African Veterinary Imaging

Bayesian Hierarchical Model Adoption Rates in Ghanaian Regional Monitoring Networks: A Comparative Study

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Abstract

The adoption of Bayesian hierarchical models in monitoring agricultural practices across Ghanaian regional networks is a topic requiring methodological scrutiny. A comparative study design was employed to assess Bayesian hierarchical model adoption in three key agricultural regions. Data collection involved surveys and secondary sources. In Region One, 72% of the surveyed networks used Bayesian models compared to 60% in Region Two and 58% in Region Three. The analysis reveals significant variations in model application across different regions, necessitating tailored strategies for regional network development. Regional authorities should prioritise investment in training programmes aimed at increasing the use of Bayesian hierarchical models to enhance monitoring accuracy. Bayesian Hierarchical Models, Adoption Rates, Agricultural Monitoring, Ghanaian Regions The empirical specification follows $Y = \vec{\beta_{0+\beta}} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, Bayesian, Hierarchical, Adoption, Modelling, Spatial, Evaluation*

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