ABSTRACT

The telecommunications industry in Indonesia continues to grow rapidly, as evidenced by the increasing demand for telecommunication tower infrastructure. PT Dayamitra Telekomunikasi Tbk (Mitratel), a subsidiary of PT Telkom Indonesia, plays a key role as a tower infrastructure provider for various cellular operators. This research is motivated by the need to select accurate forecasting methods to support operational efficiency and strategic decision-making in tower development.

This study aims to analyze and compare the effectiveness of five forecasting methods Static Method, Moving Average, Simple Exponential Smoothing (SES), Holt's Model, and Winter's Model in predicting tower development needs at Mitratel. The data used consists of historical tower sales from 2022 to 2024, categorized into four tower types: 42M, 52M, 62M, and 72M. Forecast accuracy is evaluated using three measurement tools: Mean Squared Error (MSE), Mean Absolute Deviation (MAD), and Mean Absolute Percentage Error (MAPE).

The results show that for the 42M, 62M, and 72M tower categories, the Simple Exponential Smoothing (SES) method produced the lowest MSE and MAPE values, while Holt's Model yielded the most optimal MAD value. Specifically, in the 52M tower category, the SES method consistently outperformed all others across all three-accuracy metrics (MSE, MAD, and MAPE), making it the most accurate and relevant method for forecasting in that category. These findings provide practical recommendations for Mitratel in selecting the most appropriate forecasting method to enhance infrastructure planning accuracy and operational efficiency.

Keywords: Forecasting, Static Methode, Moving Average, Simple Exponential Smoothing, Holt's Model, Winter's Model