

Assessing Circular Economy Policy Coherence and Environmental Performance through Systems Thinking

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Abstract:

Circular economy transition has increasingly been embedded in national policy agendas, yet its translation into measurable environmental outcomes remains uneven. This study develops a systems thinking approach to assess the alignment between circular economy policy configuration and environmental performance, using Malaysia as an empirical case. The proposed STACE framework integrates BERTopic-based thematic analysis, the Driving Forces–Pressures–State–Impact–Response framework, and Environmental Performance Index benchmarking to connect policy content, structural configuration, and observed outcomes. The findings show that Malaysia's circular economy policy architecture remains largely embedded within a growth-oriented development agenda, with circular economy themes occupying a relatively limited and downstream position. The systems mapping further indicates that policy responses are directed mainly toward managing environmental pressures rather than addressing upstream drivers such as industrial activity, urbanisation, energy demand, and resource-intensive economic growth. Environmental performance benchmarking also suggests uneven alignment between policy emphasis and observed outcomes, particularly in greenhouse gas mitigation. The study contributes a replicable framework for identifying structural gaps in policy systems and supporting more coherent, outcome-oriented circular economy strategies.