



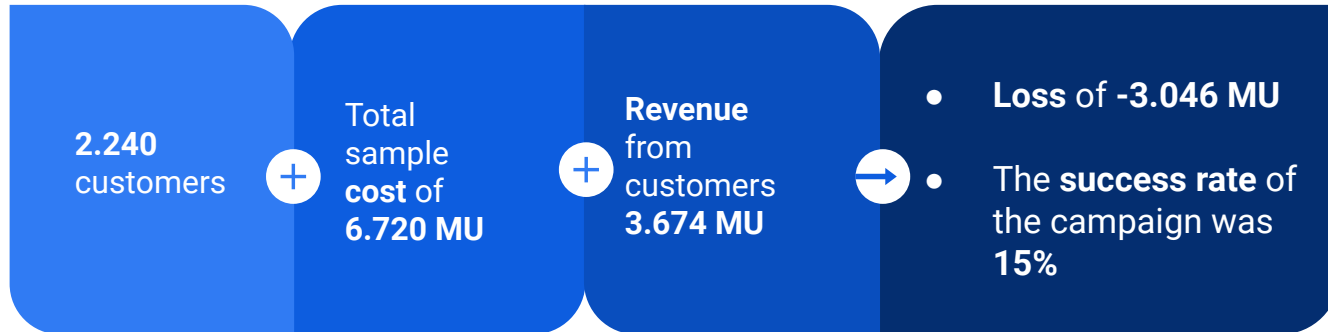
Evaluating Marketing Campaign

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Understanding the Business Problem

A food company wants to produce the **highest profit** for the next **marketing campaign**.

In order to **gain insights regarding customers** a pilot campaign was carried out:



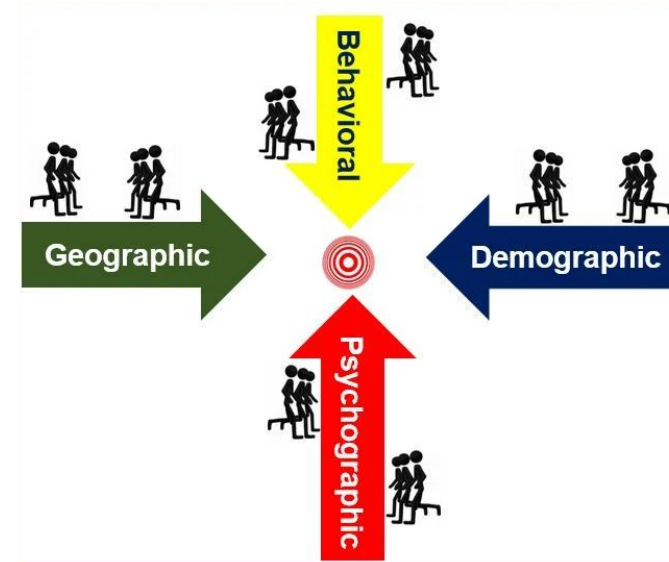
- Loss per each customer targeted by campaign: -3.0 MU/customer
- Profit per customer that accepted by campaign: 8.0 MU/customer

Criteria for Customer Segmentation

Different types of customers respond differently to different types of campaigns.

Hence this analysis is aimed at finding:

- different customer segments for the next campaign
- which segments responds well and which do not
- conversion percentages and associated profitability for each customer segment
- clusters within this customer data to target customers more effectively



Steps We Use for this Analysis



1

Univariate Analysis

Clean and understand the available data through univariate analysis

2

Exploratory Data Analysis

Carry a exploratory data analysis to identify profit gains in the next marketing campaign

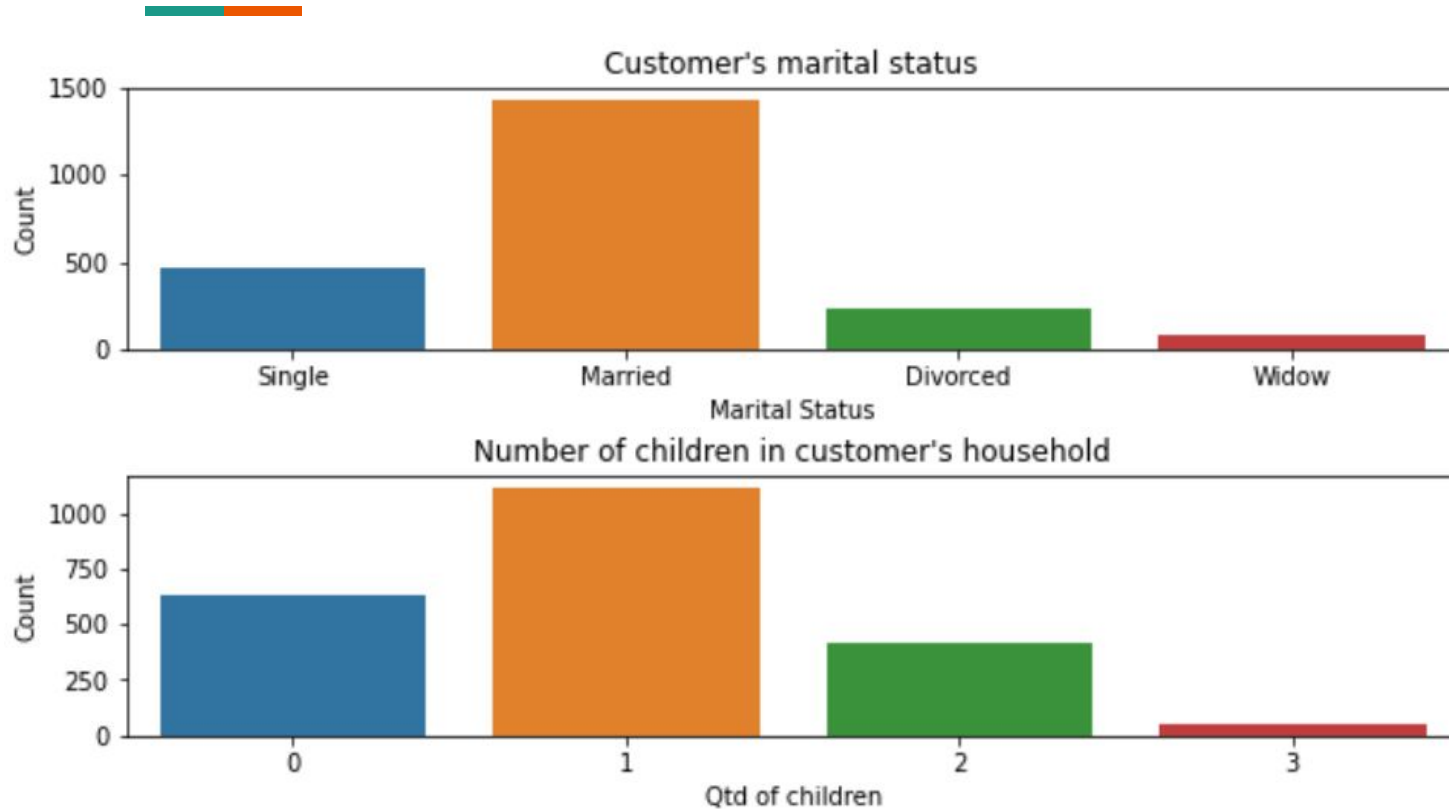
3

Clustering Customers

Build a predictive model based on clustering analysis to segment customers characteristic features and support marketing initiatives

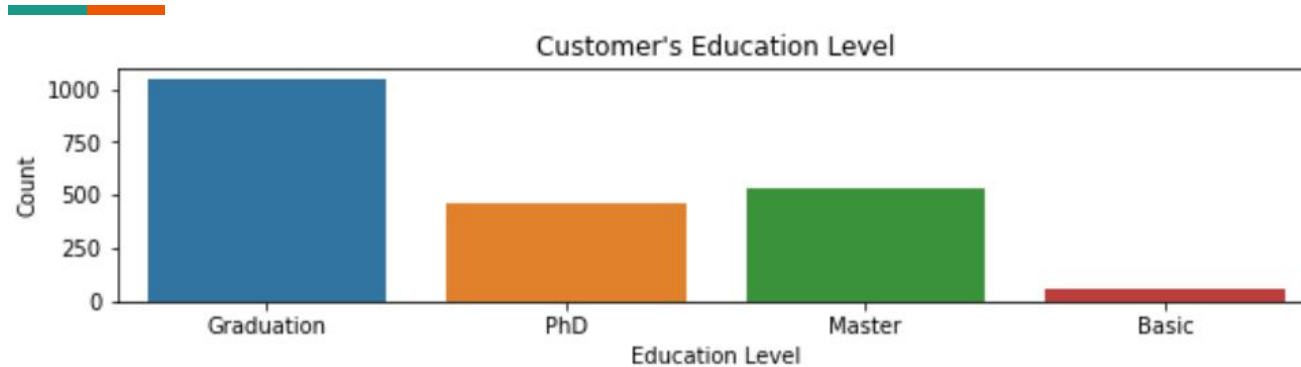
Step 1 - Understanding The Customers

Living Arrangements

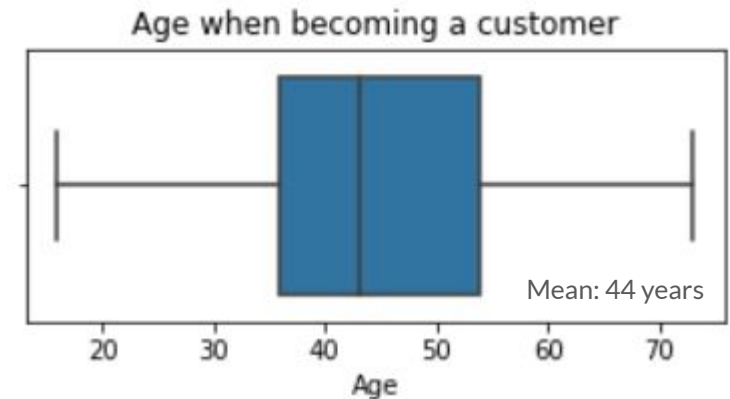
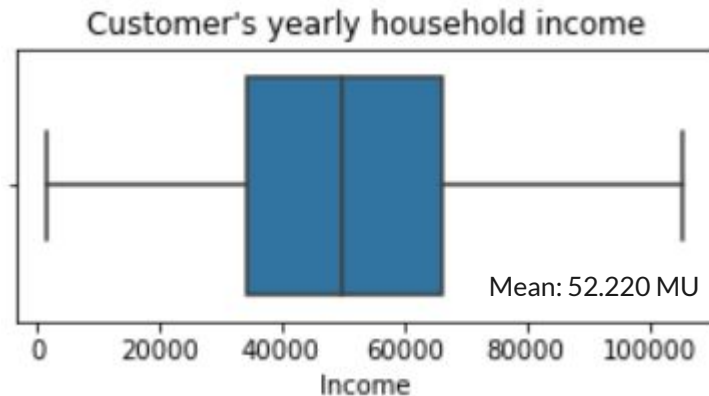


Most of the customers are married and have at least one child at home

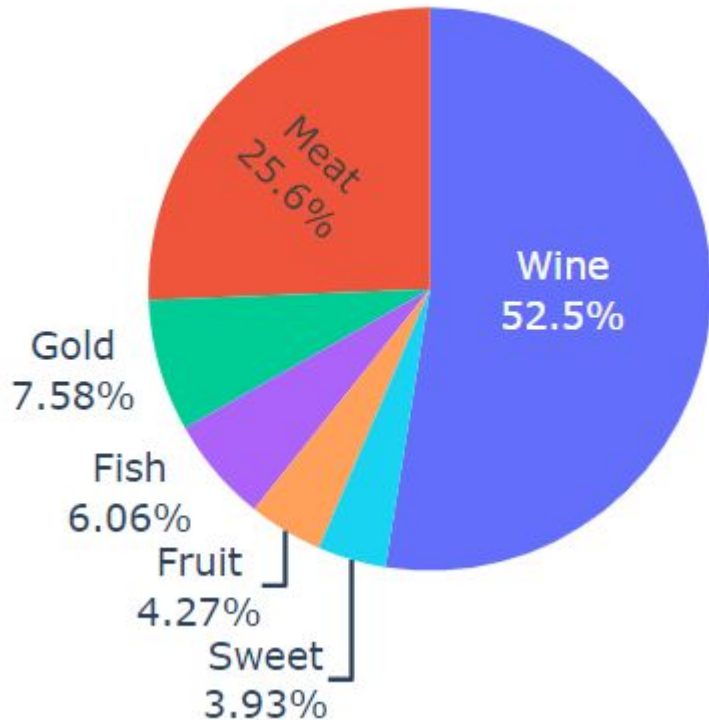
Education, Age and Income



Customers have higher level of education. Are in their 40's and have an ear around 50000 MU per year



Amount Spent



Wine and Meat account for 75% of sales. The majority of purchases happen through the Store and Website

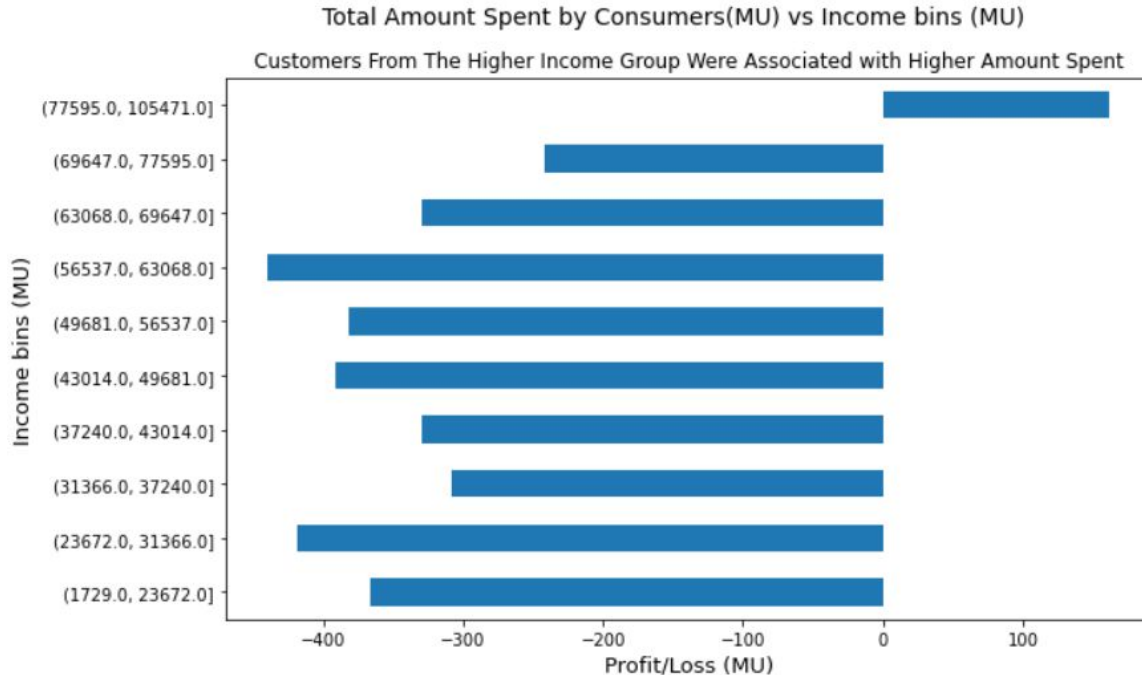
Step 2 - Exploring our Data

The data is segmented and dissected focusing on insights that have the maximum business impact.

Thus the frame of the analysis explores **only the most recent Marketing Campaign**, which is our target variable in identifying profit gains for the next marketing campaign

Profitability and Income

For this analysis customers income are classified into group intervals and we evaluate their profitability (loss vs revenue)



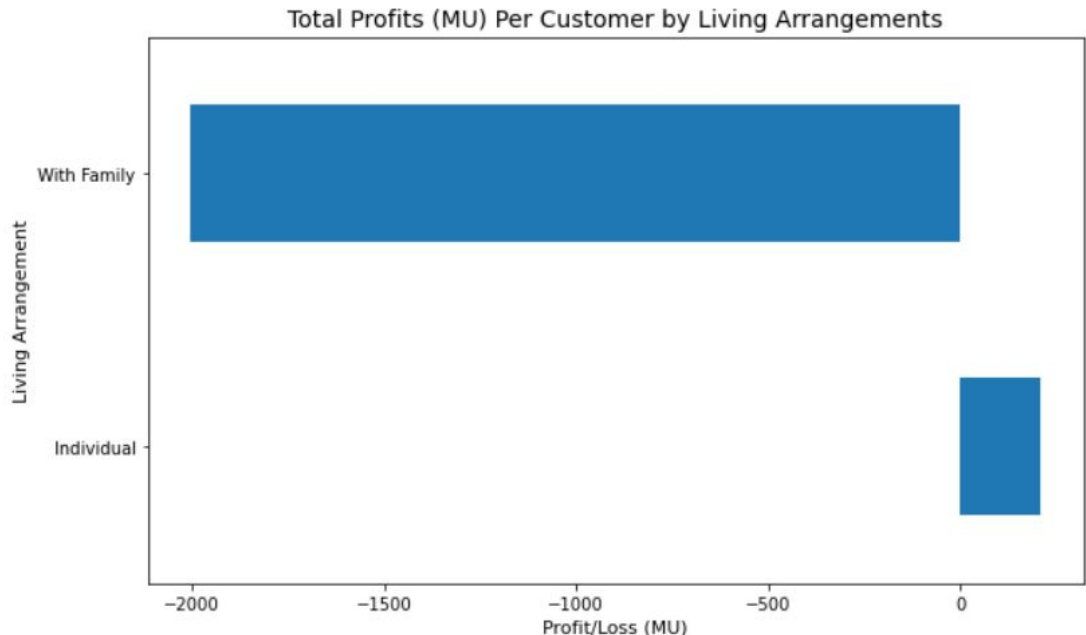
the marketing campaign appeals the most to high income groups. They have the greatest conversion and the only profitable income group.

A future marketing campaign that should target high-income customers, specifically those earning above \$77,000 per year

Profitability and Living Arrangements

For this analysis customers income are classified into two categories: Individuals (single and no child) and With Family (either in a relationship or with child)

Customers Who Live Alone Are Profitable While Those Who Live with Families Incur Heavy Losses



When we market to single customers the marketing campaign is effective and profitable. This imply that the marketing campaign is effective with single individuals.

Features that did no present profitability

These characteristics below suggest that future marketing campaigns should not target or segment customers on these basis.

Age

None of the group of customers segmented by Age proved to be profitable.

Education Level

All customers when segmented by Education are associated with losses.

Step 3 - Segmenting Customers

Through the use of K-Means Clustering Algorithm the customers are classified into groups of similar characteristics.

The advantage of this approach is that the human bias is taken out of the equation. Instead of having a researcher create classification groups, the machine creates its own clusters based on empirical proof, as opposed to people's assumptions.

Relevant Features used in the model

For this analysis the target variable is related to the customers that have accepted the offer in the last campaign. Thus, the relevant features for the model are the ones with highest correlation magnitude with the target variable.

Variable that
indicates that the
customer has
accepted the offer
in the last
campaign

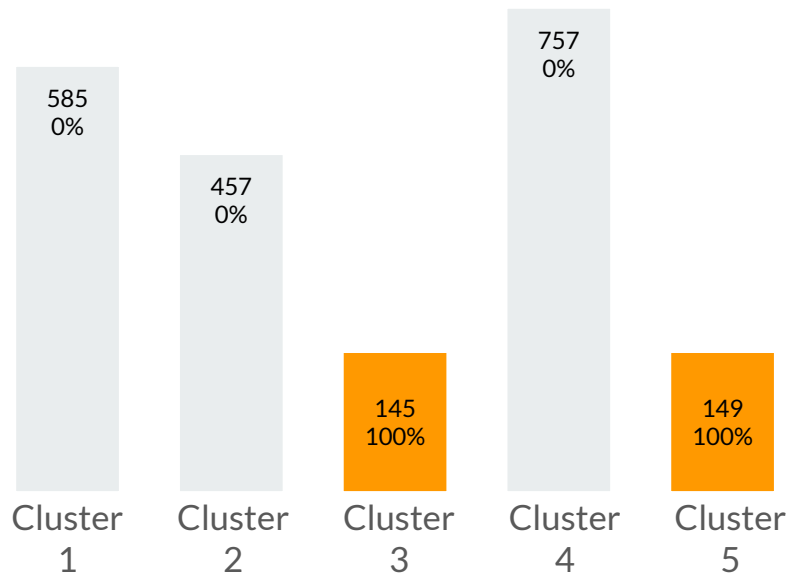
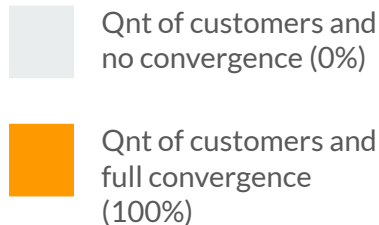
vs

- Income,
- Quantity of kids home
- Amount spent in Wine
- Amount spent in Meat
- Amount spent on gold products
- Number of purchase through catalog.
- Living arrangements

Customers groups and Convergence rates

Thus, the relevant features for the model are the ones with highest correlation magnitude with the target variable.

Through K-means analysis we found 5 groups of consumers



The high rate of acceptance on cluster 2 and 4 implies that the traits of customers in these cluster are significantly correlated with a higher likelihood of conversion.

Target Customers



The target customers for our next marketing campaign are those represented by the centroid element of Cluster 3 and 5:

Cluster 3

- Income: 56.931 MU
- Quantity of kids home: 0
- Amount spent in Wine: 501 MU
- Amount spent in Meat: 232 MU
- Amount spent on gold products: 61 MU
- Number of purchase through catalog: 4
- Living arrangements: In a Relationship

Cluster 5

- Income: 56.885MU
- Quantity of kids home: 0
- Amount spent in Wine: 449 MU
- Amount spent in Meat: 241 MU
- Amount spent on gold products: 58 MU
- Number of purchase through catalog: 4
- Living arrangements: Not in a Relationship

The traits in both groups are very similar, except with the living arrangements. Thus we should ignore the last for targeting purposes and resume to a single group or characteristics

Take away

These presentation comprises the data analysis of the last pilot marketing campaign.

Using the main conclusions of presented throughout the analysis will be able to better isolate relevant customers for our next marketing campaign and make this campaign more targeted. As a result, the next marketing campaign should see much greater conversion and profitability overall
