



DATA ANALYSIS

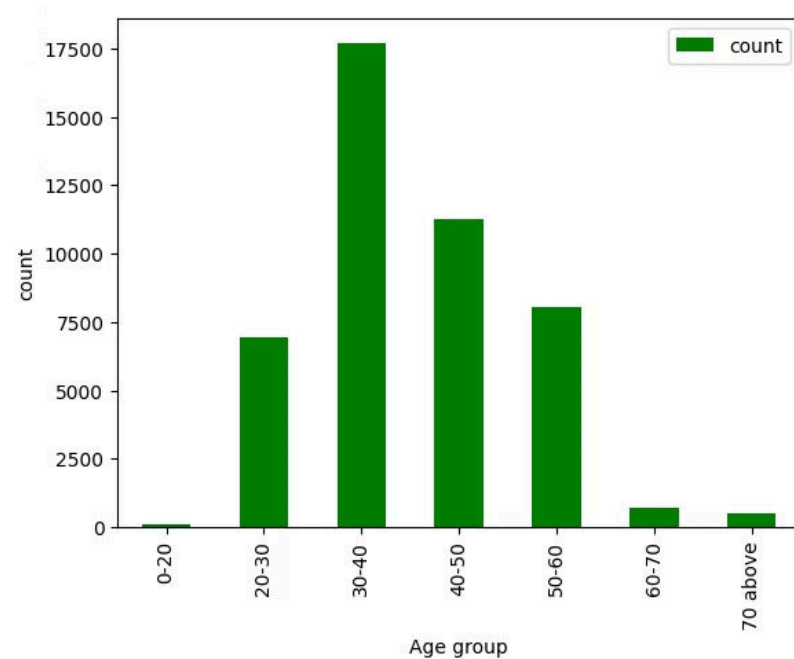
Banking Data Set

Introduction

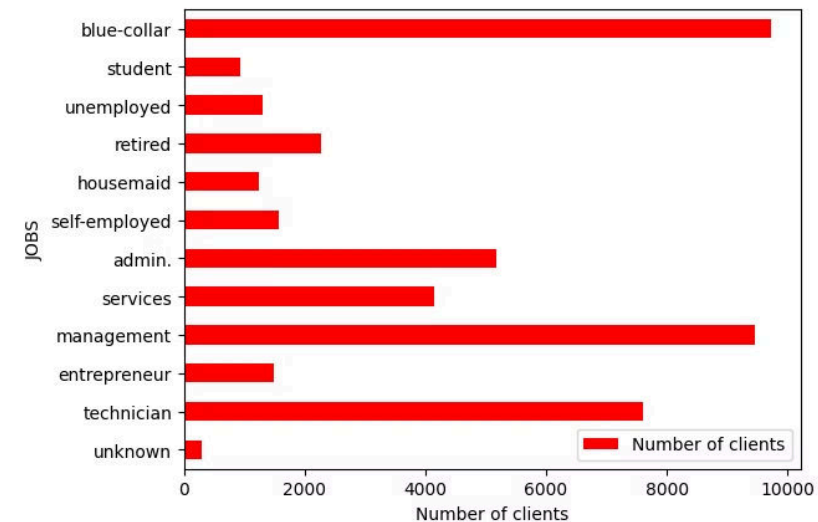
In the realm of finance, data analysis plays a vital role in understanding market trends, customer behavior, and risk assessment. Term deposits serve as a significant revenue stream for banks, representing cash investments held within financial institutions. These investments involve committing funds for a predetermined period, during which they accrue interest at an agreed-upon rate. To promote term deposits, banks employ various outreach strategies including email marketing, advertisements, telephonic marketing, and digital marketing. The data is related to direct marketing campaigns of a Portuguese banking institution. The classification goal is to predict if the client will subscribe to a term deposit.

Age and Job variation among targeted clients.

Analyzing the distribution of clients who were approached for subscribing the term deposit along age groups and among different job sectors.



Count represents the number clients among the age group who were approached for the subscription of term deposit.

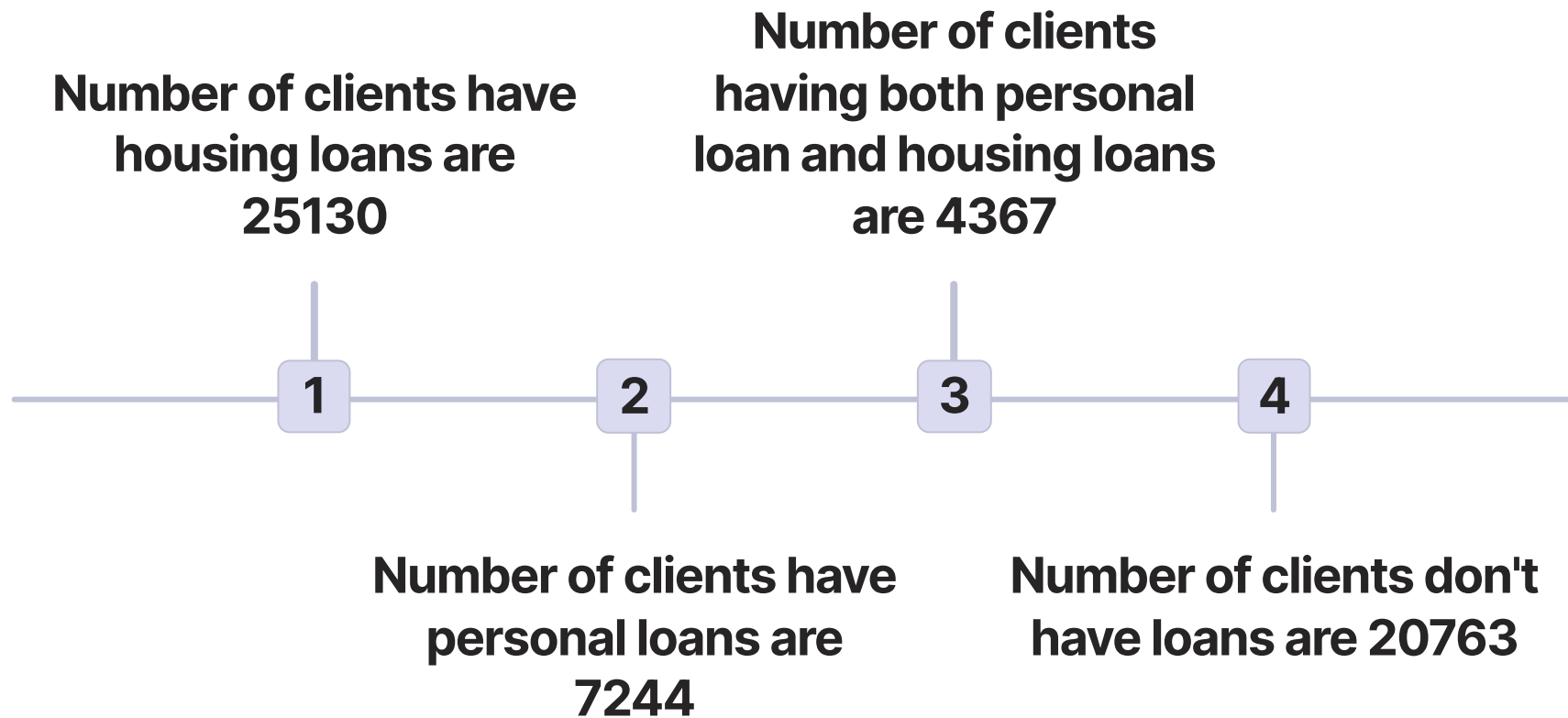


The number clients working in different sectors who were approached for the subscription of term deposit.

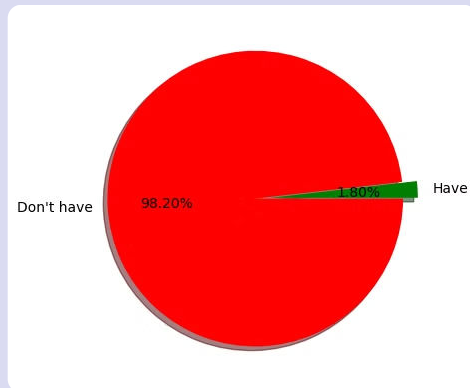
The 30-40 age group contain the most number of clients followed by 40-50 group.

Among job sectors Blue-collar jobs and Management jobs are the most contacted clients by the Bank for the subscription.

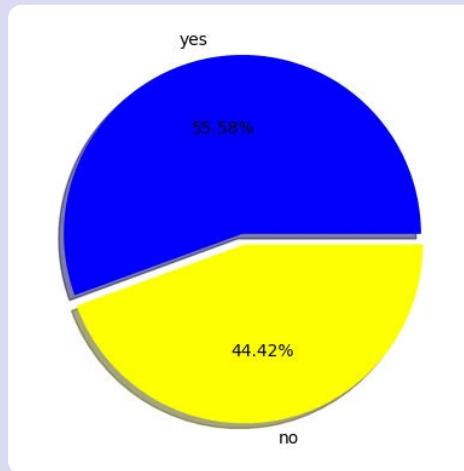
Clients approached for subscription and Loans



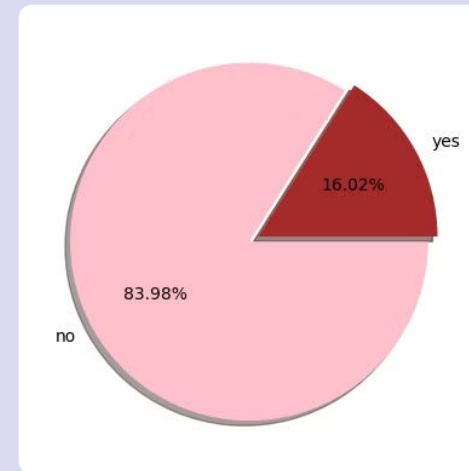
Analysis on clients having credits and loans.



Proportion of clients have credits in default.



Clients who were approached having housing loans.

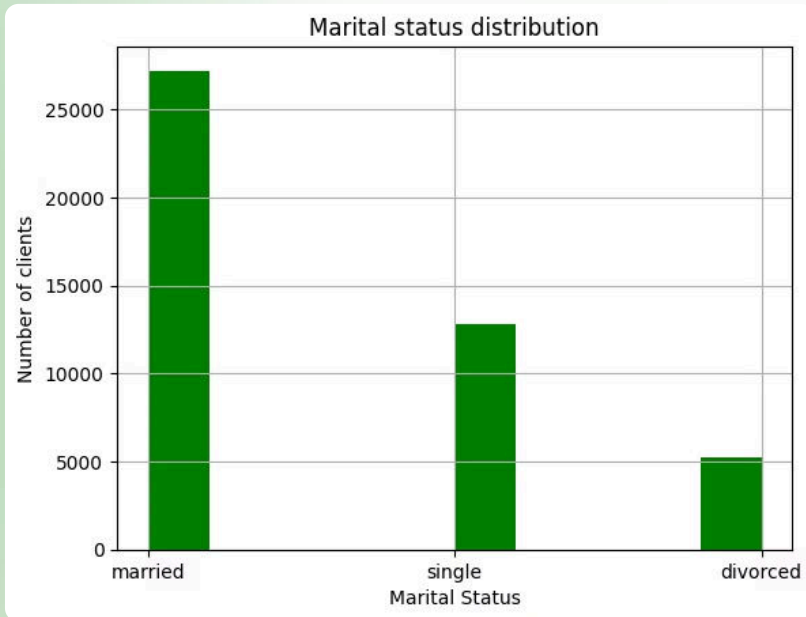


Clients who were approached having personal loans.

Visions

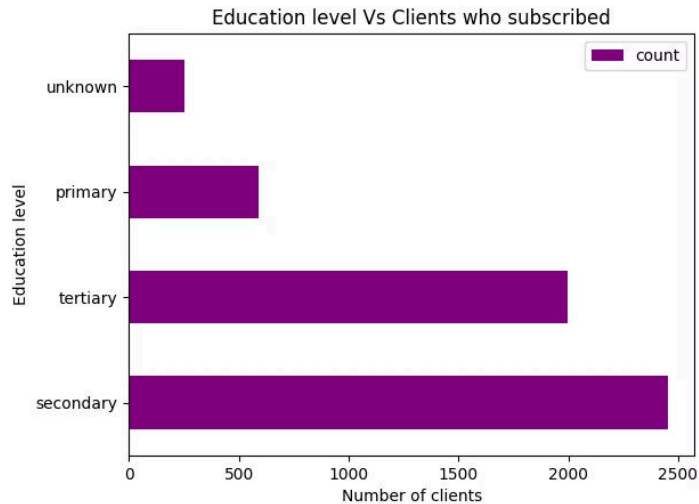
Campaigns were aiming for new clients who has no default credits and don't have personal loans . Even though clients having housing loans were considered much .

Marital status Distribution

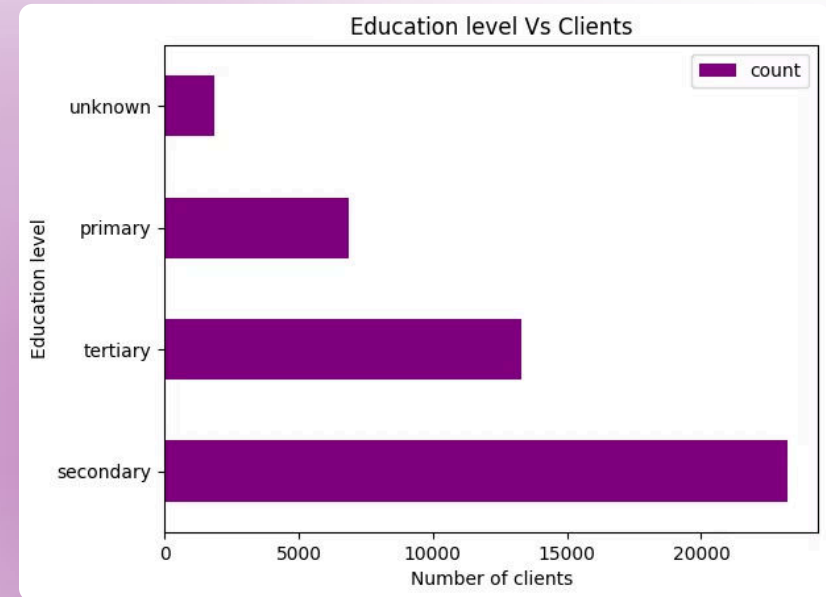


Campaigns were aimed at married clients more than single and divorced for the subscription of the term deposit. As a result from distribution above shows the marital status of who had subscribed showing married individuals are high in number.

Educational level of Clients

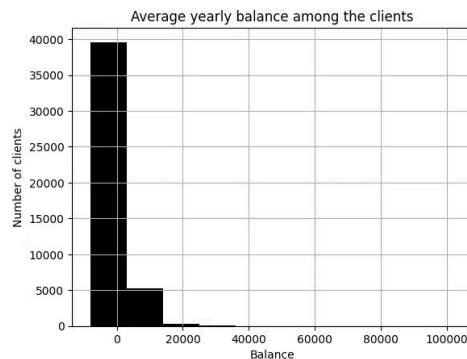


Campaigns were aimed at clients having secondary and tertiary level of education for the subscription of the term deposit. As a result from distribution above shows the marital status of who had subscribed showing these groups are high in number.



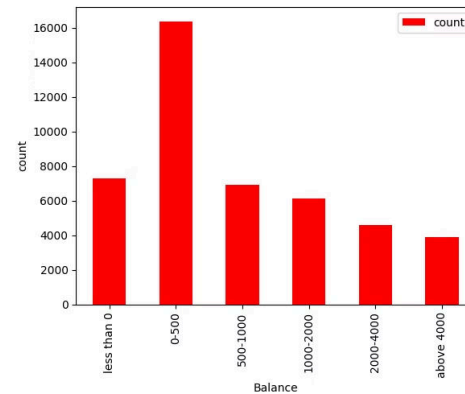
Distribution of average yearly balance among the clients.

1



Histogram
representing the
average yearly
balance of the clients.

2



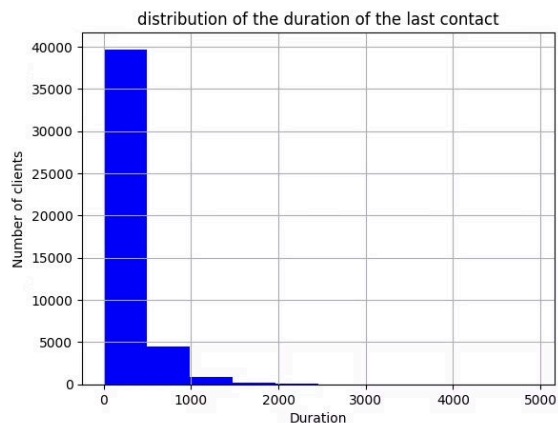
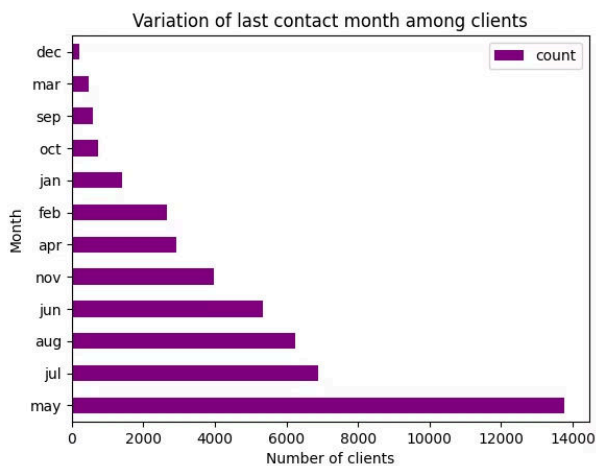
Bar plot representing
average yearly
balance of the clients
in each group.

3

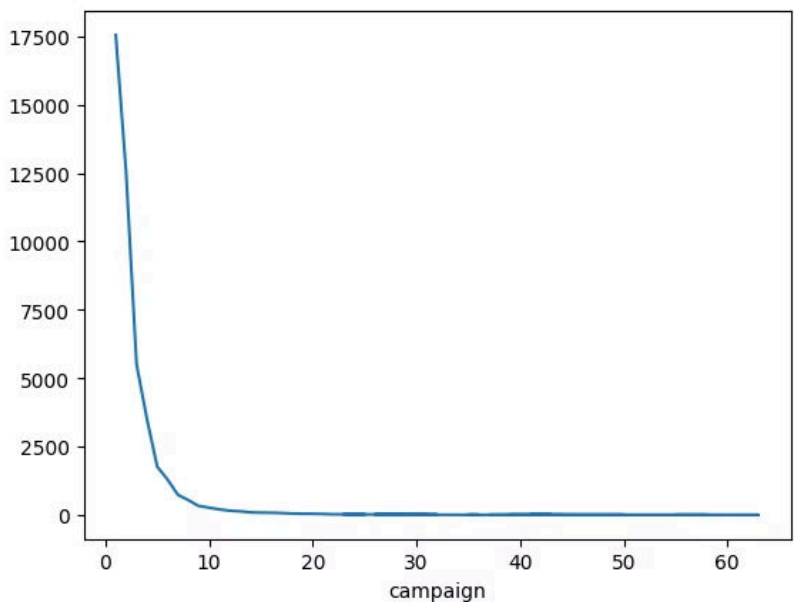
count	7168.000000
mean	6.308036
std	42.505138
min	1.000000
25%	1.000000
50%	2.000000
75%	6.000000
max	3514.000000

Basic statistical analysis
on the average yearly
balance.

Analysis on previous contacts for campaign.

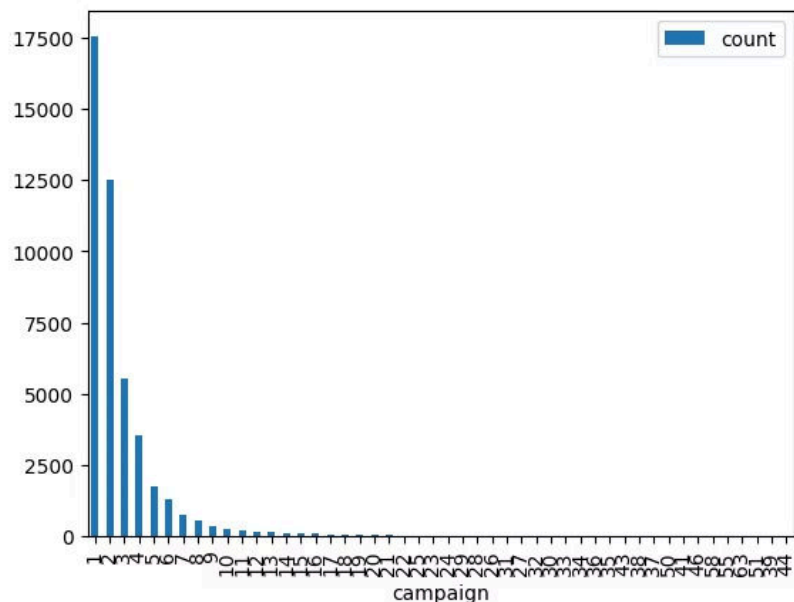


Contacts were performed during the campaign for clients.



X axis : Number of times contacted

Y axis : Number of clients

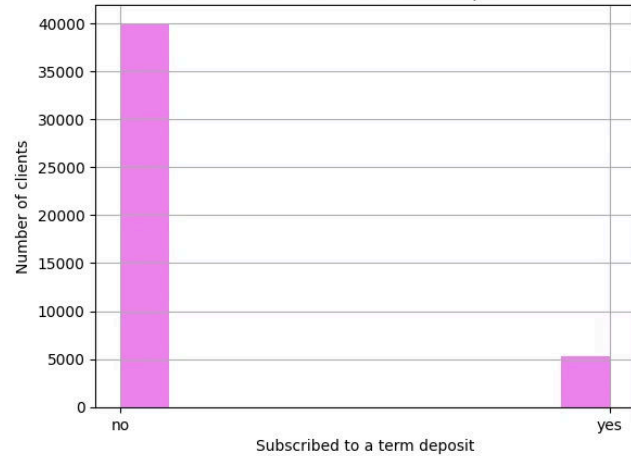


X axis : Number of times contacted

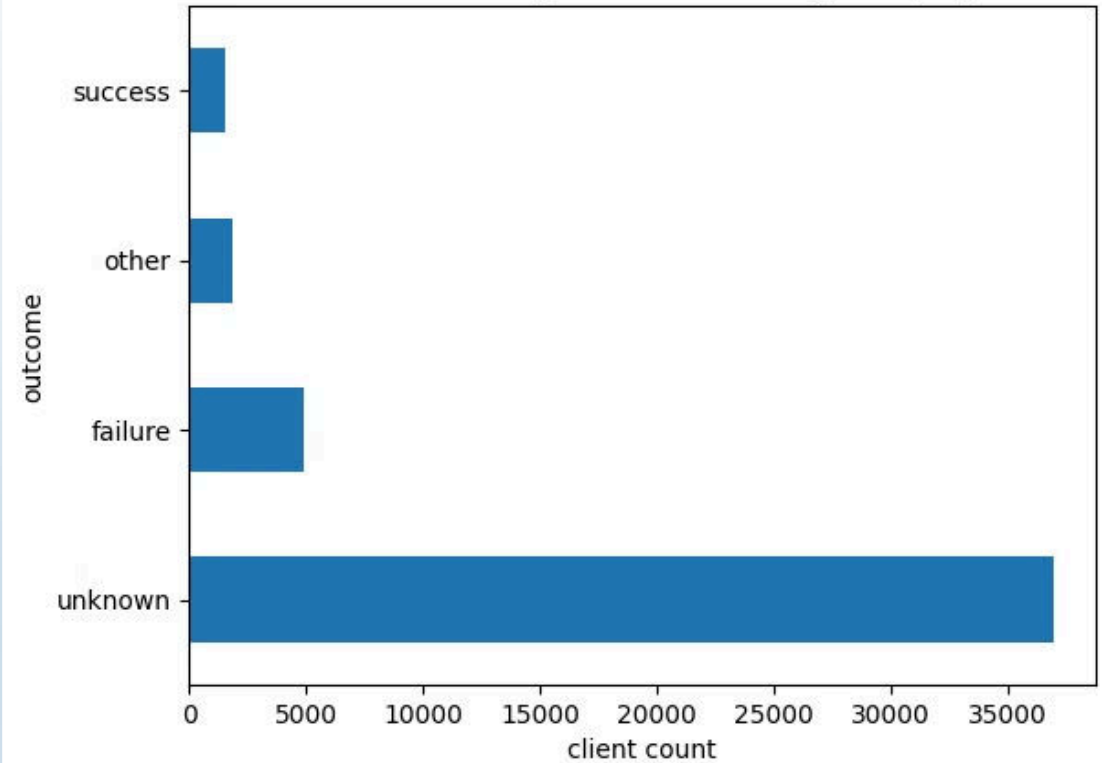
Y axis : Number of clients

Campaign outcomes

Distribution of clients who subscribed to a term deposit vs. those who did not



Outcomes of the previous marketing campaigns



Further points from analysis

Correlation study motivates to get an idea that duration of the last contact has a good positive correlation with the target which is the subscription of the term deposit.

Clients in the age group 30-40 is more likely to subscribe the term deposit followed by 20-30 and further 40-50.

Clients in the Management sector are more likely to subscribe the term deposit followed by technician and further blue-collar even though blue-collar clients are mostly approached by the campaign.

Conclusion

Despite the advent of digital channels, telephonic marketing campaigns persist as one of the most effective means of engaging customers. However, they necessitate substantial investment due to the requirement of large call centers to execute these campaigns. Therefore, it becomes essential to pre-identify potential customers likely to convert, enabling targeted outreach efforts via phone calls. Through the exploratory data analysis on the data related to the direct marketing campaigns of a Portuguese banking institution we find out certain attributes for the consideration of the campaigns and how they ultimately affecting aim. The ideas consolidated from the analysis will be helpful for modelling more techniques and methods for much more productivity.