Abstract

This study focuses on predicting the apartment price index in Indonesia using property survey data from Bank Indonesia. In the era of the Covid-19 pandemic, accurately predicting the sale and purchase price of apartments is essential to minimize the impact of losses, thus making apartment prices attractive to predict. The machine learning approach used to predict the apartment price index are the Random Forest method, the Multiple Regression method, and the Backpropagation method. This study aims to determine which method is more effective in predicting small amounts of data accuracy. The data used is apartment price index data from 2012 to 2019 in the JABODEBEK area. The research will produce prediction accuracy that will determine the effectiveness of the application of the method. The Random Forest method with parameters n_estimators=100 and max_features="log2" produces an R2 accuracy of 0.977. The Multiple Regression method with a correlation between the selling price and rental price variables is 0.746, and the rental inflation variable is 0.042 produces an R2 accuracy of 0.996. Therefore, the Backpropagation method is more suitable in this study compared to the other two methods. The Backpropagation method is suitable because it gets almost perfect accuracy, so this method will minimize losses in investing in buying and selling apartments in the Covid-19 pandemic era.

Keywords: backpropagation, multiple regression forecasting, prediction, predicted apartment prices, random forest forecasting