

ABSTRACT

There has been a significant increase in suspicious financial transactions that have the potential to harm financial institutions and the public. Money laundering and financial fraud are serious threats that are difficult to detect by traditional systems, which are often unable to keep up with the complexity of increasingly sophisticated criminal methods. The main problem of this research is how to improve accuracy and efficiency in detecting suspicious transactions using Machine Learning technology.

The solution offered in this research is the development of Machine Learning-based predictive models using XGBoost, Decision Tree, and Logistic Regression algorithms. These algorithms were chosen because of their ability to process large and complex data, as well as their ability to detect suspicious transaction patterns with a high level of accuracy.

By integrating these techniques into the detection system, it is expected to increase the effectiveness in detecting suspicious transactions. The results showed that the developed models achieved detection accuracy of 96% for XGBoost, 91% for Decision Tree, and 63% for Logistic Regression. Based on these results, the XGBoost model proved to be the most effective in detecting suspicious transactions, followed by Decision Tree.

Keywords: machine learning, suspicious transaction, XGBoost, Decision Tree, Logistic Regression.