through the development of digital reverse logistics twins (Sun et al., 2024). Beyond enhancing operational efficiency, digitalization can also bolster consumer engagement within reverse logistics processes. For instance, IoT implementation can be utilized to increase consumers' willingness to return end-of-life electronic products while supporting more effective circular supply chain management. The integration of Industry 4.0 technologies with reverse logistics has gained growing attention due to its potential to simultaneously advance economic, environmental, and social sustainability (John & Rahman, 2026). Nevertheless, the network visualization results of this study indicate that the explicit connection between reverse logistics and digital technologies such as AI and IoT remains relatively limited. Meanwhile, overlay visualization analysis reveals a thematic shift toward green supply chain management, carbon issues, and consumer behavior. This condition highlights a compelling research opportunity to integrate digitalization, sustainability, and consumer behavior in the future development of smart reverse logistics."

3. Methodology of Study

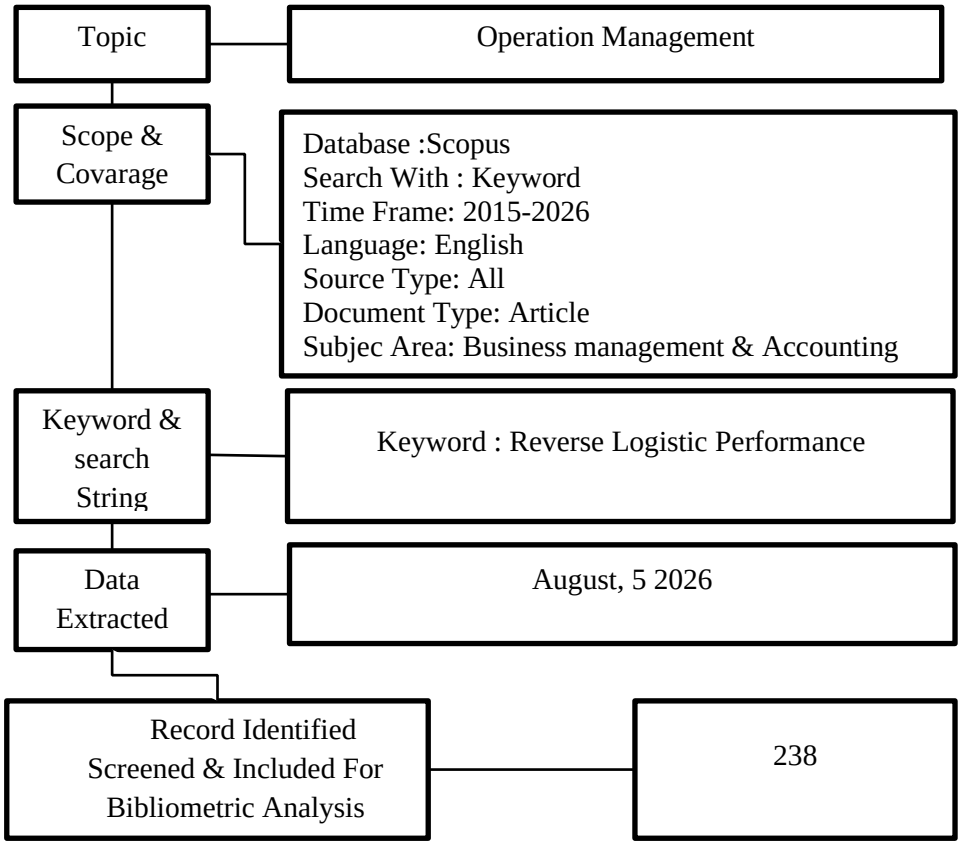
This study adopts a secondary data-based quantitative approach using bibliometric analysis to systematically evaluate and map the scientific literature on Reverse Logistics Performance. Bibliometric analysis combines mathematical and statistical techniques to examine publication metadata, publication trends, knowledge structures, and scientific contributions across documents, journals, authors, and subject areas (Chen et al., 2023). The analysis combines performance analysis and science mapping. Performance analysis evaluates academic productivity and impact through annual publication output, source distribution, subject-area distribution, and citation patterns, while science mapping identifies conceptual interconnections and thematic clusters through network analysis. Document screening was conducted systematically following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to improve transparency, quality, and relevance.

3.1 Search Strategy and Data Selection

The Scopus search strategy was designed to be transparent and reproducible. The primary search field was TITLE-ABS-KEY, and the core query was: TITLE-ABS-KEY("Reverse Logistics Performance"). The screening filters were then applied as follows: publication

years 2015-2026; subject area Business, Management and Accounting; language English; source type all; and document type Article. The complete reproducible search formulation is: TITLE-ABS-KEY("Reverse Logistics Performance") AND PUBYEAR > 2014 AND PUBYEAR < 2027 AND LIMIT-TO ("English"). Eligibility screening subsequently retained records directly relevant to reverse logistics performance and its sustainable supply chain context. The search was executed on 5 August 2026; therefore, 2026 is a partial publication year (Marzi et al., 2025).

Table 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses



3.2 Bibliometric Analysis Procedures

Bibliometrix (Biblioshiny) was used for descriptive and performance analysis, including annual publication output, citation trends, source distribution, subject-area distribution, and logistic growth analysis. VOSviewer was used for science mapping. The keyword analysis employed co-occurrence analysis with full counting. To improve interpretability, a minimum keyword occurrence threshold of five occurrences was applied, and the keyword list was cleaned using a thesaurus approach to merge spelling variants, singular/plural forms, and closely equivalent terms while removing non-informative terms. The same cleaned keyword set was used to generate the network, overlay, and density visualizations. The overlay

visualization used the average publication year of keywords, while the density visualization represented the concentration of frequently occurring keywords in the network.

The literature identification and selection process was systematically conducted in accordance with the PRISMA framework to ensure data transparency and accountability (Page et al., 2021). Initial metadata extraction from the Scopus database was performed on 5 August 2026. The core search was conducted in the TITLE-ABS-KEY field using the exact phrase "Reverse Logistics Performance." The reported filtering sequence was: initial retrieval = 2,094 documents; publication years 2015-2026 = 1,621 documents; Business, Management and Accounting subject area = 415 documents; document type Article = 321 documents; and final relevance/eligibility screening = 238 articles. The 238-article dataset constitutes the final corpus for the overall bibliometric analysis.

4. Results and Discussion

4.1 Annual Publication Trends and Research Development Dynamics

The annual publication trends and the temporal research dynamics in this study were analyzed using the Biblioshiny software.

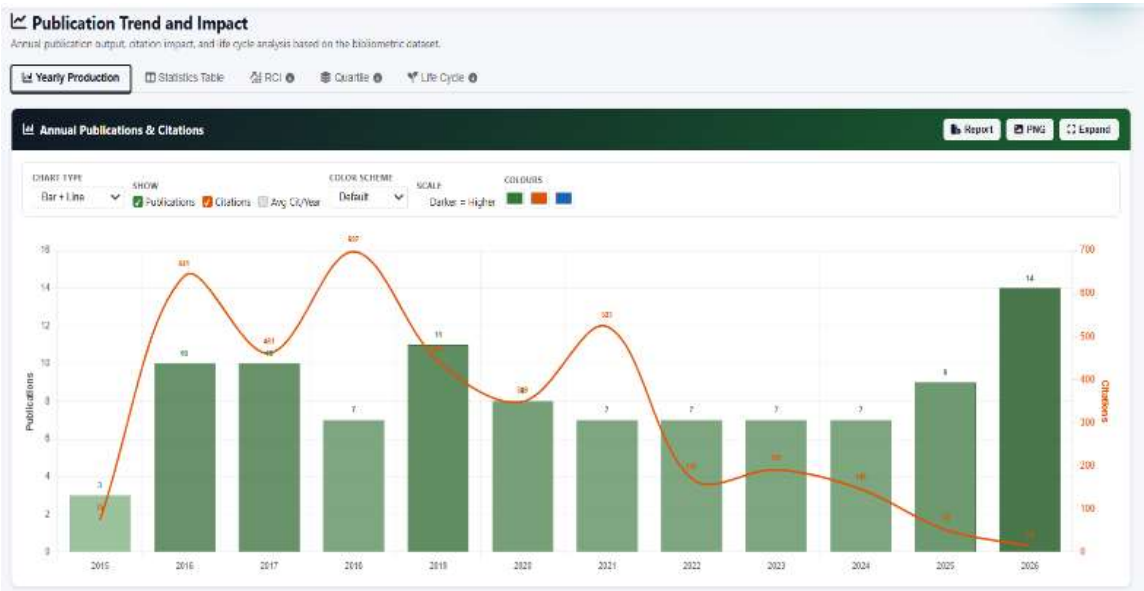


Figure 1: Annual Publication and Citation Trends in Reverse Logistics Research

The 2015-2021 period represents a foundational theoretical phase, wherein publications from 2016 (641 citations) and 2018 (697 citations) established core seminal works with the highest academic impact. During 2022-2024, publication productivity stabilized at a steady output (7 articles per year); the lower citation counts during this interval are attributable to

citation latency, the natural time lag required for citation accumulation. Entering the 2025-2026 period, renewed research interest emerged, with publications peaking at 14 articles in 2026. Because the data were extracted on 5 August 2026, the 2026 count reflects only publications indexed by that date and should not be interpreted as the final annual total (Didegah & Thelwall, 2013).

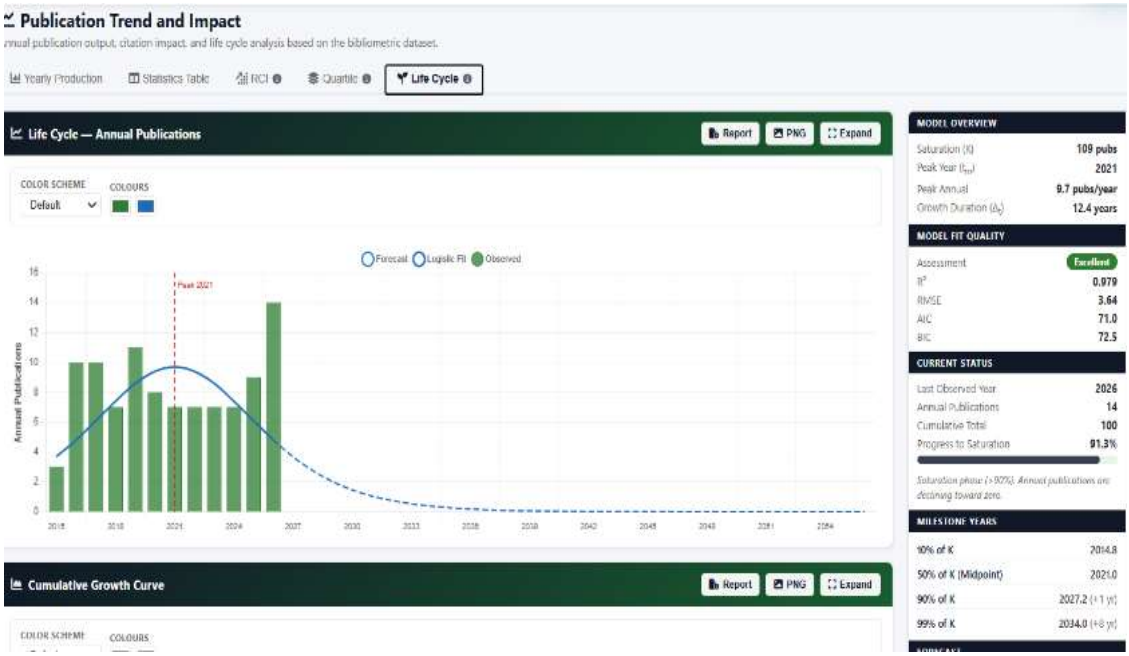


Figure 2: Life Cycle Analysis and Logistic Growth Model of Reverse Logistics Research

4.2 Publication Trends by Source Distribution

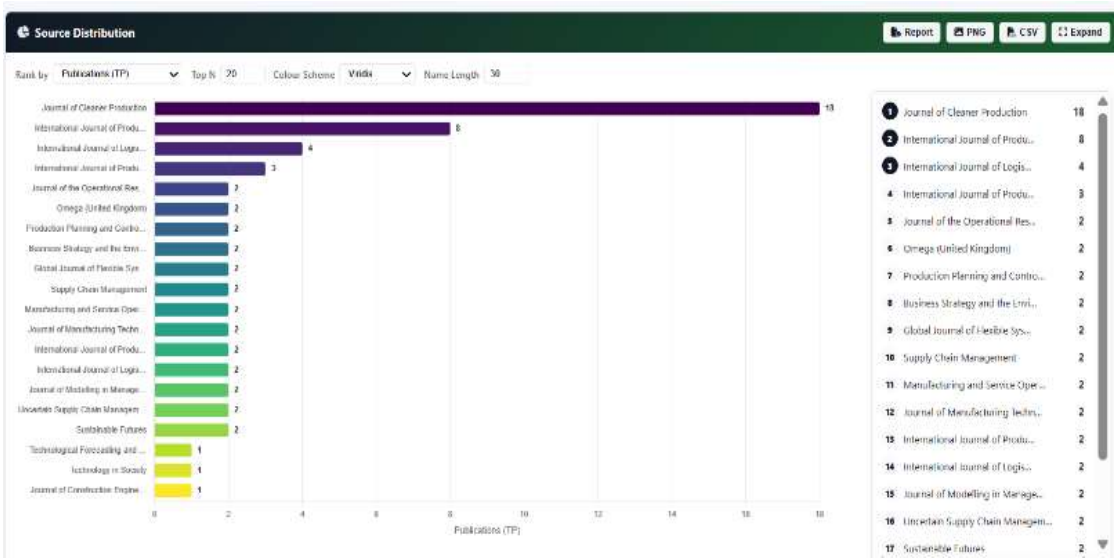


Figure 3: Source Distribution of Publications in Reverse Logistics Research

The source distribution analysis reveals a centralized dominance among several highly reputable scholarly journals. Journal of Cleaner Production leads the contribution significantly with 18 publications, followed by the International Journal of Production Economics (8 publications) and the International Journal of Logistics Research and Applications (4 publications). This concentration of publications in top-tier (Q1) journals underscores a strong preference within the research landscape for high-standard outputs focusing on sustainability, operations management, and supply chains (Brookes, 1969). The remaining distribution, evenly dispersed across various other reputable journals (1-3 articles each), demonstrates the diversity of interdisciplinary approaches involved in advancing this research field.

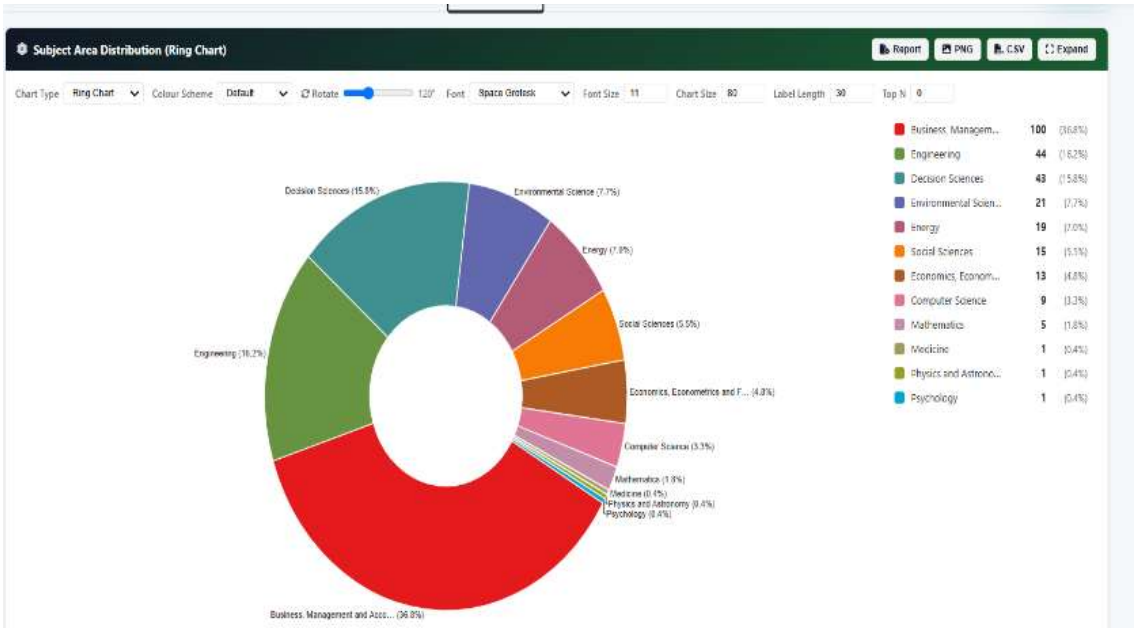


Figure 4: Subject Area Distribution of Reverse Logistics Research

The subject area distribution analysis confirms the pronounced multidisciplinary and cross-disciplinary nature of this research domain. Business, Management and Accounting substantially dominates the proportion (36.8%; 100 publications), underscoring that the core research domain resides in organizational governance and operational strategy. The technical and analytical orientation is strongly supported by Engineering (16.2%; 44 publications) and Decision Sciences (15.8%; 43 publications). Furthermore, the integration of sustainability dimensions and their impacts is reflected through the shares of Environmental Science (7.7%), Energy (7.0%), and Social Sciences (5.5%). This composition demonstrates that the research topic is holistically evaluated from the perspectives of strategic management, technical system optimization, and environmental and social impacts (Govindan & Soleimani, 2017).

4.3 Network Visualization

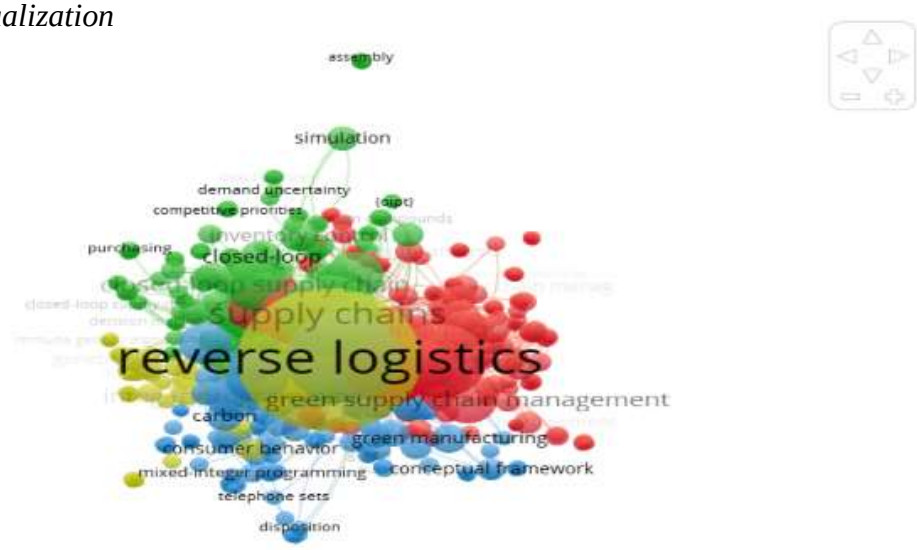


Figure 5: Keyword Co-Occurrence Network in Reverse Logistics Research

As illustrated in Figure 5, reverse logistics serves as a central hub connecting closed-loop supply chains, green supply chain management, and inventory control. This central position marks a paradigm shift from viewing product returns merely as operational activities to regarding them as a strategy for sustainable value creation and organizational competitiveness. Its close link to demand uncertainty underscores that effective management of product returns is important for mitigating supply chain risks.

The network also illustrates the integration of quantitative optimization methods, including mixed-integer programming, simulation, and genetic algorithms, with market and environmental variables such as carbon and consumer behavior. Current research has moved beyond static mathematical modeling by incorporating environmental regulation and consumer disposition decisions into more realistic operational models (Wang et al., 2025).

The network visualization also reveals a structural gap in the direct connectivity between conventional physical optimization models and digital technologies. Future research should therefore examine how AI, IoT, and related digital capabilities can be integrated with established reverse logistics models to support real-time visibility, adaptive decision-making, and circular economy objectives (Almuwallad, 2026).

4.4 Overlay Visualization

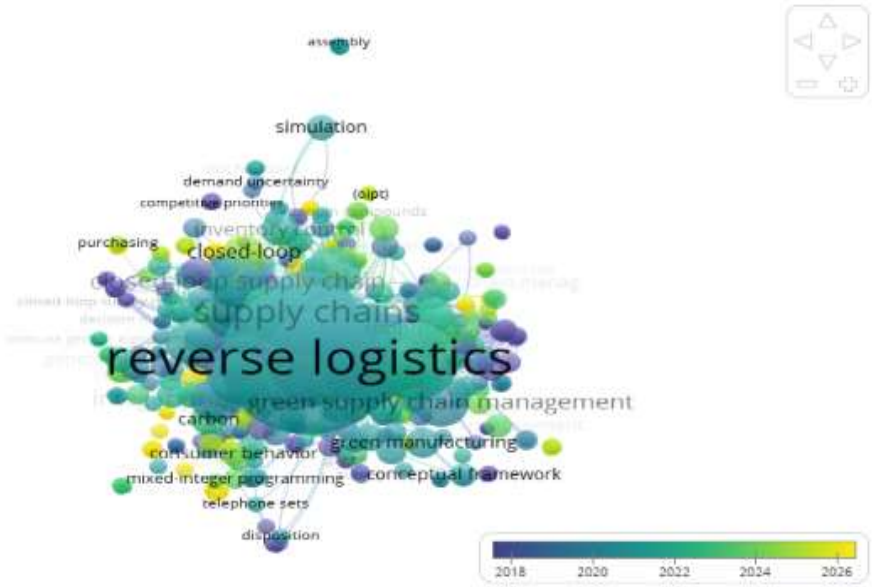


Figure 6: Temporal Evolution of Research Themes in Reverse Logistics Research

The overlay visualization in Figure 6 maps the temporal evolution of keywords. The color transition from dark purple-blue (2018-2020) to bright green-yellow (2022-2026) indicates a thematic shift from traditional operational optimization toward sustainability and market-oriented concerns, including green supply chain management, carbon, and consumer behavior (Zengin et al., 2024). The relative scarcity of direct interconnections between recent sustainability themes and digital technologies such as AI and IoT highlights an opportunity to develop more integrated smart reverse logistics research.

4.5 Density Visualization



Figure 7: Keyword Density Visualization of Reverse Logistics Research

The density visualization in the Figure above maps keyword density, illustrating the intellectual concentration within the literature. The bright yellow areas centered on reverse logistics, supply chains, and closed-loop supply chains identify this domain as the core hotspot, characterized by the most established theoretical modeling. Conversely, the lower-density peripheral areas (greenish-blue) such as consumer behavior, carbon, green manufacturing, and mixed-integer programming mark emerging domains (peripheral coldspots) that remain insufficiently explored. This density contrast underscores a critical novelty gap: future research must shift its focus from the maturing core domain toward integrating carbon regulation variables, consumer behavior, and smart digitalization architectures into closed-loop supply chains (Challouf et al., 2025).

5. Discussion

The findings demonstrate that reverse logistics research has progressively shifted from an operational and optimization-oriented domain toward a broader sustainable supply chain perspective. This pattern is consistent with earlier reviews that established the importance of reverse logistics for closed-loop supply chains and circular economy development (Govindan & Soleimani, 2017). However, the present bibliometric evidence extends that literature by showing how performance-related research is increasingly connected with environmental, behavioral, and resilience-oriented concerns. The results therefore position reverse logistics performance as a multidimensional construct involving operational efficiency, resource recovery, environmental performance, and responsiveness rather than cost and time efficiency alone.

The contribution becomes clearer when compared with recent specialized reviews. Sustainability-focused studies have emphasized environmental performance and measurement frameworks (Oliveira et al., 2025), while bibliometric work has documented the broader growth of reverse logistics and sustainability research. Other recent studies have examined digital technologies or Industry 4.0 applications in reverse logistics (Sun et al., 2024). The present study brings these strands together within one performance-oriented knowledge map. In particular, the network, overlay, and density results indicate that sustainability-related themes are becoming more prominent, whereas AI and IoT remain comparatively peripheral. This structural finding adds a forward-looking dimension that is less visible in reviews centered on either sustainability or individual technologies.

The findings reveal that research on reverse logistics throughout the 2015-2026 period has progressively shifted toward sustainability issues. The growth analysis refers specifically to the Business, Management and Accounting subset and demonstrates $R^2 = 0.979$, with cumulative publications reaching approximately 91.3% of the modelled carrying capacity. This suggests that the conventional disciplinary stream is approaching a maturity phase. Nevertheless, the observed increase during 2025-2026 indicates continuing thematic development; the 2026 publication count should be interpreted cautiously because data extraction occurred on 5 August 2026(Zamora-Musa, 2024).

The VOSviewer mapping demonstrates that reverse logistics is most strongly connected with closed-loop supply chains, green supply chain management, inventory control, and demand uncertainty. The thematic evolution indicates a shift from integer programming and disposition toward carbon, green manufacturing, and consumer behavior. These findings extend previous reviews by showing that reverse logistics performance is increasingly understood not merely through operational efficiency, but also through environmental and behavioral perspectives. At the same time, the mapping identifies a clear structural gap in the integration of digital technologies with the established sustainability and optimization clusters.

Another critical finding is the persisting weakness of the linkage between AI and IoT and the core themes of reverse logistics. This finding is particularly important in light of recent reviews of Industry 4.0 and AI applications, which demonstrate the potential of digital technologies but also point to an emerging rather than fully consolidated research stream (Leal et al., 2024). The bibliometric structure therefore suggests an opportunity to connect digital capabilities with sustainability objectives, particularly in return forecasting, product tracking, recovery-process optimization, resource efficiency, and resilient decision-making.

Overall, the findings demonstrate a paradigm shift from operational optimization-based reverse logistics toward sustainability- and digitalization-oriented reverse logistics. The distinctive contribution of this study lies not simply in identifying these themes, but in demonstrating their relative position and connectivity within the reverse logistics performance literature. Future research should therefore move beyond isolated optimization models and develop integrated frameworks that combine operational efficiency, environmental sustainability, consumer behavior, resilience, and digital capabilities within circular supply chains (Rodrigues et al., 2025).

6. Conclusions

This study concludes that reverse logistics research over the 2015-2026 period has evolved from a predominantly operational- and optimization-oriented perspective toward a more sustainable supply chain perspective. The bibliometric mapping of the final 238-article corpus reveals that reverse logistics, closed-loop supply chains, inventory control, and operational optimization remain the primary foundation of the literature, whereas emerging themes increasingly focus on carbon management, green manufacturing, consumer behavior, resilience, and digital technologies.

The findings also indicate that the conventional Business, Management and Accounting stream is approaching a maturity phase, based on the logistic growth analysis of its 100-article subset. At the same time, the recent emergence of sustainability and digitalization themes creates new research opportunities. Specifically, the relatively weak connectivity of AI and IoT with the core structure of the literature positions digital integration as a priority for future scholarly inquiry. Future research should move beyond isolated optimization

models by synthesizing operational efficiency, environmental sustainability, consumer behavior, resilience, and technological capabilities.

Overall, this study contributes by providing an integrated mapping of the intellectual and thematic evolution of reverse logistics performance within sustainable supply chains. Compared with previous reviews that have tended to emphasize broad reverse logistics development, sustainability, or specific digital applications, the present study uses reverse logistics performance as the organizing lens and explicitly examines how sustainability and emerging digital technologies are positioned within the field. These findings establish a theoretical basis for developing a smart and sustainable reverse logistics framework capable of enhancing resource efficiency, environmental performance, and supply chain resilience.

7. Limitations of the Study

This study is subject to several methodological limitations that present opportunities for future research. First, the bibliometric dataset was restricted to a single database (Scopus), potentially omitting scholarly contributions indexed exclusively in other databases such as Web of Science or IEEE Xplore. Second, VOSviewer keyword co-occurrence analysis identifies conceptual associations but does not assess the methodological depth or empirical validity of individual studies. Third, citation impact measures for recent publications, particularly those from 2024-2026, are affected by citation latency, so their long-term influence should be reassessed periodically. Finally, because data extraction was completed on 5 August 2026, the 2026 publication count is incomplete and may change as additional records are indexed.

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References

Agrawal, S., Singh, R. K., & Murtaza, Q. (2016). Triple bottom line performance evaluation of reverse logistics. *Competitiveness Review*, *26*(3), 289–310. https://doi.org/10.1108/CR-04-2015-0029.

Almuwallad, M. (2026). AI-driven resilient reverse logistics network for electric vehicle battery circular economy: A deep reinforcement learning approach with multi-objective optimization under disruption uncertainty. *Energies*, *19*(3), 738. https://doi.org/10.3390/en19030738.

Brookes, B. C. (1969). Bradford's law and the bibliography of science. *Nature*, *224*, 953–956. https://doi.org/10.1038/224953a0.

Challouf, K., Alhloul, A., & Nemeth, N. (2025). Mapping the role of Industry 4.0 technologies in green supply chain management: A bibliometric and structured text analysis. *Discover Sustainability*, *6*, 949. https://doi.org/10.1007/s43621-025-01827-0.

Chen, H., Tsang, Y. P., & Wu, C. H. (2023). When text mining meets science mapping in the bibliometric analysis: A review and future opportunities. *International Journal of Engineering Business Management*, *15*, 1–15. https://doi.org/10.1177/18479790231222349.

Didegah, F., & Thelwall, M. (2013). Which factors help authors produce the highest impact research? Collaboration, journal and document properties. *Journal of Informetrics*, *7*(4), 861–873. https://doi.org/10.1016/j.joi.2013.08.006.

Govindan, K., & Soleimani, H. (2017). A review of reverse logistics and closed-loop supply chains: A Journal of Cleaner Production focus. *Journal of Cleaner Production*, *142*, 371–384. https://doi.org/10.1016/j.jclepro.2016.03.126.

Govindan, K., Soleimani, H., & Kannan, D. (2015). Reverse logistics and closed-loop supply chain: A comprehensive review to explore the future. *European Journal of Operational Research*, *240*(3), 603–626. https://doi.org/10.1016/j.ejor.2014.07.012.

John, R., & Rahman, M. (2026). Industry 4.0 application framework for sustainable reverse logistics: A systematic literature review. *African Journal of Science, Technology, Innovation and Development*. https://doi.org/10.1080/20421338.2026.2643439.

Leal, A. E. F., Costa, V. C. C., Fernandes, R. M., Melo, A. C. S., & Nagata, V. M. N. (2024). Applications of digital technologies for overcoming challenges in municipal solid waste reverse logistics: A systematic literature review. *Engenharia Sanitária e Ambiental*, *29*(3). https://doi.org/10.1590/S1413-415220240048.

Maheswari, H., Yudoko, G., Adhiutama, A., & Agustina, H. (2020). Sustainable reverse logistics scorecards for the performance measurement of informal e-waste businesses. *Heliyon*, *6*(9), e04834. https://doi.org/10.1016/j.heliyon.2020.e04834.

Marzi, G., Balzano, M., Caputo, A., & Pellegrini, M. M. (2025). Guidelines for Bibliometric-Systematic Literature Reviews: 10 steps to combine analysis, synthesis and theory development. *International Journal of Management Reviews*, *27*(1), 81–103. https://doi.org/10.1111/ijmr.12381.

Mishra, A., Dutta, P., Jayasankar, S., Jain, P., & Mathiyazhagan, K. (2022). A review of reverse logistics and closed-loop supply chains in the perspective of circular economy. *Benchmarking: An International Journal*, *30*(3), 975–1020. https://doi.org/10.1108/BIJ-11-2021-0669.

Moosabeiki Dehabadi, F., Shahbazi Manshadi, S., Appolloni, A., Sun, X., & Yu, H. (2026). How can artificial intelligence enhance reverse logistics practices: A systematic literature review and research agenda. *Cleaner Logistics and Supply Chain*, *19*, 100327. https://doi.org/10.1016/j.clscn.2026.100327.

Nath, A. G., & Rajeev, A. (2025). Consumer behavior perspectives in end-of-life product recovery: A configurational study. *Journal of Cleaner Production*, *501*, 145180. https://doi.org/10.1016/j.jclepro.2025.145180.

Oliveira, M. A. de, Silva, M. H. de P. e, Batista Junior, O. H., Mendes, J. V, & Santa-Eulalia, L. A. de. (2025). Reverse logistics sustainability performance: From a systematic review to an assessment framework. *International Journal of Logistics Systems and Management*, *50*(3), 334–360. https://doi.org/10.1504/IJLSM.2025.144676.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., & Mulrow, C. D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, *372*, n71. https://doi.org/10.1136/bmj.n71.

Rodrigues, S. P., Gomes, L. C., Peres, F. A. P., Correa, R. G. F., & Baierle, I. C. (2025). A framework for leveraging digital technologies in reverse logistics actions: A systematic literature review. *Logistics*, *9*(2), 54. https://doi.org/10.3390/logistics9020054.

Shin, Y., Kim, G., & Jeong, Y. (2025). Robust closed-loop supply chain model with return

management system for circular economy. *Computers & Industrial Engineering*, *203*, 110993. https://doi.org/10.1016/j.cie.2025.110993.

Sun, X., Yu, H., Solvang, W. D., & Govindan, K. (2024). A two-level decision-support framework for reverse logistics network design considering technology transformation in Industry 4.0: A case study in Norway. *The International Journal of Advanced Manufacturing Technology*, *134*, 389–413. https://doi.org/10.1007/s00170-024-14121-6.

Wang, C., Shi, J., & Wang, K. (2025). Game theoretic modeling and optimization of competition and collaboration in dual channel electronic waste supply chains. *Scientific Reports*, *15*, 44194. https://doi.org/10.1038/s41598-025-27878-x.

Zamora-Musa, R. (2024). Reverse Logistics and Sustainability: A Bibliometric Analysis. *Sustainability*, *16*(13), 5279. https://doi.org/10.3390/su16135279.

Zengin, M., Amin, S. H., & Zhang, G. (2024). Closing the gap: A comprehensive review of the literature on closed-loop supply chains. *Logistics*, *8*(2), 54. https://doi.org/10.3390/logistics8020054.