

# PORTUGAL AN OPPORTUNITY

Data Science by IBM/Coursera

Cláudio Ferreira

19/10/2019

# Invest in Portuguese Tourism

- Due to the growth of the Portuguese economy to the increase of the tourist consumption and the incentive measures to the investment. Portugal has become very attractive for foreign investment groups.

## Take note:

- In 2018, Portugal received over 12 million foreign tourists,
- Revenues in the sector increased 7.7% in Jan-Aug (2019), they represent more than 13% of PIB,.
- In August 2019 Portugal received 3 308.7 guests, which generate an income of 630.1€ million for the sector.

# Imagine that an investment group wants to invest in a successful business in Portugal.

They need to know

- What kinds of businesses the cities already offer?
- In which cities they could invest?
- What kind of investment should the investment group make??

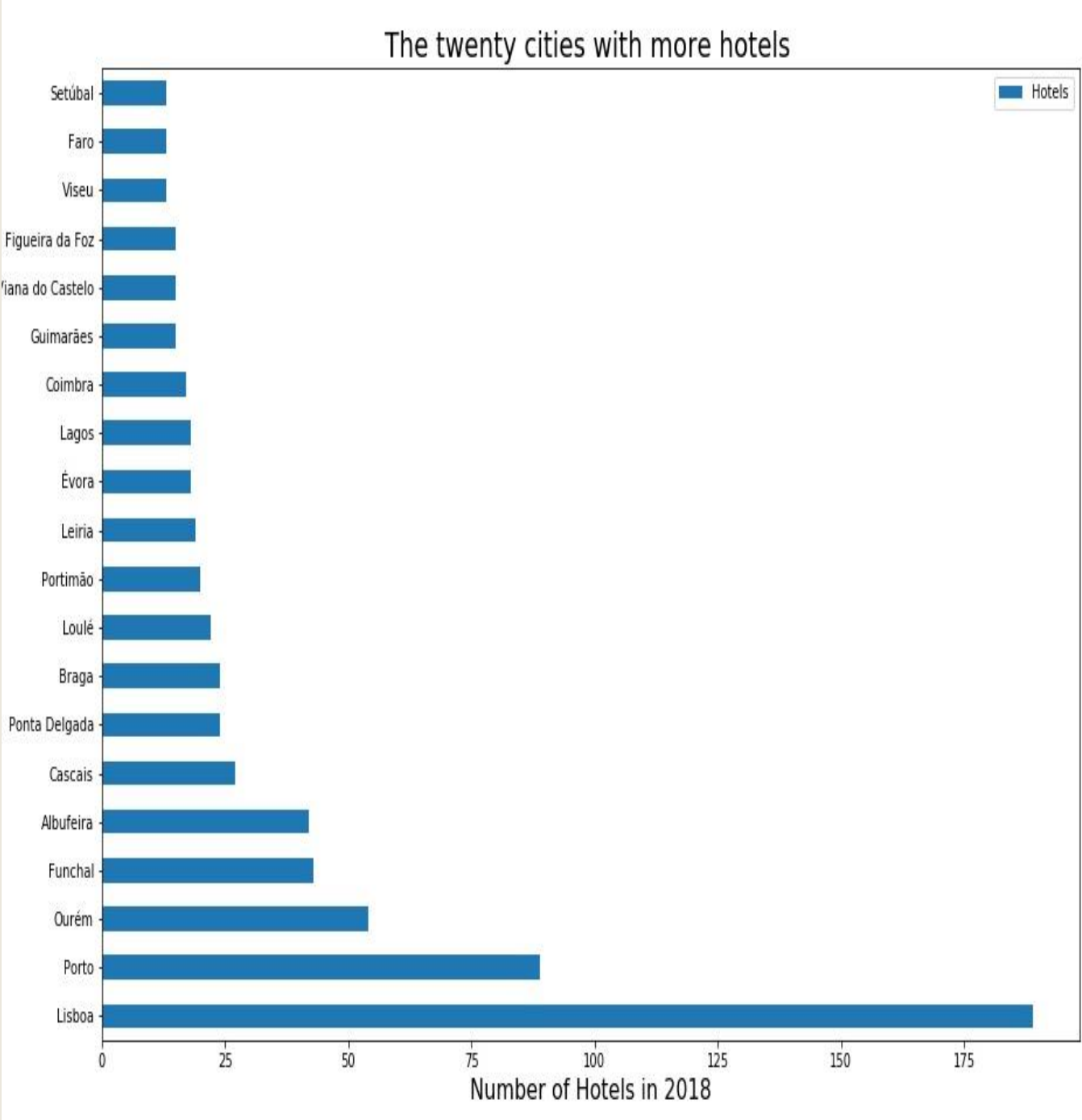
# Data acquisition and cleaning

- Info about Portuguese accommodations touristic in 2018, from [Pordata](#), as index of most touristic cities.
- Folium library was used to confirm the correct location and identification of each city on the Portugal map
- Coded a Foursquare loop request based on table 1. The result was a total of 1779 venues, distributed for 178 venues categories.
- Segmentation by K-Means clustering

# Cities with the higher tourism

## Cities and coordinates

Cities	Hotels	latitude	longitude
Lisboa	189	38.725147	-9.144997
Porto	89	41.149451	-8.610788
Ourém	54	39.633666	-8.670023
Funchal	43	32.649650	-16.908678
Albufeira	42	37.089506	-8.246843
Cascais	27	38.696812	-9.424695
Ponta Delgada	24	37.739434	-25.668362
Braga	24	41.551058	-8.428005
Loulé	22	37.079227	-8.110704
Portimão	20	37.126283	-8.538482
Leiria	19	39.743790	-8.807112
Évora	18	38.570774	-7.909281
Lagos	18	37.099555	-8.676873
Coimbra	17	40.210980	-8.429206
Guimarães	15	41.441768	-8.295571
Viana do Castelo	15	41.694867	-8.831088
Figueira da Foz	15	40.148282	-8.855414
Viseu	13	40.657471	-7.913866
Faro	13	37.019869	-7.929246
Setúbal	13	38.523410	-8.894496

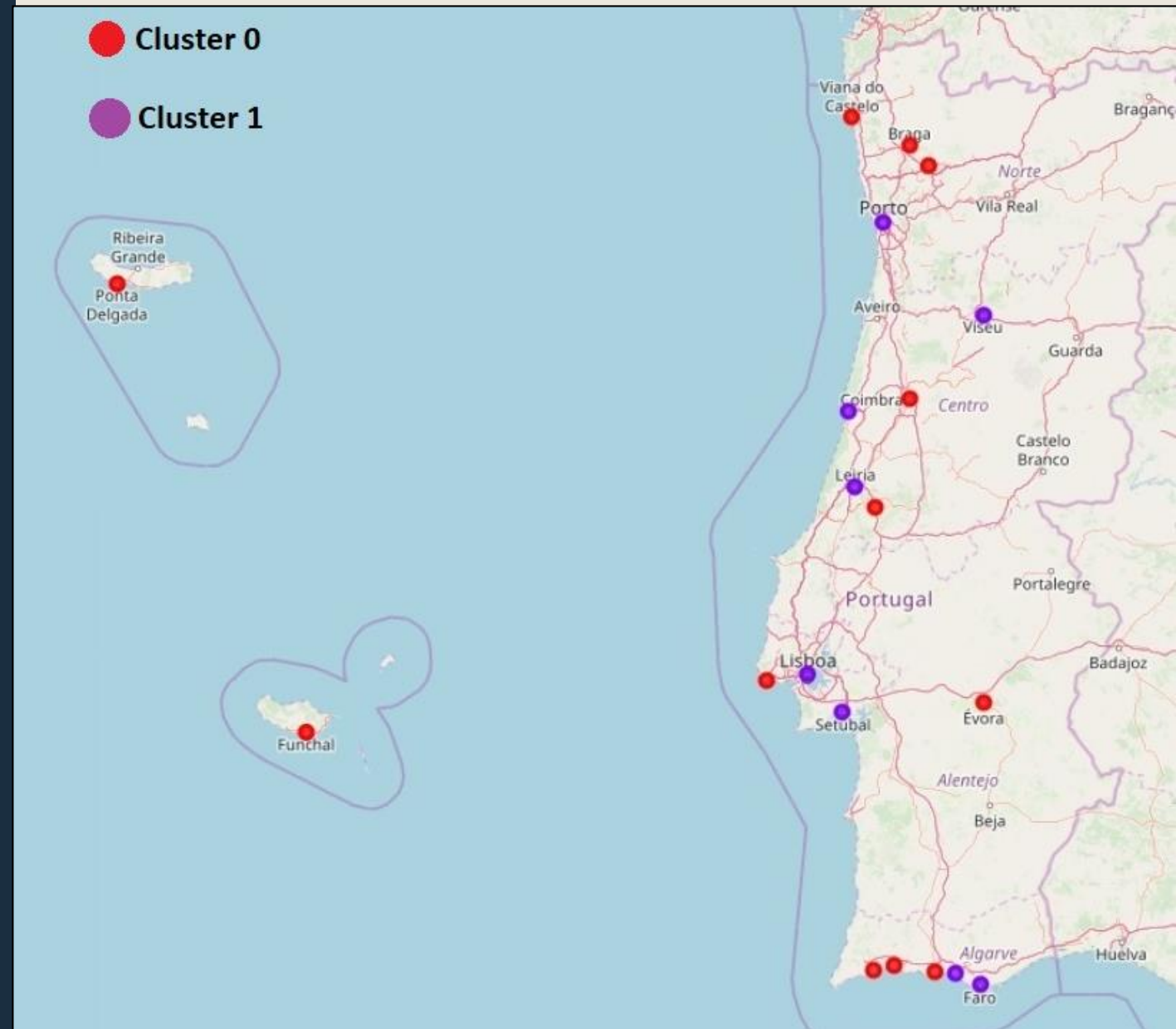
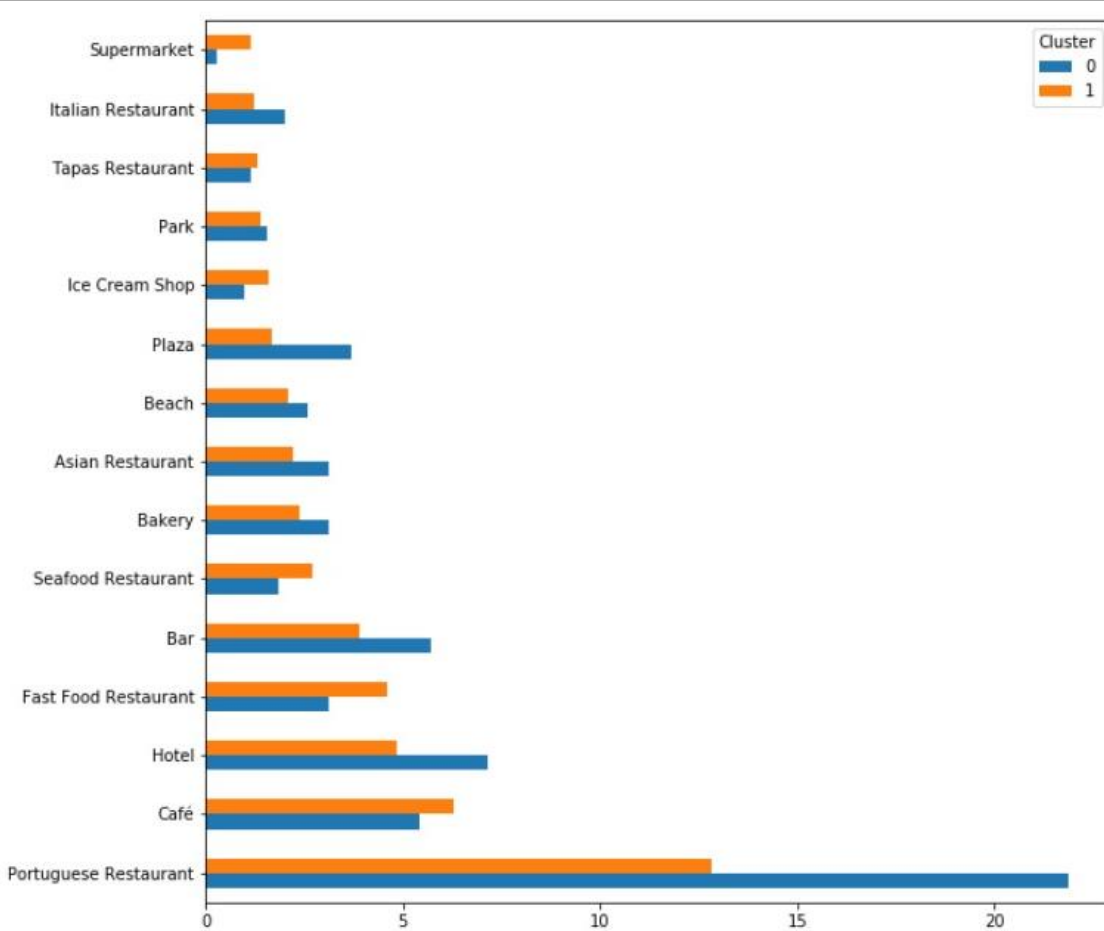


# MOST COMMON VENUES

Cities	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
Albufeira	Portuguese Restaurant	Hotel	Bar	Beach	Italian Restaurant	Seafood Restaurant	Asian Restaurant	Cocktail Bar	Fast Food Restaurant	Café
Braga	Portuguese Restaurant	Bar	Café	Asian Restaurant	Hotel	Plaza	Bakery	Vegetarian / Vegan Restaurant	Gym / Fitness Center	Fast Food Restaurant
Cascais	Portuguese Restaurant	Asian Restaurant	Hotel	Seafood Restaurant	Beach	Café	Italian Restaurant	Historic Site	Steakhouse	Ice Cream Shop
Coimbra	Portuguese Restaurant	Plaza	Café	Hotel	Bar	Bakery	Park	Italian Restaurant	Historic Site	Tapas Restaurant
Faro	Portuguese Restaurant	Fast Food Restaurant	Bakery	Bar	Tapas Restaurant	Beer Bar	Lounge	Supermarket	Café	Hotel
Figueira da Foz	Café	Portuguese Restaurant	Beach	Fast Food Restaurant	Hotel	Ice Cream Shop	Tapas Restaurant	Bar	Historic Site	Park
Funchal	Portuguese Restaurant	Hotel	Bakery	Café	Bar	Plaza	Asian Restaurant	Fast Food Restaurant	Seafood Restaurant	Gym
Guimarães	Portuguese Restaurant	Café	Bar	Hotel	Plaza	Performing Arts Venue	Historic Site	Asian Restaurant	Electronics Store	Fast Food Restaurant
Lagos	Portuguese Restaurant	Fast Food Restaurant	Beach	Resort	Hotel	Seafood Restaurant	Bar	Tapas Restaurant	Café	Supermarket
Leiria	Portuguese Restaurant	Café	Fast Food Restaurant	Plaza	Asian Restaurant	Electronics Store	Bar	Seafood Restaurant	Lounge	Spanish Restaurant
Lisboa	Hotel	Portuguese Restaurant	Asian Restaurant	Scenic Lookout	Café	Fast Food Restaurant	Plaza	Garden	Bar	Park
Loulé	Portuguese Restaurant	Hotel	Café	Beach	Lounge	Seafood Restaurant	Bar	Resort	Italian Restaurant	Cupcake Shop
Ourém	Portuguese Restaurant	Hotel	Café	Historic Site	Trail	Cosmetics Shop	Bar	Seafood Restaurant	Snack Place	Brewery
Ponta Delgada	Portuguese Restaurant	Hotel	Café	Seafood Restaurant	Fast Food Restaurant	Bar	Bakery	Asian Restaurant	Ice Cream Shop	Garden
Portimão	Portuguese Restaurant	Hotel	Beach	Fast Food Restaurant	Seafood Restaurant	Café	Bar	Ice Cream Shop	Lounge	Bakery
Porto	Portuguese Restaurant	Bar	Hostel	Café	Ice Cream Shop	Plaza	Wine Bar	Sandwich Place	Tapas Restaurant	Cocktail Bar
Setúbal	Fast Food Restaurant	Café	Portuguese Restaurant	Seafood Restaurant	Fish & Chips Shop	Park	Asian Restaurant	Electronics Store	Bakery	Supermarket
Viana do Castelo	Portuguese Restaurant	Bakery	Café	Fast Food Restaurant	Bar	Hotel	Plaza	Supermarket	Beach	Park
Viseu	Portuguese Restaurant	Café	Bar	Fast Food Restaurant	Hotel	Bakery	Nightclub	Bed & Breakfast	Asian Restaurant	Shopping Mall
Évora	Portuguese Restaurant	Hotel	Historic Site	Café	Bed & Breakfast	Pharmacy	Fast Food Restaurant	Shopping Mall	Bistro	Big Box Store

# Exploring the Clusters

Average of most common venues per city



Map 1 – Representation of Cluster “0” and “1”

# Conclusions

- Machine learning techniques is useful help the decision making of an investor group.
- It is necessary to find a platform with a database similar to Foursquare but with a larger number of Portuguese users more venues registered and updated.
- Portuguese Restaurants are the most represented business in practically all cities.
- Cities in cluster 1 have more potential to invest.
  - *Venues found on average a lower number compared to cities in cluster 0.*
- I recommend that the investment made in the construction of a hotel in the cities of Faro and especially Porto.