

Abstract

This study addresses the operational challenges faced by Salezone, a multi-brand fashion retail brand under PT Mega Perintis, specifically regarding declining sales trends and inefficient inventory management. The primary objective is to evaluate and compare the accuracy of two statistical forecasting models, Seasonal Autoregressive Integrated Moving Average (SARIMA) and Holt–Winters Exponential Smoothing to provide a more reliable basis for merchandising and inventory allocation decisions.

The research utilized a quantitative design, analyzing biweekly sales data from January 2024 to March 2026 across 14 mature outlets, ten of which are located in toll road rest areas. The performance of the models was evaluated using MAE, RMSE, and MAPE metrics. Findings reveal that the Holt–Winters model (MAPE: 20.77%) marginally outperformed the SARIMA model (MAPE: 21.15%). The SARIMA model selection resulted in a near-seasonal naive specification $SARIMA(0,0,0)(0,1,0)$, while the Holt–Winters parameters (alpha, beta, and gamma near zero) suggested a strong reliance on stable historical patterns rather than short-term fluctuations. Both models highlighted that Salezone's sales are heavily driven by predictable seasonal surges tied to Indonesian festive periods, such as Ramadan and Christmas, which trigger significant travel-related demand at rest-area locations.

The study concludes that Salezone's current reliance on short-term two-month moving average forecasts contributes to the bullwhip effect by misinterpreting temporary spikes as long-term trends. It is recommended that the company transition to seasonally-based forecasting and pre-position inventory according to identified biweekly seasonal cycles to reduce high stock-to-sales ratios and improve operational efficiency.

Keywords: sales forecasting, ARIMA, Holt–Winters, fashion retail, time-series forecasting