

Client Demography

- A slight majority of clients do not have a housing loan. The fractions of ' *housing_loan = yes* ' and ' *housing_loan = no* ' clients vary depending on their age group; people older than 65 generally do not have loans, however clients younger than 25 have a loan.
- The percentage of clients with credits in default is relatively small, less than 2%. This default percentage has large variations in age groups: clients between 35 and 45 years old have the highest default percentage, 65 years old clients and older have the smallest.
- The percentage of clients having a loan changes a lot depending on their age group. Almost 16% of clients between age 45 and 55 have loans, while less than 1% of clients older than 65 have on loans.
- The majority of clients work as administrators, in the services or as blue collar.
- The majority of clients are married.
- The majority of them have either secondary (high school) or tertiary (college) education.

EDA Findings

- The data suggest that numerous phone calls to a person does not result in a deposit, however calling the client on the landline gives a 3% higher probability of success of a deposit as compared to using a mobile phone.
- The month of May was when the most attempts to contact client by the marketing company. It is also a month when the success to unsuccessful ratio is very low. On the contrary, March, September and October, the success to unsuccessful ratio is pretty high. **Suggestion:** The Company should shift its main effort from late spring and summer months towards autumn and winter months.
- There is also a 67% probability of success when the person has in the past made a deposit
- It is worth knowing that clients with loans would not usually open a term deposit.

Model Insights

Predicting as many positives as possible out of actual positives from dataset is the goal here, recall has been chosen as one of the performance matrices along with accuracy and AUC score.

It is found that Logical Regression gives the best value for accuracy and recall which is 0.90 and 0.64 respectively. The best AUC score of 0.92 comes from XGBOOST.

Feature importance, Company should focus more on clients with success in previous campaign. Whether client uses cellular phone or not and the month in which client is being called play a vital role in prediction.