

# The cities ecosystems

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UNDERSTANDING THE ECONOMIC ENVIRONMENT OF EACH CITIES  
TO SEEK FOR NEW OPPORTUNITIES

# Introduction

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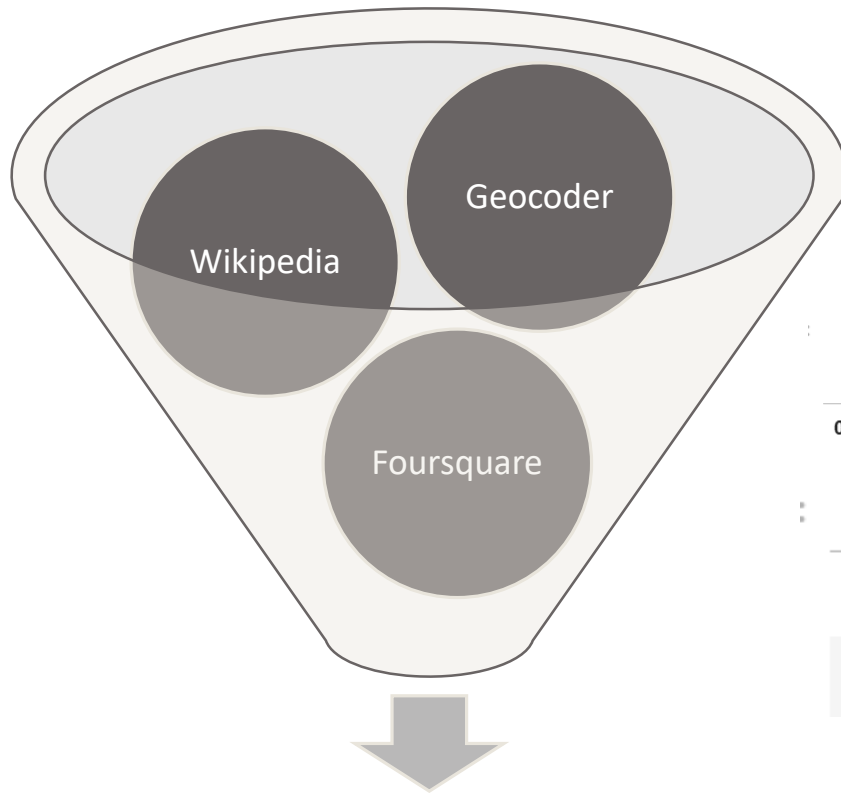
## **Facts:**

1. More than 250 cities with more than 1 millions inhabitants
2. Growing Businesses
3. Different cultures around the world

## **The problematic:**





How to consider the cities, to cluster them to adopt the right strategy to conquer new markets ?

# The datas



DATABASE

Largest cities [\[ edit \]](#)


City	Nation	Image	Population		
			City proper	Metropolitan area	Urban area <sup>[7]</sup>
Chongqing	 China		30,751,600 <sup>[8]</sup>	17,000,000 <sup>[9]</sup>	8,165,500 <sup>[a]</sup>
Shanghai	 China		24,256,800 <sup>[11]</sup>	24,750,000 <sup>[12]</sup>	23,416,000 <sup>[b]</sup>

	American Restaurant	Art Gallery	Art Museum	Asian Restaurant	Bakery	Bar	Beer Bar	Bistro	Boat or Ferry	Brazilian Restaurant	...	Tea Room	Thai Restaurant	Theater
0	0.00346	0.00692	0.00346	0.010381	0.00692	0.017301	0.00692	0.00346	0.00692	0.00346	...	0.00346	0.00346	0.00346

	City	Country	Population city	Latitude	Longitude
0	Chongqing	China	30751600.0	29.56278	106.55278
1	Shanghai	China	24256800.0	31.22222	121.45806

# The database

	City	Country	Population city	Latitude	Longitude	ATM	Abruzzo Restaurant	Acai House	Accessories Store	Adult Boutique	'''	Xinjiang Restaurant	Ya Resta
0	Chongqing	China	30751600.0	29.56278	106.55278								
1	Shanghai	China	24256800.0	31.22222	121.45806								
2	Beijing	China	21516000.0	39.90750	116.39723								
3	Lagos	Nigeria	16060303.0	6.45471	3.38876								
4	Dhaka	Bangladesh	8906039.0	23.71323	90.39957								



A world map showing the locations of cities in the database. The map uses purple circles of varying sizes to represent cities, with larger circles indicating higher population. A callout box for Calgary shows a population of 1,235,171. The map includes zoom controls (+/-) in the top left corner.

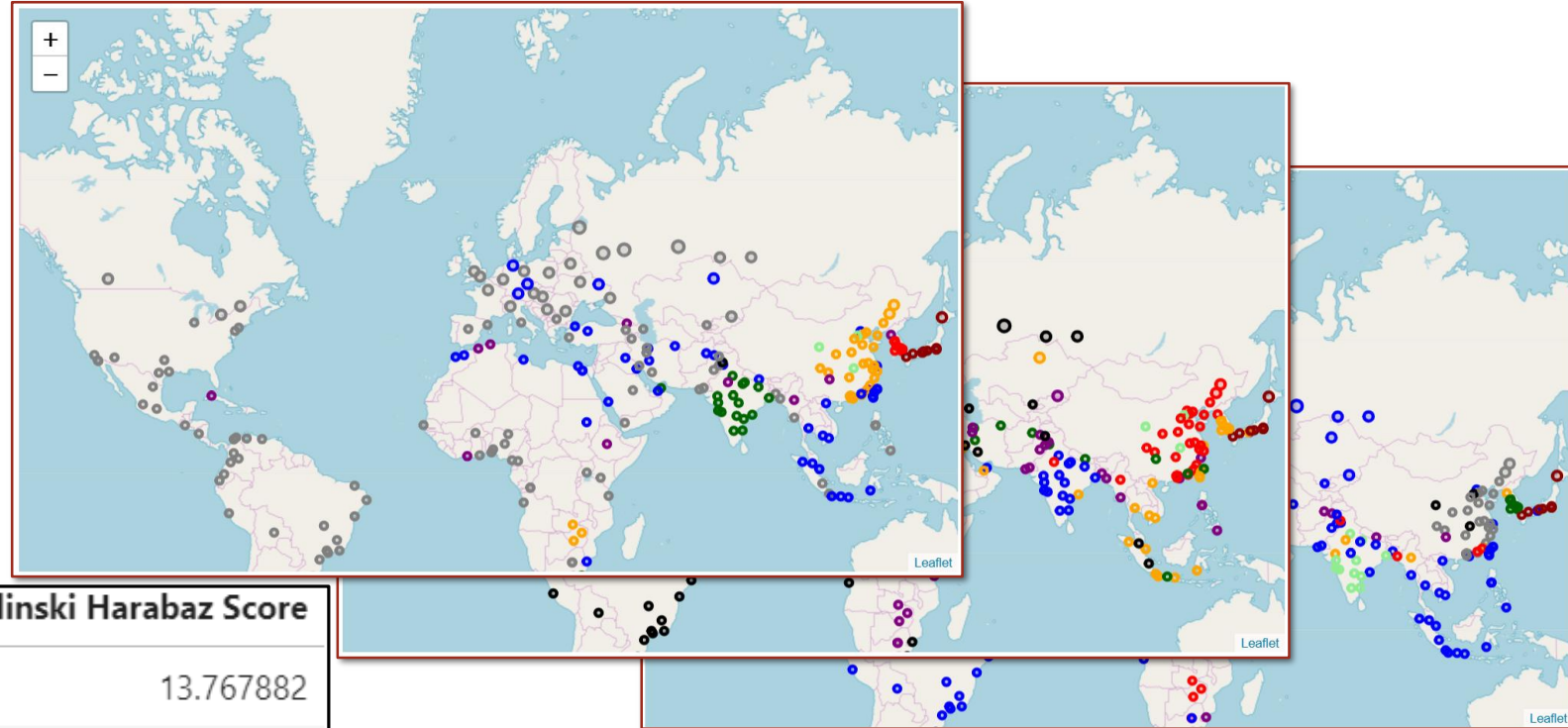
# Modeling

Three clustering Methods:

1. Kmeans
2. Spectral Clustering
3. Agglomerative Clustering

Compare and chose one :

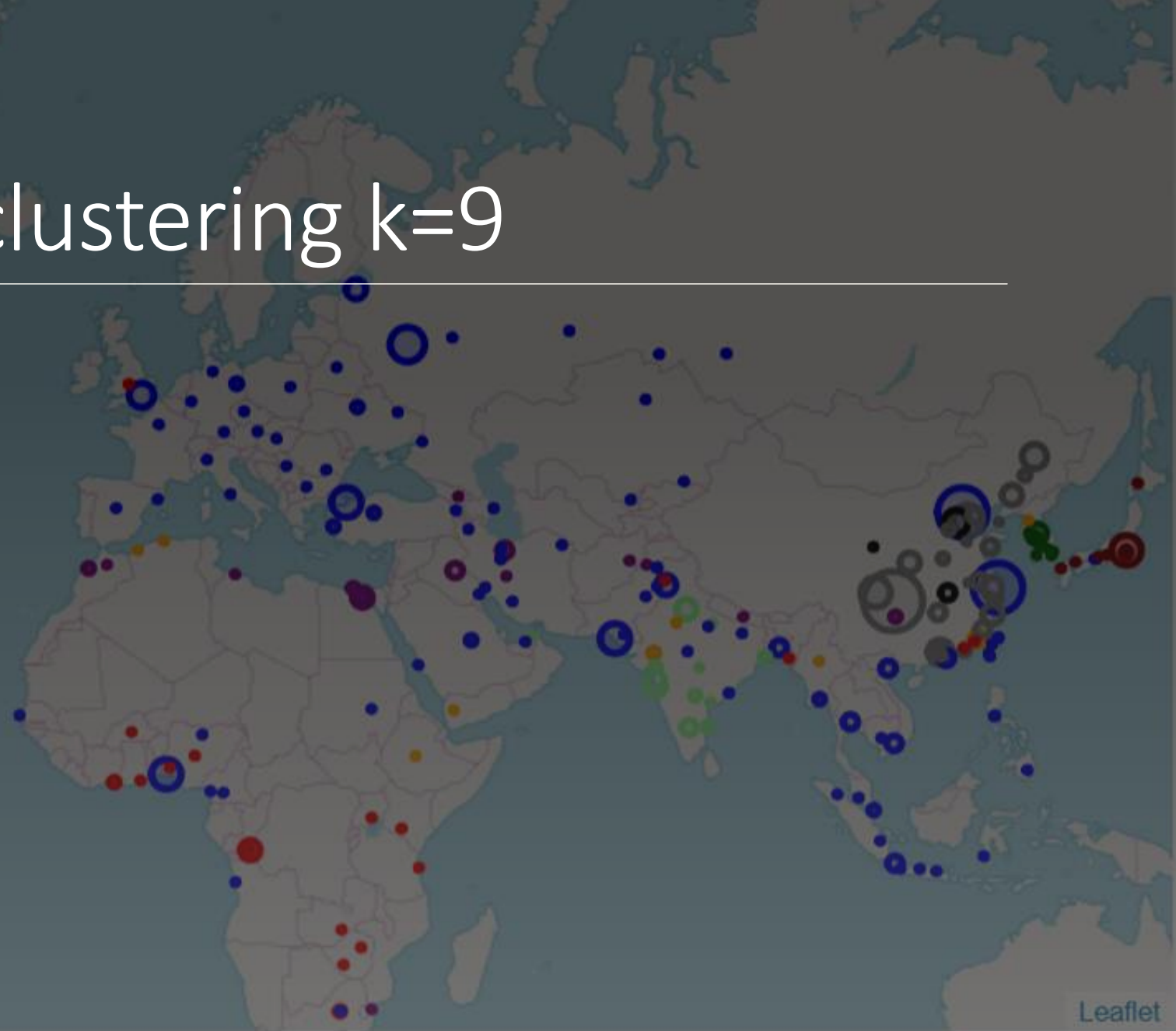
Method	k	Inertia	Silhouette Score	Calinski Harabaz Score
KMeans	9	5.95378	0.103405	13.767882
Spectral Clustering	8	None	0.089401	14.553589
Agglomerative Clustering	9	None	0.121860	13.292661



# Agglomerative clustering k=9

9 Clusters:

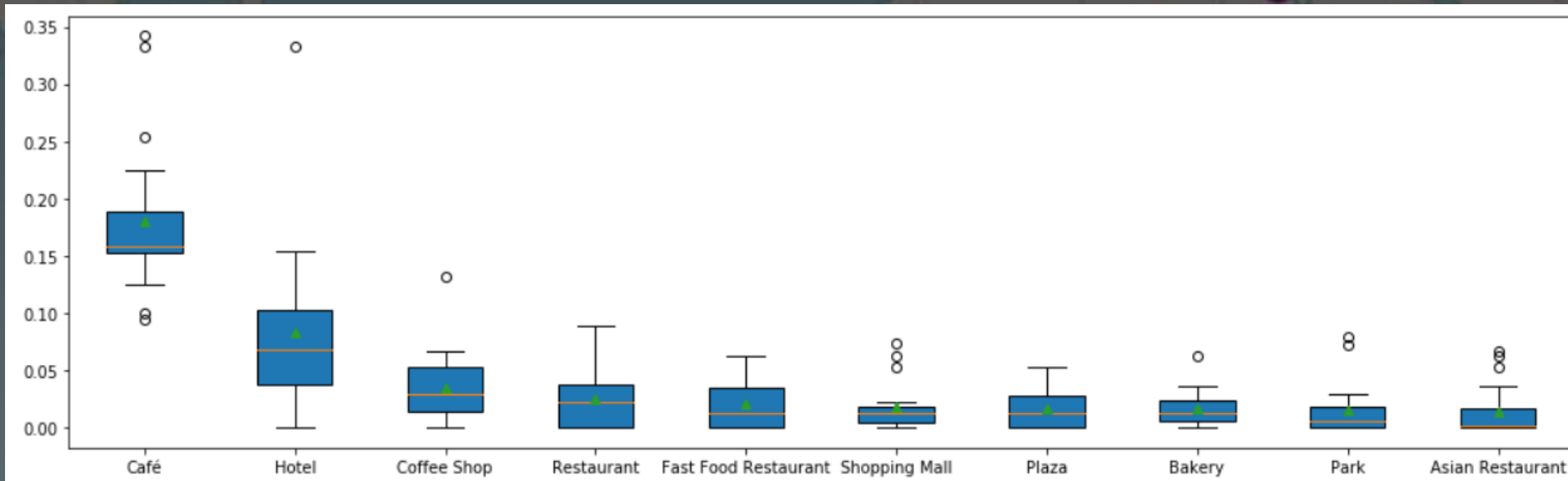
- China (twice)
- India
- South Korea
- Japan
- Equatorial region
- Water region (river and sea)
- The blue area (easter ?)
- The red area ( old colonies ?)



# The results

9 Clusters easy to study.

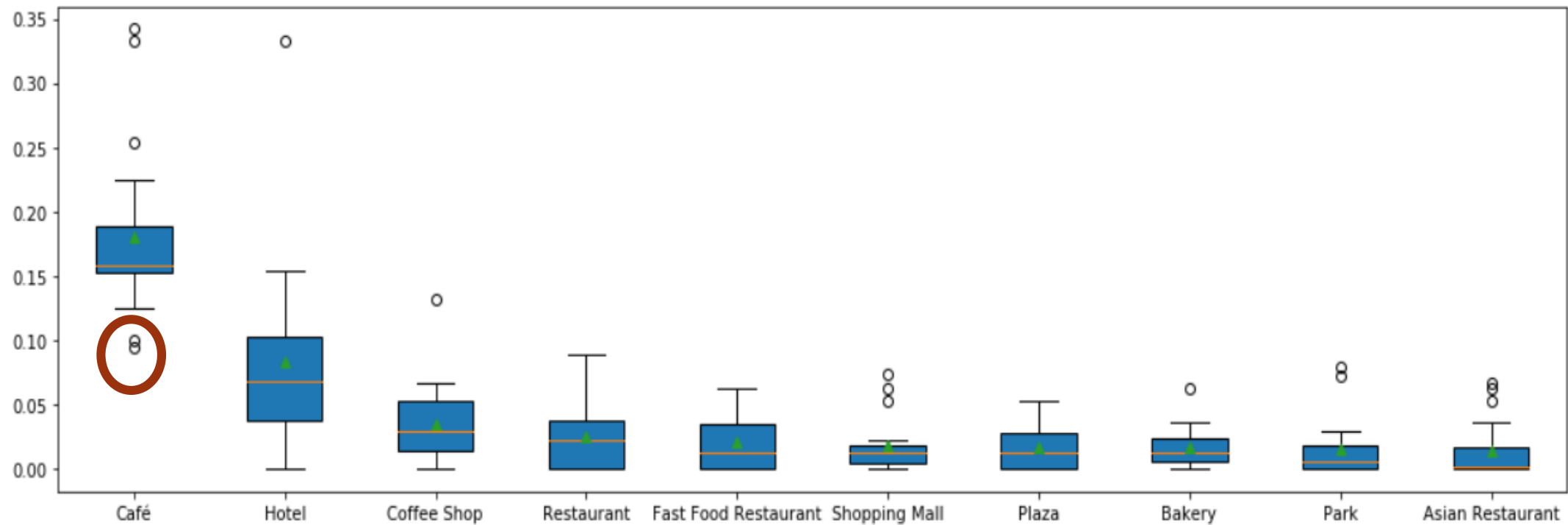
For instance: the warm region (previously called ecuador)





# Analysis

Opportunity is some cities to **rise the number of coffee place** to meet the average of the cluster





# Conclusion

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A result of 9 clusters easy to analyze

A model that allows to split the cities in 9 groups to establish different strategies adapted to each economic system

To go further:

1. Analyze each cluster to find more relations between the cities
2. Look for business opportunities in each cluster
3. Understand the different culture that are at the origins of this cities