

SALES TURNOVER PREDICTION OF TOKO MBAK NING CINDERAMATA SHOP USING THE LONG SHORT TERM MEMORY METHOD

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ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) play an important role in the Indonesian economy. In recent years, MSMEs have shown significant growth and contributed greatly to the country's Gross Domestic Product (GDP), but sometimes MSMEs face challenges in managing and increasing sales. This study focuses on Toko Mbak Ning which sells clothing needs at the Souvenir Market. This study aims to overcome these challenges by developing an accurate sales turnover prediction model using the Long Short Term Memory (LSTM) method with hyperparameter tuning to maximize model performance to support business decision making. The data used in the study amounted to 89 rows sourced from Toko Mbak Ning's sales turnover data which was recorded manually on a monthly scale from January 2017 to May 2024. The research methods used include business understanding, sales data collection, exploratory data analysis, data preparation, implementation of the LSTM model with hyperparameter optimization, and evaluation of model performance using Root Mean Square Error (RMSE) and Mean Absolute Percentage Error (MAPE). The model created produces prediction accuracy with a value of 0.14838789107389674 using the RMSE evaluation metric and 0.24845188705972057 (24.8%) using the MAPE evaluation metric. Based on the accuracy value produced, the model is classified as quite good at predicting sales data. The final implementation of the model is carried out by predicting sales turnover for the next 6 months which produces a slightly increasing sales trend but has a fluctuation pattern similar to historical sales data.

Keywords: *UMKM, Prediction, Deep Learning, Long Short Term Memory, Python.*