

Churn Prediction for Savings Bank Customers: A Machine Learning Approach

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Abstract : Commercial banks are facing immense pressure, including financial disintermediation, interest rate volatility and digital ways of finance. Retaining an existing customer is 5 to 25 less expensive than acquiring a new one. This paper explores customer churn prediction, based on various statistical & machine learning models and uses under-sampling, to improve the predictive power of these models. The results show that out of the various machine learning models, Random Forest which predicts the churn with 78% accuracy, has been found to be the most powerful model for the scenario. Customer vintage, customer's age, average balance, occupation code, population code, average withdrawal amount, and an average number of transactions were found to be the variables with high predictive power for the churn prediction model. The model can be deployed by the commercial banks in order to avoid the customer churn so that they may retain the funds, which are kept by savings bank (SB) customers. The article suggests a customized campaign to be initiated by commercial banks to avoid SB customer churn. Hence, by giving better customer satisfaction and experience, the commercial banks can limit the customer churn and maintain their deposits.

Keywords : savings bank, customer churn, customer retention, random forests, machine learning, under-sampling

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