Transparency for Sustainability in the German MedTech Industry? Ways forward from a Sustainable Supply Chain Management Perspective

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HWR Research Competence Centre
CHALLENGES AND RESILIENCE OF GLOBAL SUPPLY AND VALUE CHAINS

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Who We Are

Research competence centre
„Challenges and resilience of global supply and value chains (GSVCs)“

Research project – Cluster E
„Sustainability in global supply chains of B2B-products“

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Conducting institution:

Berlin School of Economics and Law (HWR Berlin)

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MedTech Industry in General

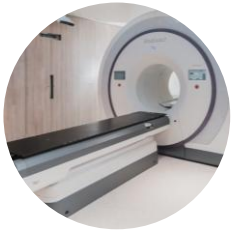
Production and marketing of goods and services that serve to preserve and restore health (BioCon Valley, 2025)



Medical devices
(BMWK, 2024a)

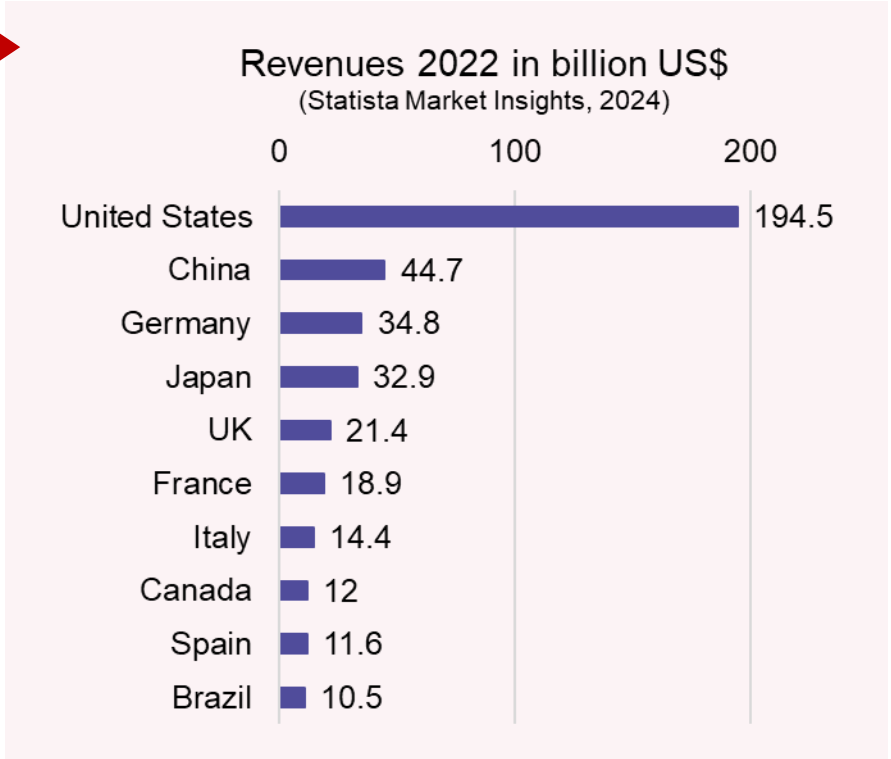
Hetero-geneous product range

Medical technology/ large medical-technical equipment
(BMWK, 2024b)


Relevance of German MedTech Industry

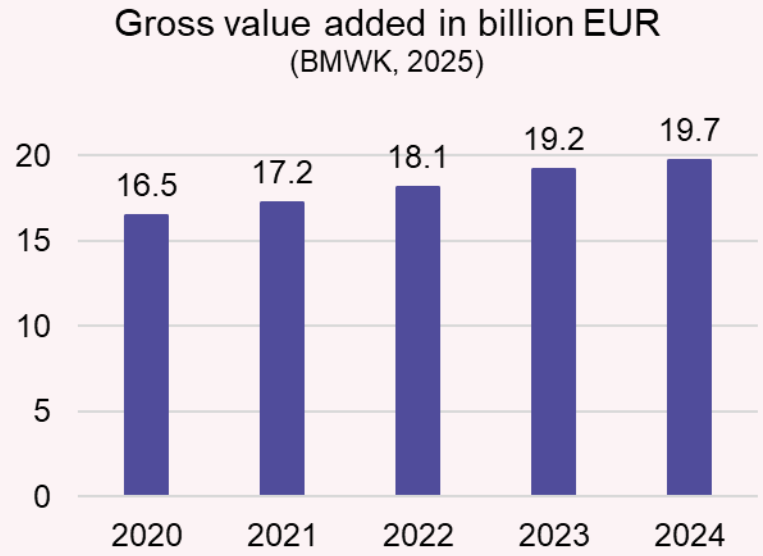
- Important site for MedTech globally



Relevance of German MedTech Industry

- Important site for MedTech globally
- Significant for national economy

212,100 employed people in 2024 (BMWK, 2025)



Relevance of German MedTech Industry

- Important site for MedTech globally
- Significant for national economy
- Industry with GSVCs
- Challenge to implement more sustainable GSVCs
- Numerous research gaps related to sustainability of MedTech supply and value chains

German MedTech industry footprint 2020
(Gerlach et al., 2022)

8.9 Mio t GHGs	62% in GSVCs
2,953 t Fine dust with a particle size of PM2.5	86% in GSVCs
1,782,000 t Waste	82% in GSVCs
61.2 Mio m^3 Water	87% in GSVCs
23,900 Work accidents	63% in GSVCs
3,200 Cases of child labour	100% in GSVCs

Goals of Research Project

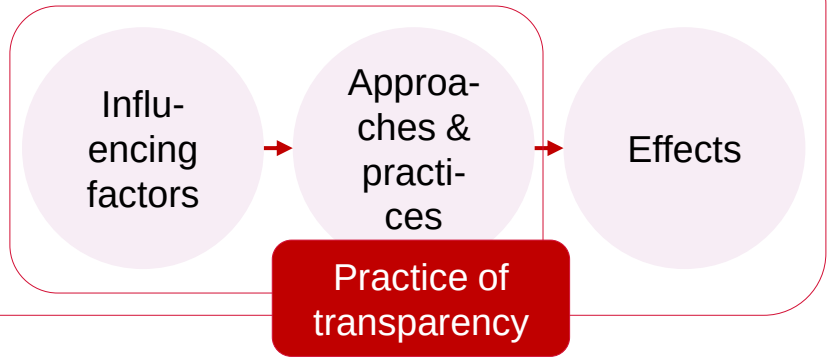
1 Status Quo of Sustainable Supply Chain Management (SSCM)

2 Design/ structure of selected supply chains (SCs)

3 Criteria catalogue for sustainability assessment and management

4 Measures for more sustainable SCs

(1) What strategic approaches and practices are applied to increase the sustainability of medical technology supply chains?
(2) What factors promote or hinder the implementation?
(3) What are the effects of implementation (performance, resilience)?



Research Questions Focused Today

To what extent is transparency applied as a practice of sustainable supply chain management in German MedTech companies?

What influences its implementation?

Understanding of SC transparency (Schäfer, 2023)

"Supply chain transparency can be defined as the visibility and disclosure of sustainable supply chain information to stakeholders within and outside the supply chain."
(Schäfer, 2023, p. 594)

Sustainable supply chain information
E.g.: material information, process information, traceability information

Involved stakeholder
E.g.: focal company, supplier, third party, public, consumer, investor

Perspective
Supply chain visibility as state
Supply chain disclosure as process

Method: Expert interviews

- **Data gathering:** Semi-structured expert interviews
  - **Period:** July – November 2025
  - **Number of interviews:** 12
  - **Number of interviewees:** 15
    - 6 industry experts
    - 9 company representatives
- **Data analysis:** Qualitative content analysis according to Mayring (2019)

Study Findings: Transparency as SSCM practice

- Creating **transparency is not a widespread SSCM practice** (explicitly named only by 3 out of 12 interviews)

→ Rather a **lack of transparency is perceived as a main challenge for SSCM** (9 out of 12 interviews)

- **Barriers for enhancing SC transparency:**
  - Unwillingness of lead firms and suppliers to provide information out of commercial reasons
  - Complexity of data collection (especially for small businesses)
  - Lack of influence and control mechanisms (low ‘market power’)
  - Lack of regulatory obligations for sustainability related SC transparency
  - Lack of interest among businesses (‘what I don't know doesn't bother me’ mentality) → Traditional separation between sustainability and supply chain management, keep business as usual, medical devices less in focus than consumer products, Code of Conducts & desk audits as box-ticking-activities (lack of verification)

Study Findings: Transparency as QM practice

- Creation of SC transparency / traceability in the course of quality management (QM) processes (due to strict regulatory requirements)
  - Close cooperation to ensure engineering quality
  - Data exchange of product and material information required (especially for critical components and products with risk class II and III)
  - Regular audits of the QM system by legal manufacturers and notified bodies (worldwide)

→ Rarely linked to sustainability

“The way of thinking is also different. Suddenly I have to consider, is child labour involved? Or do the people who produce certain raw materials have an 8-hour working day? What is their environment like, where they produce, where they manufacture for me? Do they have access to clean water? It's a completely different way of thinking. It's very different from what is usually done in supply chain management. Supply chain management is just about when I'll get the stuff on time and in a certain quality. That's it. There is no before. It arises, so to speak, de novo. So godlike, so to speak” (Interview 2_BG, Pos. 155).

Study Findings: Ways forward from a SSCM perspective

(1) Linking quality management with sustainability

(2) Strengthening capabilities of supply chain actors to effectively request and exchange information

(3) Collaboration-oriented approaches

(4) Overarching platform for collecting and providing suppliers' sustainability certificates

(5) Introduction of legal obligations for sustainability related SC transparency

(6) Strengthening awareness for relevance of SC sustainability

Discussion & Outlook

- **Limitations:**
  - Limited generalizability of results
    - Number of interviews with company representatives
    - Lack of interviews with representatives from big multinational companies
  - Limited in-depths insights due to wider general study focus on SSCM

- **Next steps:**
  - Quantitative survey
  - Participatory SC mapping workshop with project company partners

References

- BioCon Valley (2025, 19th March). *Branchenkonferenz Gesundheitswirtschaft 2005* - Die Konferenz im Überblick. https://www.konferenz-gesundheitswirtschaft.de/rueckblicke/2005
- BMWK (2025, 19th March). *Gesundheitswirtschaftliche Gesamtrechnung (GGR), 2024*. https://ggrdashboard.bmwk.de/shiny/
- BMWK (2024a, 19th March). *Gesundheitswirtschaft – Daten und Trends zur Gesundheitswirtschaft in Deutschland, 2023. Faktenblatt „Medizinprodukte“.* https://www.bmwk.de/Redaktion/DE/Module/Publikationen/modul-slider-faktenblaetter-gesundheitswirtschaft.html
- BMWK (2024b, 19th March). *Gesundheitswirtschaft – Daten und Trends zur Gesundheitswirtschaft in Deutschland, 2023. Faktenblatt „Medizintechnik“.* https://www.bmwk.de/Redaktion/DE/Module/Publikationen/modul-slider-faktenblaetter-gesundheitswirtschaft.html
- Gerlach, J., Gwinner, P., Dorndorf, T., Scholz, R., & Zimmermann, S. (2022). SEE-Impact-Study der deutschen MedTech-Branche. Erstmalige Indikatoren basierte Quantifizierung der ökonomischen, ökologischen und sozialen Beiträge der deutschen Medizintechnikbranche entlang der globalen Wertschöpfungsketten. WifOR Institut. https://www.bvmed.de/download/wifor-see-impact-study-of-the-german-medtech-industry-2022
- Integrity Next (2025). Studie Zwei Jahre deutsches Lieferkettengesetz. Erkenntnisse, Fazit und Ausblick. https://www.integritynext.com/files/content/Insights/Whitepaper/Downloads/white-paper-lksg-study-2024.pdf
- Mayring, P., & Fenzl, T. (2019). Qualitative Inhaltsanalyse. In N. Baur & J. Blasius (Eds.), Handbuch Methoden der empirischen Sozialforschung (pp. 633–648). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-21308-4_42
- Schäfer, N. (2023). Making transparency transparent: a systematic literature review to define and frame supply chain transparency in the context of sustainability. Management Review Quarterly, 73(2), 579–604. https://doi.org/10.1007/s11301-021-00252-7
- Statista Market Insights (2024). Industries & Markets. Medical Technology: market data & analysis. Market Insights report.
- Pictures from Unsplash

Thank you!

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