

# Restaurant Recommender System- IBM Capstone Project

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### Purpose of the project:

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- What type of foods is available in the restaurant and is their variety?
- Which place has the best rating near me?
- How many "similar" restaurants are available near me of my previous tastes and liking?
- What speciality do these restaurants have as each place tends to have some?

### Factors considered for the study:

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- Its geographical coordinates (latitude and longitude) to find out where exactly it is located.
- Population of the neighbourhood where the restaurant is located.
- Average income of neighbourhood to know how much is the restaurant worth.

# Data Frames:

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Borough	Neighborhoods	Latitude	Longitude
Central	Cantonment area	12.972442	77.580643
Central	Domlur	12.980992	77.638726
Central	Indiranagar	12.971891	77.641151
Central	Jeevanbheemanagar	12.982900	77.659500
Central	Malleswaram	13.003100	77.584300
Central	Pete area	12.982700	77.575800
Central	Rajajinagar	12.990100	77.552500
Central	Sadashivanagar	13.006800	77.581300
Central	Seshadripuram	12.993500	77.578700
Central	Shivajinagar	12.985700	77.605700

This is the preview of the compiled data set.

## Population Data set

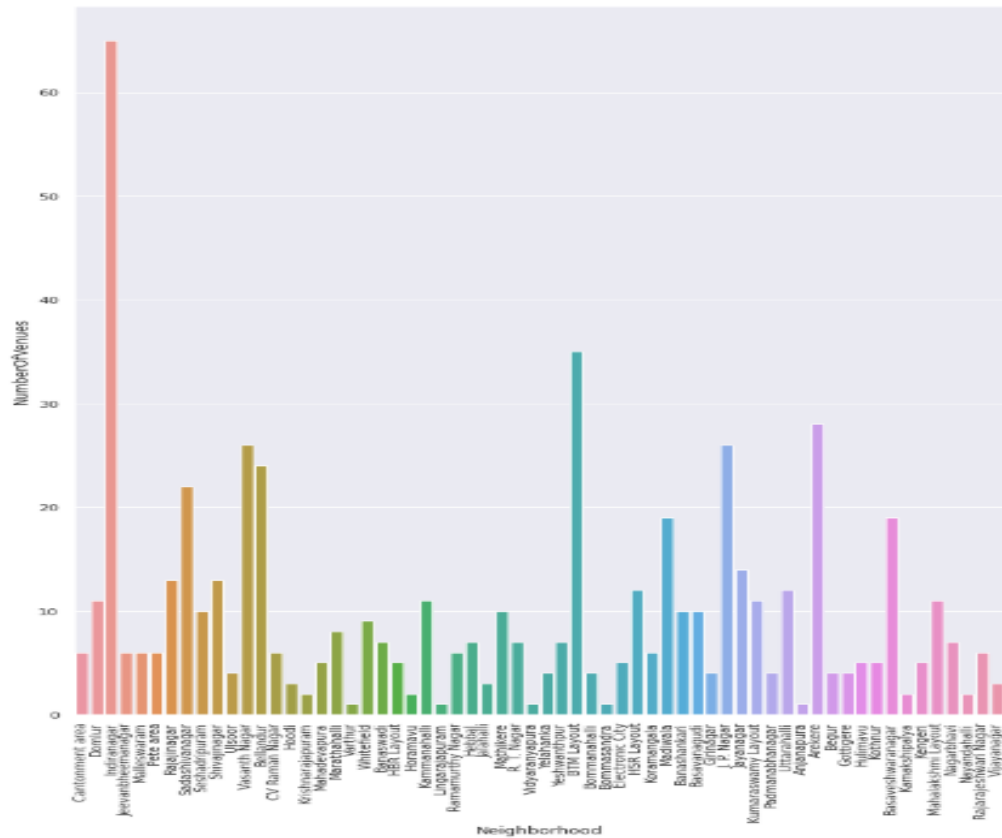
	Borough	Neighborhoods	Population	Normalized_population
0	Central	Cantonment area	888377	0.880810
1	Central	Domlur	743188	0.755587
2	Central	Indiranagar	474289	0.482190
3	Central	Jeevanbheemanagar	527874	0.538888
4	Central	Malleswaram	893829	0.908518

## Income Data set

	Borough	Neighborhoods	AverageIncome	Normalized_income
0	Central	Cantonment area	18944.099792	0.293051
1	Central	Domlur	58837.022198	0.879225
2	Central	Indiranagar	41991.817435	0.649581
3	Central	Jeevanbheemanagar	8887.447632	0.103140
4	Central	Malleswaram	53270.083892	0.824047

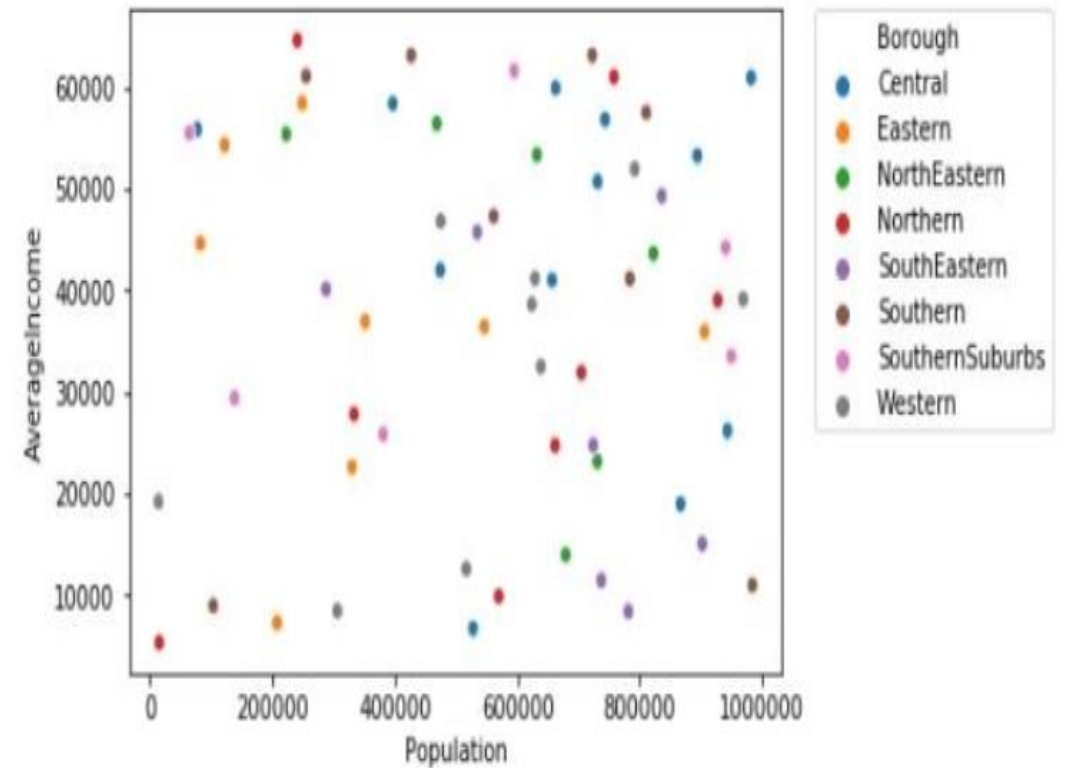
# Data Analysis:

## Exploratory analysis:

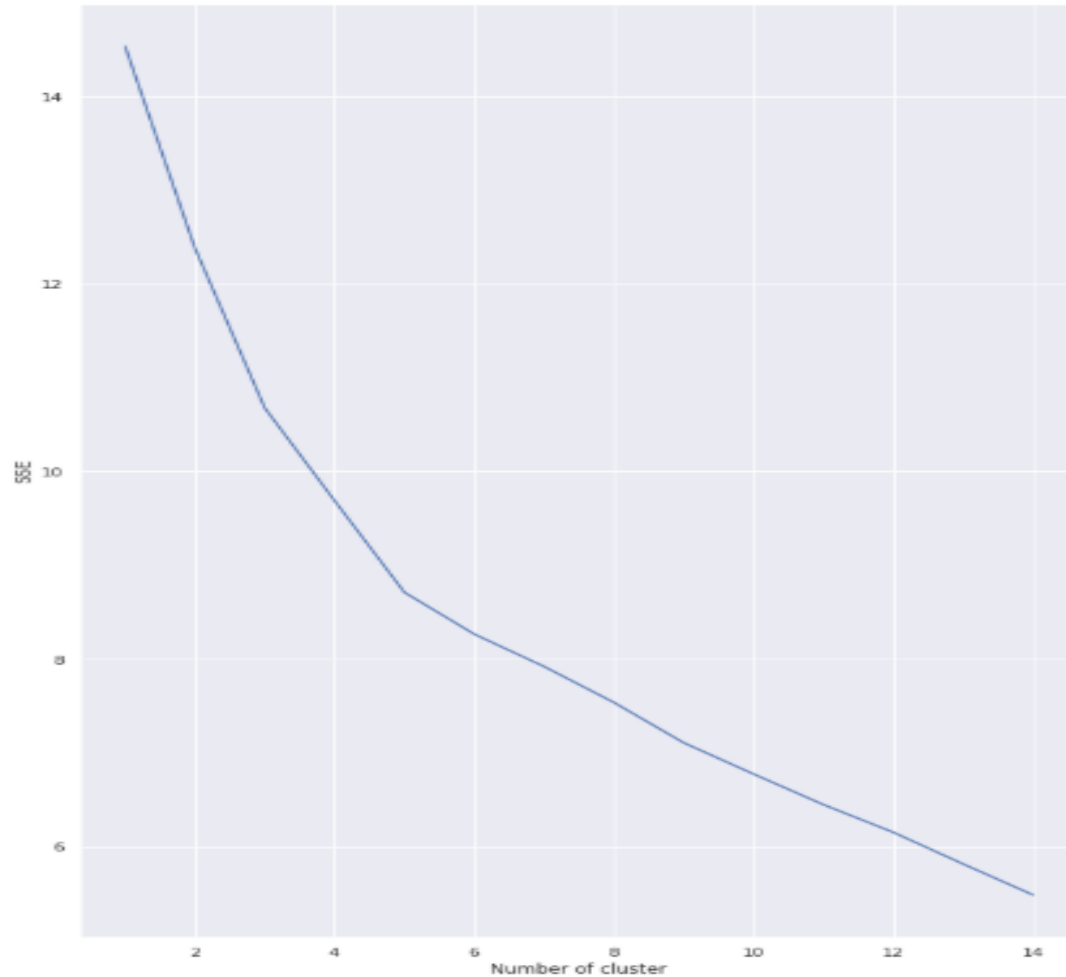


From the above graph we can see that Indernagar has most number of venues followed by BTM layout and further

## Inferential analysis:

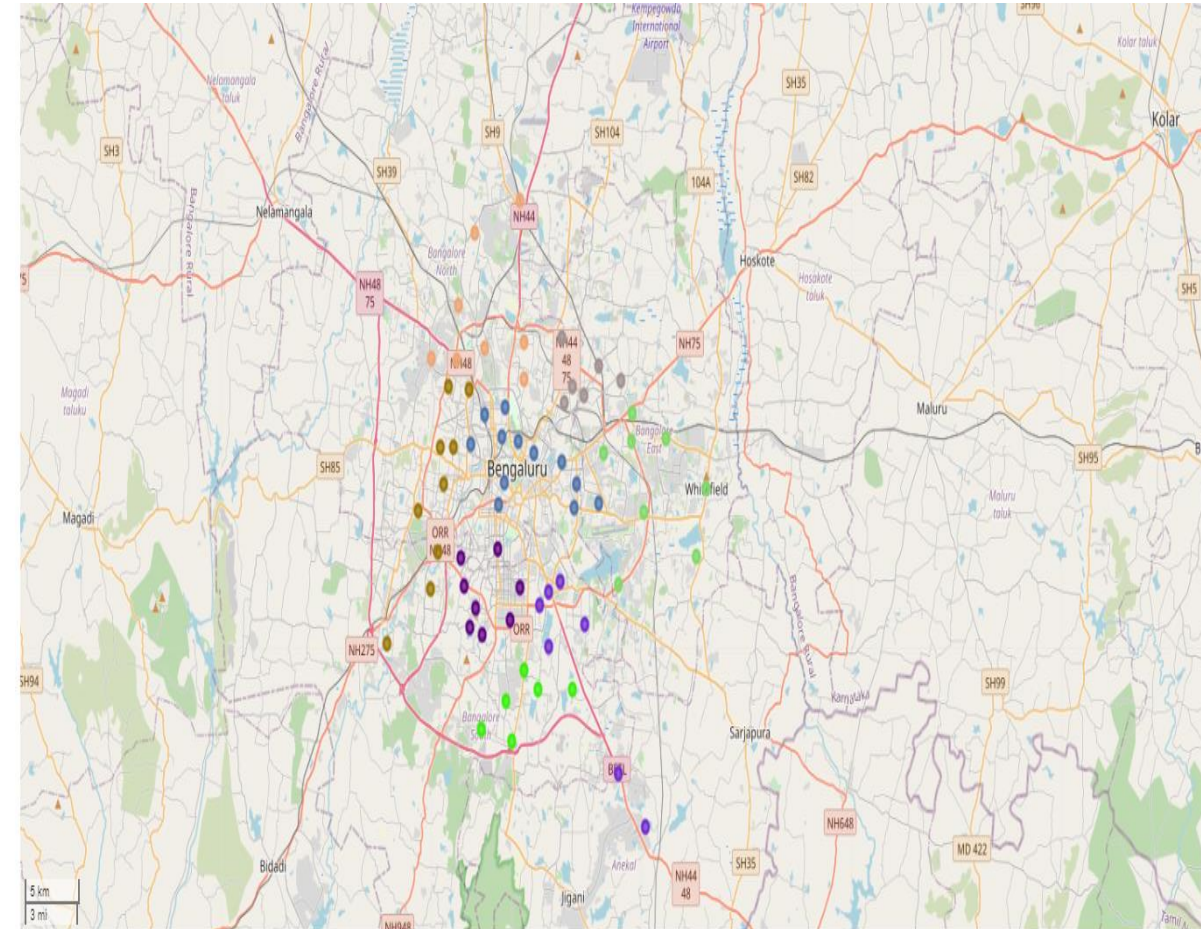


## Elbow graph:



From the above graph, we can see the optimal value for cluster is 5.

## Map used to explore Bangalore Neighbours using Four Square API



Exploring bangalore Neighborhoods using FourSquare API



# Result:

[91]:	Neighborhoods	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	Ranking
0	Begur	Venue Category_ATM	Venue Category_Clothing Store	Venue Category_Supermarket	[0.7361321887298261]
1	Electronic City	Venue Category_Outlet Store	Venue Category_Furniture / Home Store	Venue Category_Auto Garage	[0.5423513638776338]
2	Kamakshipalya	Venue Category_ATM	Venue Category_South Indian Restaurant	Venue Category_Hyderabadi Restaurant	[0.8041873599273973]

Here, according the data, we see that 'Begur,Electronic City and kamakshipalya' are top 3 neighborhoods to find similar food to whitefield restaurant's veg food ! Here our model will recommend these neighborneeds and top 3 common venues to visit.

Thank you