



<https://www.aimspress.com/journal/jimo>

Research article

Supply chain digitalization and risk management: A scoping review, systematic review, and meta-analysis

Nadia Hmitti* and Ahmed Maghni

Laboratoire Gouvernance et Performance des Organisations, National School of Business & Management Tangier, Abdelmalek Essaâdi University, Tangier, Morocco

* **Correspondence:** Email: nadia.hmitti@etu.uae.ac.ma; Tel: +212-667-402-162.

Appendix

Appendix A. Methodological details for scoping review.

A.1. Search query

- Query:

“Digit*” AND (“Supply chain” OR “Logistics”) AND “industr*”

- Initial search date: December 22, 2024
- Update: January 8, 2025
- Databases: Scopus and Web of Science (WoS)

A.2. Inclusion criteria

- Document type: Journal articles and conference papers
- Language: English only
- Time span: 2015–2025

Justification: This time window was defined based on a preliminary analysis of publication trends in Scopus and Web of Science, which showed a marked increase in research on supply chain digitalization starting from 2015 (see Figure 9).

- Subject areas:

- *Web of Science*: Management, Industrial Engineering, Manufacturing Engineering, Business, Business Finance, Transportation, Transportation Science & Technology
- *Scopus*: Business

A.3. Exclusion criteria

- Duplicate records across databases

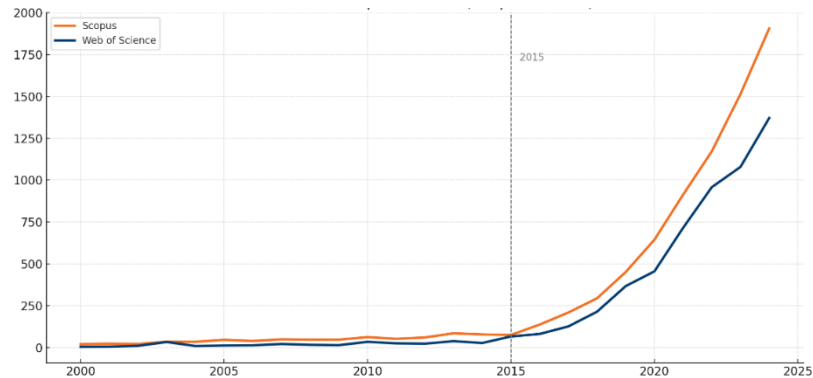


Figure 9. Evolution of scientific publications on supply chain digitalization in Scopus and Web of Science.

Appendix B. Methodological details for systematic review.

B.1. Search query

- Query:

“Digital Supply Chain” OR “Supply Chain Digitalization” OR “Supply Chain Digitalisation” OR “Smart Supply Chain” OR “Supply Chain 4.0”) AND “risk” AND (“industry” OR “industrial”)

- Initial search date: March 25, 2025
- Update: April 5, 2025
- Databases: Scopus, Web of Science (WoS), Research4Life, JSTOR, and CAIRN

B.2. Inclusion criteria

- Document type: Journal articles and review papers
- Language: English and French (CAIRN used for French-language publications)
- Time span: No time restriction applied

Justification: No temporal filter was applied in order to avoid excluding potentially scarce publications in an emerging research field.

- Subject areas:
 - *Scopus*: Computer Science, Business, Management and Accounting, Engineering, Decision Sciences, Economics, Social Sciences, Environmental Science, Multidisciplinary

- *Web of Science*: Industrial Engineering, Management, Manufacturing Engineering, Operations Research, Management Science, Business, Computer Science, Environmental Sciences, Green Technologies, Transportation
- *Research4Life*: Business, Computer Science, Economics, Engineering
- *CAIRN*: Economics, Management, Information and Communication Sciences
- *JSTOR*: Business, Economics, Engineering, Technology, Transportation, Development Studies, Sustainability

B.3. Exclusion criteria

- Studies outside the scope of the research
- Non-quantitative studies
- Lack of access to full-text articles
- Duplicate records across databases

Appendix C. Partial summary of hypothesized relationships and effects directions.

Table 2. Partial summary of hypothesized relationships and effects directions.

Article	Effect
Article 1	System Modularity → Perceived Risk
Article 1	Perceived Risk → Supply Chain Digitization
Article 1	System Modularity → Supply Chain Digitization (no mediator)
Article 1	System Modularity → Supply Chain Digitization (mediator)
Article 1	IT Unit Decision Right → Perceived Risk
Article 1	IT Unit Decision Right → Supply Chain Digitization
Article 1	System Modularity × IT Unit Decision Right → Perceived Risk
Article 1	System Modularity × IT Unit Decision Right → Supply Chain Digitization (no mediator)
Article 1	System Modularity × IT Unit Decision Right → Supply Chain Digitization (mediator)
Article 1	Risk Propensity → Supply Chain Digitization
Article 1	Strategic Aspiration → Supply Chain Digitization
Article 1	Isomorphic IT Adoption → Supply Chain Digitization
Article 1	Security Management → Supply Chain Digitization
Article 1	Firm Size → Supply Chain Digitization
Article 1	Firm Revenue → Supply Chain Digitization
Article 1	IT Budget → Supply Chain Digitization
Article 6	Performance Expectancy → Adoption I4.0
Article 6	Effort Expectancy → Adoption I4.0
Article 6	Social Influence → Adoption I4.0
Article 6	Facilitating Conditions → Adoption I4.0
Article 6	Cost Perception × Performance Expectancy → Adoption I4.0
Article 6	Cost Perception × Effort Expectancy → Adoption I4.0
Article 6	Cost Perception × Social Influence → Adoption I4.0

Continued on next page

-
- Article 6 Cost Perception × Facilitating Conditions → Adoption I4.0
Article 6 Risk Perception × Performance Expectancy → Adoption I4.0
Article 6 Risk Perception × Effort Expectancy → Adoption I4.0
Article 6 Risk Perception × Social Influence → Adoption I4.0
Article 6 Risk Perception × Facilitating Conditions → Adoption I4.0
-



AIMS Press

© 2026 the Author(s), licensee AIMS Press. This is an open access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0>)