



# **Battle of Neighborhood Restaurants in Barcelona**

**Applied Data Science Capstone Project**

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# Introduction

Have you ever imagined setting up your own restaurant?

Opening a new and successful restaurant is probably a tough but exciting challenge. There are several points to consider to achieve it. One of the most important is where the new restaurant will be placed. Indeed, the physical location of the food-service business is a key point to get known, popular and to set the best possible price range.

In this project, we will work with restaurant data from Barcelona (Spain) to determine which neighborhoods are more convenient to start this kind of business.





# Introduction

## Why Barcelona?

- Second most populated spanish city
- One of the most populous metropolitan area in the EU
- Touristic and very popular

## Business Question

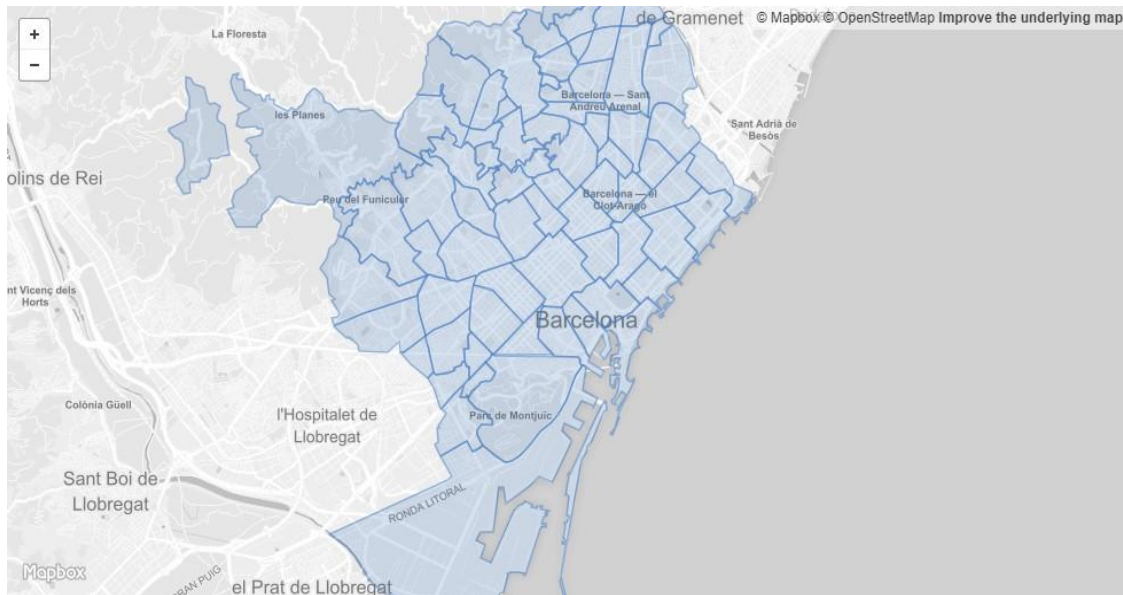
Which neighborhoods of Barcelona would be more advisable to consider if you want to maximize the popularity of your restaurant?

## Target Audience

- New entrepreneurs
- Restaurant owners
- Investors
- Food franchises

# Data

- List of Neighborhoods
- Neighborhoods Boundaries
- Foursquare Data



(<https://github.com/martgnz/bcn-geodata/blob/master/barris/barris.geojson>)

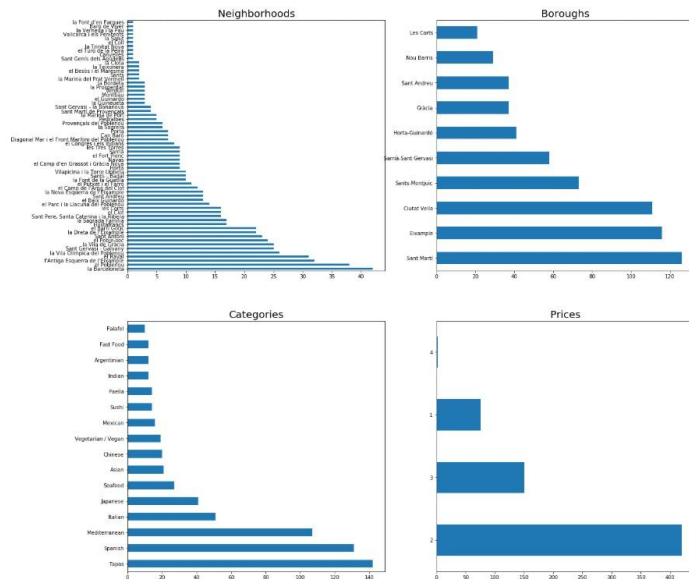


# Methodology

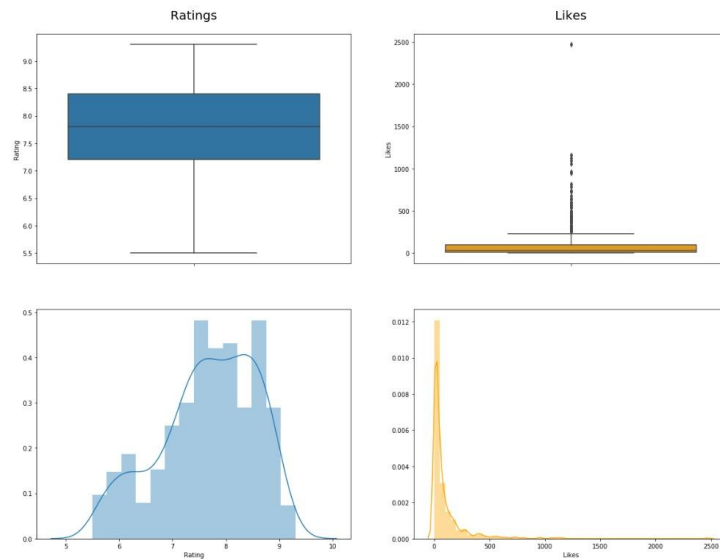


# Results - Exploratory Analysis

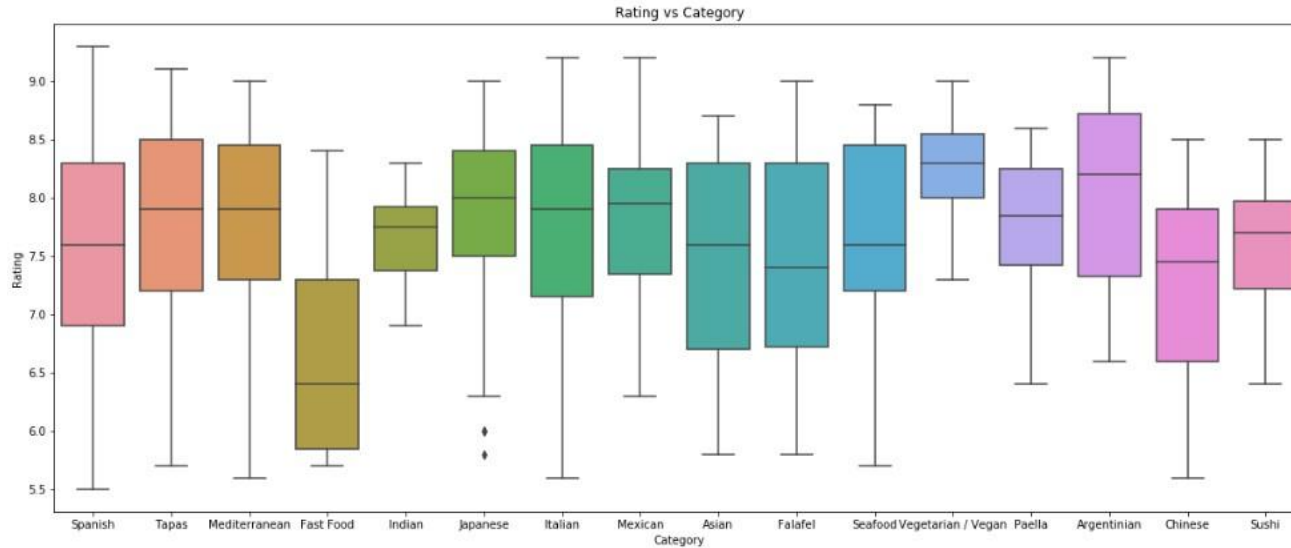
Categorical Variables frequencies



Numerical variables

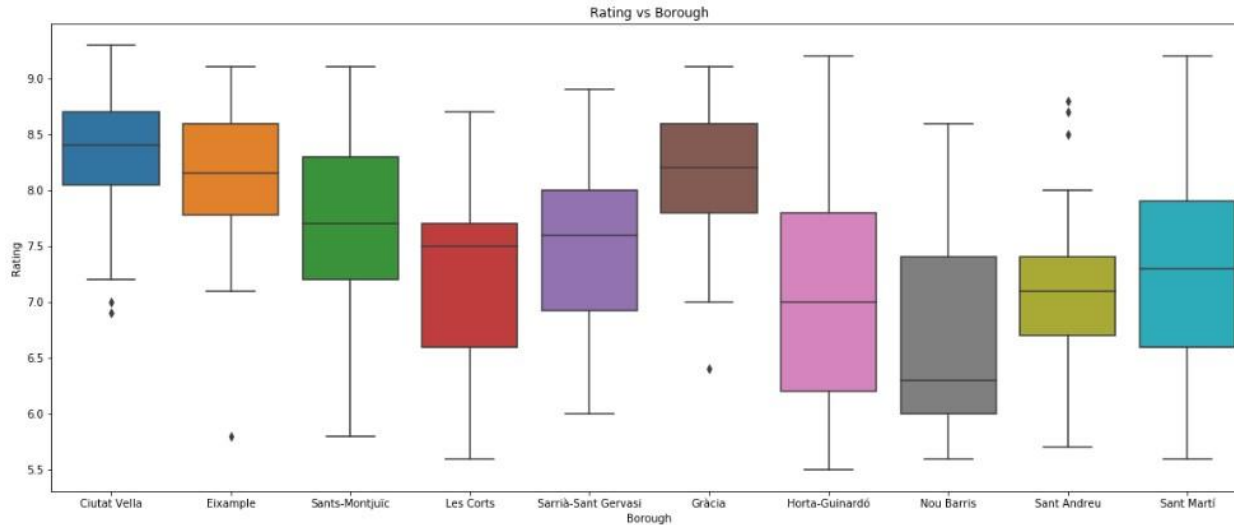


# Results - Exploratory Analysis



- Categories show great variability in restaurant ratings
- Vegan/Vegetarian restaurants tend to be better valued
- Fast food restaurants seem to be the worst rated

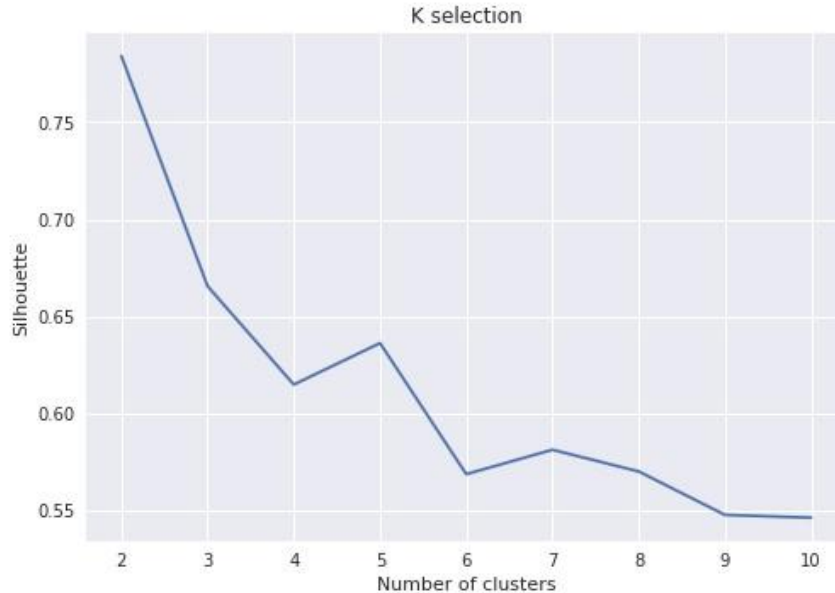
# Results - Exploratory Analysis



Ciutat Vella, Eixample and Gràcia stand out for the ratings of their restaurants

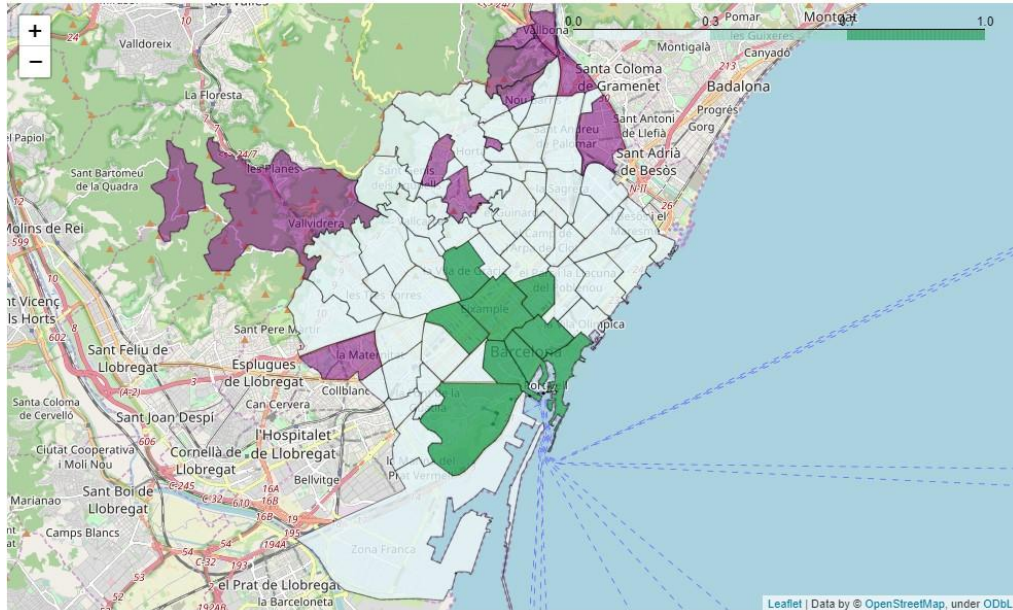


# Results - Cluster Analysis



The model with  $K = 2$  was selected as the best model

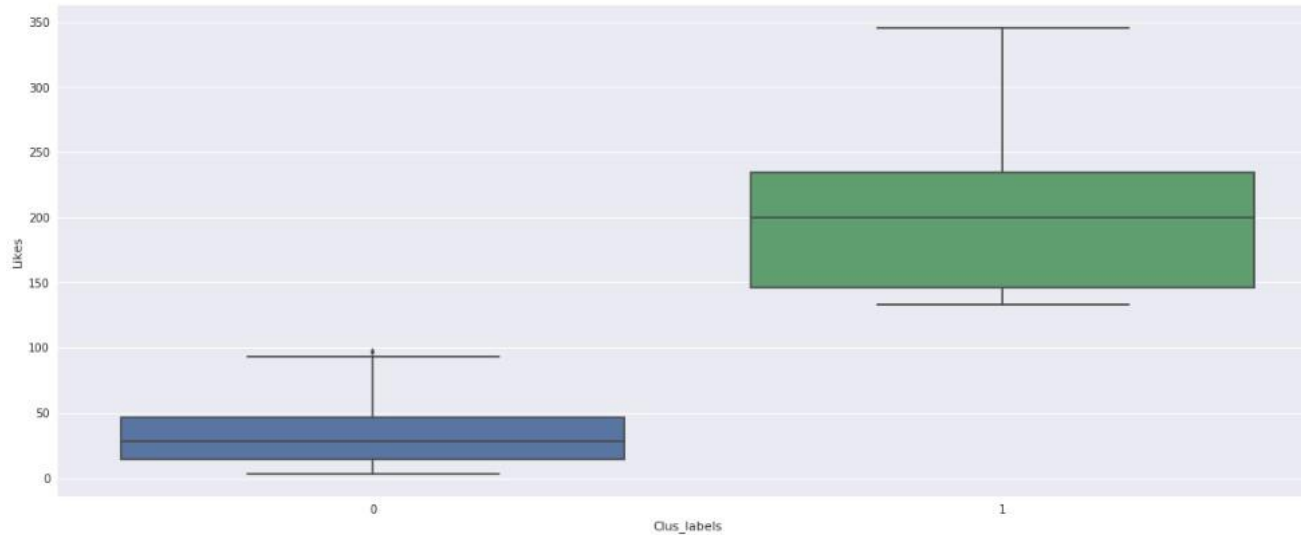
# Results - Cluster Analysis



Cluster 1 (green)  
neighborhoods are all  
physically adjacent in a  
concrete area



## Results - Cluster Analysis



Popularity (Likes and Ratings)  
greatly differs between  
clusters



# Discussion

- Results point to the existence of a trendy urban area composed by cluster 1 neighborhoods.
- This area holds a central and well-communicated position in the city, between three very iconic and touristic boroughs: Ciutat Vella, Eixample, and Gràcia.
- Neighborhoods in this area (cluster 1) are the most convenient to consider if you want to open a restaurant in Barcelona.
- Further analysis including real estate data could improve these recommendations



# Conclusion

- Data science methodologies have been applied to answer the business question: Which neighborhoods of Barcelona would be more advisable to consider if you want to maximize the popularity of your restaurant?
- The purpose of this project has been satisfied
- The achievement of this objective highlights the effectiveness of the use of data science methodology to improve decision-making in business.