

# **A Conceptual Framework for Challenges of Adopting Circular Agri-Food Supply Chains In Sri Lanka**

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This study aims at developing a conceptual framework to identify the challenges of adopting circular supply chains in the Agri-Food supply chain of Sri Lanka through conducting a systematic literature review. Circular supply chains facilitate the circular flow of materials throughout the supply chain through strategies such as recycling, reusing, reducing, and remanufacturing, unlike the traditional linear, take-make-dispose approach. Therefore, circular supply chains can be seen as the solution for the huge food waste accumulation worldwide, and even within Sri Lanka. Furthermore, the literature reveals that Sri Lanka's municipal solid waste totals 7,000 tons per day. Past studies highlight that, many developing nations demonstrate limited practical implementations of circular supply chains. Among the few studies done in Sri Lanka relevant to the circular economy, this is the first study conducted viewing circular economy from the supply chain perspective. As the research outcome, a conceptual framework is developed based on multiple organizational theories. For the development of the conceptual framework, this study analyzes the barriers validated by the past literature and identifies main challenges based on four theoretical lenses: the Resource dependence theory, Contingency theory, Institutional theory, and Stakeholder theory. This study identifies four main challenges as independent variables. Based on Institutional theory and Stakeholder theory, the first two challenges, the Weak environmental laws and policies and the Lack of market acceptance, are identified. This is followed by the "Lack of coordination among supply chain actors are derived from the Resource dependence theory. Finally, based on the Contingency theory, Lack of short-term economic benefits and economies of scale is recognized. The Weak environmental laws and policies is concerned with the impact of, Lack of environmental laws and regulations, Lack of subsidies, and Lack of industry incentives to support circular economy activities. The Lack of market acceptance is concerned with the impact of, Lack of demand for circular (reused, recycled) products, Lack of market pressure from customers, and Lack of customer awareness of circular economy. The Lack of coordination among supply chain actors is concerned with the impact of, Lack of support for circular economy initiatives, Lack of collaboration among supply chain members, and Lack of shared vision. The Lack of short-term economic benefits and economies of scale is concerned with the impact of, Failure to accommodate large-scale production as the demand for circular products is low, Uncertainty in the profitability of circular economy activities, and Lack of short-term economic benefits. Furthermore, the Lifestyle which focuses on the impact of the unsustainable lifestyle of the public, and "Environmental conditions which focuses on the impact of adverse weather conditions, are identified as the moderating variables. The Successful adoption of circular economy is recognized as the

dependent variable. This research enables members of the Agri-Food supply chain to identify and hence address these significant challenges relevant to the Sri Lankan context. Moreover, this study makes theoretical contributions by adding to the limited literature of barrier studies conducted on circular economy from the supply chain perspective, and by incorporating four theoretical lenses.

**Keywords:** *Agri-Food Supply Chain, Circular Economy, Circular Supply Chain*