



# Methodological Evaluation of Regional Monitoring Networks in Ethiopia Using Difference-in-Differences Models for Clinical Outcomes Assessment

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## Abstract

Ethiopia has implemented regional monitoring networks to improve veterinary services in agriculture. A systematic review using difference-in-differences models for data analysis. Regional differences showed a significant improvement in animal health metrics ( $p < 0.05$ , CI: [12%, 34%]). The use of difference-in-differences models effectively measured the impact of monitoring networks on clinical outcomes. Further studies should validate these findings and explore network scalability in other regions. The empirical specification follows  $Y = \beta_{0+\beta} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** African agriculture, monitoring networks, difference-in-differences, econometrics, randomized controlled trials, geographical information systems, spatial analysis

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