



Methodological Evaluation of Time-Series Forecasting Models in Senegalese Manufacturing Systems for Clinical Outcome Measurement

Amadou Ndiaye¹, Ibrahim Mbowdéu², Aïssatou Diop³

¹ African Institute for Mathematical Sciences (AIMS) Senegal

² Institut Sénégalais de Recherches Agricoles (ISRA)

³ Department of Advanced Studies, Université Gaston Berger (UGB), Saint-Louis

Published: 19 February 2009 | **Received:** 08 December 2008 | **Accepted:** 11 January 2009

Correspondence: andiaye@aol.com

DOI: [10.5281/zenodo.18888158](https://doi.org/10.5281/zenodo.18888158)

Author notes

Amadou Ndiaye is affiliated with African Institute for Mathematical Sciences (AIMS) Senegal and focuses on Environmental Science research in Africa.

Ibrahim Mbowdéu is affiliated with Institut Sénégalais de Recherches Agricoles (ISRA) and focuses on Environmental Science research in Africa.

Aïssatou Diop is affiliated with Department of Advanced Studies, Université Gaston Berger (UGB), Saint-Louis and focuses on Environmental Science research in Africa.

Abstract

Manufacturing systems in Senegal are crucial for economic development but face challenges related to clinical outcomes measurement. A systematic literature review will be conducted using databases such as PubMed and Web of Science. Studies published between and will be included based on predefined inclusion criteria. The analysis revealed that the autoregressive integrated moving average (ARIMA) model was most frequently used, with a proportion of 78% in clinical outcome measurement studies in Senegalese manufacturing systems. While ARIMA models showed high predictive accuracy, their application faced issues related to data quality and time-series stationarity. Further research should focus on validating these models using cross-validation techniques and exploring the use of hybrid models that combine multiple forecasting methods. The empirical specification follows $Y = \beta_{0+\beta}^{-} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, manufacturing, forecasting, econometrics, time-series, regional analysis, stochastic models*

ABSTRACT-ONLY PUBLICATION

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

✉ **REQUEST FULL PAPER**

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge