

Optimal location for opening a new cafe alongside the Bangalore Metro

Muhammed Salih

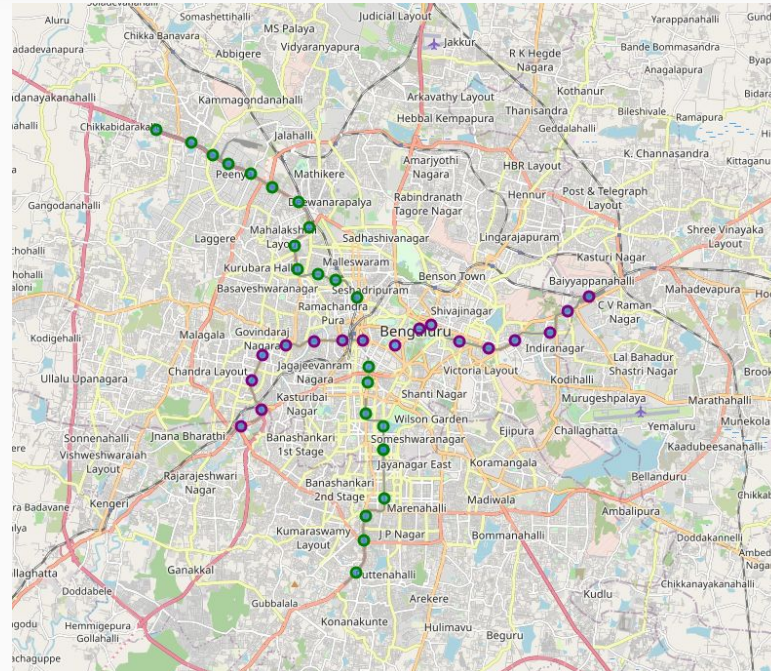
For a client who is expanding their operations in Bangalore

- This project is done for a client who own more than 50 cafes across India and is planning to expand their operations in the city of Bangalore over the next few years.
- The Bangalore metro which sees a daily ridership of around 450,000 provides an excellent business opportunity for such F&B outlets.
- Some of the metro stations are already congested with a lot of cafes and opening a new one there would not be a good idea.
- Metro stations that can attract young outgoing crowds and vicinities with an active and thriving food culture need to be chosen.

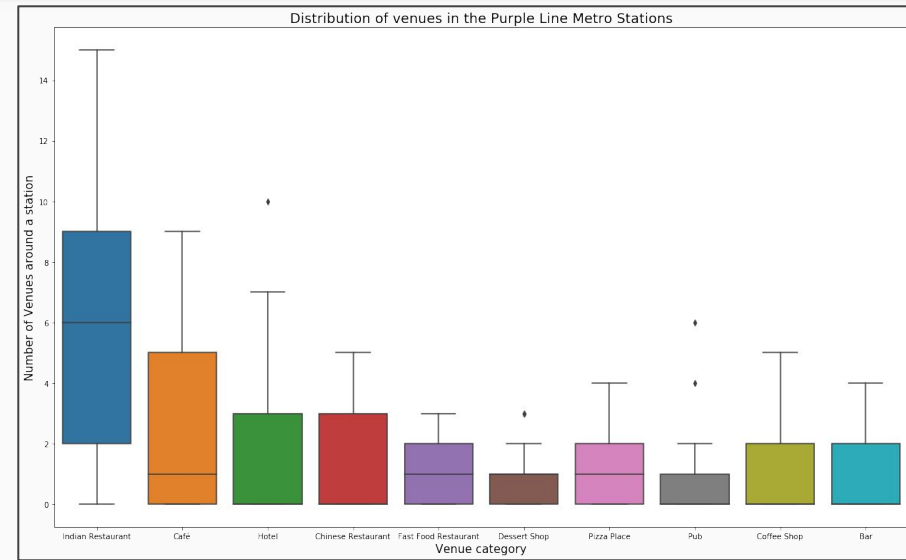
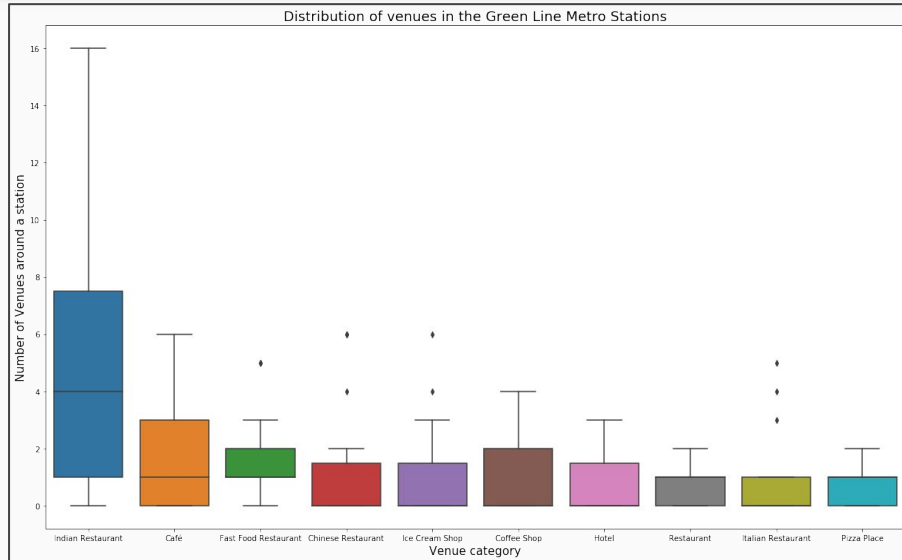
Data acquisition and cleaning

- Location data of the metro stations were collected from Wikipedia and was stored in a pandas dataframe
- Venue data was collected using the Foursquare API
- For data acquisition, other relevant Python packages like requests, json_normalize etc. were also used.

Visualising the metro stations using Folium

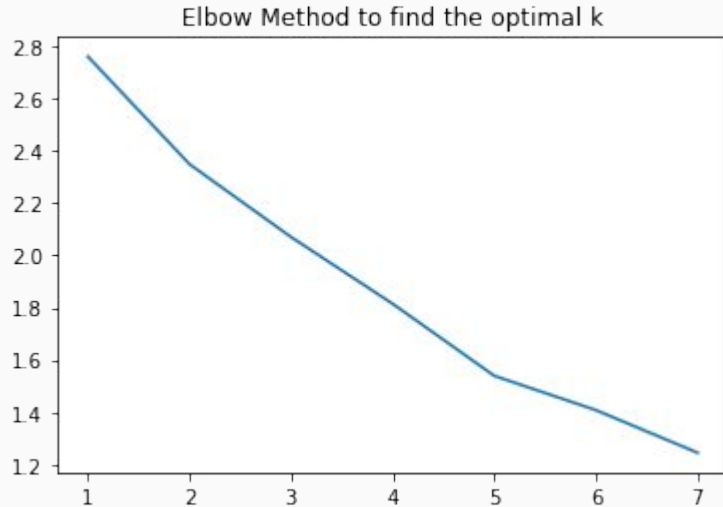


Most common venues - distribution across lines



It can be seen that the stations in purple line has more cafes and Indian Restaurants in general

Optimal value of number of clusters for k-means using elbow method

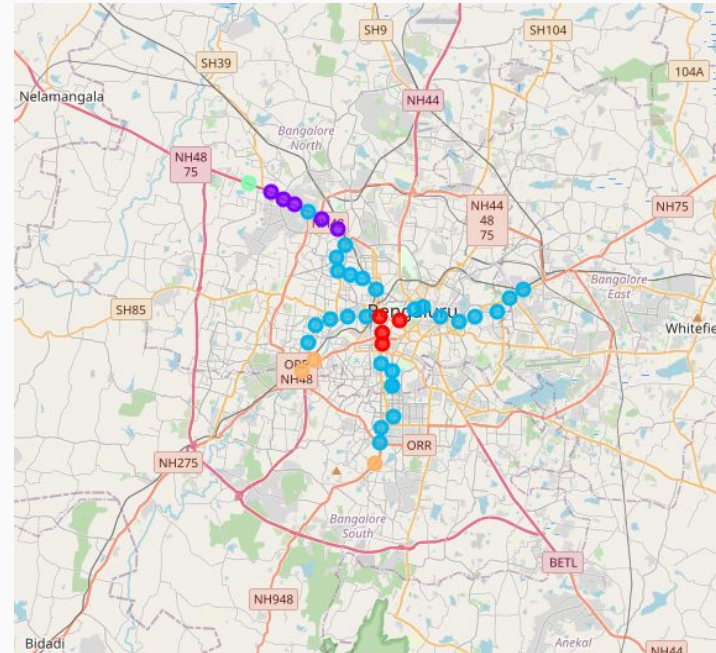


Although there is no definitive elbow, the slope of the curve decreases from $n = 5$. So the number of clusters was chosen as 5.

Results of k-means clustering

Cluster	Number of Stations
Cluster 1	4
Cluster 2	5
Cluster 3	27
Cluster 4	1
Cluster 5	3

The clusters are represented by the different coloured markers.



Summary of findings

Cluster	Description	Remarks
Cluster 1	Not congested with cafes, but represent a less outgoing community	Second most preferred
Cluster 2	Urban centres with a thriving food culture, not congested with cafes	Most preferred for opening a new cafe
Cluster 3	Saturated with cafes	Not a viable choice for opening a new cafe
Cluster 4	Outlier case with a single member	-
Cluster 5	Lacks a strong food culture with very few F&B venues currently	-

Discussion and recommendations

- Cluster 4 and 5 represent a less outgoing populace and is not a great fit for opening a new cafe
- Cluster 3 is congested with a lot of cafes operating already and hence would not be a good choice
- The remaining 2 clusters (Cluster 1 and Cluster 2) have a thriving food culture but are not congested with a lot of cafes. And hence would be good candidates for opening a new cafe.
- Amongst the two clusters, cluster 2 represents a more urban and outgoing community and hence would be the best choice for our new cafe.