

Group name: Laaroussi Saadeddine

Name: Laaroussi Saadeddine

Email: laar.saad.eddine@gmail.com

Country: Morocco

Specialization: Data science

Project: Bank Marketing (Campaign)

Batch code: LISUM09

Table of contents

Problem description	2
Github repo link:.....	2
EDA performed on data:.....	3
Number of subscribers	3
Subscriptions per age group	3
Subscribers per marital status	3
Subscribers per default credit	3
Subscribers per education	3
Subscribers per balance group	4
Subscribers per housing.....	4
Subscribers per loan status.....	4
Subscribers per contact mean	4
Subscribers per duration time spent	4
Months with most subscribers	4
Days with most subscribers	4
Subscribers per campaign number	4
Subscribers per contact	4
Subscribers per outcome.....	4
Final recommendations	5

Problem description

- ABC Bank wants to sell its term deposit product to customers.
- Before launching the product, they want to develop a model that will help them in understanding whether a particular customer will buy their product or not (based on customer's past interaction with bank or other Financial Institution).
- ABC Bank wants to use ML (machine learning) model to shortlist customers whose chances of buying the product are higher.
- They want their marketing channel (tele marketing, SMS/email marketing etc) to focus only on those customers whose chances of buying the product are higher.
- The data is related with direct marketing campaigns of a Portuguese banking institution. The marketing campaigns were based on phone calls. Often, more than one contact to the same client was required, in order to access if the product (bank term deposit) would be ('yes') or not ('no') subscribed.
- The classification goal is to predict if the client will subscribe (yes/no) a term deposit (variable y).

Github repo link:

https://github.com/Saad-code13/Internship_Assignment/tree/main/week%2010

EDA performed on data:

Various analysis was done on data to find what type of customer to target:

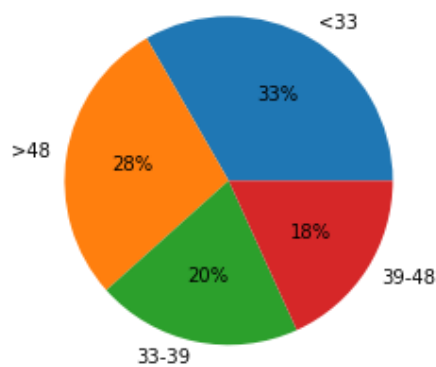
Number of subscribers

- 11% of the customers in the data chose to subscribe.

Subscriptions per age group

- 33% of the customers that chose to subscribe are under 33.
- 28% of them are over 48.
- 20% are between 33-39
- 18% are between 39-48

Subscriptions per age group for subscribers



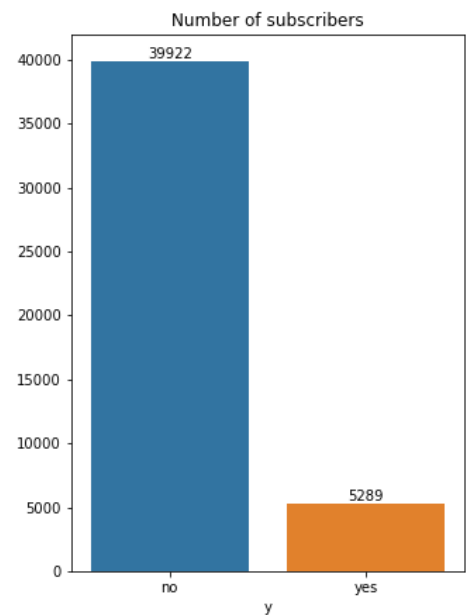
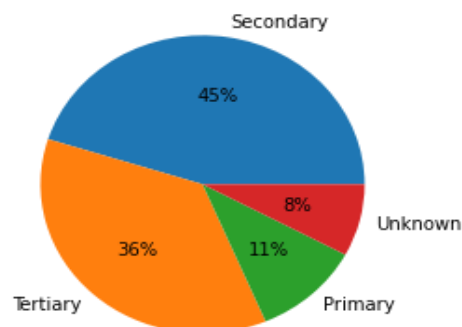
Subscribers per default credit

- 99% of subscribers do not have default credit.

Subscribers per education

- 46% of subscribers have secondary education.
- 37% of them have tertiary education.
- 11% have primary education
- 8% of subscribers education is unknown.

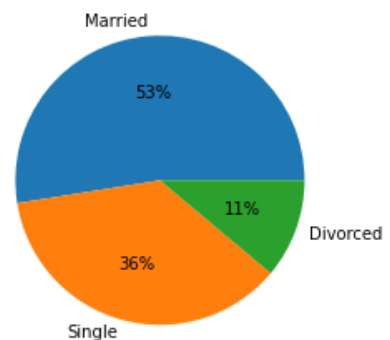
Subscriptions per education for subscribers



Subscribers per marital status

- 52% of subscribers are married.
- 36% of them are single.
- 11% are divorced.

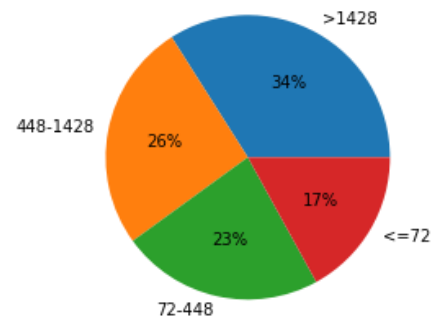
Subscriptions per marital for subscribers



Subscribers per balance group

- 34% of subscribers have a balance above 1428.
- 26% of them have a balance between 448-1428.
- 23% have a balance between 72-448.
- 17% have a balance lower or equal than 72.

Subscriptions per balance group for subscribers



Subscribers per housing

- 63% of subscribers do not have a house.
- 37 of them have a house.

Subscribers per loan status

- 90% of subscribers do not have a loan status.
- 10% of them have one.

Subscribers per contact mean

- 82% of subscribers were contacted via cellular.
- 10% of them were contact via unknown means.
- 8% were contacted via telephone.

Subscribers per duration time spent

- 63% of subscribers were contacted for a duration over 319 seconds.
- 24% of them for a duration between 180 and 319 seconds.
- 11% of them for a duration between 113 and 180 seconds.
- 2% of them for a duration less than 113 seconds.

Months with most subscribers

- Months with most subscribers are : may, aug and july.

Days with most subscribers

- Day with most subscribers are : 30,12,13,15.

Subscribers per campaign number

- 49% of subscribers were contacted 1 time only during this campaign.
- 26% of them were contacted 2 times.
- 25% were contacted more than 3 times.

Subscribers per contact

- 64% of subscribers were never contacted in any previous campaigns
- 36% were contacted in a previous campaign.

Subscribers per outcome

- 64% of subscribers outcome was unknown.
- 18% of the outcome was considered a success.
- 11% of the outcome was considered a failure.
- 7% of the outcome was classed as other.

Final recommendations

The bank should consider advertising to :

- People that are **under 33**.
- **Married** people.
- Customers that **do not have a default credit**.
- Customers with **at least a secondary education**.
- Customers with **a balance higher than 1428**.
- Customers that **do not own a house**.
- Customers **without a loan**.

The bank should consider contacting their customers via **cellular** and spend **at least 319 seconds** contacting them.

The bank should consider advertising during **the months of May, August, and July**. Either during **the end of the months or the middle of the months**.

The bank should mainly focus on **contacting customers one time** and should **prioritize customers that have never participated in a campaign**.