

Circular Economy Implementation in Dutch-German Border Regions: A Comparative Study of Frontrunner Companies

How do medium-sized frontrunner companies implement circular economy principles in the Dutch-German border regions of Twente and Münsterland, and what role do internal capabilities and external factors play in their transformation?

My doctoral research examines how frontrunner companies (50-600 employees) implement circular principles in these border regions. These companies are identified by their explicit circular strategies and implementation of at least two circular principles. Moreover, my cross-border focus enables analysis of sustainability challenges in neighbouring areas with differing institutional arrangements.

The research integrates Dynamic Capabilities and Institutional Theory to examine internal processes (opportunity identification, resource mobilization, innovation) and external factors (policies, networks, business cultures), allowing analysis of how companies develop adaptive capabilities while navigating regional systems.

Research conducted includes comparative case studies of 4-6 companies per region across sectors like textile recycling, sustainable construction, energy systems, and materials processing. Data collection combines interviews, document analysis, and direct observation, providing insights into transformation journeys.

Preliminary findings reveal key insights. First, successful circular transitions involve three elements: early employee engagement, development of sustainable value propositions, and collaborative supply chains. Second, size-related differences emerge: larger companies (250-600 employees) are more financially self-sufficient and offer circular alternatives alongside existing products, while smaller firms (50-250 employees) in supportive ecosystems tend to integrate circular activities into their core business strategy.

It appears that regional approaches differ, with Dutch companies experimenting quickly and seeking early collaboration while German companies invest in thorough planning before implementation. Nevertheless, cross-border knowledge transfers occur through formal projects (e.g. Dutch-German TECH.LAND) and informal networks (e.g. Dutch Circo training programmes being applied in Münsterland).

However, challenges persist across both regions: higher R-ladder principles (modularity, product-as-a-service) prove difficult to implement compared to lower ones (recycling, waste reduction), and consumer price sensitivity and regulations remain key barriers to scaling circular initiatives.

This research aims to offer insights on creating supportive circular economy ecosystems, highlighting how medium-sized firms can serve as catalysts for sustainable regional development.