



Methodological Evaluation of Regional Monitoring Networks in Kenya: Quasi-Experimental Design for Cost-Effectiveness Assessment

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Abstract

Monitoring networks in Kenya's agricultural sector aim to improve livestock productivity through regular data collection and analysis. A mixed-methods approach combining quantitative survey data and qualitative interviews was employed to assess the impact of different monitoring strategies on agricultural productivity and resource utilization. The analysis revealed that a balanced network configuration involving 10% more livestock herders with enhanced coverage led to an average 5.2% increase in milk yield per hectare, while maintaining costs within a 3% margin. This study provides evidence for the most cost-effective regional monitoring layout by optimising data collection points and resource deployment. Based on findings, it is recommended to expand network coverage proportionally to enhance productivity without significantly increasing operational expenses. The empirical specification follows $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: African, Quasi-experimental, Monitoring, Network, Evaluation, Methodology, Econometrics

ABSTRACT-ONLY PUBLICATION

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