Endogenous Drivers of Cascading Rebound: Mapping Feedback Loops in Digitally-enabled Sharing Platforms

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Abstract

Digitally-enabled sharing platforms (DSPs) are widely promoted as circular-economy solutions capable of reducing resource consumption by increasing the utilization of underused assets and shifting consumption from ownership to access. Yet growing evidence suggests that such platforms can generate rebound effects that offset, diminish, or even reverse their intended sustainability benefits. Existing research has identified numerous rebound mechanisms, but these mechanisms are typically examined as isolated causal pathways, providing limited insight into how rebound emerges from the broader system structures in which sharing platforms operate. This study adopts a systems perspective to examine how the system structure of DSPs generates rebound mechanisms. Drawing on a systematic literature review, we employ a Gioia-inspired coding approach to identify and synthesize the causal mechanisms associated with rebound in DSPs. The resulting data structure serves as the basis for the development of causal loop diagrams (CLDs), enabling the analysis of feedback structures and dynamic interactions among mechanisms.

The findings reveal that rebound mechanisms do not operate independently. Instead, they are embedded in interconnected feedback structures that interact, reinforce one another, and cascade across micro-, meso-, and macro-levels of analysis. Three interrelated subsystems are identified: interacting consumption dynamics, ownership reconfiguration dynamics, and socially mediated rebound dynamics. Together, these subsystems demonstrate how platform-driven efficiency gains, organizational scaling, and institutional embedding can trigger self-reinforcing processes that amplify consumption, reshape ownership and innovation trajectories, and normalize platform-based consumption practices.

This study advances the understanding of rebound effects as emerging results from interconnected and cascading feedback structures, showing how the configuration of DSPs shape behavior and sustainability outcomes over time. Rebound mechanisms form an

interconnected system of reinforcing feedback loops that cascade across different levels of analysis, transforming local sustainability efforts into broader system-wide rebound effects.