

# MOVING TO MADRID OR TO BARCELONA?

A DATA-DRIVEN APPROACH



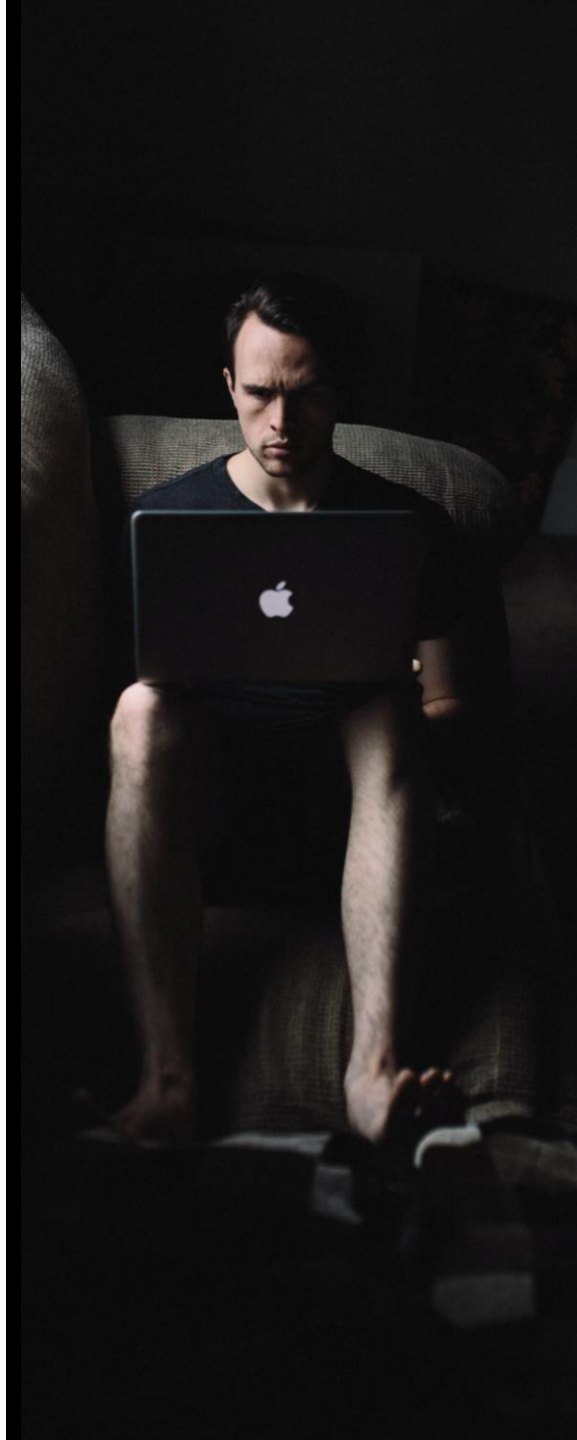
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# DECIDING WHERE TO MOVE

## MUST BE A DATA-DRIVEN DECISION

- Madrid and Barcelona are the main destination cities for both national people willing to progress and foreigners moving to Spain
- It is always easier to remotely find your dream job than regular places you'll need to make use of once the working time is over
- Everybody has their own needs, so we will focus on a given 'persona' profile very likely to be a national and/or international migrant
- This 'persona' profile consists of young people without children, likely with pets, and lovers of the natural life
- These people have a bigger than average level of spending, which is a driver for local entities to attract such kind of talent too



# WHERE THE DATA COMES FROM

## AND HOW NEEDS TO BE PREPARED

- Wikipedia provides Madrid and Barcelona neighborhoods structure, Geohack does so with their geographical coordinates
- All 131 neighborhoods in Madrid and all 75 in Barcelona considered
- Foursquare API provides relevant venues per neighborhood
- INE databases provide average size of houses per neighborhood, and idealista.com the average renting per m<sup>2</sup> per neighborhood
- Above together can define the average renting price per neighborhood
- Glassdoor provides average year salaries per city and position
- Multiple venues per city and neighborhood where de-duped, grouped and compared





# FUNNELING PROCESSES SOMETIMES HELP

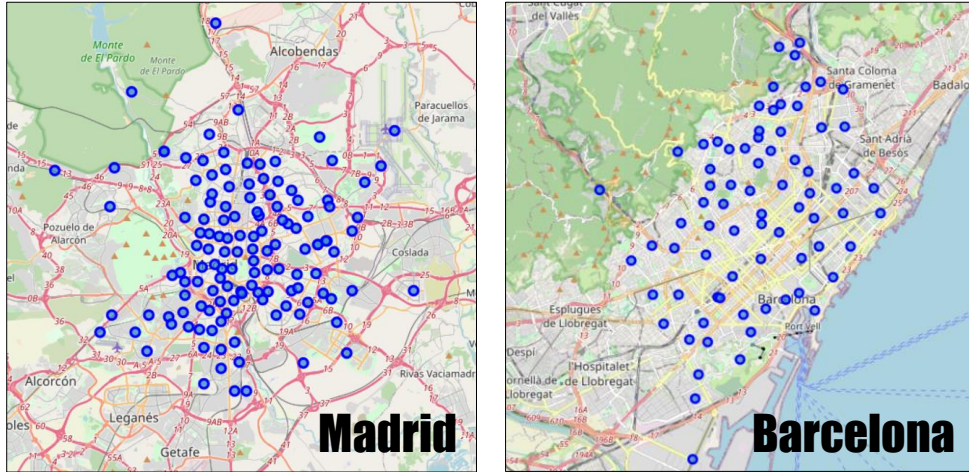
## ONCE DATA IS CLEANED AND PREPARED

- A funneling process was followed as:
  - choose the best city
  - select the most suitable cluster of neighborhoods within that city
  - uncover the pool of neighborhoods affordable for the migrant as per salary level
- To choose the best city:
  - define and count 'natural' venues per city / district / neighborhood
  - compare cities based on those visually and via t-test for unequal samples
- Once city chosen, define clusters based on all venue types and choose the one with a more 'natural'-like profile
- Subset pools of neighborhoods a migrant could move to, based on the average renting amount and their possible salary



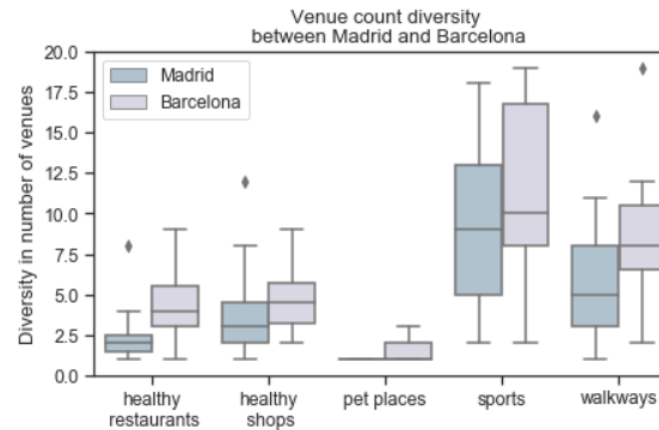
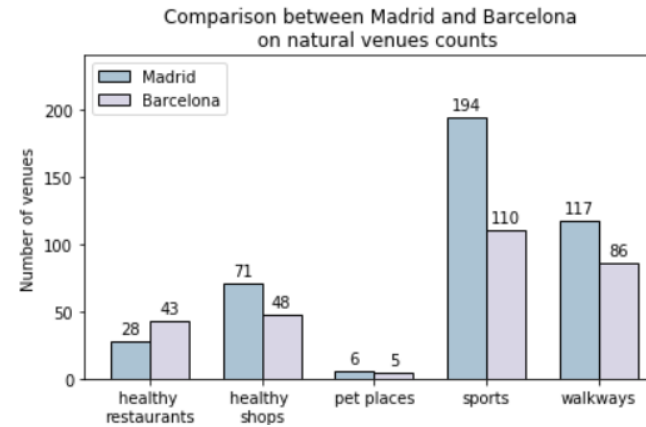
# CHOSE THE BEST OF THE TWO CITIES

## BASED ON THE AMOUNT OF 'NATURAL' VENUES



**Madrid** is the city which has the biggest amount of 'natural' venues, as well as having those more equally distributed amongst neighborhoods:

**T-test**    t-value: -2.16     $p = 0.04$





# DEFINE CLUSTERS OF NEIGHBORHOODS

## AND CHOSE THE MOST 'NATURAL' ONE



When generating clusters via k-means the most balanced option was defining a priori a k value of 4 clusters.

Cluster 1 seemed the best candidate, but with 80 out of the 131 neighborhoods in, still required some additional cleaning. The final list of top 10 'natural' options was:

	Neighborhood	Natural Rank	Average Home Size m2	Rental m2 EUR	Average Rental EUR
0	Fuentelarreina	7	269	12.30	3308.70
1	Valdezarza	6	88	12.30	1082.40
2	Abrantes	6	84	10.40	873.60
3	Horcajo	6	141	9.68	1364.88
4	San Cristobal	6	69	10.61	732.09
5	Puerta del Angel	5	83	13.10	1087.30
6	Las Aguilas	5	84	10.00	840.00
7	Almendrales	5	91	11.70	1064.70
8	Media Legua	5	99	11.30	1118.70
9	Apostol Santiago	5	109	10.80	1177.20



# SELECT THE POSSIBLE NEIGHBORHOOD

## YOU MAY BE ABLE TO LIVE IN WITH YOUR SALARY



Job positions in Madrid and their average year salary, can define 3 salary ranges and provide options to migrants based on those:

Salary range 1: EUR20k – EUR30k

	District	Neighborhood	Natural Rank	Average Home Size m2	Average Rental EUR
2	Carabanchel	Abrantes	6	84	873.60
4	Villaverde	San Cristobal	6	69	732.09
6	Latina	Las Aguilas	5	84	840.00

Salary range 2: EUR30k – EUR40k

	District	Neighborhood	Natural Rank	Average Home Size m2	Average Rental EUR
7	Usera	Almendrales	5	91	1064.7

Salary range 3: EUR40k – EUR50k

	District	Neighborhood	Natural Rank	Average Home Size m2	Average Rental EUR
1	Moncloa-Aravaca	Valdezarza	6	88	1082.40
3	Moratalaz	Horcajo	6	141	1364.88
5	Latina	Puerta del Angel	5	83	1087.30
8	Moratalaz	Media Legua	5	99	1118.70
9	Hortaleza	Apostol Santiago	5	109	1177.20





# WHAT WE LEARNED

## AND WHAT WE COULD KEEP LEARNING

- Madrid seems a better provisioned city for migrants looking for a 'natural' way of living
- The more 'natural' neighborhoods are spread across the city and have different average home sizes and renting prices
- Different salary levels of professional migrants would still provide them diverse options to live as they want in Madrid
- There are possible applications for this data-driven approach for:
  - talent acquisition companies willing to better serve through a holistic approach
  - local public entities wanting to attract high profile neighbors
- Some improvements would come from being able to define several other 'persona' profiles and adapt this system to multi-profile usage







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