Abstract

[Project Information]

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[Abstract]

The concept of a Circular Economy (CE), which aims to circulate resources at high value rather than following the traditional linear economy, is gaining significant attention both domestically and internationally. Although it aligns in principle with the “Sound Material-cycle Society” that our country has been promoting since around the year 2000, which aims at improving resource efficiency, CE is characterized by its focus on transforming socioeconomic systems and building new business models for a sustainable society. On the other hand, various businesses that contribute to CE by appropriately combining products and services, such as car sharing and clothing rental, have been emerging. This study refers to businesses that provide the functionality of products as a service, rather than selling products outright, as "Service-Oriented Circular Economy (SoCE) Businesses."

The distinctive feature of SoCE Businesses lies in their appropriate combination of products and services, which is expected to reduce the amount of resources used compared to traditional product-selling businesses, while meeting consumer acceptance and needs. This study aims to propose a method for evaluating the environmental potential of SoCE businesses to realize them in a way that reduces environmental impact while considering consumer acceptance. The proposed method is characterized by its ability to quantitatively evaluate potential SoCE businesses by describing them as narrative scenarios and linking them with consumer behavior and environmental impact assessment models. This study validated the effectiveness of the proposed method using three case studies: bike sharing, clothing rental, and home appliance subscription services. Note that the proposed method is not limited to these examples and is applicable to a wide range of cases.

By using the proposed method, iterative cycles of creating, quantitatively evaluating, revising, and re-evaluating SoCE business scenarios can be efficiently executed. As a result, practitioners such as SoCE business operators and policymakers can derive the conditions and measures for SoCE businesses that contribute to reducing environmental impact while considering consumer acceptance.

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