Sustainability of Multi-Echelon Supply Chain: Bibliometric and Content Analyses of Published Papers

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Abstract

This research paper describes the bibliometric analysis of the sustainability of a multi-echelon supply chain that is used for optimizing the levels of inventory across the entire supply chain network and bettering customer service levels. The bibliometric analysis carried out depicts the performance analysis and science mapping for the combination of topics Multi-Echelon Supply Chain and Sustainability by considering the publication-related metrics such as total publications, most cited papers, productive authors including the number of citations per author, most influential journals, and cross-country collaborations, using keywords mapping and network analysis. A complete bibliometric study was conducted on 331 articles retrieved from the Scopus database published between 1985 and 2022. The collected data has been analysed using Bibliometrix R and VOSviewer, which revealed the major trends in the articles, with reference to the authors/ countries, journal performance, and co-occurrence. Based on a content- analysis of published papers, this research article also reveals the research gaps and the potential for further research on the sustainability of a multi-echelon supply chain.

Key Words

Multi-echelon, Supply chain, Sustainability, Bibliometrics, Content analysis

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References

1. Ahmed, A. A., Nazzal, M. A., Darras, B. M., & Deiab, I. M. (2022). A comprehensive multi-level circular economy assessment framework. Sustainable Production and Consumption, 32, 700-717. https://doi.org/https://doi.org/10.1016/j.spc.2022.05.025
2. Alkawaleet, N., Hsieh, Y.-F., & Wang, Y. (2014). Inventory Routing Problem with CO2 Emissions Consideration (P. Golinska (ed.), 611-619, Springer International Publishing. https://doi.org/10.1007/978-3-319-07287-6_44
3. Alptekino lu, A., & Tang, C. S. (2005). A model for analyzing multi-channel distribution systems. European Journal of Operational Research, 163(3), 802-824. https:/ /doi.org/10.1016/j.ejor.2003.11.005
4. Argumedo-García, M., Salas-Navarro, K., Acevedo-Chedid, J., & Ospina-Mateus, H. (2021). Bibliometric analysis of the potential of technologies in the humanitarian supply Chain. Journal of Open Innovation: Technology, Market, and Complexity, 7(4). https://doi.org/10.3390/joitmc7040232
5. Axsater, S. (1990). Simple solution procedures for a class of two-echelon inventory problems. Operations Research, 38(1), 64-69. https://doi.org/10.1287/opre.38.1.64
6. Axsäter, S. (1993). Exact and approximate evaluation of batch-ordering policies for two-level inventory systems. Operations Research, 41(4), 777-785
7. Axsater, S. (1997). Simple evaluation of echelon stock (R, Q) policies for two level inventory systems. IIE Transactions, 29(8), 661-669
8. Axsäter, S. (2000). Exact analysis of continuous review (R,Q) policies in two echelon inventory systems with compound Poisson demand. Operations Research, 48(5), 686-696. https://doi.org/10.1287/opre.48.5.686.12403
9. Axsäter, S. (2003a). A new decision rule for lateral transshipments in inventory systems. Management Science, 49(9), 1168-1179. https://doi.org/10.1287/mnsc.49. 9.1168.16568
10. Axsäter, S. (2003b). Approximate optimization of a two-level distribution inventory system. International Journal of Production Economics, 81-82, 545-553. https://doi.org/ 10.1016/S0925-5273(02)00270-0
11. Axsäter, S. (2003c). Supply Chain Operations: Serial and Distribution Inventory

Systems. Handbooks in Operations Research and Management Science, 11(C), 525- 559. https://doi.org/10.1016/S0927-0507(03)11010-9

12. Bagul, A. D., & Mukherjee, I. (2019). Centralized vs. decentralized sourcing strategy for multi-tier automotive supply network. International Journal of Productivity and Performance Management, 68(3), 578-607. https://doi.org/10.1108/IJPPM-02- 2018-0083

13. Bajpai, P. (2013). Recycling and deinking of recovered paper. In Recycling and Deinking of Recovered Paper. Elsevier. https://doi.org/10.1016/C2013-0-00556-7

14. Belhadi, A., Kamble, S. S., Chiappetta Jabbour, C. J., Mani, V., Khan, S. A. R., & Touriki, F. E. (2022). A self-assessment tool for evaluating the integration of circular economy and industry 4.0 principles in closed-loop supply chains. International Journal of Production Economics, 245, 108372. https://doi.org/https://doi.org/10.1016/ j.ijpe.2021.108372

15. Berlin, D., Feldmann, A., & Nuur, C. (2022). The relatedness of open- and closed loop supply chains in the context of the circular economy; Framing a continuum. Cleaner Logistics and Supply Chain, 4, 100048. https://doi.org/https://doi.org/10.1016/ j.clscn.2022.100048

16. Caggiano, K. E., Jackson, P. L., Muckstadt, J. A., & Rappold, J. A. (2007). Optimizing service parts inventory in a multiechelon, multi-item supply chain with time-based customer service-level agreements. Operations Research, 55(2), 303-318. https://doi.org/10.1287/opre.1060.0345

17. Chaudhary, V., Kulshrestha, R., & Routroy, S. (2018). State-of-the-art literature review on inventory models for perishable products. Journal of Advances in Management Research, 15(3), 306-346. https://doi.org/10.1108/JAMR-09-2017-0091

18. Chen, F., & Zheng, Y. S. (1997). One-warehouse multiretailer systems with centralized stock information. Operations Research, 45(2), 275-287. https://doi.org/ 10.1287/opre.45.2.275

19. Christopher, M. (2016). Logistics & Supply Chain Management. Pearson, UK.

20. Chu, X., Zhong, Q., & Li, X. (2018). Reverse channel selection decisions with a joint third-party recycler. International Journal of Production Research, 56(18), 5969- 5981. https://doi.org/10.1080/00207543.2018.1442944

21. Clark, A. J., & Scarf, H. (2004). Optimal policies for a multi-echelon inventory problem. Management Science, 50(12 SUPPL.), 1782–1795. https://doi.org/10.1287/ mnsc.1040.0265

22. Cohen, M. A., Kleindorfer, P. R., & Lee, H. L. (1986). Optimal stocking policies for low usage items in multi-echelon inventory systems. Naval Research Logistics Quarterly, 33(1), 17-38. https://doi.org/10.1002/nav.3800330103

23. Corbett, C. J., & Klassen, R. D. (2006). Extending the horizons: Environmental excellence as key to improving operations. Manufacturing and Service Operations Management, 8(1), 5-22. https://doi.org/10.1287/msom.1060.0095

24. Cuthbertson, R., Cetinkaya, B., Ewer, G., Klaas-Wissing, T., Piotrowicz, W., Tyssen, C., & Cetinkaya, B. (2011). Developing a sustainable supply chain strategy. Sustainable Supply Chain Management: Practical Ideas for Moving towards Best Practice, 17-55.

25. Das, D., Hui, N. B., & Jain, V. (2019). Optimization of stochastic, (Q, R) inventory system in multi-product, multi-echelon, distributive supply chain. Journal of Revenue and Pricing Management, 18(5), 405-418. https://doi.org/10.1057/s41272- 019-00204-7

26. David, D. U., Aikhuele, D. O., Ughehe, P. O., & Tamuno, E. M. (2022). Multi echelon, multi-period supply chain master planning in the food process industry: A sustainability

concept. Process Integration and Optimization for Sustainability, 6(2), 497-512. https://doi.org/10.1007/s41660-022-00229-3

27. Dekker, R., Bloemhof, J., & Mallidis, I. (2012). Operations research for green logistics – An overview of aspects, issues, contributions and challenges. European Journal of Operational Research, 219(3), 671-679. https://doi.org/https://doi.org/ 10.1016/j.ejor.2011.11.010

28. Diks, E. B., & de Kok, A. G. (1998). Optimal control of a divergent multi-echelon inventory system. European Journal of Operational Research, 111(1), 75-97. https:/ /doi.org/https://doi.org/10.1016/S0377-2217(97)00327-5

29. Dobos, I., & Richter, K. (2000). The integer EOQ repair and waste disposal model□ Further analysis. Cejor, 8(2), 173-194.

30. Dobos, Imre., & Richter, K. (2004). An extended production/recycling model with stationary demand and return rates. International Journal of Production Economics, 90(3), 311-323. https://doi.org/10.1016/j.ijpe.2003.09.007

31. Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of Business Research, 133, 285-296. https://doi.org/10.1016/j.jbusres.2021.04.070

32. Ekanayake, N., Joshi, N., & Thekdi, S. A. (2016). Comparison of single-echelon vs. multi-echelon inventory systems using multi-objective stochastic modelling. International Journal of Logistics Systems and Management, 23(2), 255-280. https:// doi.org/10.1504/IJLSM.2016.073971

33. Elia, V., Gnoni, M. G., & Tornese, F. (2017). Measuring circular economy strategies through index methods: A critical analysis. Journal of Cleaner Production, 142, 2741-2751. https://doi.org/https://doi.org/10.1016/j.jclepro.2016.10.196

34. Ettl, M., Feigin, G. E., Lin, G. Y., & Yao, D. D. (2000). Supply network model with base-stock control and service requirements. Operations Research, 48(2), 216-232. https://doi.org/10.1287/opre.48.2.216.12376

35. Fan, Y., & Fang, C. (2020). Circular economy development in China-current situation, evaluation and policy implications. Environmental Impact Assessment Review, 84, 106441. https://doi.org/https://doi.org/10.1016/j.eiar.2020.106441

36. Firoozi, M., Babai, M. Z., Klibi, W., & Ducq, Y. (2020). Distribution planning for multi-echelon networks considering multiple sourcing and lateral transshipments. International Journal of Production Research, 58(7), 1968-1986. https://doi.org/10.1080/ 00207543.2019.1639841

37. Forsberg, R. (1995). Optimization of order-up-to-S policies for two-level inventory systems with compound Poisson demand. European Journal of Operational Research, 81(1), 143-153. https://doi.org/https://doi.org/10.1016/0377-2217(93)E0216-K

38. Forsberg, R. (1997). Exact evaluation of (R, Q)-policies for two-level inventory systems with Poisson demand. European Journal of Operational Research, 96(1), 130-138. https://doi.org/https://doi.org/10.1016/S0377-2217(96)00137-3

39. Fu, R., (Patrick) Qiang, Q., Ke, K., & Huang, Z. (2021). Closed-loop supply chain network with interaction of forward and reverse logistics. Sustainable Production and Consumption, 27, 737-752. https://doi.org/10.1016/j.spc.2021.01.037

40. Gholizadeh, H., Jahani, H., Abareshi, A., & Goh, M. (2021). Sustainable closed□ loop supply chain for dairy industry with robust and heuristic optimization. Computers and Industrial Engineering, 157, 107324. https://doi.org/10.1016/ j.cie.2021.107324

41. Giri, B. C., Chakraborty, A., & Maiti, T. (2017). Pricing and return product collection

decisions in a closed-loop supply chain with dual-channel in both forward and reverse logistics. Journal of Manufacturing Systems, 42, 104-123. https://doi.org/ https://doi.org/10.1016/j.jmsy.2016.11.007

42. Golden, J. S., Vermeer, D., Clemen, B., Noyes, C., & Akella, A. (2010). An Overview of Ecolabels and Sustainability Certifications in the Global Marketplace An Overview of Ecolabels and Sustainability Certifications in the Global Marketplace. Corporate Sustainability Initiative - Nicholas Institute for Environmental Policy Solutions at Duke University, 1(10), 1-99.

43. Govindan, Kannan, Khodaverdi, R., & Jafarian, A. (2013). A fuzzy multi criteria approach for measuring sustainability performance of a supplier based on triple bottom line approach. Journal of Cleaner Production, 47, 345-354. https://doi.org/ https://doi.org/10.1016/j.jclepro.2012.04.014

44. Govindan, K, Azevedo, S. G., Carvalho, H., & Cruz-Machado, V. (2015). Lean, green and resilient practices influence on supply chain performance: Interpretive structural modeling approach. International Journal of Environmental Science and Technology, 12(1), 15-34. https://doi.org/10.1007/s13762-013-0409-7

45. Govindan, Kannan, 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/https://doi.org/ 10.1016/j.ejor.2014.07.012

46. Graves, S. C. (1985). Multi-echelon inventory model for a repairable item with one-for-one replenishment. Management Science, 31(10), 1247-1256. https://doi.org/ 10.1287/mnsc.31.10.1247

47. Gupta, M., Kaur, H., & Singh, S. P. (2021). Multi-echelon agri-food supply chain network design integrating operational and strategic objectives: a case of public distribution system in India. Annals of Operations Research. https://doi.org/10.1007/ s10479-021-04240-8

48. Hall, P. (2012). USAID environmental compliance reporting. Global Environment Management Support, 1-13

49. Hodgson, J. P. E., & Warburton, R. D. H. (2009). Inventory resonances in multi□echelon supply chains. International Journal of Logistics Research and Applications, 12(4), 299-311. https://doi.org/10.1080/13675560903076172

50. Hopp, W. J., Zhang, R. Q., & Spearman, M. L. (1999). An easily implementable hierarchical heuristicfor a two-echelon spare parts distribution system. IIE Transactions, 31(10), 977-988. https://doi.org/10.1023/A:1007679500295

51. Howard, C., & Marklund, J. (2011). Evaluation of stock allocation policies in a divergent inventory system with shipment consolidation. European Journal of Operational Research, 211(2), 298-309. https://doi.org/10.1016/j.ejor.2010.11.030

52. Howard, C., Marklund, J., Tan, T., & Reijnen, I. (2015). Inventory control in a spare parts distribution system with emergency stocks and pipeline information.

53. Hsiao, Y. C. (2008). Optimal single-cycle policies for the one-warehouse multi□retailer inventory/distribution system. International Journal of Production Economics, 114(1), 219-229. https://doi.org/10.1016/j.ijpe.2008.01.008

54. Huang, R., & Yao, X. (2021). An analysis of sustainability and channel coordination in a three-echelon supply chain. Journal of Enterprise Information Management, 34(1), 490-505. https://doi.org/10.1108/JEIM-12-2019-0413

55. Huang, S., Axsäter, S., Dou, Y., & Chen, J. (2011). A real-time decision rule for an

inventory system with committed service time and emergency orders. European Journal of Operational Research, 215(1), 70-79. https://doi.org/https://doi.org/ 10.1016/j.ejor.2011.05.029

56. Johansson, L., & Olsson, F. (2017). Quantifying sustainable control of inventory systems with non-linear backorder costs. Annals of Operations Research, 259(1-2), 217-239. https://doi.org/10.1007/s10479-017-2542-z

57. Johansson, L., & Olsson, F. (2018). Age-based inventory control in a multi-echelon system with emergency replenishments. European Journal of Operational Research, 265(3), 951-961. https://doi.org/10.1016/j.ejor.2017.08.057

58. Kazemi, N., Modak, N. M., & Govindan, K. (2019). A review of reverse logistics and closed loop supply chain management studies published in IJPR: A bibliometric and content analysis. International Journal of Production Research, 57(15-16), 4937- 4960. https://doi.org/10.1080/00207543.2018.147124

59. Kherbach, O., & Mocan, M. L. (2016). The importance of logistics and supply chain management in the enhancement of romanian SMEs. Procedia - Social and Behavioral Sciences, 221, 405-413. https://doi.org/https://doi.org/10.1016/ j.sbspro.2016.05.130

60. Kim, Y. G., & Chung, B. Do. (2022). Closed-loop supply chain network design considering reshoring drivers. Omega, 109, 102610. https://doi.org/https://doi.org/ 10.1016/j.omega.2022.102610

61. Kleindorfer, P. R., Singhal, K., & Van Wassenhove, L. N. (2005). Sustainable operations management. Production and Operations Management, 14(4), 482-492. https://doi.org/10.1111/j.1937-5956.2005.tb00235.x

62. Kristensen, H. S., & Mosgaard, M. A. (2020). A review of micro level indicators for a circular economy – moving away from the three dimensions of sustainability? Journal of Cleaner Production, 243, 118531. https://doi.org/https://doi.org/10.1016/ j.jclepro.2019.118531

63. Kukreja, A., Schmidt, C. P., & Miller, D. M. (2001). Stocking decisions for low□usage items in a multilocation inventory system. Management Science, 47(10), 1371- 1383. https://doi.org/10.1287/mnsc.47.10.1371.10263

64. Kumar, S., Lim, W. M., Sivarajah, U., & Kaur, J. (2022). Artificial intelligence and blockchain integration in business: Trends from a bibliometric-content analysis. Information Systems Frontiers, 25(2), 871-896. https://doi.org/10.1007/s10796-022- 10279-0

65. Lin, J. R., Nozick, L. K., & Turnquist, M. A. (2006). Strategic design of distribution systems with economies of scale in transportation. Annals of Operations Research, 144(1), 161-180. https://doi.org/10.1007/s10479-006-0004-0

66. Mahmoum Gonbadi, A., Genovese, A., & Sgalambro, A. (2021). Closed-loop supply chain design for the transition towards a circular economy: A systematic literature review of methods, applications and current gaps. Journal of Cleaner Production, 323, 129101. https://doi.org/10.1016/j.jclepro.2021.129101

67. Marklund, J. (2011). Inventory control in divergent supply chains with timebased dispatching and shipment consolidation. Naval Research Logistics (NRL), 58(1), 59-71.

68. Marklund, J., & Berling, P. (2017). Green Inventory Management BT - Sustainable Supply Chains: A Research-Based Textbook on Operations and Strategy (Y. Bouchery, C. J. Corbett, J. C. Fransoo, & T. Tan (Eds.), 189-218, Springer International Publishing. https://doi.org/10.1007/978-3-319-29791-0_8

69. Mawandiya, B. K., Jha, J. K., & Thakkar, J. J. (2020). Optimal production-inventory policy for closed-loop supply chain with remanufacturing under random demand and return. Operational Research, 20(3), 1623-1664. https://doi.org/10.1007/s12351- 018-0398-x

70. Mckinnon, A. (2010). Green Logistics: the Carbon Agenda. Electronic Scientific Journal of Logistics, 6(3), 1-9.

71. Mitra, S. (2009). Analysis of a two-echelon inventory system with returns. Omega, 37(1), 106-115. https://doi.org/https://doi.org/10.1016/j.omega.2006.10.002

72. Moinzadeh, K., & Aggarwal, P. K. (1997). An information based multiechelon inventory system with emergency orders. Operations Research, 45(5), 694-701. https:/ /doi.org/10.1287/opre.45.5.694

73. Moinzadeh, K., & Schmidt, C. P. (1991). (S-1, S) inventory system with emergency orders. Operations Research, 39(2), 308-321. https://doi.org/10.1287/opre.39.2.308

74. Moreira, J. A. A., & Bispo, C. F. G. (1999). An echelon inventory-based single stage cost function for a two-station tandem system. Production Planning and Control, 10(7), 643-649. https://doi.org/10.1080/095372899232713

75. Mukherjee, D., Kumar, S., Donthu, N., & Pandey, N. (2021). Research Published in Management International Review from 2006 to 2020: A Bibliometric Analysis and Future Directions. Management International Review, 61(5), 599-642. https:// doi.org/10.1007/s11575-021-00454-x

76. Olsson, F. (2015). Emergency lateral transshipments in a two-location inventory system with positive transshipment leadtimes. European Journal of Operational Research, 242(2), 424-433. https://doi.org/https://doi.org/10.1016/j.ejor.2014.10.015

77. Pagell, M., & Wu, Z. (2009). Building a more complete theory of sustainable supply chain management using case studies of 10 exemplars. Journal of Supply Chain Management, 45(2), 37-56. https://doi.org/10.1111/j.1745-493X.2009.03162.x

78. Palevich, R. (2011). Lean Sustainable Supply Chain: How to Create a Green Infrastructure with Lean Technologies, FT Press.

79. Pan, F., & Nagi, R. (2013). Multi-echelon supply chain network design in agile manufacturing. Omega, 41(6), 969-983, United Kingdom. https://doi.org/10.1016/ j.omega.2012.12.004

80. Parsa, M., Nookabadi, A. S., & Atan, Z. (2020). A joint economic lot-size model for sustainable industries of recycled content products. International Journal of Production Research, 58(24), 7439-7470. https://doi.org/10.1080/00207543. 2020.1802078

81. Prajapati, D., Pratap, S., Zhang, M., Lakshay, & Huang, G. Q. (2022). Sustainable forward-reverse logistics for multi-product delivery and pickup in B2C E-commerce towards the circular economy. International Journal of Production Economics, 253, 108606. https://doi.org/10.1016/j.ijpe.2022.108606

82. Pritchard, A. (1969). Statistical bibliography or bibliometrics? Journal of Documentation, 25(4), 348-349.

83. Rambau, J., & Schade, K. (2014). The stochastic guaranteed service model with recourse for multi-echelon warehouse management. Mathematical Methods of Operations Research, 79(3), 293-326. https://doi.org/10.1007/s00186-014-0464-y

84. Rechtschaffen, C. (2007). Shining the spotlight on European Union environmental compliance. Pace Envtl. L. Rev., 24, 161.

85. Reddy, K. N., & Kumar, A. (2021). Capacity investment and inventory planning for a hybrid manufacturing–remanufacturing system in the circular economy. International Journal of

Production Research, 59(8), 2450-2478. https://doi.org/10.1080/ 00207543.2020.1734681

86. Richter, K. (1997). Pure and mixed strategies for the EOQ repair and waste disposal problem. OR Spectrum, 19(2), 123-129. https://doi.org/10.1007/BF01545511

87. Rocchi, L., Paolotti, L., Cortina, C., Fagioli, F. F., & Boggia, A. (2021). Measuring circularity: An application of modified material circularity indicator to agricultural systems. Agricultural and Food Economics, 9(1), 9. https://doi.org/10.1186/s40100- 021-00182-8

88. Rogers, D. F., & Tsubakitani, S. (1991). Inventory Positioning/Partitioning for Backorders Optimization for a Class of MultiEchelon Inventory Problems. Decision Sciences, 22(3), 536-558. https://doi.org/10.1111/j.1540-5915.1991.tb01280.x

89. Samouei, P., Kheirkhah, A. S., & Fattahi, P. (2015). A network approach modeling of multi-echelon spare-part inventory system with backorders and quantity discount. Annals of Operations Research, 226(1), 551-563. https://doi.org/10.1007/ s10479-014-1718-z

90. Sbai, N., Benabbou, L., & Berrado, A. (2022). Multi-echelon inventory system selection: Case of distribution systems. International Journal of Supply and Operations Management, 9(1), 108-125. https://doi.org/10.22034/ijsom.2021. 109031.2138

91. Seuring, S., & Müller, M. (2008a). Core issues in sustainable supply chain management - A Delphi study. Business Strategy and the Environment, 17(8), 455- 466. https://doi.org/10.1002/bse.607

92. Seuring, S., & Müller, M. (2008b). From a literature review to a conceptual framework for sustainable supply chain management. Journal of Cleaner Production, 16(15), 1699-1710. https://doi.org/https://doi.org/10.1016/j.jclepro.2008.04.020

93. Shekarian, E., Marandi, A., & Majava, J. (2021). Dual-channel remanufacturing closed-loop supply chains under carbon footprint and collection competition. Sustainable Production and Consumption, 28, 1050-1075. https://doi.org/https:// doi.org/10.1016/j.spc.2021.06.028

94. Shen, B., Xu, X., & Guo, S. (2019). The impacts of logistics services on short life cycle products in a global supply chain. Transportation Research Part E: Logistics and Transportation Review, 131, 153-167. https://doi.org/https://doi.org/10.1016/ j.tre.2019.07.013

95. Sherbrooke, C. C. (1968). Metric: A multi-echelon technique for recoverable item control. Operations Research, 16(1), 122-141. https://doi.org/10.1287/ opre.16.1.122

96. Shu, J., Ma, Q., & Li, S. (2010). Integrated location and two-echelon inventory network design under uncertainty. Annals of Operations Research, 181(1), 233- 247. https://doi.org/10.1007/s10479-010-0732-z

97. Song, J. S., & Zipkin, P. (2009). Inventories with multiple supply sources and networks of queues with overflow bypasses. Management Science, 55(3), 362-372. https://doi.org/10.1287/mnsc.1080.0941

98. Souza, G. C. (2013). Closed-loop supply chains: A critical review, and future research. Decision Sciences, 44(1), 7-38. https://doi.org/10.1111/j.1540- 5915.2012.00394.x

99. Srivastava, S. K. (2007). Green supply-chain management: A state-of-the-art literature review. International Journal of Management Reviews, 9(1), 53-80. https:/ /doi.org/10.1111/j.1468-2370.2007.00202.x

100. Stenius, O., Karaarslan, A. G., Marklund, J., & De Kok, A. G. (2016). Exact analysis of divergent inventory systems with time-based shipment consolidation and compound poisson

demand. Operations Research, 64(4), 906-921. https:// doi.org/10.1287/opre.2016.1510

101. Stenius, O., Marklund, J., & Axsäter, S. (2018). Sustainable multi-echelon inventory control with shipment consolidation and volume dependent freight costs. European Journal of Operational Research, 267(3), 904-916. https://doi.org/ 10.1016/j.ejor.2017.12.029

102. Suppipat, S., & Hu, A. H. (2022). A scoping review of design for circularity in the electrical and electronics industry. Resources, Conservation & Recycling Advances, 13, 200064. https://doi.org/https://doi.org/10.1016/j.rcradv.2022.200064

103. Tee, Y. S., & Rossetti, M. D. (2002). A robustness study of a multi-echelon inventory model via simulation. International Journal of Production Economics, 80(3), 265-277. https://doi.org/10.1016/S0925-5273(02)00259-1

104. Tiwari, K., & Khan, M. S. (2019). An action research approach for measurement of sustainability in a multi-echelon supply chain: Evidences from Indian sea food supply chains. Journal of Cleaner Production, 235, 225-244. https://doi.org/10.1016/ j.jclepro.2019.06.200

105. Van Der Heijden, M. C., Diks, E. B., & De Kok, A. G. (1997). Stock allocation in general multi-echelon distribution systems with (R, S) order-up-to-policies. International Journal of Production Economics, 49(2), 157-174. https://doi.org/ 10.1016/S0925-5273(97)00005-4

106. van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. Scientometrics, 84(2), 523-538. https://doi.org/ 10.1007/s11192-009-0146-3

107. Wang, B., Pan, S. Y., Ke, R. Y., Wang, K., & Wei, Y. M. (2014). An overview of climate change vulnerability: A bibliometric analysis based on Web of Science database. Natural Hazards, 74(3), 1649-1666. https://doi.org/10.1007/s11069-014- 1260-y

108. Yang, G., Dekker, R., Gabor, A. F., & Axsäter, S. (2013). Service parts inventory control with lateral transshipment and pipeline stockflexibility. International Journal of Production Economics, 142(2), 278-289. https://doi.org/https://doi.org/ 10.1016/j.ijpe.2012.11.009.