

Socio-Economic-Factors Affecting Fresh Tomato Marketing in Kitgum Main Market, Uganda.

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Abstract - The continuous rise of urbanization has led to an overwhelming increase in waste generation with serious consequences for the environment and humans. Most waste disposal methods are inefficient, with little accountability or participation from the community, hence we propose a Smart Waste Management System (SWMS) built on AI technologies that employs computer vision and cloud computing to track on a real-time basis, facilitating improved waste sorting and the complaint making towards upcycling. The system allows the community to upload pictures of items to be reused and are identified as categories using an artificial intelligence model through which there is a triggering of the item for appropriate action. The platform also enables conversations on tracking complaints and donations of reusable items, thereby enabling data emergence for urban waste management authorities in making decisions. This paper explains the system design and implementation and is sustainability implications.

Keywords - Tomato, Marketing, Vendors, Kitgum, Uganda

INTRODUCTION

Tomato (*Lycopersicon esculentum* Mill.) is among the most widely grown vegetables in Uganda, valued both as a food crop and a source of household income [2,5] [2]. Despite its importance, marketing challenges such as poor infrastructure [3,7] [3], perishability, and low bargaining power hinder its potential.

This paper examines factors affecting fresh tomato marketing in Kitgum Main Market.

Problem Statement

Tomato farmers and vendors in Uganda, particularly in Kitgum Main Market, face persistent challenges including inadequate storage, high postharvest losses, unreliable transportation, and limited access to credit.

These challenges reduce profitability and sustainability, yet little empirical research has been conducted to quantify the key factors influencing fresh tomato marketing [1,6] in this context.

Objectives

The overall objective of the study was to analyze the factors affecting fresh tomato marketing in Kitgum Main Market. Specifically, the study sought to:

- Characterize fresh tomato vendors in Kitgum Main Market.
- Assess the socio-economic and business environment factors influencing fresh tomato sales.
- Identify key challenges affecting fresh tomato marketing.

II. METHODOLOGY

A cross-sectional survey design was applied, integrating both qualitative and quantitative methods. The study sample consisted of 40 fresh tomato vendors (5 wholesalers and 35 retailers) selected through simple random sampling.

Primary data were gathered using semi-structured questionnaires and focus group discussions. Quantitative data were analyzed using SPSS (version 16.0) for descriptive statistics, Chi-square tests, and cross-tabulations, while qualitative data were thematically analyzed.

Results

Table 1: Socio-demographic characteristics of fresh tomato vendors

Variable	Category	Frequency	Percent	Total
Gender	Female	40	100%	40
Marital Status	Married	23	57.5%	40
Marital Status	Single/Other	17	42.5%	40
Education	Primary	20	50%	40
Education	Other	20	50%	40
Age range	31–52 years	28	70%	40
Household size	5–10 members	30	75%	40

Findings showed all fresh tomato vendors were female, mostly married, with primary-level education. The majority

were middle-aged (31–52 years) and managed large households [8].

Table 2: Key factors influencing fresh tomato sales

Factor	Statistical significance	Effect on sales
Age	Significant ($p<0.05$)	Older vendors recorded lower sales
Education level	Significant ($p<0.05$)	Higher education increased sales
Marital status	Significant ($p<0.05$)	Married vendors recorded higher sales
Household size	Significant ($p<0.05$)	Larger households correlated with higher sales
Credit access	Significant ($p<0.05$)	Vendors with credit access had more stock and higher sales
Business services	Significant ($p<0.05$)	Access to training increased efficiency
Vendor association membership	Not significant	No statistical influence on sales

Socio-economic and business environment factors strongly influenced sales, especially education and credit access, while vendor association membership showed no significant effect.

Table 3: Major challenges in fresh tomato marketing

Challenge	Frequency (%)	Impact
Substandard market stalls	30.5%	Inadequate shelter and sanitation
Lack of cold storage facilities	27.4%	High postharvest losses
Poor/unreliable transportation	11.6%	Delays and reduced quality
Theft of produce	14.7%	Loss of income

Discussion

The study demonstrates that fresh tomato marketing in Kitgum Main Market is heavily influenced by vendors' socio-economic characteristics and the prevailing business environment. Consistent with earlier studies [4], education and access to credit were critical for improving business performance [4,9]. The challenges identified—particularly inadequate storage and infrastructure—mirror those faced by vegetable markets in other developing countries [1,7,10] [1].

III. CONCLUSION AND RECOMMENDATIONS

Fresh tomato marketing in Kitgum is hindered by socio-economic constraints and inadequate infrastructure. Addressing these issues could improve vendor livelihoods and reduce postharvest losses.

Recommendations:

- Strengthen vendor access to affordable credit facilities.
- Provide regular training and business development services.
- Improve market infrastructure, especially cold storage facilities.
- Enhance security and stall quality in the market.

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