

CAPSTONE PROJECT: Marketing campaign customer segmentation

Executive Summary

The purpose of the project is to define the customer segments based on information provided, in such a way that personalized campaigns can be created and investments directed where the return on investment can be maximized. Likewise, it will be possible to know the behavior of the client and improve their experience in the hotel.

Problem Summary

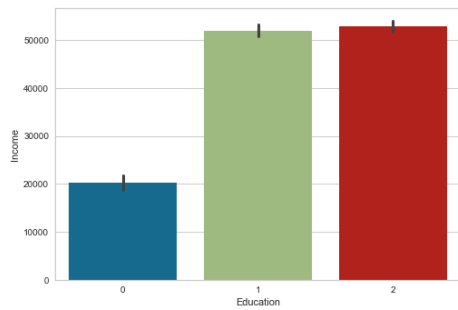
The problem is to analyze the data provided in order to identify patterns of customer behavior in terms of the variables provided. In such a way, that it allows to generate communication strategies and marketing campaigns to increase the revenues.

Solution Design

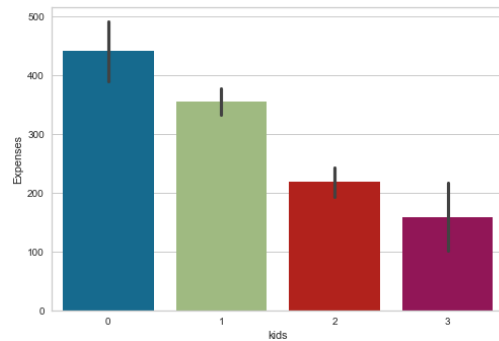
Exploration & Data Analysis:

- 2240 records were received.
- 1% of the records have missing information on income field.
- Year birth from a record with inconsistent data.
- Categorical and continuous variable were identified.
- Education and marital status fields were normalized by grouping categories.
- All Variables were analyzed to identify outliers, for instance: Income.
- I performed univariate and bi-variate analysis to identify relations between features.
- The information was scaled to perform clustering algorithms.

At the first view of the data, we are able to find the main following conclusions:



The customers with higher the educational level have the best income, and they spend more in our hotels.



The greater number of children, the less they spend in our hotels.

Customers who have higher incomes will be the ones who spend more.

Clustering profile

After

In order to analyze the data several methods were used: K-means, Hierarchical, Gaussian and DBScan.

The best approach to the problem were get from K-means method with 5 clusters with the following characteristics:

Cluster 1:

- Average income: USD 64.583
- Average age: 56 years. They are the oldest.
- They spend more money on:
 - Wine (USD 457)
 - Fruits: (USD 43)
 - Meat: (USD 200)
 - Fish: (USD 57)

- Gold: (USD 77)
- In general, they spend more money. (USD 748)
- The campaigns carried out have not been successful on them.
- They have a good average of number of purchases made with discount.
- They tend to buy on the Website and in our stores.

Recommendations: They are attracted by discounts, then we can create campaigns in wine, fruits, meat, fish and gold products, these campaigns could be offered in Website and the Store, because they have good average of number purchases made in the company's web site and stores directly.

Cluster 2:

- Average income: USD 34.846. These customers are the second with the least income.
- Average expenses: USD 61
- Average age: 50 years
- These customers are those with the most children or the largest family.
- They are the customers who spend the least money.
- They are not impacted by the carried-out campaigns.
- They tend to shop more in stores than online.

Recommendations: These customers have the largest families, then discount campaigns for groups could be success in stores, mainly. However, I don't discard the online campaigns. These campaigns could be offer kids attractions for instance play ground or childcare services. Preferred channel Online.

Cluster 3.

- Average income: USD 29730.
- Average expenses: USD 82
- These customers have the most average no Recency (number of days since the last purchase).
- These customers have the greatest number of visits to the company's website
- These customers are the most ageing customers

Recommendations: A discount campaign for older customers and families with children could have good results on the company's website or stores.

Cluster 4.

- Average income: USD 50530

- Average expenses: USD 379
- Average age: 55 years
- The most of these customers are married and have teenage children.
- These customers have the greatest number of teenagers children
- The purchases made by these customers are distributed equally between website and stores.

Recommendations: Targeted campaigns for teenagers, specific activities for them, while design activities for couples for instance romantic dinners. Advertising on Web Page.

Cluster 5

- Average income: USD 60.0092
- Average expense: USD 22.357
- They accepted the previous campaigns
- They are the customer with more complains.
- These customers are very attracted by discounts than others.
- The high-level education
- They dislike shop in the stores.

Recommendations: Online discount campaigns on Wines, Meat and gold products.

