



Reduction Strategies for Food Loss and Waste in South African Supply Chains: A Replication Study

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Abstract

Inadequate strategies to reduce food loss and waste in South African supply chains pose significant challenges for sustainable agriculture. A comprehensive literature review was conducted to identify and replicate successful food loss reduction techniques from previous studies. The methodology involved analysing case studies from South African supply chains, with a particular emphasis on secondary data analysis. The replication study identified that implementing targeted interventions in the primary production phase could reduce food waste by up to 20%, based on preliminary findings from three major agricultural regions. This replication confirms the effectiveness of previously proposed strategies and highlights their potential for broader implementation across South African supply chains, particularly in reducing post-harvest losses. Recommendations include integrating waste reduction programmes into existing sustainability initiatives and fostering collaboration between stakeholders to ensure effective execution. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African, Geographic, Supply, Chains, Reduction, Strategies, Waste*

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