



Assessing the Viability of a Vendor-Driven Framework for Food Waste Management in Sri Lanka

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I certify that I have read this thesis and that, in my opinion, it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Science.

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DECLARATION

This is to certify that the work is entirely my own and not of any other person, unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Sri Lanka Institute of Information Technology or to any other institution for assessment for any other purpose.

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ABSTRACT

Food waste is a pressing global and local issue, with substantial economic, environmental, and social costs. In Sri Lanka, more than 42% of food waste in urban areas originates from restaurants, markets, and slaughterhouses, while expired supermarket products contribute further to the problem. These losses translate not only into financial burdens but also reputational risks for businesses. Globally, the cost of food waste is estimated at USD 1 trillion annually; a reduction of even 25% could feed 870 million people. Against this backdrop, innovative solutions such as digital platforms have gained prominence. Inspired by the internationally successful "Too Good To Go" app, this study explores the feasibility of introducing a vendor-focused digital solution for food waste reduction in Sri Lanka.

Using a sample of 220 food vendors (restaurants, hotels, bakeries, supermarkets, and grocery shops), the study investigates vendor perspectives across critical independent variables: economic incentives, technological accessibility, trust and food safety, public image, government support, customer demand, logistics, religious and dietary preferences, and transaction methods. A conceptual framework with six dependent dimensions—Vendor Adoption, Quick Match, Vendor Profitability, Waste Saved, Fair Access, and Stay Strong, was developed.

Findings reveal strong vendor interest, with economic incentives, public image, logistics, and government support emerging as dominant drivers of adoption. Context-specific factors such as tri-lingual support, religious labeling, and COD payment options were identified as essential for inclusivity. The study proposes a vendor-driven framework tailored to Sri Lanka, aligning with national waste policies and the Clean Sri Lanka Initiative. This thesis contributes to both theory and practice by providing a structured, evidence-based model for digital food waste management in developing contexts.

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