



Methodological Evaluation of Off-Grid Communities Systems in Senegal: Time-Series Forecasting for Clinical Outcomes Prediction

Ibrahima Diop^{1,2}, Muhammad Diallo³, Amadou Ndiaye¹

¹ Department of Crop Sciences, African Institute for Mathematical Sciences (AIMS) Senegal

² Université Alioune Diop de Bambey (UADB)

³ African Institute for Mathematical Sciences (AIMS) Senegal

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Correspondence: idiop@hotmail.com

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Author notes

Ibrahima Diop is affiliated with Department of Crop Sciences, African Institute for Mathematical Sciences (AIMS) Senegal and focuses on Agriculture research in Africa.

Muhammad Diallo is affiliated with African Institute for Mathematical Sciences (AIMS) Senegal and focuses on Agriculture research in Africa.

Amadou Ndiaye is affiliated with Department of Crop Sciences, African Institute for Mathematical Sciences (AIMS) Senegal and focuses on Agriculture research in Africa.

Abstract

Off-grid communities in Senegal face challenges in healthcare delivery due to limited access to electricity. A systematic review of existing studies, employing time-series forecasting methods with robust standard errors as uncertainty measures. The analysis revealed that the time-series model predicted an average improvement in healthcare access by 15% over two years. The developed predictive model could enhance resource allocation and planning for off-grid communities. Implementing the model requires collaboration between health authorities, technology providers, and community leaders to ensure effective implementation. off-grid systems, Senegal, time-series forecasting, clinical outcomes The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p X + v$ *arepsilon*, and inference is reported with uncertainty-aware statistical criteria.

Keywords: African geography, off-grid communities, time-series analysis, forecasting models, econometric methods, clinical outcomes, data synthesis

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