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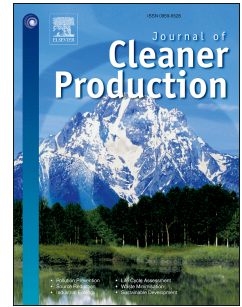
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Governance Mechanisms of Dual-channel Reverse Supply Chains with Informal Collection Channel

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Abstract:

The existence of informal collection channel has been a serious problem for reverse supply chain management in China. Informal collectors interrupt the normal order of end-of-life product collection. To assess this problem, this article explores governance mechanisms of the current recycling system in practical operations from the perspectives of both governments and enterprises. Based on the respective characteristics of two collection channels (i.e., formal and informal), we establish a Stackelberg game model to describe and analyze the dual-channel collection supply chain in which consumer preference to collection channels is considered. Based on the benchmark model, three governance mechanisms set by both governments and formal collectors are introduced and analyzed when deriving optimal decisions and certain parameter properties. This study demonstrates that both governments and collectors can implement appropriate governance mechanisms to control or utilize the informal collection channel under different circumstances on one hand. On the other hand, governance mechanisms set by the government are unenforceable to control informal collection under certain situations. Effective governance mechanisms should be determined based on different channel preferences of consumers and the economic value of the waste electrical and electronic equipment (WEEE).

Keywords: Informal collection, Channel management, Stackelberg game, Supply chain coordination, Governance mechanism

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