



Bangalore Restaurants Analysis

Why Bangalore Restaurants only ?

- Restaurants from all over the world can be found here in Bengaluru.
- From United States to Japan, Russia to Antarctica, you get all type of cuisines here. Delivery, Dine-out, Pubs, Bars, Drinks, Buffet, Desserts you name it and Bengaluru has it.
- The number of restaurant are increasing day by day. Currently which stands at approximately 12,000 restaurants. With such a high number of restaurants. This industry hasn't been saturated yet.
- This project aims at analysing demography, its food culture of the location. Most importantly it will help new restaurants in deciding their theme, menus, cuisine, cost etc for a particular location. It also aims at finding similarity between neighborhoods of Bengaluru on the basis of food. With the analysis the project also will help people in choosing the restaurant based on several other factors. The project will mainly try to answer the quetion based on restaurants and foodies interest. And what factors should be kept in mind if someone wants to open new restaurant.

Data acquisition and cleaning

- The main data used for this project were from two sources:
 - The restaurants in each neighborhood scraped from the Zomato website.
 - Explore trending venues in a neighborhood particularly restaurant (FourSquare API).
- In total, 51,768 rows and 17 features in the raw dataset.
- Duplicate, highly similar or highly correlated features were dropped.
- Cleaned data contains 13000(approx) rows.

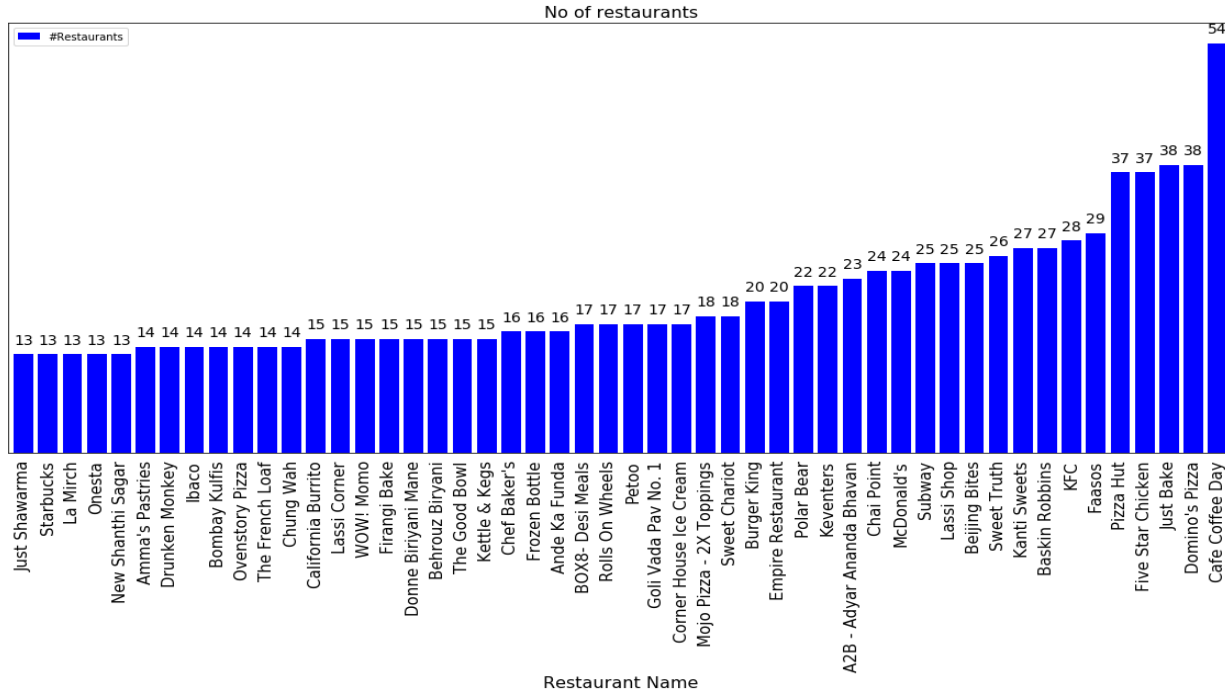


Popular Food/Most Liked food in a restaurant

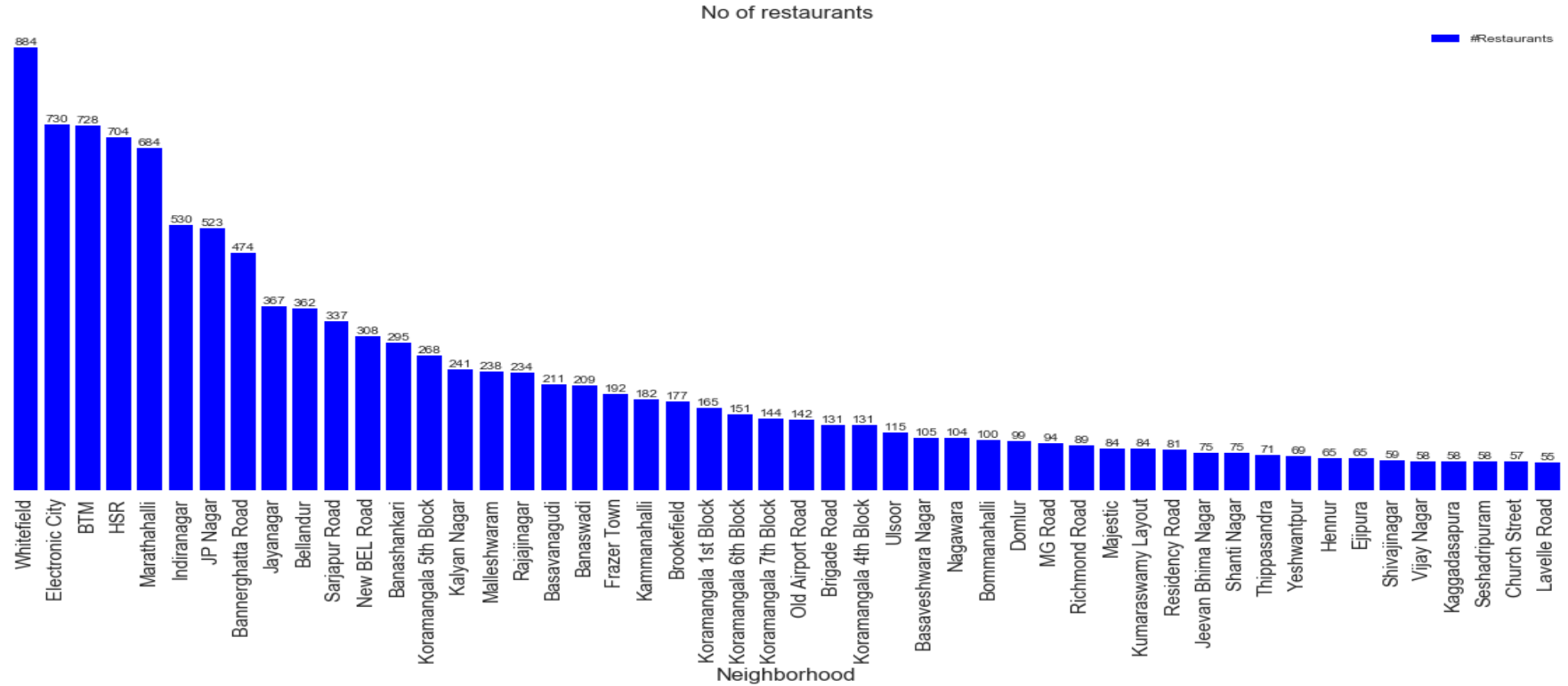
- A food corpus or menu corpus was created from the entire data.
- For each of the restaurant review all those review(greater than 3) that contained food items from the corpus in it were only extracted. Eg Biryani was good, stew was tasty etc
- A careful analysis of the corpus was done to remove those menu that were not a food item.
- After extracting the liked food for each of the restaurant it was stored in a list of menu items which will be used for our analysis.



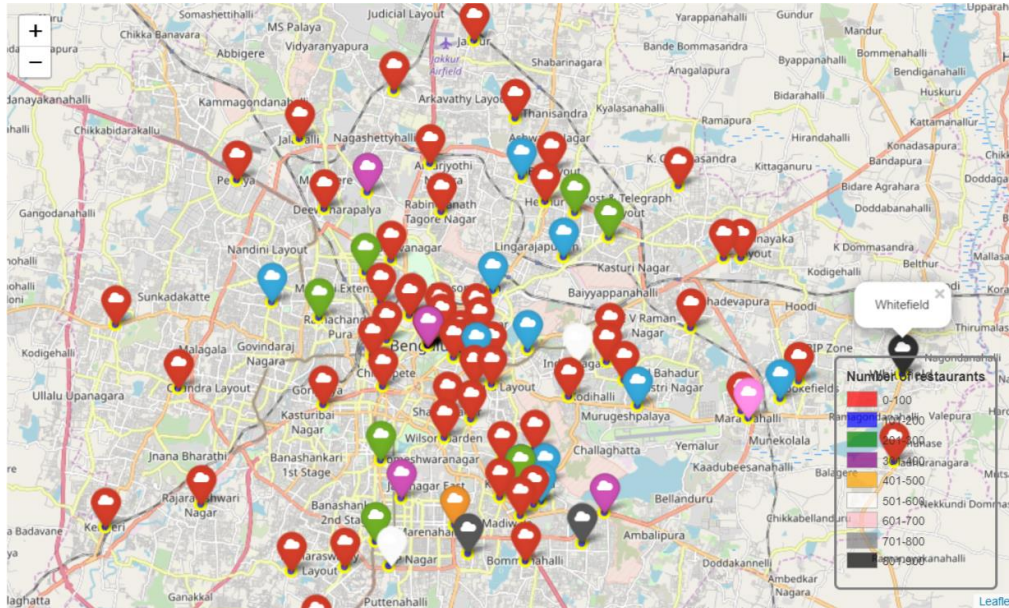
Number of food chains in Bengaluru



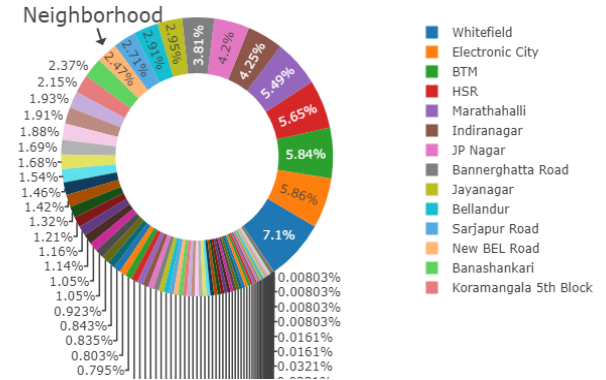
Number of restaurant in each neighborhood



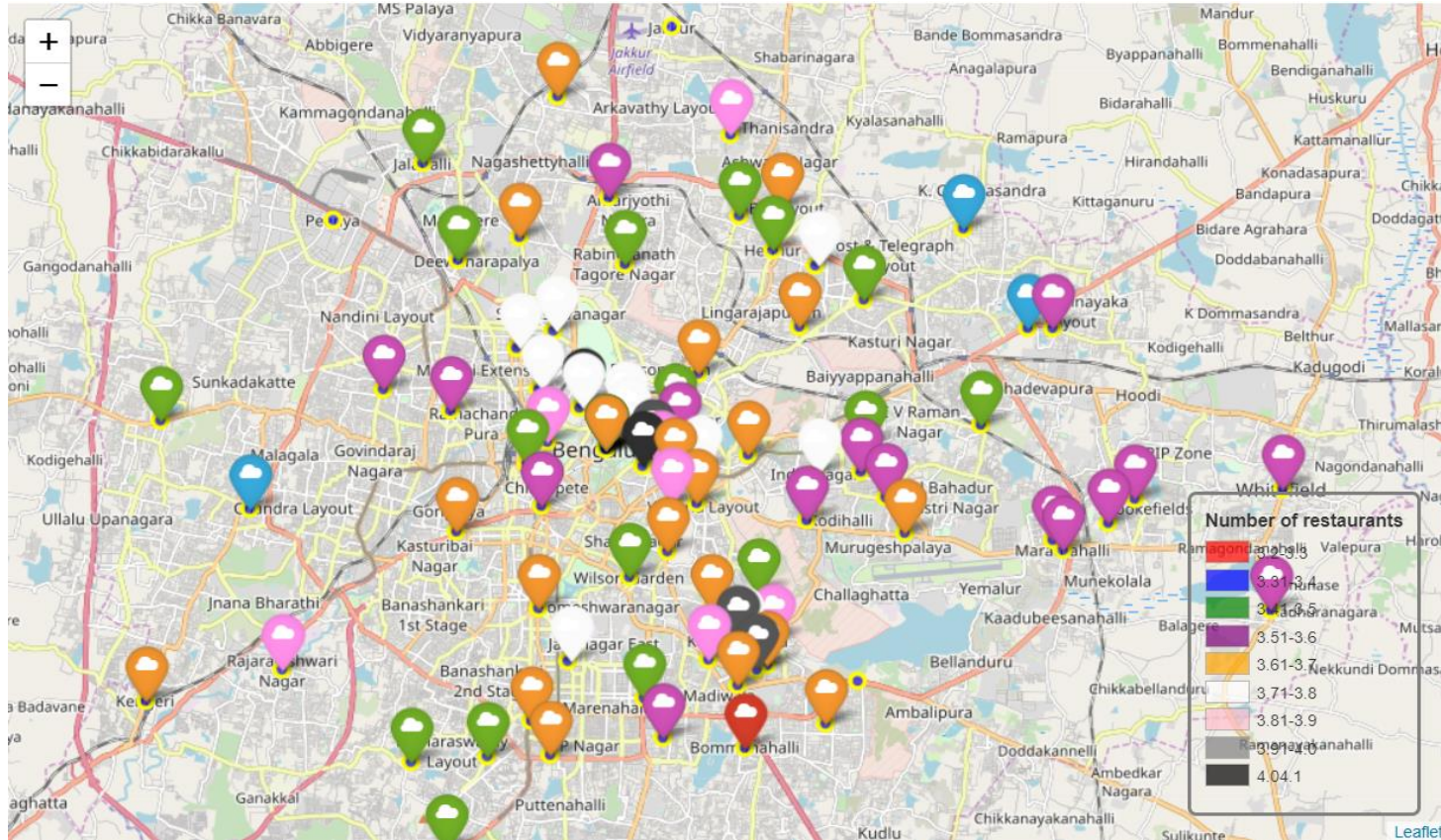
Central Bengaluru is densely populated



Zomato's Presence in Bangalore



Top rated restaurants are also clustered around Central Bengaluru



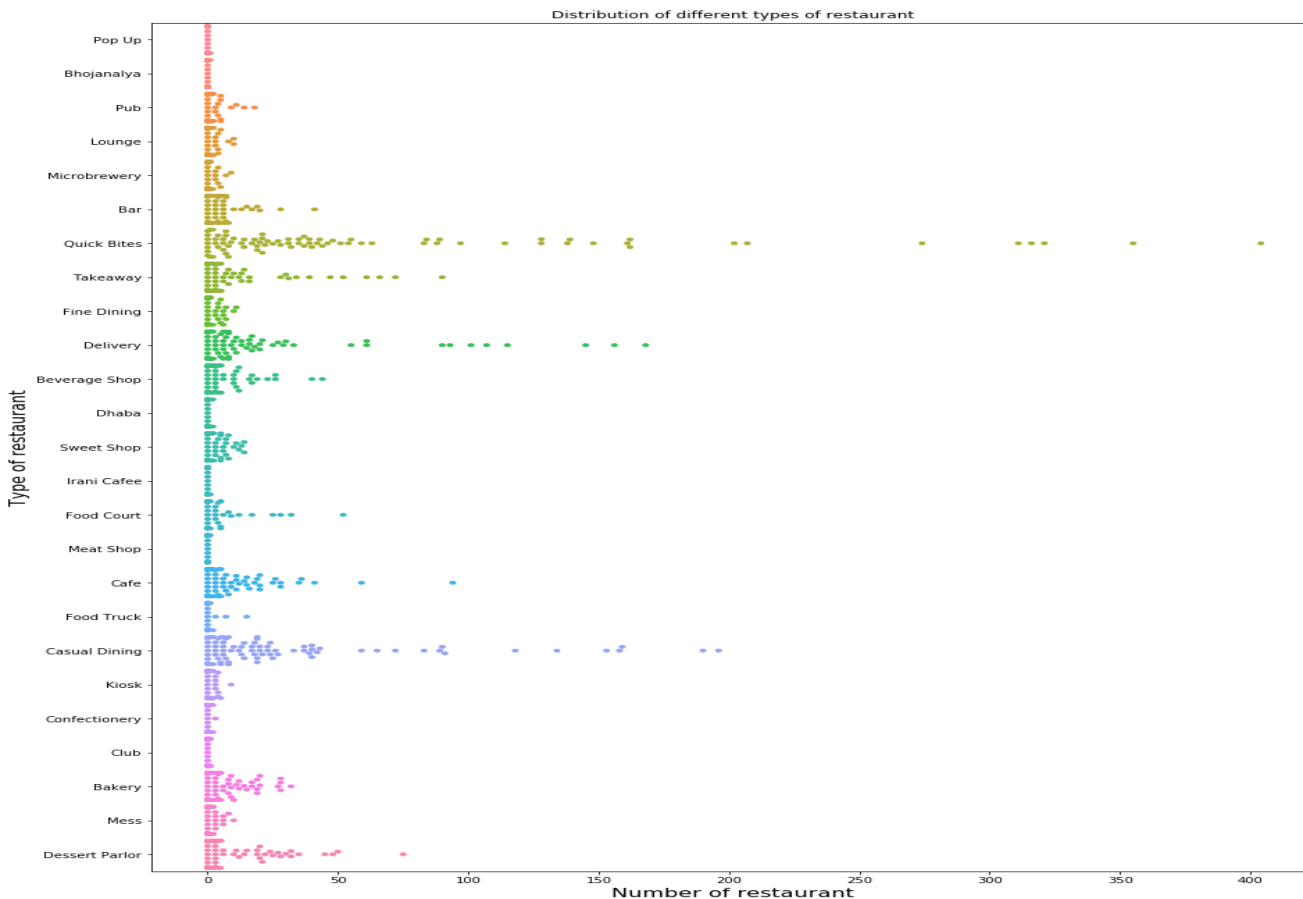
Approx cost of food by neighborhood

Lavelle Road	1292.727273
MG Road	1052.127660
Residency Road	949.382716
Church Street	762.280702
Richmond Road	736.516854
Seshadripuram	733.620690
Vasanth Nagar	719.444444
Ulsoor	687.280702
Old Airport Road	637.304965
Indiranagar	601.064639
Koramangala 4th Block	595.038168
Brigade Road	594.122137
Koramangala 5th Block	578.113208
Whitefield	558.293515
Domlur	553.020833
Koramangala 6th Block	548.666667
Koramangala 7th Block	525.524476
Kalvan Nagar	523.941909



- Cost of living in Lavelle Road is also quite high, even I can't afford the restaurants in lavelle road

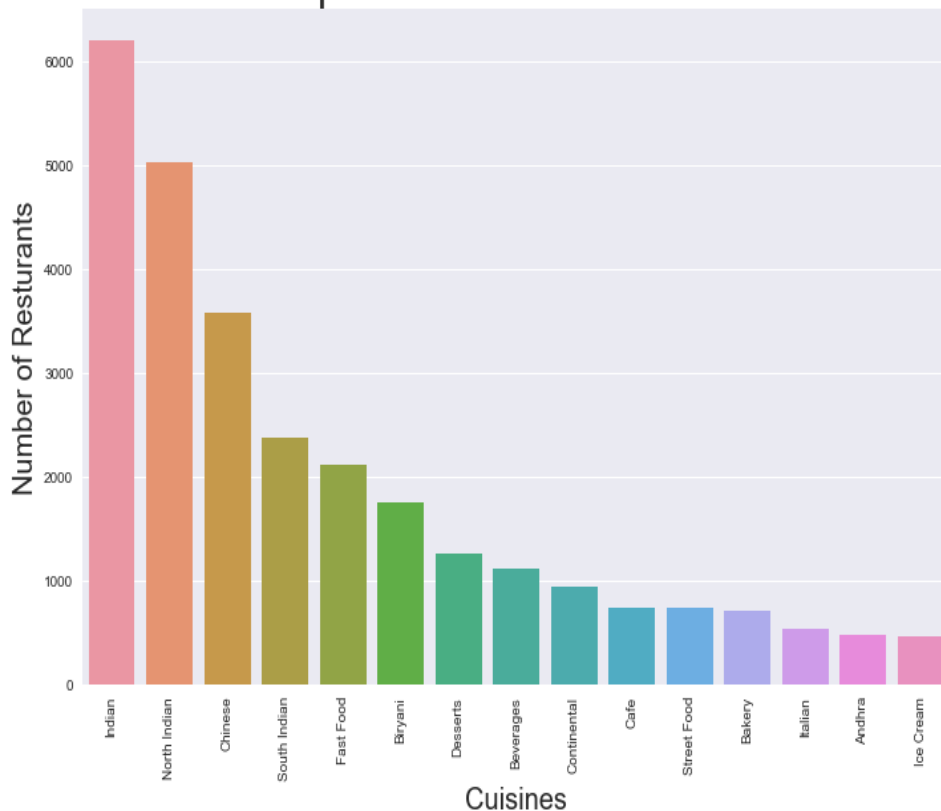
Quick Bites, Delivery, casual Dining



The population of Bangalore comprises mostly of people from 25-35 years of age. Hence delivery restaurant have to plan accordingly.

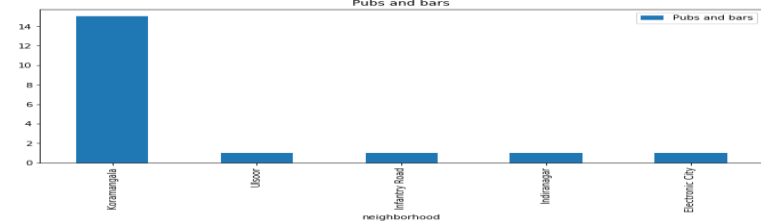
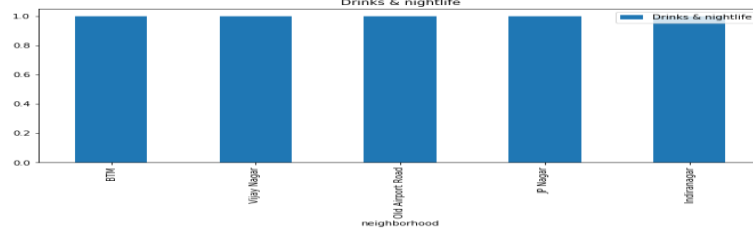
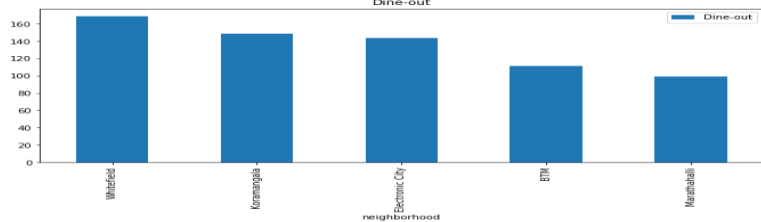
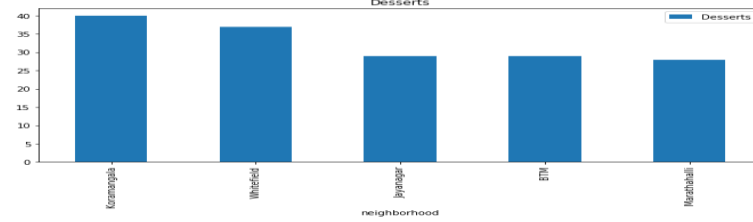
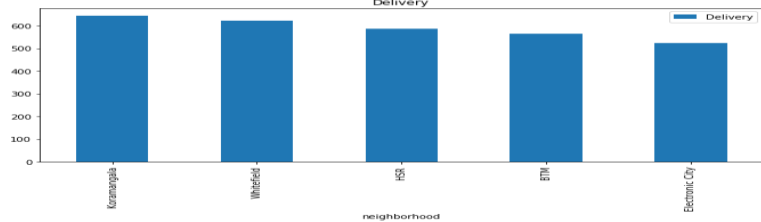
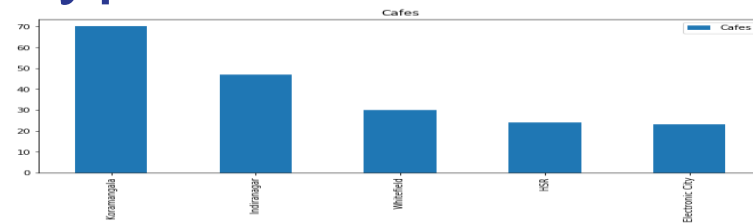
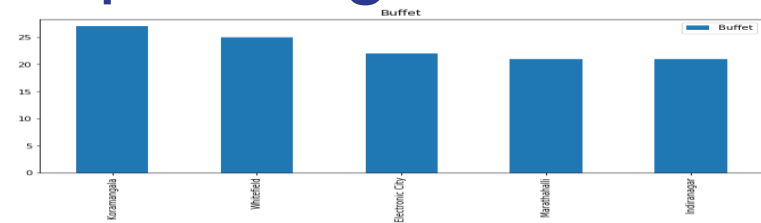
Regression models performance

Top 15 Cuisines on Zomato

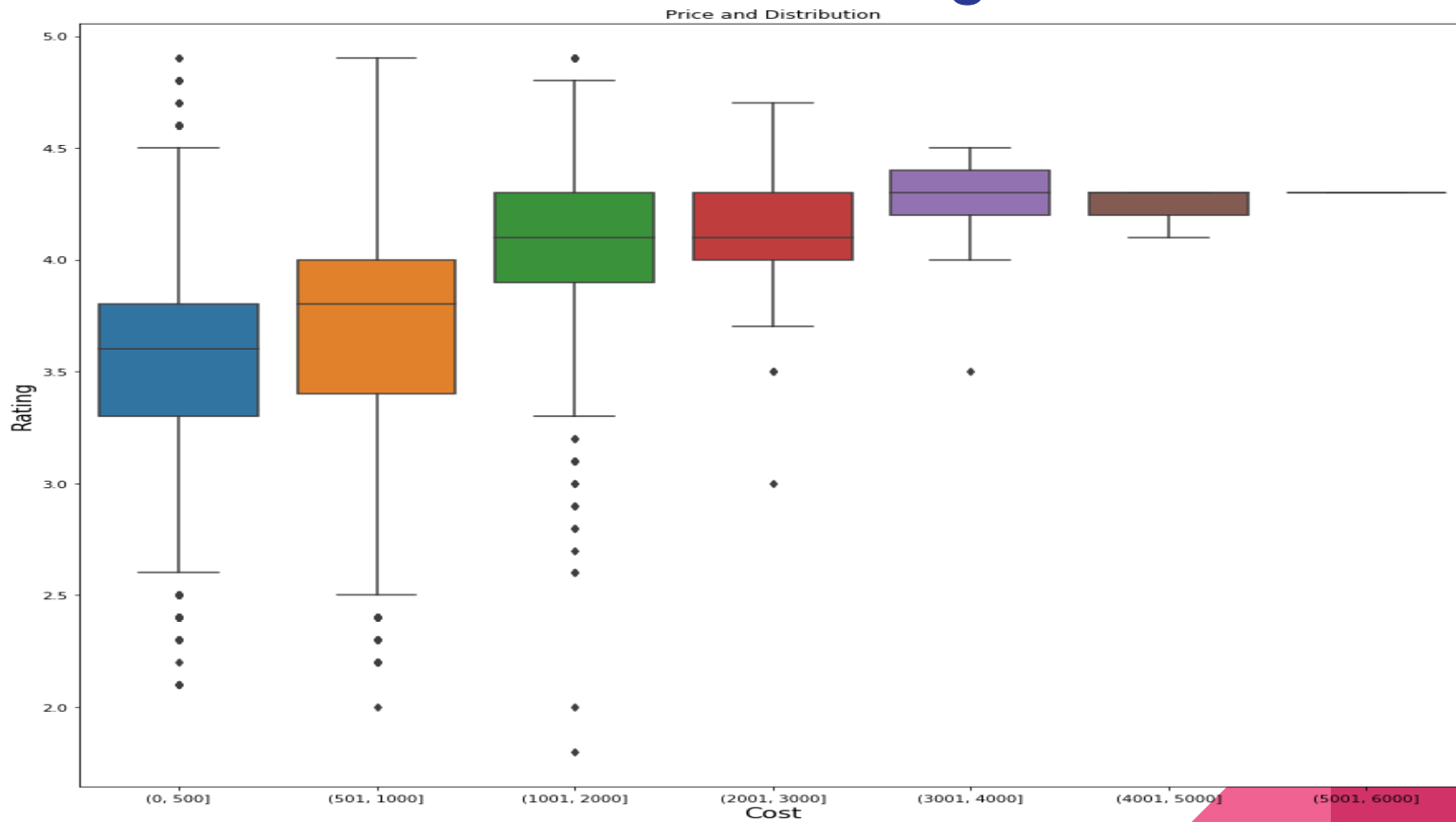


- Even though Bangalore is in South India but North Indian dishes are more famous here.

Top 5 neighborhoods by type of restaurant

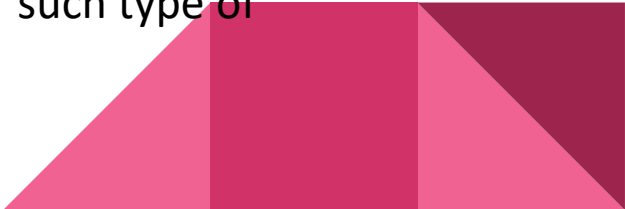


Cost increase Rating increase



Higher rated restaurant have more Cuisines

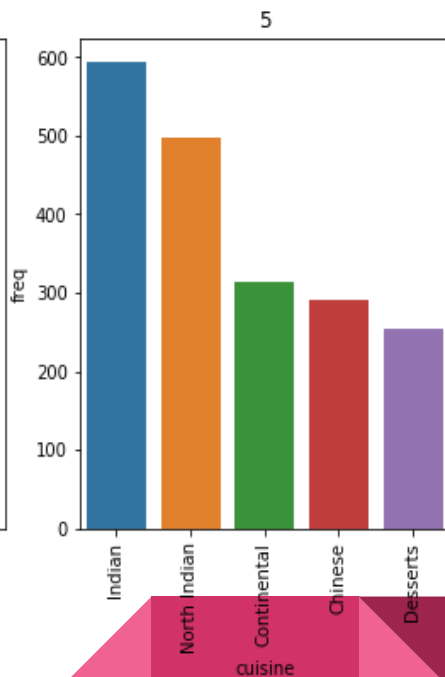
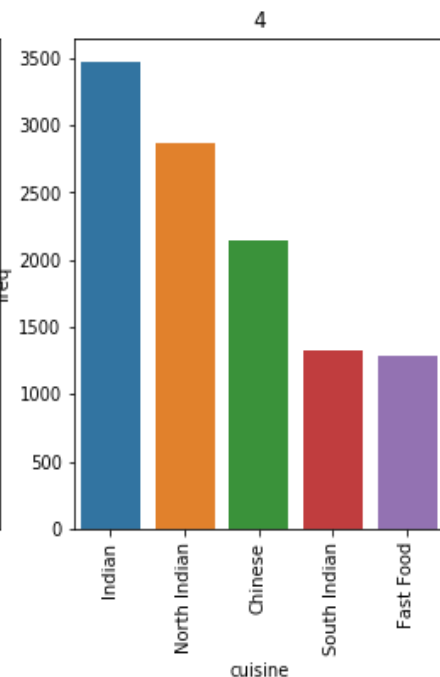
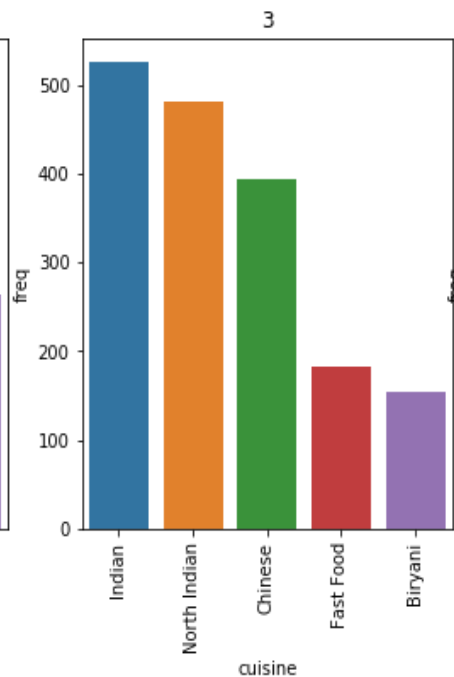
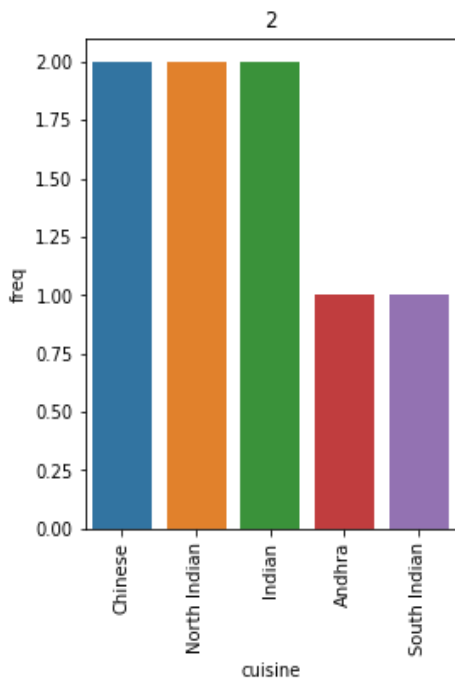
After analysing the data it was found that these type of cuisines were very highly rated *Goa, Seafood, Korean, African, Fast Food, Biryani, Chinese, Continental, Thai, Sushi, Sindhi, Portuguese, Turkish, Naga, Jewish, Rajasthani, BBQ, Sandwich, Momos, Andhra, Steak, Tex-Mex, Arabian, Rolls, Healthy Food, Desserts, Finger Food, Pizza, Vietnamese Italian, Mediterranean, Kebab, American, Japanese, Mexican, Indonesian, Burmese, European, French, Malaysian, Asian, Mughlai, Burger, Iranian* but among these **American, Italian, Pizza, Biryani, Continental, Chinese, Seafood, Korean** were much highly rated. Though North Indian, South Indian, Ice Cream, Mangalorean Beverages, Street Food, Cafe, Indian were the top rated but it is quite obvious for such type of restaurant to be at the top.



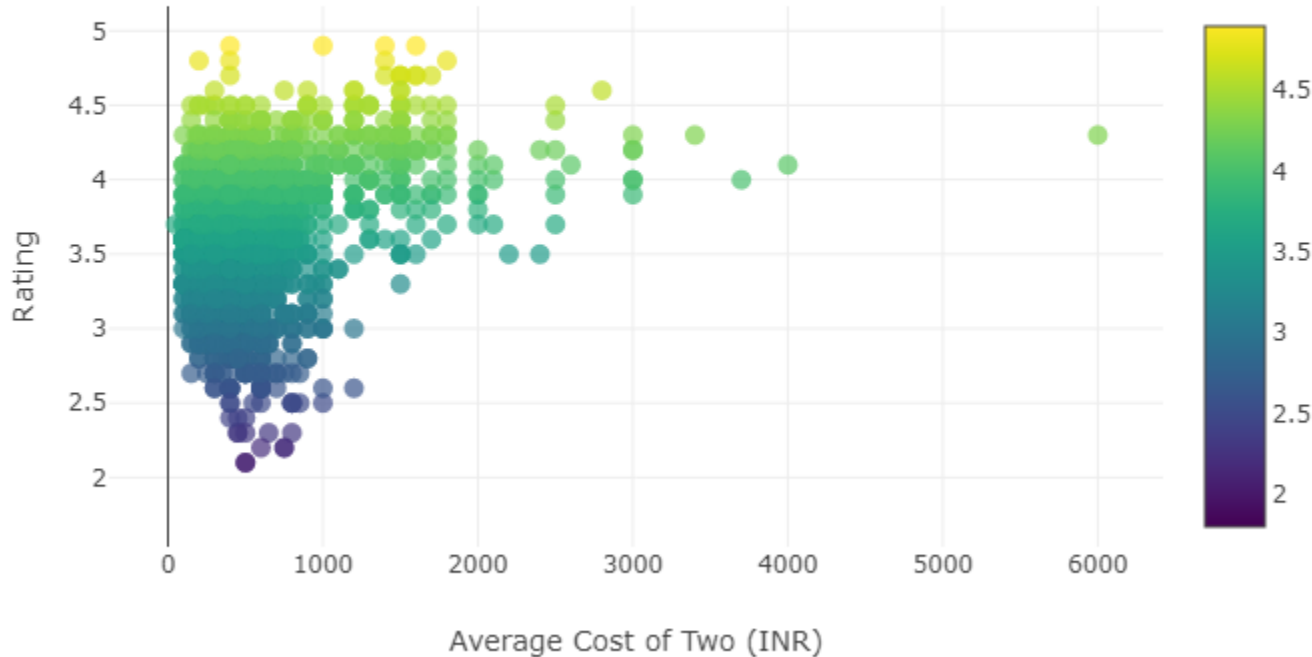
Famous cuisines in Bengaluru



Foreign Cuisines are highly rated



Rating and cost



Pearson correlation.

Null Hypothesis : There

is no relationship
between the rating and
price of the restaurant

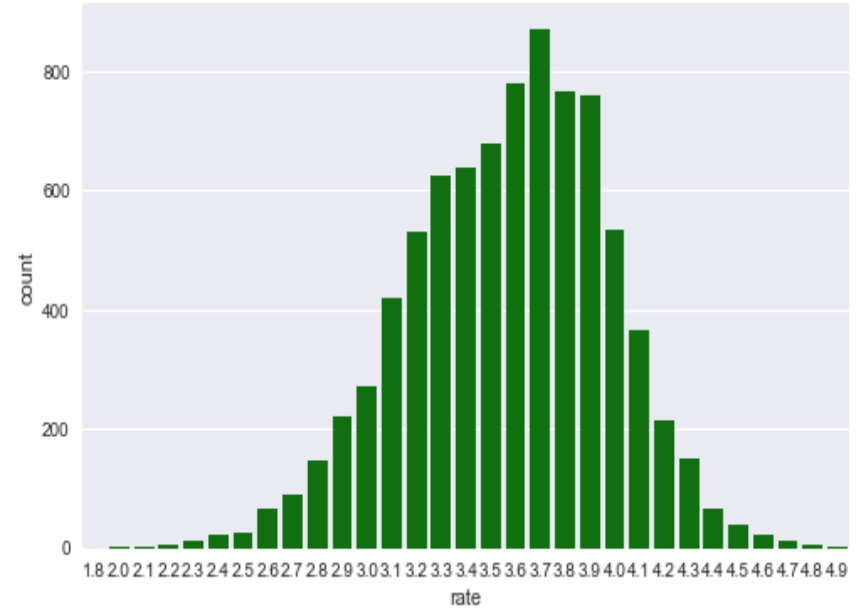
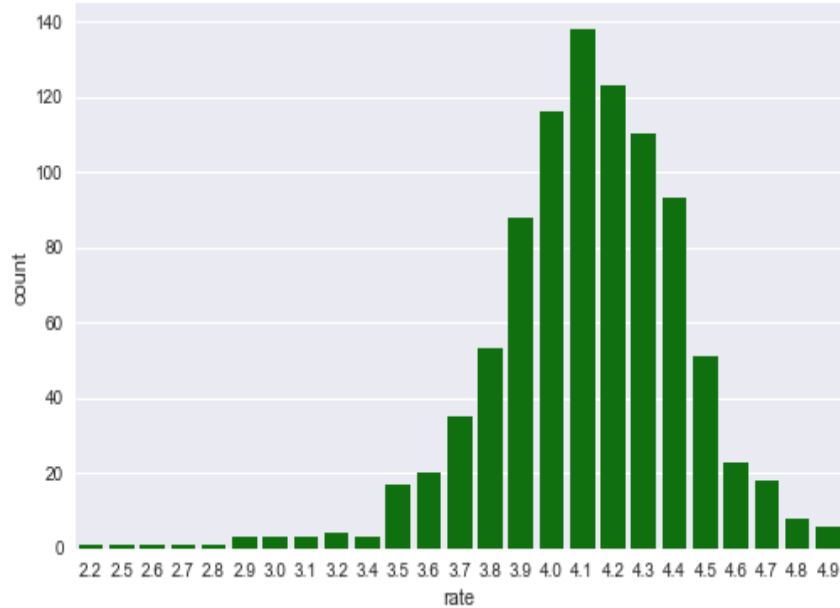
Alternate Hypothesis :

There is some
relationship between the
two.

P-value of: $3.59519e-228$

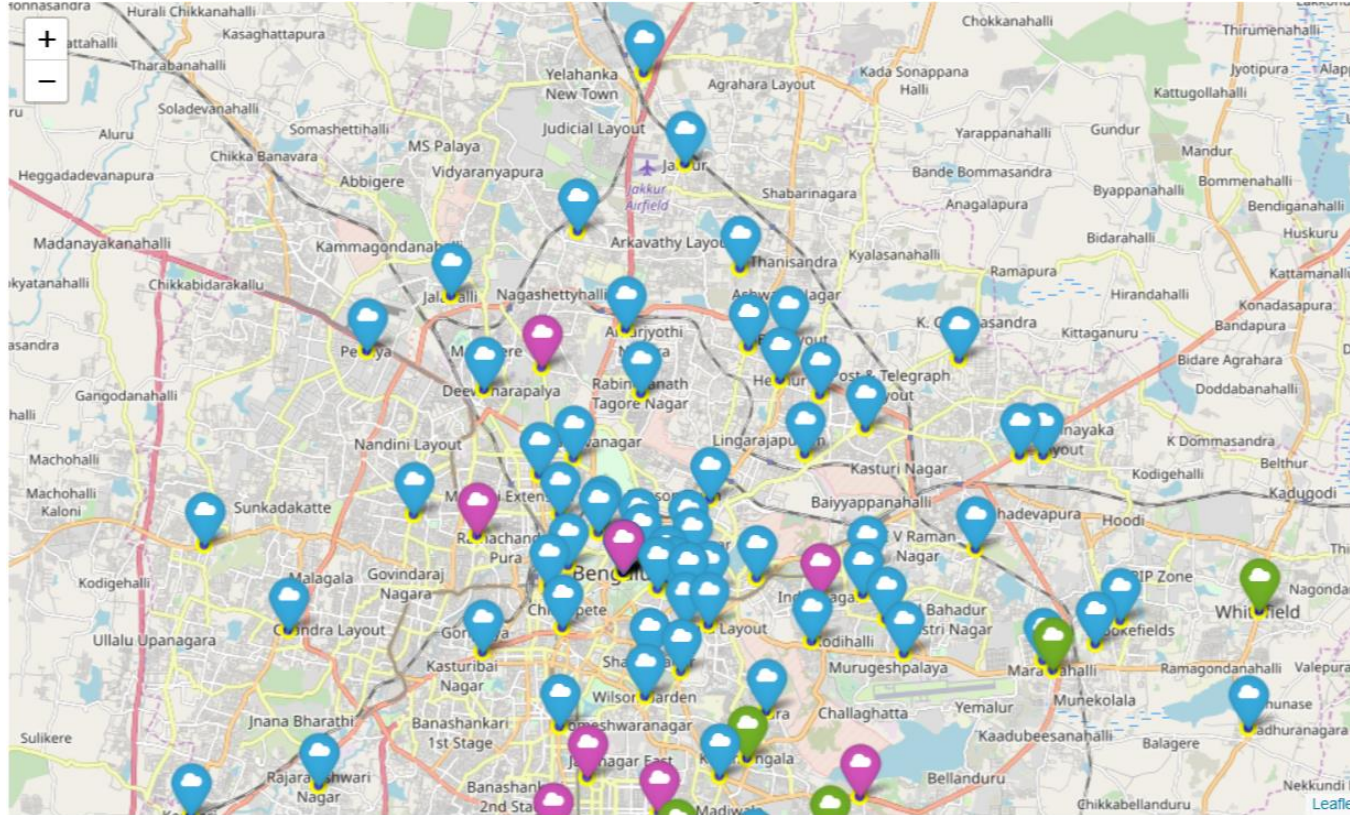
Reject our NULL
hypothesis. There is
some relationship
between the two

Restaurants that offer Table booking option were rated higher



Yes, Table book option restaurants are rated higher.

K-means Clustering based on Type of Restaurant

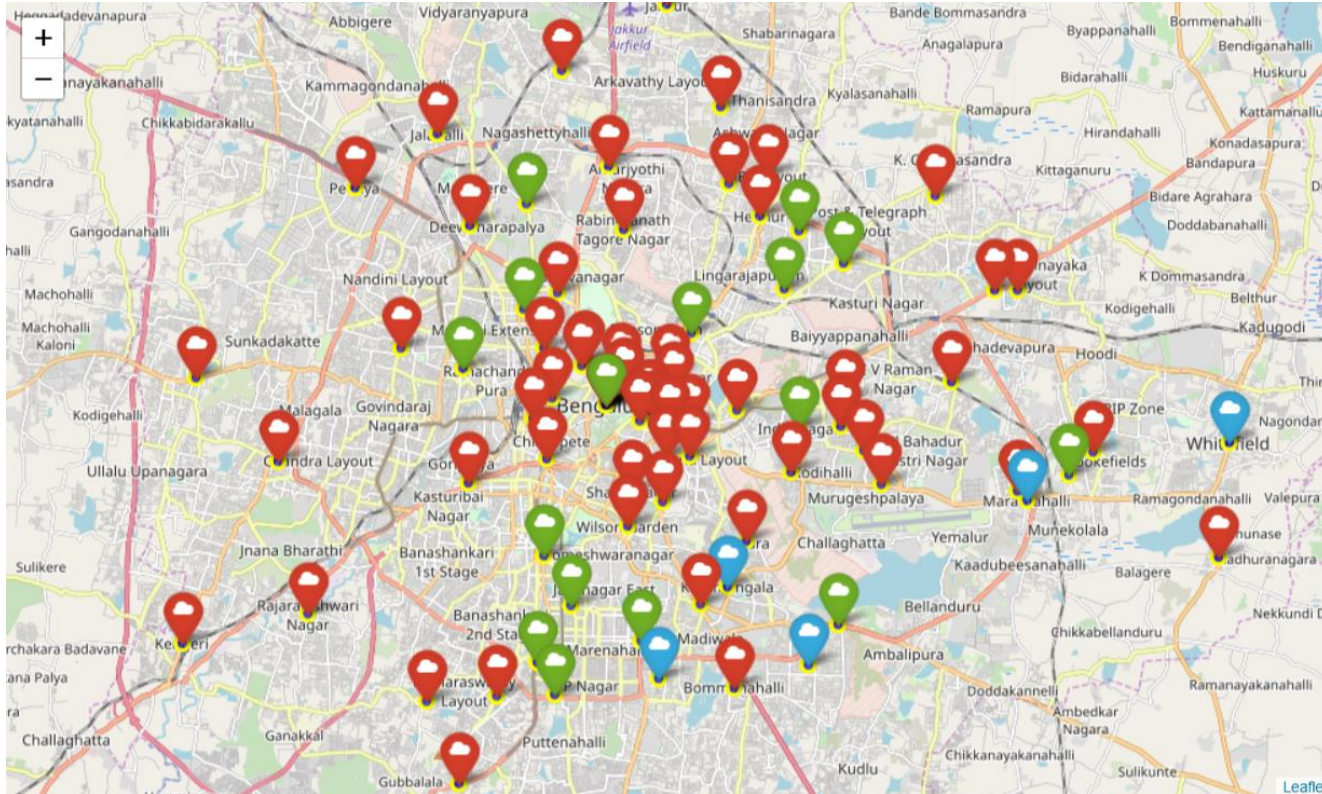


❑ **Cluster 1** or those marked in Blue are the places that are more famous for its Biryani, Chinese, Fast food and North Indian food.

❑ **Cluster 2** or those marked in Green are those places that are more famous for its South Indian, Indian, North Indian, Chinese as well as fast food.

❑ **Cluster 3** or those marked in Purple were those areas where Street Food, Chinese, Fast food were more popular or we can say more number of restaurants were present.

Clustering of neighborhood based on Cuisines



- **Cluster 1** that are marked in red are generally residence(only) areas of bangalore. There aren't much nightlife, pubs, bars in those areas
- **Cluster 2** marked in Blue are the hubs of restaurant in Bangalore, After verifying it with the ground truth it was found that new foreign food chain starts its operation from these places only.
- **Cluster 3** marked in green contains most of the posche areas of Bengaluru, they contain both residence as well as costly restaurants of Bangalore.

Conclusion and future directions

- Quick service restaurants are a mainstay of the Indian food service market, and are growing fast. Fine dining is gaining prominence too. Both multi-cuisine and single-cuisine establishments have shown tremendous growth.
- The model and the idea can be used in real life if I get the access to the ordering data of Zomato.
- Telling anything about entire neighborhood which is really large is not possible. But the taste of a locality can be found out by their ordering pattern and the type of restaurant it houses.
- Cafe Coffee day has its outlet in most of the neighborhood of Bengaluru. The Indian food service market has come a long way from the early Nineties when it was dominated by unorganised players and few brands.
- These pattern can be mined from the data which is seen in the real life too. Thanks to the diversity of India. The data can also be used to find out the popular food, type of people, residency area etc to help new restaurants take better data driven decisions.