Methodological Assessment of Regional Monitoring Networks in Senegal Using Quasi-Experimental Design for Risk Reduction Measurement

Mama Diop[1,2]**, Touba Sallé**[3]**, Séni Ndiaye**[4]**, Cheikh Sylla**[2,5]

[1] Department of Artificial Intelligence, Institut Sénégalais de Recherches Agricoles (ISRA)

[2] Department of Software Engineering, Université Gaston Berger (UGB), Saint-Louis

[3] African Institute for Mathematical Sciences (AIMS) Senegal

[4] Institut Sénégalais de Recherches Agricoles (ISRA)

[5] Department of Data Science, Council for the Development of Social Science Research in Africa (CODESRIA), Dakar

Author notes

Mama Diop is affiliated with Department of Artificial Intelligence, Institut Sénégalais de Recherches Agricoles (ISRA) and focuses on Computer Science research in Africa.

Touba Sallé is affiliated with African Institute for Mathematical Sciences (AIMS) Senegal and focuses on Computer Science research in Africa.

Séni Ndiaye is affiliated with Institut Sénégalais de Recherches Agricoles (ISRA) and focuses on Computer Science research in Africa.

Cheikh Sylla is affiliated with Department of Data Science, Council for the Development of Social Science Research in Africa (CODESRIA), Dakar and focuses on Computer Science research in Africa.

Abstract

This study addresses a current research gap in Computer Science concerning Methodological evaluation of regional monitoring networks systems in Senegal: quasi-experimental design 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 structured analytical approach was used, integrating formal modelling with domain evidence. 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: quasi-experimental design for measuring risk reduction, Senegal, Africa, Computer Science, working paper This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Model estimation used $\hat{\theta} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

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This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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