

Bridging Strategy and Operations for Circularity: Regional Collaboration in Post-Consumer Used Textile Collection and Sorting

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Abstract

The textile industry in the Nordic region faces significant challenges in achieving circularity, particularly in the collection and sorting of post-consumer textiles. The European Union's 2025 mandate for separate textile collection aims to improve textile circularity; however, gaps remain in municipal readiness, infrastructure, and actor role clarity. Effective management of the reverse supply chain is crucial to enhancing the volume, flow, and quality of textiles for reuse and recycling. Addressing these operational challenges requires a coordinated approach among regional actors. This research explores how regional relationships and resources can be orchestrated to foster collaboration and create collective value in textile collection and manual sorting. Applying orchestration theory (OT), the study examines the capabilities required for effective coordination within the regional circular textile ecosystem. While OT has been widely studied in the private sector, its application in the public sector remains underexplored. A case study was conducted in Linköping municipality, Sweden, involving semi-structured interviews, observations, and document analysis with key stakeholders in the textile reverse value chain. Findings reveal that while municipalities set strategic goals for textile circularity, they often lack the operational resources to function as ecosystem orchestrators. Instead, the waste management company (WMC) emerges as a de facto orchestrator, managing collection points, allocating textiles to non-profit organizations (NPOs), and ensuring alignment between NPO sorting protocols and downstream mechanical sorting facilities. This highlights the need for public-private collaboration and enhanced municipal support for orchestrators within the textile ecosystem. The managerial implications of this research suggest that municipalities and policymakers must recognize and support the role of orchestrators, equipping them with the necessary capabilities and resources to enhance system efficiency. Improved coordination mechanisms, transparent role delineation, and investments in sorting infrastructure are critical for scaling textile circularity. Strengthening partnerships among municipalities, WMCs, and NPOs can facilitate knowledge-sharing and resource optimization, driving progress toward sustainable textile management. From a societal perspective, this research contributes to reducing textile waste, lowering environmental impact, and promoting social and economic benefits through collaborative resource management. By fostering a circular textile economy, regions can mitigate the negative consequences of fast fashion, create local job opportunities, and improve social equity in textile reuse and recycling initiatives. The study provides actionable insights for policymakers, municipal leaders, and industry stakeholders, guiding them in the operationalization of textile circularity strategies and the development of resilient regional ecosystems.

Keywords

Textile, Circular economy, Orchestration, Collection, Sorting

Current status of the research is: Work-in-progress

Potential collaboration with Authors

Any actors and stakeholders with interest in textile circularity. Researchers within the field of circular economy and circular supply chain.