

Case Study – Customer Acquisition & Retention

Background.

Managing customer retention and acquisition is essential for developing and maintaining customer relationships. The first step to cure customer retention and acquisition is to predict which customers have a high probability of ending their relationship with the firm and the probability of acquiring a new customer. The second step is to target the predicted at-risk current customers or new customers with high likelihood of joining using incentives such as pricing offers or communications such as emails. Models that accurately predict customer retention and acquisition are pivotal in targeting the right customers, thereby decreasing the cost of the marketing campaign and using scarce firm resources more efficiently.

Data:

To access the data in R: load the SMCRM package and execute `data(acquisitionRetention)`.

Therefore, in this case-study, please address the following tasks and write the report using the Case-study guidelines.

Tasks:

- Use acquisitionRetention data set to predict which customers will be acquired and for how long (duration) based on a feature set using a random forest.
- Compute variable importance to detect interactions and optimize hyper-parameters for acquired customers.
- Compare the accuracy of model with a decision trees and logistic regression model for acquiring customers.
 - Extra credit: generate PDP plots for all variables