

## Sentiment Effect on Mandiri Bank Stock using Feature Expansion *Word2vec* and Classification Method *Gradient Boosted Decision Tree*

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### Abstract

Stock price movements are very volatile and difficult to predict. This is due to various things such as news, ongoing events and product launches. In June 2019, there was an event of damage to the Mandiri Bank system and on the same day the movement of Bank Mandiri's stock price decreased as a result. Many customers use social media as a means of conveying their opinions on this event, one of which is Twitter. Twitter is a service used by users to upload information in the form of text that contains sentiments from its users. However, the Twitter service itself has a character limit for expressing opinions, which is only 280 characters. As a result of character restrictions, opinions expressed may contain vocabulary mismatches because they contain slang, abbreviations, emoticons, etc. So it is difficult to understand the context of the opinions expressed. Therefore, in this study, word2vec feature expansion is used to deal with the problem of vocabulary mismatch, which can result in word context. This study develops a Twitter sentiment classification system using the Word2vec feature expansion method with the Gradient Boost Decision Tree classification algorithm and a sentiment analysis classification system without feature expansion. The results of this study indicate that by using feature expansion in the classification algorithm, performance increases to 3.29% with a value of 70.02% for accuracy, 3.35% with a value of 69.30% for precision, 3.31% with a value of 68.61% for recall, and 3.31% for f1-score. with a value of 68.83%. And from the sentiment classification system for stock price movements, sentiment has a positive correlation with stock price movements with a correlation value of 0.097 for positive sentiment and 0.124 for negative sentiment.

**Keywords:** gradient boosted decision tree, word2vec, feature expansion, sentiment, stock

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