## ABSTRACT

Bank liquidation is the process of settling the obligations of a bank whose operating license has been revoked and represents an important stage in maintaining financial system stability. The duration of liquidation of Rural Banks (BPR) is influenced by various financial factors, thus requiring an analytical approach capable of classifying these conditions, due to the complexity of relationships among financial variables as well as the presence of nonlinear patterns and interactions that are difficult to capture using conventional methods. The method used in this study is the Random Forest algorithm based on historical liquidation data of BPR obtained from the Indonesia Deposit Insurance Corporation (LPS). The variables include total assets, total liabilities, equity, insured claim value, estimated asset liquidation, total asset liquidation, liquidation costs, liquidation proceeds, and various financial ratios. The initial stage involves data preprocessing, including handling missing values, outliers, and standardization. Class imbalance is addressed using the Synthetic Minority Over-sampling Technique (SMOTE), followed by hyperparameter optimization using GridSearchCV. The Random Forest model with SMOTE and tuning achieved an accuracy of 83.3%, precision of 75.0%, recall of 93.8%, and an F1-score of 83.3% for the problematic class. Feature importance results indicate that Estimated Asset Liquidation, Audited NP Assets/LCT Assets, Total Gross Assets, and Insured Claim Value are the most influential variables. SHAP analysis further confirms that Estimated Asset Liquidation, Total Gross Assets, Insured Claim Value, Nominal Payout Ratio, Claim Recovery, and Recovery Rate provide dominant contributions to the classification results.



**Keywords**: Bank Resolution, Liquidation Duration, *Random Forest*, *Hyperparameter* Optimization, Feature Importance, Deposit Insurance Policy