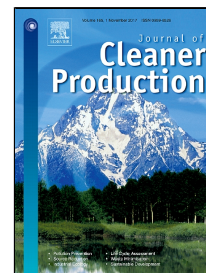


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Analysis of Challenges Inhibiting the Reduction of Waste in Food Supply Chain

Samir Gokarn, Thyagaraj S. Kuthambalayan



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Abstract

The main objective of this paper is to identify and analyse the effectiveness of challenges inhibiting the reduction of waste in Indian agri-food supply chain (AFSC). The reduction of food waste impacts positively all three dimensions of sustainability (economic, social, and environmental). Thirty-three challenges inhibiting reduction of waste in AFSC are identified by a review of the literature and a consultation with experts in the Indian food industry and academia. These challenges are grouped using Exploratory Factor Analysis into a super-set of nine challenges. The inter-relationship and respective dominance among these nine challenges is then determined using Interpretive Structural Modelling and MICMAC analysis. **The group of independent challenges (food characteristics, supply chain uncertainty, market infrastructure, and food policy and regulation) have higher driving power and low dependency, and require maximum attention.** These four challenges constrain decisions at the three-decision-making echelon (strategic, tactical, and operational) and each of the supply-chain echelons. **The group of dependent challenges (supply chain partnerships, operational capability, and supply chain networks) have high dependence and low driving power and are resultant effects.** **The challenge, information technology, with high driving and dependence power, is a linkage variable.** It acts as an enabler of dependent variables, and it mitigates the complexities due to food characteristics and uncertainty. **The challenge, consumer behaviour, with low driving and dependence power, is an autonomous variable.** It has little influence on waste reduction in Indian AFSC. This study highlights the importance of conducting region-specific study of supply chains and promotes sustainable practice.

Keywords: Food waste; Agri-food supply chain; Interpretive Structural Modelling; Exploratory Factor Analysis

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