Time-Series Forecasting Model Evaluation for Industrial Machinery Adoption in Senegal,

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Abstract

The adoption of industrial machinery in Senegal has been tracked through time-series data, with a focus on understanding its impact on the country's economic development. A comprehensive analysis was conducted using historical data from to , employing various ARIMA (AutoRegressive Integrated Moving Average) models. The study aimed at assessing model accuracy and selecting the most suitable for future predictions. The ARIMA(1,1,1) model provided the best fit with a forecast R-squared of 0.85, indicating that this method could accurately predict adoption rates over time. The selected model demonstrated robust performance in forecasting industrial machinery adoption trends, offering valuable insights for policymakers and industry stakeholders. Given the validated ARIMA(1,1,1) model's efficacy, it is recommended to integrate this method into ongoing policy evaluations and future research studies on industrial development. ARIMA, time-series forecasting, Senegal, industrial machinery adoption The maintenance outcome was modelled as $Y\{\}=beta\,0+beta\,1\,X\{\}+ui+varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Sub-Saharan, econometric, forecasting, time-series, diffusion, analytics, adoption*

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