

Abstract

Demand forecasting in Supply Chain Management is essential to avoid mismatches between projections and actual events, which can lead to excess or shortage of inventory. This study utilizes Support Vector Regression (SVR) to predict monthly goods demand in the warehouse of telecommunication company PT XYZ, specifically for the Optical Network Terminal (ONT) attribute. Experiments were conducted by applying hyperparameter tuning using the HalvingGridSearchCV method to improve prediction accuracy, and the results were compared with a linear regression baseline model. The SVR model showed better performance at lags of 4 and 5 months, with RMSE values of 58.62 and 59.33, MAPE of 9.74% and 14.17%, and R-squared scores of 0.83 and 0.85 respectively. Compared to linear regression which has an RMSE of 53.93, MAPE of 10.16%, and R-squared score of 0.85 at a lag of 4 months, SVR offers advantages in handling more complex data patterns. This conclusion shows that SVR, with proper tuning, can be an effective tool for predicting demand for goods, and the results of this study contribute to supporting better inventory management decisions.

Keywords: prediction, goods, warehouse, SVR