



CALL FOR PAPERS

THEMATIC SECTION: Logistics 5.0 in Production Engineering: Methods, systems, and decision-making in complex contexts

SUBMIT YOUR PAPERS BY DECEMBER 31, 2026

The increasing complexity of production and logistics systems has intensified the need for approaches that go beyond efficiency-driven and technology-centered models. Digitalization, sustainability pressures, institutional constraints, social inequalities, and territorial fragmentation have reshaped how production systems and logistics networks are designed, managed, and evaluated. In this context, Logistics 5.0 emerges as a new paradigm that integrates technological capabilities with human-centered values, ethical considerations, governance, resilience, and sustainability.

This thematic section aims to advance knowledge on how Logistics 5.0 can be understood, operationalized, and embedded within Production Engineering, particularly through the lens of Engineering Methods, Operations Management, and Decision-Making in Complex Systems. Rather than treating digital technologies as an end in themselves, Logistics 5.0 emphasizes their role as enablers of responsible, inclusive, and adaptive production and logistics systems.

Recent disruptions, institutional fragilities, and growing socio-territorial challenges have highlighted the limitations of traditional logistics and operations paradigms. Production systems increasingly operate in environments marked by uncertainty, trade-offs, paradoxes, and conflicting objectives, such as efficiency versus resilience, cost reduction versus social impact, and formal versus informal arrangements. Logistics 5.0 provides a conceptual and methodological space to address these tensions in an integrated manner.

Given the interdisciplinary nature of Operations, Manufacturing, Industrial, and Production Engineering, this thematic section aligns with the journal's commitment to fostering research that advances theory, methods, and practice while addressing contemporary societal and organizational challenges.

About the Journal

The **Production journal** (formerly known as **Produção** or **Producao**) is the flagship publication of the **Brazilian Association of Production Engineering (ABEPRO)**. Established in **1990**, the journal (ISSN 0103-6513) serves as a key platform for disseminating academic research in **Production Engineering** and **Operations Management**.

Its mission is to provide an internationally respected channel for publishing original and relevant research in Operations, Manufacturing, Industrial Engineering, and Production Engineering and Management. The journal is dedicated to fostering advancements and knowledge exchange in these critical areas of study and practice.



Production Journal
Editor-in-Chief: Adriana Leiras
<http://www.prod.org.br>



The objectives of this thematic section are:

- To advance theoretical and methodological foundations of Logistics 5.0 within Production Engineering;
- To explore how Engineering Methods can support decision-making in Logistics 5.0-oriented systems;
- To analyze trade-offs, tensions, and paradoxes in logistics and production systems operating in complex environments;
- To investigate the integration of sustainability, resilience, governance, and human-centered perspectives in logistics and operations;
- To examine logistics systems in urban, institutional, and territorially constrained contexts, including the middle mile;
- To discuss the implications of Logistics 5.0 for production system design, performance evaluation, and managerial decision-making.

We invite submissions that provide empirical evidence, theoretical frameworks, methodological contributions, simulation models, and applied studies addressing these key areas.

Topics of Interest

The topics of interest include, but are not limited to, the following:

Logistics 5.0 and Production Engineering

- Conceptual foundations and definitions of Logistics 5.0
- Logistics 5.0 versus Logistics 4.0: implications for Production Engineering

Engineering Methods and Decision-Making

- Engineering Methods applied to logistics and operations
- Multi-criteria decision-making, trade-offs, and paradox management
- Performance measurement and evaluation in Logistics 5.0 systems

Complex and Urban Logistics Systems

- Middle mile logistics and urban production systems
- Logistics under institutional constraints and governance challenges
- Formal and informal logistics arrangements

Resilience, Sustainability, and Governance

- Resilient production and logistics systems
- Sustainability, ethics, and social impact in logistics
- Governance and coordination in complex supply networks

Technology as an Enabler

- Digital technologies supporting human-centered logistics
- Decision-support systems, analytics, and modeling for Logistics 5.0

Submissions

The Guest Editors and the Editor-in-Chief of the [Production](http://www.prod.org.br) journal invite researchers to submit research papers with strong scientific rigor and practical relevance. Manuscripts should present clear motivation, research objectives, methodological soundness, and original theoretical, empirical, and/or methodological contributions aligned with the scope of Production Engineering.

Empirical studies supported by robust theoretical or conceptual frameworks are especially welcome.

For author guidelines, please refer to: <https://prod.org.br/instructions>



Production Journal
Editor-in-Chief: Adriana Leiras
<http://www.prod.org.br/>



Submissions must be made through: <https://mc04.manuscriptcentral.com/prod-scielo>

When submitting, authors should select: **Thematic Section - Logistics 5.0 in Production Engineering: Methods, systems, and decision-making in complex contexts**

Important dates:

- **Submission opens:** March 2026
- **Deadline:** December 2026

Guest Editors:

- Aduino Bueno (UNEMAT) - <http://lattes.cnpq.br/6196055633133159>
- Elias Ribeiro da Silva (University of Southern Denmark – Denmark) - <https://portal.findresearcher.sdu.dk/en/persons/elias-ribeiro-da-silva/>
- Gustavo Grander (PUCPR) - <http://lattes.cnpq.br/5534685269232330>
- Kenyth Alves de Freitas (INSPER-SP) - <http://lattes.cnpq.br/5059045965061971>
- Leonardo da Silva Ribeiro (COPPETEC-UFRJ) - <https://lattes.cnpq.br/7199246296055191>
- Luis Antonio De Santa-Eulalia (Université de Sherbrooke - Canadá) - <https://scholar.google.com/citations?user=BGdZ0z8AAAAJ&hl=en>
- Marcelo Martins de Sá (Northumbria University - Inglaterra) - <http://lattes.cnpq.br/0231895845880270>
- Rodrigo Goyannes Gusmão Caiado (PUC-Rio) - <http://lattes.cnpq.br/3922452850648712>

References

- BUENO, A.; GODINHO FILHO, M.; CECCONELLO, M.; DE SANTA-EULÁLIA, L. A.; CAIADO, R. G. G.; GANGA, G. M. D.; CARVALHO, J. V. Advancing towards Industry 4.0: A maturity model for smart shop floor control. *International Journal of Production Economics*, v. 282, p. 109538, 2025.
- CAIADO, R. G. G.; SCAVARDA, L. F.; GAVIÃO, L. O.; IVSON, P.; NASCIMENTO, D. L. de M.; GARZA-REYES, J. A. A fuzzy-rule-based Industry 4.0 maturity model for operations and supply chain management. *International Journal of Production Economics*, v. 231, p. 107883, 2021.
- CAIADO, R. G. G. et al. Sustainable I4. 0 integration and transition to I5. 0 in traditional and digital technological organisations. *Technological Forecasting and Social Change*, v. 207, p. 123582, 2024.
- CARAYANNIS, E. G.; MORAWSKA-JANCELEWICZ, J. The futures of Europe: Society 5.0 and Industry 5.0 as driving forces of future universities. *Journal of the Knowledge Economy*, v. 13, n. 4, p. 3445–3471, 2022.
- CHEN, Q.; DUAN, Y. Impact of information disclosure on global supply chain greenwashing: Is more information transparency always better? *Transportation Research Part E: Logistics and Transportation Review*, v. 178, p. 103288, 2023.
- EKREN, B. Y. et al. Warehousing 5.0 for the future of the logistics industry. *International Journal of Production Research*, p. 1-11, 2026.
- FOX, S.; GRIFFY-BROWN, C.; DABIC, M. From socio-technical systems to biosocial technical systems: New themes and new guidance for the field of technology in society. *Technology in Society*, v. 62, p. 101291, 2020.
- FOX, S. et al. Logistics 5.0: Biosocial–technical interactions in logistics. *The International Journal of Logistics Management*, v. 36, n. 7, p. 308-329, 2025.



Production Journal
Editor-in-Chief: Adriana Leiras
<http://www.prod.org.br/>



- HUANG, S.; WANG, B.; LI, X.; ZHENG, P.; MOURTZIS, D.; WANG, L. Industry 5.0 and Society 5.0: Comparison, complementation and co-evolution. *Journal of Manufacturing Systems*, v. 64, p. 424–428, 2022.
- MWANGI, G. M.; DESPOUDI, S.; ESPINDOLA, O. R.; SPANAKI, K.; PAPADOPOULOS, T. A planetary boundaries perspective on the sustainability–resilience relationship in the Kenyan tea supply chain. *Annals of Operations Research*, v. 319, n. 1, p. 661–695, 2022.
- TURKEN, N.; GEDA, A. Supply chain implications of industrial symbiosis: A review and avenues for future research. *Resources, Conservation and Recycling*, v. 161, p. 104974, 2020.
- WIELAND, A.; DURACH, C. F. Two perspectives on supply chain resilience. *Journal of Business Logistics*, v. 42, n. 3, p. 315–322, 2021.