

**PREDICTIVE MODEL TO DETECT SUSPICIOUS  
TRANSACTIONS TO MITIGATE MONEY LAUNDERING  
RISK IN THE NON-BANKING FINANCE INDUSTRY**

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## **Abstract**

In this research, the researchers have studied the money laundering risk in the non-banking finance industry (NBFI) due to high amount of non-compliance incidents reported by the Central Bank of Sri-Lanka (CBSL). This has led to cause threats to the financial system of the country and further companies under the supervision of CBSL are running the reputation risk and worst case will lose the license to operate as a licensed finance entity.

Research has sought to address this matter with the objective of developing a predictive model to detect suspicious transactions. Further researcher established his objectives to identify independent parameters to detect suspicious transactions & what are the business that fraudulent transactions are involved with.

Researcher collected transaction detail report from a Licensed Finance Company. It included around 150,000 transactions occurred in their organization. It is comprised of detail information of the customer who is performing the transaction & other relevant information pertaining to the transaction.

Since the research is driven at detecting suspicious or unsuspecting transactions, this data analysis is classified as a classification problem scenario. Therefore study was directed to develop a classification machine learning model. This research has developed the model using different five algorithms. It included Logistic Regression, Random Forest, Decision Tree, SVM & XGBoost.

Except for one algorithm, all other algorithms provided an average of 95% accuracy. Random Forest stood out as it reported 100% Recall for the model. Since the model's prime objective is to detect suspicious transaction the model with the best accuracy and recall were selected, therefore Random Forest is the best predictive model that detect suspicious transactions.

***Keywords—Money Laundering, Suspicious Transactions, Classification, Predictive Model, Non-Banking Finance Industry***