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Regional Monitoring Networks in Senegal: A Field Trial for Risk Reduction Methodological Evaluation

Mamadou Ndiaye[1]

[1] Department of Advanced Studies, Cheikh Anta Diop University (UCAD), Dakar

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Correspondence: mndiaye@aol.com

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Author notes

Mamadou Ndiaye is affiliated with Department of Advanced Studies, Cheikh Anta Diop University (UCAD), Dakar and focuses on Physics research in Africa.

Abstract

This study addresses a current research gap in Physics concerning Methodological evaluation of regional monitoring networks systems in Senegal: randomized field trial for measuring risk reduction in Senegal. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A mixed-methods design was used, combining survey and interview data collected over the study period. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Methodological evaluation of regional monitoring networks systems in Senegal: randomized field trial for measuring risk reduction, Senegal, Africa, Physics, original research This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, Geographic Information Systems, Spatial Analysis, Sampling Theory, Randomization, Precision Engineering, Risk Assessment*