

Big-Data Machine Learning for Inflation Forecasting — the South African Reserve Bank's Rigorous, Mixed-Results Evaluation

AI in the Public Sector · Good practice · South Africa

Quality score: 60/100

Evidence strength: Observational / pre–post

Summary

SARB researchers rigorously tested machine-learning models (LASSO, XGBoost, neural networks) against the bank's own published inflation forecasts: ML modestly beat SARB's forecast at 12–24 month horizons (core inflation RMSE 0.71–1.09 vs 1.19–1.32) but lost badly at short horizon

Key dimensions

Dimension	Score
Evidence of impact / measured public value	2/3
Transparency, fairness & accountability	3/3
Transferability / demonstrated replication	2/3
Scalability beyond pilot	1/3
Governance, capability & sustainability	1/3

Evaluated by C-NAPSE

Data sources

[C-NAPSE web research](#) — accessed 2026-07-19

[South African Reserve Bank \(SARB\)](#) — accessed 2026-07-19

[SARB Working Paper WP/22/01: Big data forecasting of South African inflation](#) — accessed 2026-07-19

[Empirical Economics \(Springer\): peer-reviewed publication](#) — accessed 2026-07-19

[PubMed Central: open-access copy of the peer-reviewed article](#) — accessed 2026-07-19

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