

Digital Transformation in Transport and Logistics

- Special issue call for papers for Logistics Research –

Background of the special issue

Production, logistics, and transport are integral components of the global manufacturing economy, serving as the cornerstones of an interconnected supply chain. The booming expansion of international e-commerce is driving the need for faster and smarter supply chain management to enhance customer satisfaction (Cichosz, et al., 2020). This requires effective integration and coordination of information and material flows in transport and logistics. With the advent of Industry 4.0, digital technologies such as Internet of Things (IoT), artificial intelligence (AI), and big data analytics, are becoming essential in logistics planning and decision making (Escherle et al. 2023, Sullivan and Kern, 2021, Kalaitzi et al., 2021). Increasing connectivity and usage of digital technology lead to a growing number of interfaces between the physical assets and the digital tools in transport and logistics processes (Albrecht et al. 2023).

While these interfaces have facilitated the exchange of data and information, they also pose new challenges for decision makers in supply chain management. On the one hand, the exchange of data and information between various actors requires a common way to process, interpret and understand data and information, which creates new requirements in terms of technology and standardisation (Escherle et al. 2023, Sorger et al. 2021). On the other hand, the application of digital solutions also significantly transformed business workflows, operation framework and management systems of players in supply chains (Hellweg, et al. 2023, Sullivan and Kern, 2021, Feng and Ye, 2021), prompting them to adapt their business models, organisational set ups and planning processes in time to cope with the changes.

To ensure a successful implementation and efficient and effective use of these digital and technological interfaces in transport and logistics and its planning, further research is needed to comprehensively understand and analyse these new technological as well as organisational challenges and contributions faced from planning, implementing and operation.

Purpose and prospective themes of the special issue

This special issue focuses on improving the digital and technological interfaces in the logistics and transport industry at both technological, organisational and planning levels to facilitate efficient decision-making in supply chains. Particularly, the integration of digital technologies into physical assets and processes as well as the application of digital platforms is of highest interest. All analytical, conceptual, empirical, experimental, and optimization works around the digital and technological interfaces within the production, logistics and transport industries and their adjacencies to other industries (such as leisure, consumer or energy sector) are of interest for this special issue, including but not limited to the following examples:

- Networked, intermodal transport and logistics
- Supply chain integration
- Smart city and mobility
- Industry 4.0 and autonomous value chains
- Automated freight system
- Future intralogistics and warehousing
- Data and information technology
- Data interoperability frameworks and standards
- Policy and governance practices
- Business model and process innovation

Guest editors

- Ralf Elbert (Technical University of Darmstadt, Germany, elbert@log.tu-darmstadt.de)
- Uwe Clausen (TU Dortmund University, Germany, uwe.clausen@tu-dortmund.de)

Timeline

- **April 30, 2025:** Submission deadline for full paper

Please note that papers can already be submitted to the SI. Papers will already be made available directly online upon acceptance.

About the journal

Logistics Research is a peer-reviewed open access journal published from 2025 by Emerald. The journal features fundamental and applied research in the fields of logistics and supply chain management from an interdisciplinary perspective spanning from logistics management to logistics engineering. The journal presents analytical, conceptual, empirical and/or experimental work that advances the development of logistics theory and innovative logistics practices as well as the integration of the various associated disciplines such as management and social sciences, economics, behavioural sciences, operations research, informatics, and other relevant engineering sciences. More information can be found on the website: <https://www.bvl.de/lore/about-the-journal>

References

- Cichosz, M., Wallenburg, C. M., & Knemeyer, A. M. (2020). Digital transformation at logistics service providers: barriers, success factors and leading practices. *The International Journal of Logistics Management*, 31(2), 209-238.
- Escherle, S., Darlagiannis, E., & Sprung, A. (2023). Automated Trucks and the Future of Logistics-A Delphi-Based Scenario Study. *Logistics Research*, 16(1), 1.
- Sullivan, M., & Kern, J. (Eds.). (2021). *The digital transformation of logistics: Demystifying impacts of the Fourth Industrial Revolution*. John Wiley & Sons.
- Kalaitzi, D., Matopoulos, A., Fornasiero, R., Sardesai, S., Barros, A. C., Balech, S., & Muerza, V. (2021). Megatrends and trends shaping supply chain innovation. *Next Generation Supply Chains: A Roadmap for Research and Innovation*, 3-34.
- Albrecht, T., Baier, M. S., Gimpel, H., Meierhöfer, S., Röglinger, M., Schlüchtermann, J., & Will, L. (2023). Leveraging digital technologies in Logistics 4.0: Insights on affordances from intralogistics processes. *Information Systems Frontiers*, 26, 755-774.
- Sorger, M.; Ralph, B.J.; Hartl, K.; Woschank, M.; Stockinger, M. (2021). Big Data in the Metal Processing Value Chain: A Systematic Digitalization Approach under Special Consideration of Standardization and SMEs. *Applied Sciences*, 11(19), 9021.
- Hellweg, F., Janhofer, D., & Hellingrath, B. (2023). Towards a maturity model for digital supply chains. *Logistics Research*, 16(1), 5.
- Feng, B., & Ye, Q. (2021). Operations management of smart logistics: A literature review and future research. *Frontiers of Engineering Management*, 8, 344-355.