

# Comparing the neighborhoods of

Abidjan and Dakar

# Business Problem

- ❖ Gathering information when relocating about a neighborhood or a city is crucial for decision making
- ❖ Similarities will help keep or avoid some characteristics when looking for new area
- ❖ Such information may not be always available for a tourist or a person who is planning to relocate

# About the Data

❖ Abidjan neighborhood list and their geo localization coordinates (13 lines)

❖ Dakar neighborhood list and their geo localization coordinates (20 lines)

❖ Abidjan and Dakar venues information provided by Foursquare

❖ Merging Abidjan and Dakar Data

- During the merge : non common categories were dropped.

*Example of a neighborhood data*

Neighborhood	Latitude	Longitude
Abobo	5.432887	-4.038892
Adjamé	5.365073	-4.023572
Yopougon	5.365073	-4.023572
Le Plateau	5.323212	-4.023689
Attécoubé	5.3362	-4.0414
Cocody	5.35	-3.9833
Koumassi	5.303	-3.9419
Marcory	5.3027	-3.9827
Port-Bouët	5.2773	-3.8859
Treichville	5.2936	-4.0083
Anyama	5.5	-4.05
Bingerville	5.35	-3.9
Songon	5.2917	-4.2454

## Neighborhoods with highest number of venues

Neighborhood	Venue	Venue Category
Camberene (SN)	3	3
Dakar Plateau (SN)	21	21
Dieuppeul Derkle (SN)	5	5
Fann Point E Amitie (SN)	11	11
Goree (SN)	4	4
Grand Dakar (SN)	7	7
Grand Yoff (SN)	8	8
Gueule Tapee Fass Colobane (SN)	10	10
HLM (SN)	4	4
Hann Bel Air (SN)	4	4
Les Parcelles Assainies (SN)	6	6
Medina (SN)	9	9
Mermoz Sacre Cœur (SN)	25	25
Ngor (SN)	59	59
Ouakam (SN)	8	8
Patte d Oie (SN)	11	11
Sicap Liberte (SN)	13	13
Yoff (SN)	11	11

- Top : Ngor, Mermoz Sacre Coeur, Dakar Plateau

Neighborhood	Venue	Venue Category
Abobo (IC)	1	1
Adjame (IC)	8	8
Attecoube (IC)	1	1
Bingerville (IC)	1	1
Cocody (IC)	8	8
Koumassi (IC)	6	6
Le Plateau (IC)	16	16
Marcory (IC)	24	24
Treichville (IC)	8	8
Yopougon (IC)	9	9

- **Marcory and Plateau**

Are probably the most prominent neighborhoods.

# Clustering avec KMean

Abidjan

Neighborhood	Cluster Label	Description
Abobo	2	Gastropub
Adjame	6	Popular and busy district
Attecoube	3	Pier
Bingerville	0	Restauration
Cocody, Koumassi	1	Supermakes and Bakery?
Le Plateau, Marcory, Treichville	5	Business, shoping and entertainment
Yopougon	4	Bar

- Neighborhoods were grouped by category And their means values
- Top 5 venues helped to describe the neighborhoods

Dakar

Neighborhood	Cluster Label	Description
Camberene	3	Accessories Store, Business Service, Bakery
Dakar Plateau, Gueule Tapee Fass Colobane, Hann Bel Air, Medina, Ngor, Yoff	1	Hotel, Restaurant, Furniture / Home Store, Shopping Mall
Dieuppeul Derkle	6	Fast Food Restaurant, Electronics Store, Health & Beauty Service
Fann Point E Amitie, Grand Dakar, Grand Yoff, Les Parcelles Assainies, Mermoz Sacre Coeur, Ouakam, Sicap Liberte	0	Pizza Place, Supermarket, Fast Food Restaurant, Beach, Ice Cream Shop
Goree	4	Boat or Ferry, History Museum,Art Museum
HLM	5	Zoo,Farmers Market
Patte d'Oie	2	Supermarket

- Kmean model is used With 7 centroids



# Similarities between Abidjan and Dakar neighborhoods

```
cluster_0.head()
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
2	Attecoube (IC)	Pier	Harbor / Marina	Flea Market	Fast Food Restaurant	Bar

**Attecoube** of Ivory Cost is also a percular neighborhood unlike any of the neighborhoods in Dakar.

Neighborhood	City
Attecoube	Abidjan

```
cluster_7.head()
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
19	Hann Bel Air (SN)	Sporting Goods Shop	Furniture / Home Store	Diner	Mobile Phone Shop	Playground

**Hann Bel Air** has no similar neighborhoods in Ivory Coast.

```
cluster_1.head(10)
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
5	Koumassi (IC)	Convenience Store	Bakery	Hotel	Pharmacy	Diner
6	Le Plateau (IC)	Hotel	Restaurant	Café	Soccer Field	Park
11	Dakar Plateau (SN)	Hotel	French Restaurant	Café	Italian Restaurant	BBQ Joint
17	Gueule Tapee Fass Colobane (SN)	Restaurant	Hotel	Playground	French Restaurant	Mobile Phone Shop
23	Ngor (SN)	Hotel	Restaurant	African Restaurant	French Restaurant	Bakery
27	Yoff (SN)	Hotel	Restaurant	Supermarket	Mobile Phone Shop	Shopping Mall

## Hotels and Restaurants

## Similarities between Abidjan and Dakar neighborhoods

```
cluster_2.head()
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Abobo (IC)	Gastropub	Harbor / Marina	Flea Market	Fast Food Restaurant	Bar

**Abobo** of Ivory Coast known for its **Gastropub** has no similar neighborhoods in Dakar..

Neighborhood	City
Abobo	Abidjan

```
cluster_3.head(15)
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
7	Marcory (IC)	Shopping Mall	Café	Supermarket	Ice Cream Shop	Restaurant
8	Treichville (IC)	Harbor / Marina	Electronics Store	African Restaurant	Shopping Mall	Mobile Phone Shop
9	Yopougon (IC)	Bar	Electronics Store	Pharmacy	Restaurant	Playground
13	Fann Point E Amitie (SN)	Pizza Place	French Restaurant	Flea Market	Bakery	Shopping Mall
14	Goree (SN)	Restaurant	Mobile Phone Shop	Harbor / Marina	Flea Market	Fast Food Restaurant
15	Grand Dakar (SN)	Electronics Store	French Restaurant	Mobile Phone Shop	Harbor / Marina	Flea Market
18	HLM (SN)	Restaurant	Ice Cream Shop	Mobile Phone Shop	Shopping Mall	Flea Market
20	Les Parcelles Assainies (SN)	Art Gallery	Bakery	Park	Pharmacy	Mobile Phone Shop
21	Medina (SN)	Shopping Mall	Flea Market	Movie Theater	Hotel	Mobile Phone Shop
22	Mermoz Sacre Cœur (SN)	Pizza Place	Restaurant	African Restaurant	Mobile Phone Shop	Supermarket
24	Ouakam (SN)	Bakery	African Restaurant	Pizza Place	Mobile Phone Shop	Playground



- Dakar (8) , Abidjan (3)

# Similarities between Abidjan and Dakar neighborhoods

```
cluster_4.head()
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
1	Adjame (IC)	Fast Food Restaurant	Flea Market	Mobile Phone Shop	Harbor / Marina	Bar
12	Dieuppeul Derkle (SN)	Fast Food Restaurant	Electronics Store	Mobile Phone Shop	Harbor / Marina	Flea Market

This cluster shows that **Fast Food Restaurant** are highly present in these neighborhoods

Neighborhood	City
Adjame	Abidjan
Dieuppeul Derkle	Dakar

- 1 Abidjan
- 1 Dakar

```
cluster_5.head()
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
3	Bingerville (IC)	Restaurant	Mobile Phone Shop	Harbor / Marina	Flea Market	Fast Food Restaurant

**Bingerville** has no similar neighborhoods.

```
cluster_6.head(10)
```

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
4	Cocody (IC)	Café	Supermarket	Fast Food Restaurant	Bakery	Boutique
10	Camberene (SN)	Bakery	Mobile Phone Shop	Shopping Mall	Flea Market	Fast Food Restaurant
16	Grand Yoff (SN)	Fast Food Restaurant	Supermarket	Ice Cream Shop	Bakery	Playground
25	Patte d Oie (SN)	Supermarket	Ice Cream Shop	Park	African Restaurant	Pharmacy
26	Sicap Liberte (SN)	Ice Cream Shop	Supermarket	Shopping Mall	Fast Food Restaurant	Bakery

- 1 Abidjan
- 4 Dakar

# Conclusion

- Lot of Abidjan and Dakar neighborhoods are similar (7/10 from Abidjan and 10/18 from Dakar).
- Restauration is quite present at every corner.
- There are neighborhoods with plenty of known venues whereas some have almost none in the dataset of foursquare
- Yopougon appeared to be a mark or particularity of Abidjan with a lot of Bar, bistro, and so forth. But we found out with the clustering that it has some similarities with Dakar.
- Behavioral (or crime data) and the employment ratio data would help to provide much more insights on neighborhoods.