

Abstract

The annual report from the Indonesian BPS statistics, indicates a consistent yearly growth in the number of motorcycles categorized by type between 2019 and 2021. Regular motorcycle inspections, servicing, and maintenance are crucial for maintaining the motorcycle's optimal condition and longevity. Consequently, the demand for spare parts has increased in tandem with the rise in public motorcycle ownership. The demand for purchasing spare parts rises in line with the expansion of motorcycle ownership. Numerous stores in Ngawi offer motorcycle spare parts and check services for routine motorcycle maintenance. One of these establishments is BM Motor. Thus, to formulate an effective plan for selling products, it is crucial to generate a prediction of the shop's daily turnover. The current study aims to analyse daily turnover using Recurrent Neural Networks (RNN) and Long Short-Term Memory (LSTM). These methods will be employed on a time series dataset to conduct a thorough analysis of the patterns and trends in the shop's turnover. The study evaluates several hyperparameter tunings and scenarios to enhance the performance of the models used for predicting daily turnover data at the store. The results indicated that the LSTM model attained a lower MAE score of 0.087, whilst the RNN model had a score of 0.092. These findings show that the RNN model performs inferiorly to the LSTM model in terms of evaluation scores, as it produces a more precise forecast with a lower MAE value.

Keyword: Forecasting, Daily Turnover, RNN, LSTM, BM Motor Ngawi