Battle of Neighborhoods - Bangalore

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1 Introduction

Hundreds of dining places open and close within a matter of weeks in Bangalore (rather they used to before the pandemic). One of the main reasons for closure is the inappropriate choice of location for opening the restaurants/cafe. For example, choosing a location where the well established competitors exist already may not be the best idea. Further, based on the type of cuisine, if the location chosen is not in sync with the residents of the neighborhood, the footfall will not be enough to keep the place running. A well thought out location will provide a large advantage in terms of competition, footfalls, sales and brand recognition.

This project aims to solve the above problem - help the restaurant owners understand and choose suitable locations for opening their restaurants/cafes in Bangalore - so as to increase their chances of survival and profits.

2 Data Description

This project will use the foursquare dataset to explore neighborhoods for venues and the categories data. In addition, this project will also use the Zomato dataset. Zomato is an Indian multinational restaurant aggregator and food delivery company founded by Pankaj Chaddah and Deepinder Goyal in 2008. Zomato provides information, menus and user-reviews of restaurants as well as food delivery options from partner restaurants in select cities. As of 2019, the service is available in 24 countries and in more than 10,000 cities. The dataset used is taken from kaggle website. It contains restaurants with their ratings, votes, other crucial data attributes to do research work and projects. This project will use some of the attributes like ratings, cuisine, expensiveness etc. to reach the target of the project.

3 Methodology

We first analyzed the neighborhoods using the foursquare API. As shown in table 1, there are twelve neighborhoods considered for the purpose of the analysis. To give a perspective, Koramangala, Indiranagar, Whitefield, and Bellandur are

Table 1: Neighborhoods in Bangalore

Index	Neighborhood	Latitude	Longitude
0	Bannerghatta	12.888500	77.597300
1	Jayanagar	12.929273	77.582423
2	Koramangala	12.934011	77.622230
3	Chickpet	12.968003	77.578642
4	Indiranagar	12.973291	77.640467
5	Doddanekkundi	12.975720	77.694042
6	Yelahanka	13.100698	77.596345
7	Mahadevapura	13.012700	77.703000
8	Malleswaram	13.008100	77.564800
9	Fraser Town	12.997200	77.614300
10	Whitefield	12.969000	77.750900
11	Bellandur	12.924300	77.672200

some of the most popular spots in Bangalore. In addition, we also map out the different neighborhoods using the Folium library in python. As can be seen in the figure 1, we cover most of the Bangalore city using these neighborhoods.

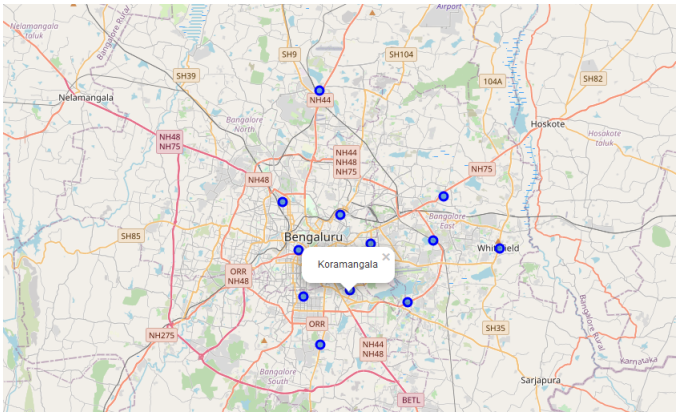

Figure 1: Bangalore neighborhoods mapped using Folium package

The next step was to get venues for different neighborhoods in Bangalore using the Foursquare API. For this project we consider a radius of 2 kilo meters around the neighborhood location. An example of venues mapped for Koramangala are shown in figure 2. We then analyzed the types of venues present in different neighborhoods using the bar plots. In this report, we will focus on the most popular neighborhoods - Koramangala, Indiranagar, Bellandur, Whitefield. The top 10 venues for each neighborhood are shown in figures 3 to 6. While the first three neighborhoods are most abundant in Indian restaurants,

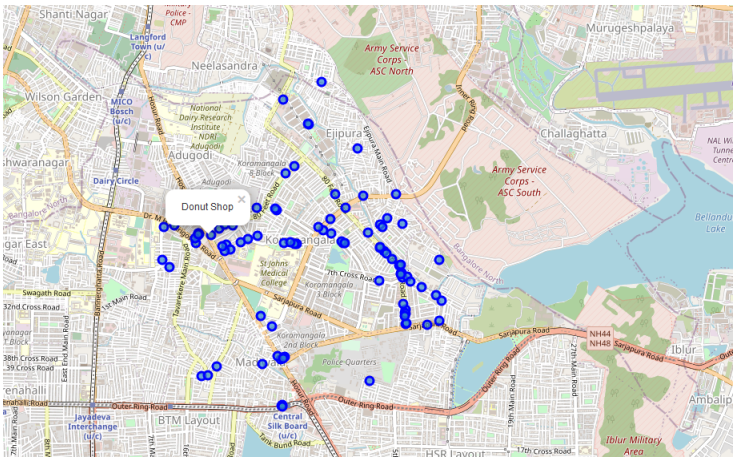

Figure 2: Koramangala neighborhood with different venues mapped using Folium package

Whitefield has Pizza places as frequently as Indian restaurants. Looking at the categories, Whitefield has a sort of different nature to it than other three. The use of this sort of exercise is to check out neighborhoods based on the type of venues in order to make more informed decisions.

4 Results

As we faced a limit of 100 venues per call using the foursqaure api, we turned to the use of Zomato Dataset.

First, we look at means of variables like average cost for two, aggregate rating, and number of votes for different neighborhoods. As can be observed in Figure 7, Whitefield is the most expensive neighborhood followed by Indiranagar and Koramangala. This is also expected result which is known fact to people who live in Bangalore. However, in terms of aggregate ratings, Whitefield lacks compared to Koramangala and Indiranagar. This points to the fact that Whitefield may still be lacking quality places to eat or drink. On the other hand, the places in the two counterparts have quality venues to eat or drink. Based on this analysis, Whitefield could be considered as a potential place to open new food business if you can keep the costs a bit lower.

Second, we look at Whitefield neighborhood data and see what kind of restaurants could be potential targets for new businesses. As seen from figure 12, lounge category is in top three categories by votes, however, the ratings reflect that people are not happy with the services offered by these lounges (as can be seen in figure 11). Hence, this could be one of the business ideas to go for in Whitefield.

We performed one more analysis which can help choose potential food busi-

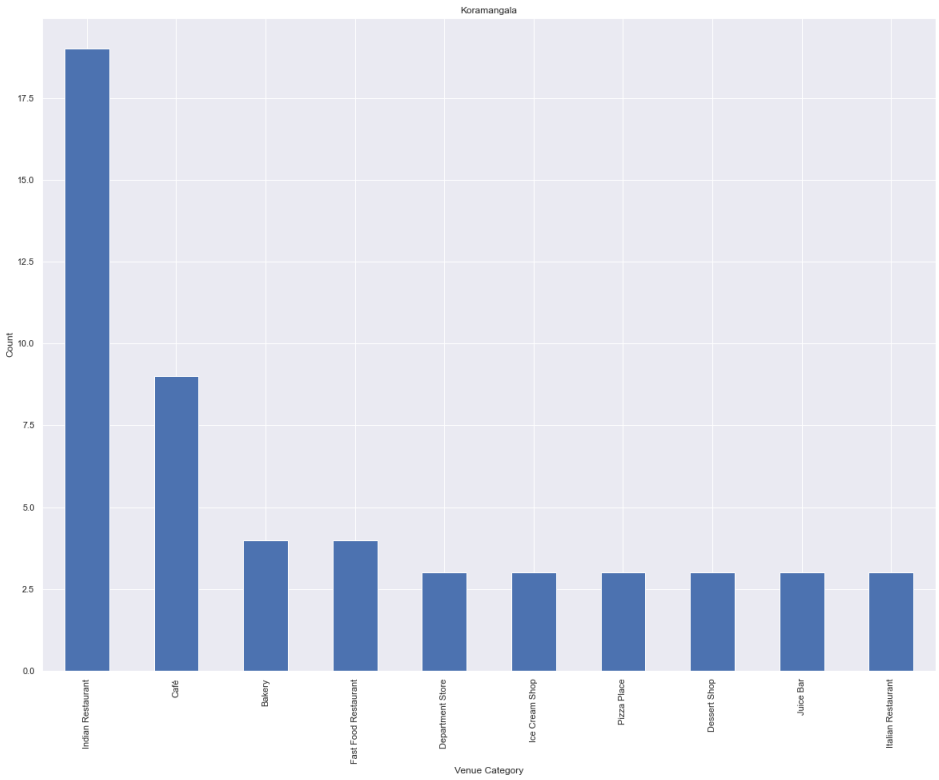

Figure 3: Koramangala neighborhood - Venue Categories

ness locations given a category type. In particular, we look at the same statistics given a category of establishment. As an example, consider the category as Sweet Shop. As can be seen in figure 14, Indiranagar has very low rated sweet shops. From figure 13 we also observe that average cost for two is also very small implying there is a lack of decent sweet shops. Such business in Indiranagar could be a potential profit setup.

5 Discussion

Based on the results obtained, we can say that the the restaurant datasets can offer valuable insights into the food business opportunities. For example, if someone wants to open a food place at Whitefield, the recommendation would be a lounge. Similarly, if someone wants to open a sweet shop, we would recommend Indiranagar as the location to make good profits. Our results can be extended

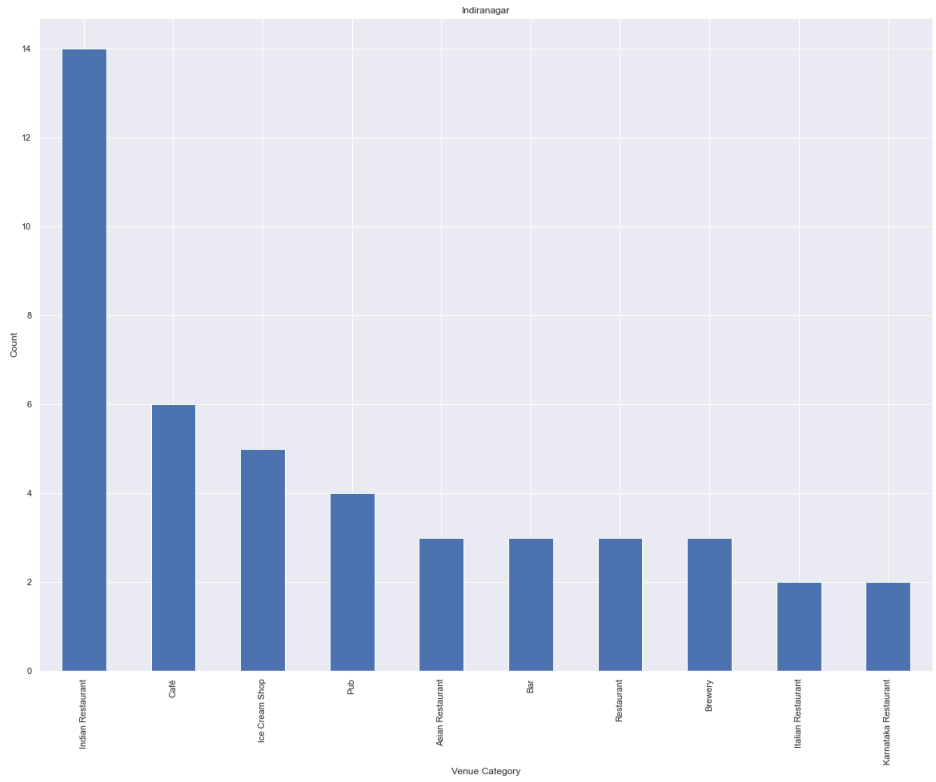

Figure 4: Indiranagar neighborhood - Venue Categories

to include more data and locations to draw similar conclusions.

6 Conclusion

In this project, we tried to answer the questions related to potential food business locations and potential food business one can get into in Bangalore. For this we utilized the Zomato dataset which contains information about restaurants and their attributes like cost, rating, popularity etc. Looking at examples, we were able to recommend Lounge as a potential business for Whitefield location. Also, if someone wants to open a sweet shop, we can recommend Indiranagar location. We would like to point out that we need more data on real estate prices as well to make more informed decisions. This project just gave a glimpse into how one can go about making such decisions using data.

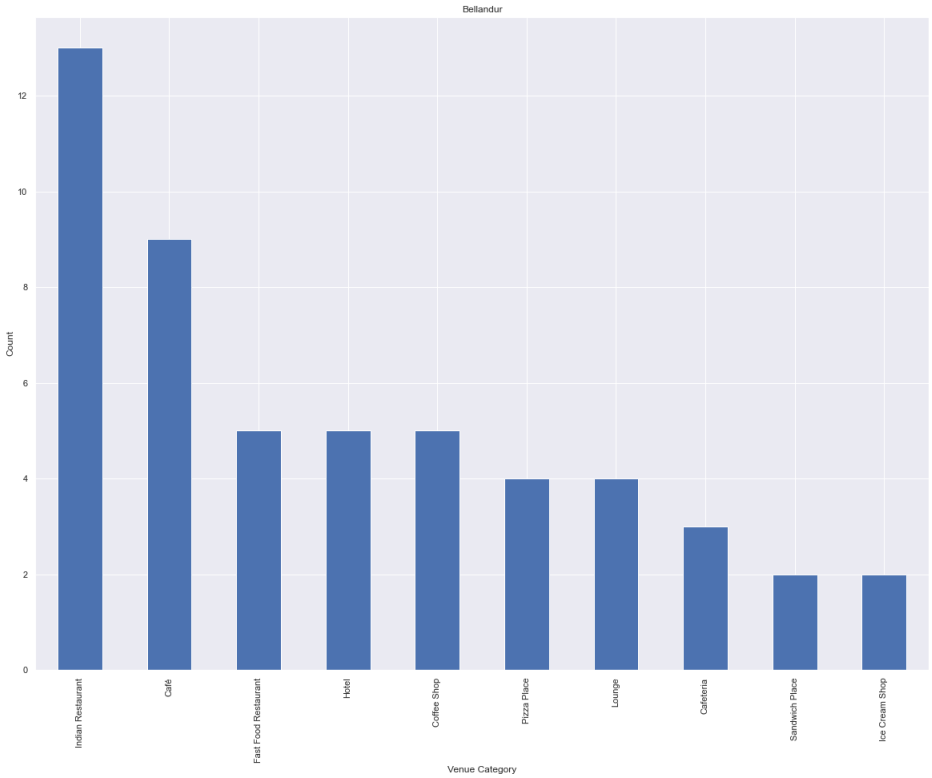

Figure 5: Bellandur neighborhood - Venue Categories

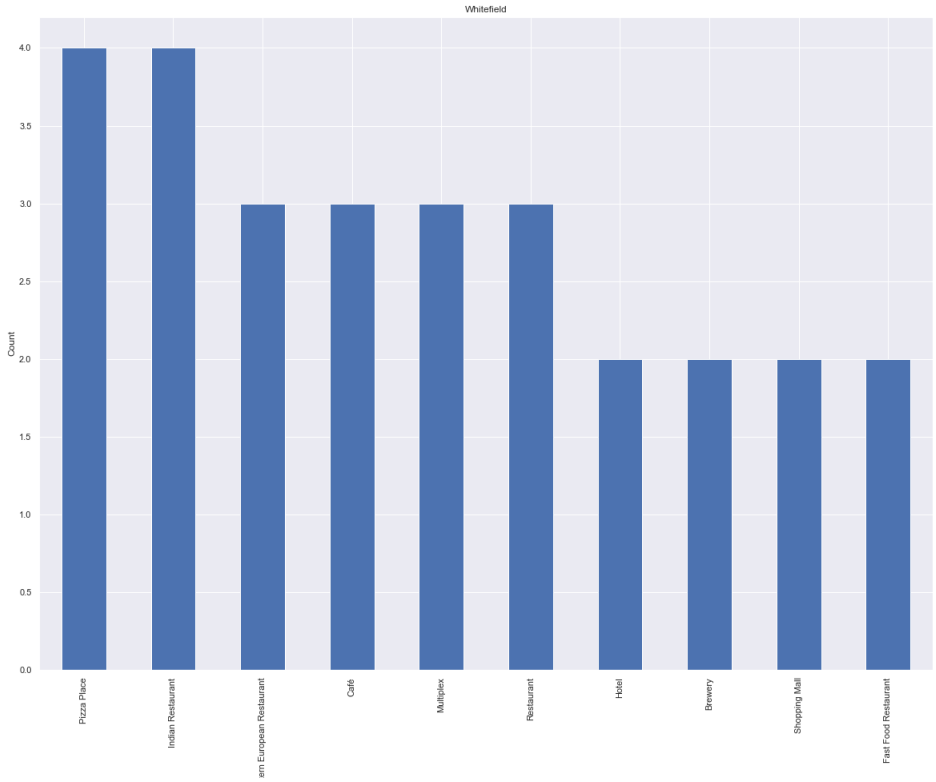

Figure 6: Whitefield neighborhood - Venue Categories

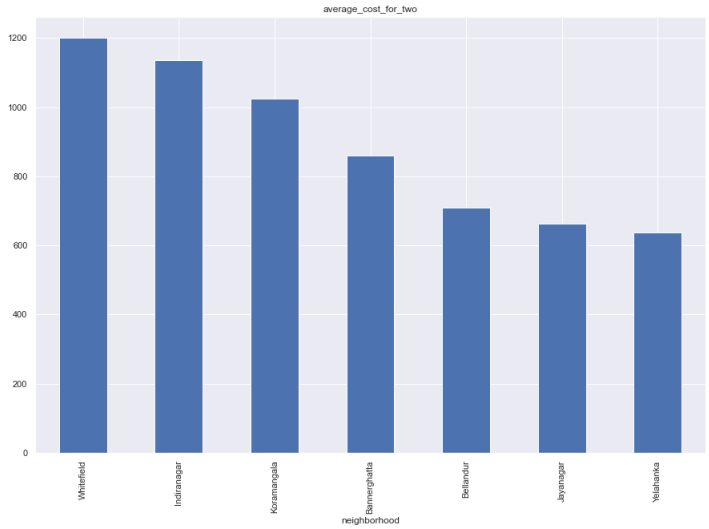

Figure 7: Means of average cost for two by neighborhoods

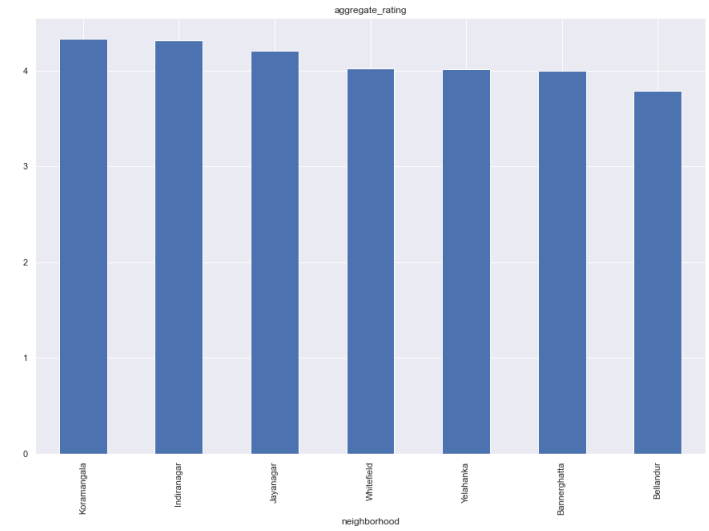

Figure 8: Means of aggregate rating by neighborhoods

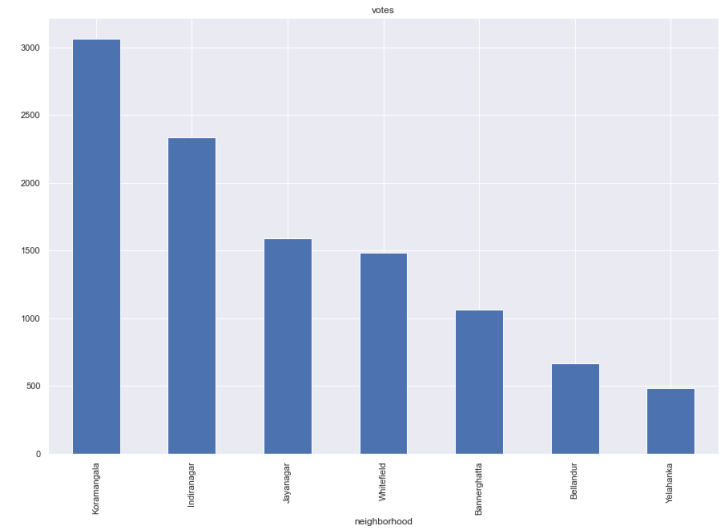

Figure 9: Means of number of votes by neighborhoods

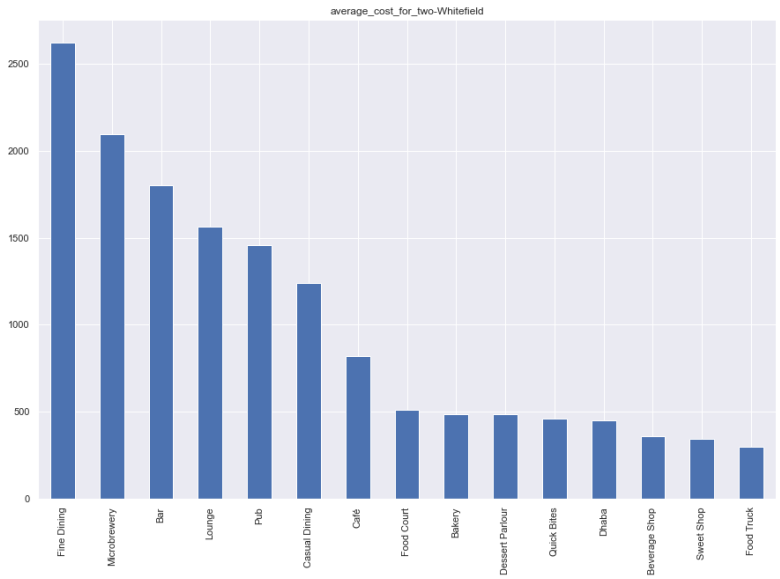

Figure 10: Means of average cost for two by categories - Whitefield

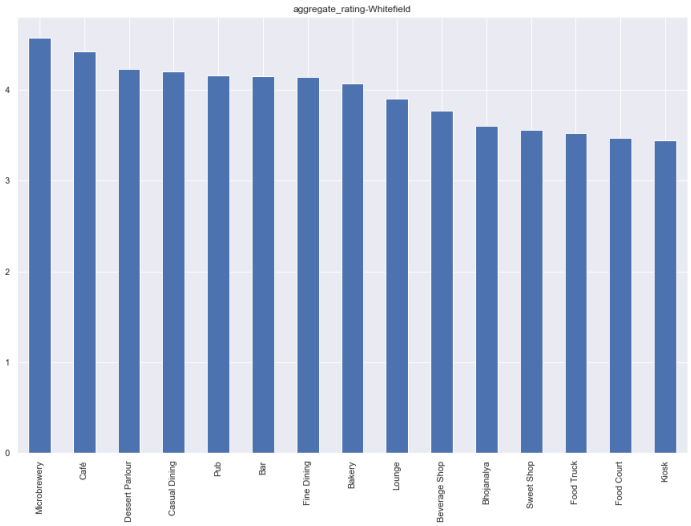

Figure 11: Means of aggregate rating by categories - Whitefield

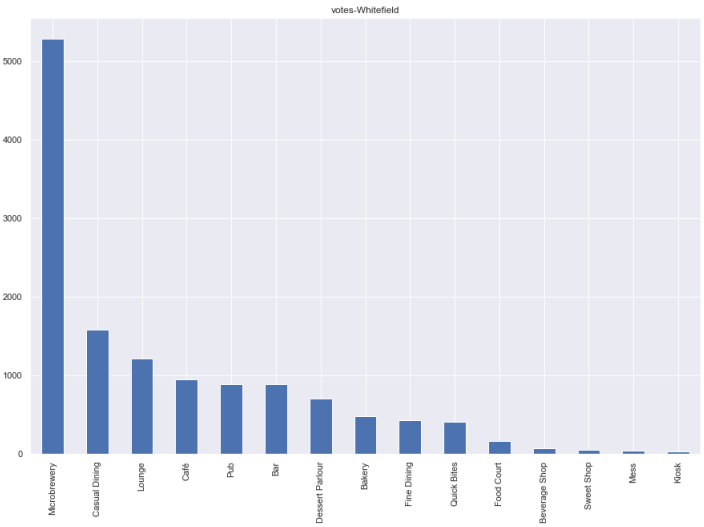

Figure 12: Means of number of votes by categories - Whitefield

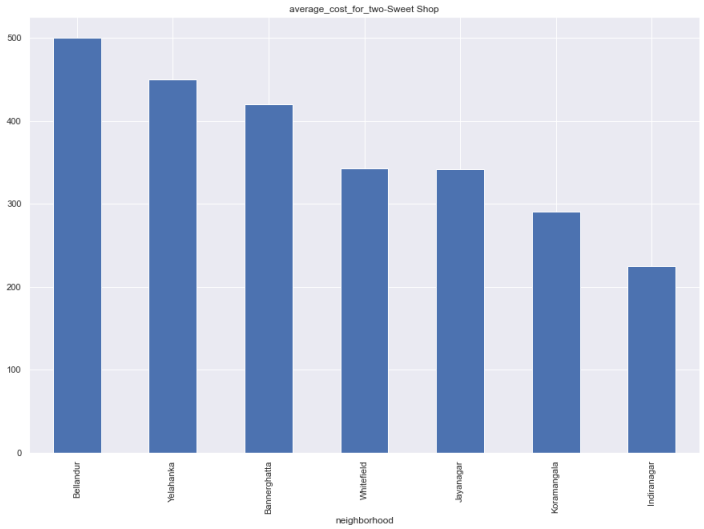

Figure 13: Means of average cost for two by neighborhood - Sweet Shop

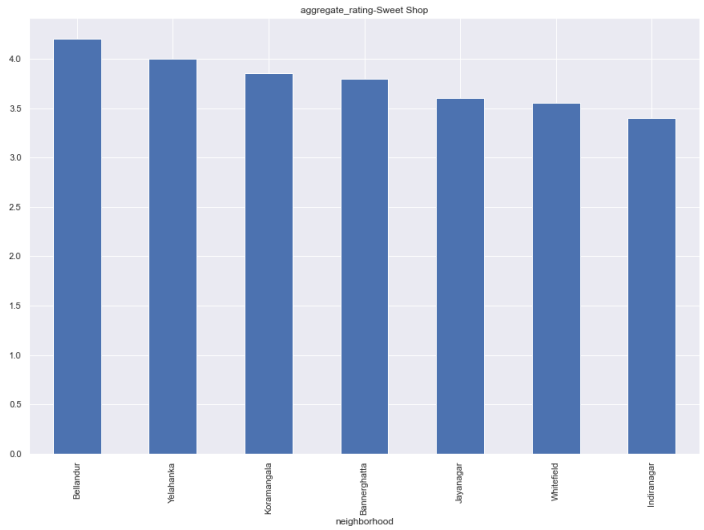

Figure 14: Means of aggregate rating by neighborhood - Sweet Shop