Regional Monitoring Networks in South Africa: A Multilevel Regression Analysis of Clinical Outcomes

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Abstract

Regional Monitoring Networks (RMN) in South Africa have been established to improve clinical outcomes for small animals. A multilevel regression model was employed to analyse data from various clinics within the RMN system in South Africa. The model accounts for both individual clinic-level variables (e.g., number of veterinarians) and regional factors affecting animal health. The analysis revealed a significant positive correlation between higher numbers of veterinary personnel and improved clinical outcomes, with an estimated effect size of 0.85 on the outcome scale. This study provides evidence that RMNs can effectively enhance clinical performance in small animal veterinary practices. Further research should explore scalability of this model across different regions and additional interventions to further improve outcomes. The empirical specification follows $Y = \vec{\beta}_{0+\beta} \, p \, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

ABSTRACT-ONLY PUBLICATION

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