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Internet of Things Technologies in Monitoring Livestock Health within Rural Kenya: A Scoping Review

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Abstract

The Internet of Things (IoT) has been increasingly adopted in various sectors to enhance efficiency and monitoring capabilities. In rural Kenya, livestock health monitoring presents opportunities for improved productivity and welfare through IoT technologies. The review will encompass a comprehensive search of peer-reviewed journals, conference proceedings, grey literature, and relevant websites using keywords related to IoT, livestock health monitoring, and rural Kenya. Studies published between January and December will be included. A total of 12 studies were identified, with a notable theme being the integration of temperature sensors for early detection of heat stress in cattle, achieving a detection accuracy rate of over 90%. Current IoT technologies are effective tools for monitoring livestock health in rural Kenya. However, significant challenges related to infrastructure and data security persist. Investment is needed in improving local internet connectivity and enhancing data privacy regulations to fully realise the benefits of IoT in this context. The empirical specification follows $Y = \vec{\beta}_{0+\beta} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African geography, IoT, sensor networks, livestock management, rural development, data analysis, precision farming*

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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