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Performance of Auto-regressive Integrated Moving Average Model (ARIMA) for Forecasting Daily Demand and Supply: A Case of Small & Medium Enterprises in Kenya

Demand and supply forecasting for small and medium enterprises (SMEs) in Kenya is crucial in ensuring that the SMEs stock the right quantities of products at the right time to increase sales and minimize losses through dead or slow-moving stock. This study modeled a forecasting model based on an auto-regressive integrated moving average (ARIMA) to forecast the daily demand and supply quantities for SMEs in Kenya. The ARIMA model was implemented in R as the main analytical tool and R-shiny as a presentation layer that allows SME owners and managers to interact with the model by uploading their sales and purchase data in a predefined comma-separated values file (CSV). The performance of the model was compared with that of the naïve model, seasonal naïve model, and the simple exponential smoothing model.

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