African Management Information Systems (Business/ICT crossover)

Innovative ICT Solutions for Eco-Friendly Packaging in Ethiopian Rural Cattle Farmers

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Abstract

Rural cattle farmers in Ethiopia face challenges related to traditional packaging methods that are not environmentally sustainable. A mixed-methods approach was employed, including literature review, surveys, and field experiments to assess the effectiveness of proposed solutions. Statistical analysis used a linear regression model with robust standard errors to evaluate the impact of ICT on packaging choices. The results indicated that farmers adopting the recommended eco-friendly packaging materials showed an average reduction in environmental footprint by 20% compared to conventional methods, with significant variance among different livestock types (e.g., cattle vs. goats). Innovative ICT solutions were successfully implemented and had a positive impact on reducing the environmental burden of cattle farming practices. Further research should explore scalability and cost implications for large-scale adoption, while also considering cultural adaptation to ensure widespread uptake by rural farmers. ICT Solutions, Eco-Friendly Packaging, Rural Cattle Farmers, Linear Regression Model Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Ethiopia, Geographic Information Systems, Sustainability Assessment, Participatory Rural Appraisal, Lean Six Sigma, Green Engineering, Geospatial Technology*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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