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IoT Sensors in Kenyan Villages: A Study on Community Food Security Initiatives and Crop Yield Variability Mitigation

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Abstract

The prevalence of food insecurity in Kenyan villages necessitates innovative solutions to enhance community food security. IoT sensors were deployed across five villages, collecting data on soil moisture and temperature. Data analysis utilised linear regression models to predict yield outcomes. Data indicated a $R^2 = 0.75$ in the prediction model, suggesting IoT sensors significantly correlate with improved crop yields ($p < 0.01$). The study demonstrates that IoT technology can be effectively employed to enhance food security initiatives in Kenyan villages. Further research should focus on scaling up interventions and exploring the economic impact of IoT sensor-based practices.

Keywords: *African Geographic Data Collection, IoT Sensors, Precision Agriculture, Crop Yield Modelling, Geospatial Analysis, Community-Based Monitoring, Food Security Models*

ABSTRACT-ONLY PUBLICATION

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