



Reduction Strategies for Food Loss and Waste in South African Supply Chains

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Abstract

Food loss and waste are significant issues in South African supply chains, contributing to environmental degradation and economic inefficiencies. A mixed-methods approach was employed, combining quantitative surveys with qualitative interviews to gather data from key stakeholders in different sectors. Statistical analysis used regression models to predict the impact of reduction strategies on waste levels. Analysis revealed a 20% reduction potential in waste across supply chains when implementing comprehensive training programmes for farmers and retailers, particularly in reducing post-harvest losses. The findings suggest that targeted interventions such as capacity-building initiatives can significantly mitigate food loss and waste without substantial financial investment. Recommendation is to prioritise the implementation of evidence-based strategies, including education and training programmes, for immediate impact. The empirical specification follows $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *South Africa, Geographic Food Loss, Supply Chain Management, Waste Reduction Strategies, Environmental Sustainability, Quantitative Methods, Qualitative Research*

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