iFood CRM Data Analyst Case
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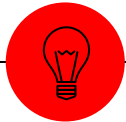
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1 — Introduction

Introduction

After 3 years with a globally solid revenue, the company doesn't have a good growth profit perspective for the next 3 years. An alternative to solve it is improving the marketing campaign performance by using data analysis and machine learning.

In order to do this, we need to answer some questions:

- What's the main behaviour of the respondents?
- Is it possible to indicate how respondents will accept the campaign?

Analysis steps

Data exploration

Business understand → ETL → EDA → Predictive model

Data manipulation

Predictive Modeling
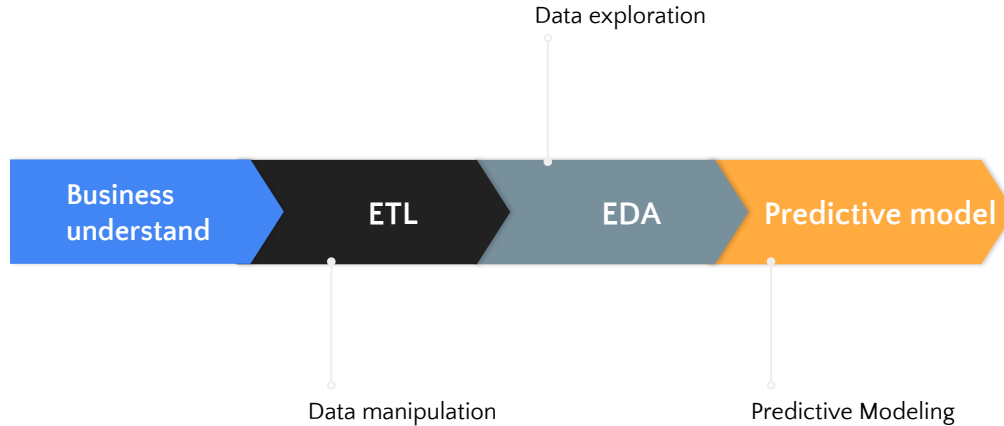
Tools:

- Python
- Pandas
- Scikit-learn
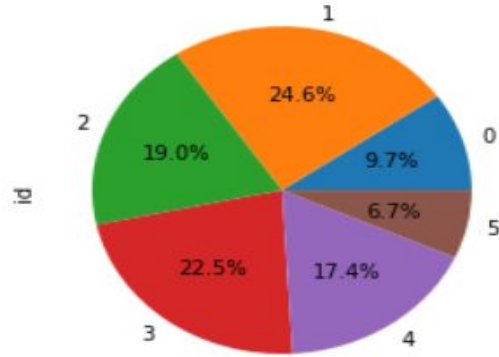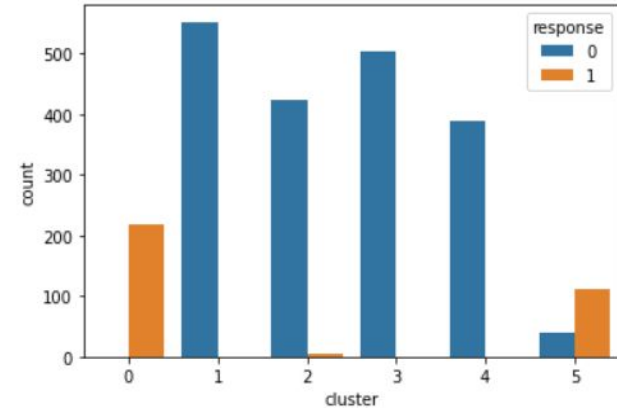- Jupyter notebook

2 Customer segmentation

Customer segmentation

1. % of customers by cluster
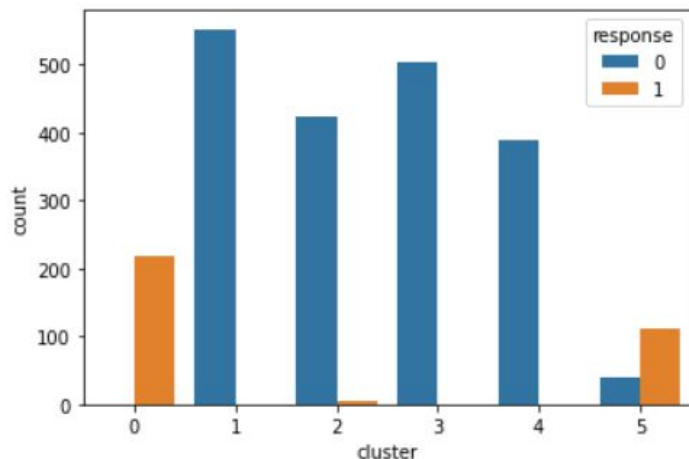

2. # of campaign success

- The K-Means method returned 6 customer segmentations (cluster).
- The second chart shows the people that buy a new item after the last campaign: being **0 the people that didn't buy** any item and **1 people that bought** some item.

Customer segmentation

2. # of Campaign Success

- It is possible to notice that **more than 300 persons** that are in **cluster 0 and 5** bought something after the campaign. Let's see the **main characteristics** of this clusters:
  - **Cluster 0:**
    - Income: $ 30,000.00
    - LTV between 3312 days and 3485 days
    - Age between 40 years and 60 years
    - Marital status is single
    - Education: Graduation
  - **Cluster 5:**
    - Income: $ 80,000.00
    - LTV between 2780 days and 2963 days
    - Age between 40 years and 60 years
    - Marital status is married
    - Education: Graduation

3 Predictive model

Predictive model

The model can provide a person with 88% of certain!

Model metrics

	precision	recall	f1-score	support
0	0.90	0.97	0.94	577
1	0.68	0.34	0.45	95
accuracy			0.88	672
macro avg	0.79	0.66	0.69	672
weighted avg	0.87	0.88	0.87	672

Confusion matrix
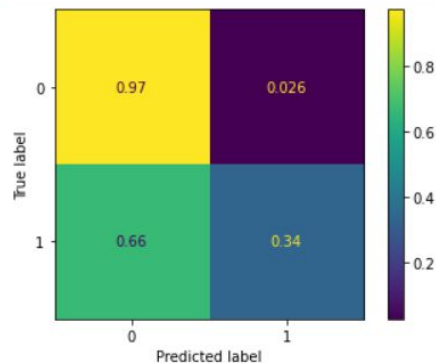
Precision: % of true positive

Recall: % of all true class

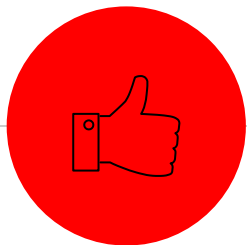**F1-score**: harmonic average between precision and recall.

4 Conclusion

Conclusion

● With this model the success rate improved from 15% to 39%.

● The actual ROI is -45%, but we could improve it to 45%.

Thanks!

Questions?

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