Abstract

Credit card delinquency refers to the failure of credit card users to make timely payments on their credit card balance which can have significant consequences for both the creditor and the debtor. This research paper examines the factors that contribute to credit card delinquency among individuals. Using samples of credit card users, we analyze the relationship between various features related to financial behavior and the likelihood of delinquency. Our analysis finds that several financial factors such as card type, card external status, credit line, last statement balance amount, last statement purchase amount, last statement purchase return amount, and last statement total amount are significant predictors of credit card delinquency. Additionally, we find that certain behaviors, such as making only minimum payments and using a higher percentage of available credit, increase the risk of delinquency. This study used a dataset consisting of 100 datasets, each of them containing 2240 values with balanced data. This research developed a dynamic approach to optimizing model specifications by using time-series predictors, different classification approaches such as Random Forest Classifier, XGBoost, and XGBDart for gradient boosting. All 100 datasets were tested with these multiple approaches to find the accuracy score of the model. Our study suggests that targeted interventions, such as financial education and debt counseling, may be effective in reducing credit card delinquency among vulnerable populations. These findings have important implications for policymakers, credit card issuers, and individuals seeking to effectively manage their credit card debt.