
Toward a Local Circular Economy: Visualization of Transaction Structures and Business Networks of Resource-Upcycling Companies in Rural Japan

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Abstract

The development of a circular economy (CE) that aims to balance environmental sustainability and economic growth has become an urgent global issue. In Europe, supported by EU policies, CE principles have been institutionally integrated into regional strategies and are being steadily implemented across both urban and rural areas. In Japan, initiatives such as the Ministry of Economy, Trade and Industry's Circular Economy Vision 2020 and the Ministry of the Environment's Regional Circulating and Ecological Sphere have promoted the use of local waste and underutilized resources to advance CE practices. As a result, resource-upcycling companies have garnered increasing attention as key actors in this process.

However, while these companies are expected to enhance resource efficiency and generate business and employment opportunities within local economies, there remains a lack of empirical studies examining the actual structures of resource and economic circulation and their impacts on regional economies (Ghisellini et al., 2016). Furthermore, there is a shortage of data and analytical methods necessary for quantitatively assessing micro-level economic circulation within regions (Fujimoto & Ikejima, 2022; Ikejima, 2022). To fully understand the potential of CE, it is essential not only to evaluate the economic efficiency of resource-upcycling companies but also to visualize how their activities are embedded in local economic structures—such as the formation of supply chains and networks—and what kinds of economic effects they generate.

This paper focuses on resource-upcycling companies in rural areas of Japan that are engaged in the reuse and upcycling of food waste and unused agricultural products. It aims to analyze the structures of both resource and economic circulation within these regions. Specifically, the research clarifies the business models of the target companies, identifies their transactional structures with Tier 1 and Tier 2 partners, examines the geographical distribution of these relationships, and visualizes money flow within transaction networks.

Keywords: Circular Economy, Environmental sustainability and economic growth, Transaction structures, local economies

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