Visualisation of Deliveroo Dataset

Data Overview and Source:

W are analyzing a dataset of the **food delivery app – Deliveroo** for the **UK** location which has approx. 32000 restaurant data such as its description, review count, rating, delivery time, and distance from the searched location.

The dataset is available at https://www.kaggle.com/datasets/polartech/deliveroo-restaurant-dataset

Data Preparation:

NLP (natural language processing) technique is used to analyze the **description** of each restaurant and **extract keywords** that can be used to categorize restaurants based on **cuisine**.

Questions addressed:

1. Are there any demographic differences in the choice of restaurants based on the search location or searched zip code?
2. How does the delivery fee vary by distance from the search location, and how does this affect the choice of restaurant?
3. What is the relationship between review count and review rating, and which restaurants have the highest overall ratings?
4. What are the most popular cuisine types, and how does this vary by geographic location?
5. How do restaurant characteristics, such as review count, delivery fee, delivery time, and distance, vary across different food categories?

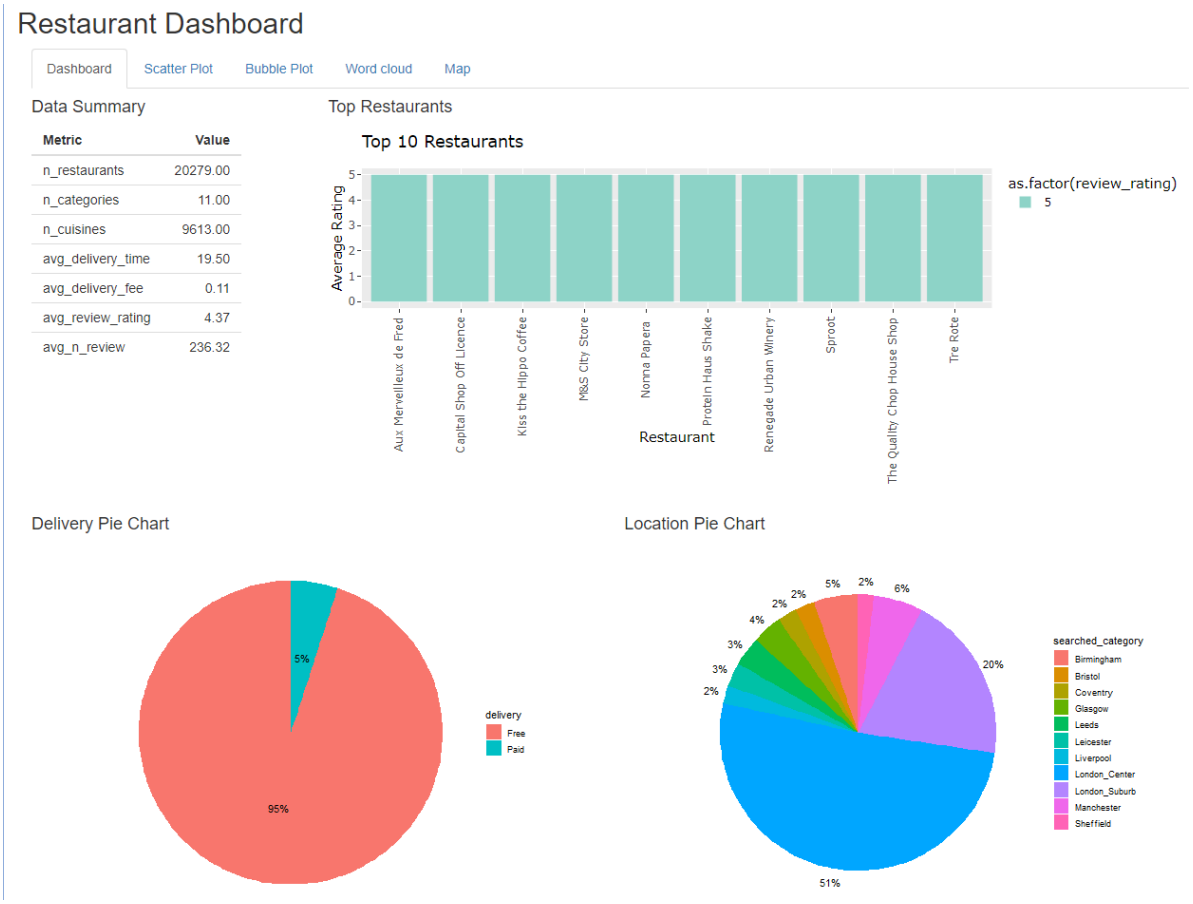
Visualizations Used:

1. Bar chart: to compare the review rating and review count of different restaurants. It helped to identify which restaurants have higher ratings and more reviews.
2. Scatter plot: to visualize the relationship between delivery time and distance. It helped to identify any correlation or pattern in the data.
3. Word cloud: to visualize the most common words in restaurant descriptions. It helped to identify the most popular cuisines and restaurant features.
4. Map: to visualize the distribution of restaurants and their locations. It helped to identify areas with a high concentration of restaurants.
5. Pie Chart: to visualize the distribution of restaurants by their location area and whether a restaurant is offering free delivery or not.

Data Analysis:

After filtering the data, there are a total of approx. 20k restaurants in UK are registered on Deliveroo app and are spread around 11 regions with maximum restaurants in the top 5 regions namely London center, London suburbs, Birmingham, Leeds and Glasgow. There are approx. 9k different food/cuisines available on Deliveroo across the country with an average delivery time of approx. 20 mins and average delivery fee of 0.11 ponds. The restaurants have a good average customer rating of 4.37 stars out of 5 and they are highly reviewed with an average count of approx. 250 reviews per restaurant.

As seen in the delivery pie chart, Deliveroo offers Free delivery for 95% of total restaurants while only 5% take delivery charges. Also, the majority of the restaurants are in the London Center region amounting to 51% of the total count, and the London suburbs region amounting to 20%. Therefore, most of the business for Deliveroo comes from these two regions. Also, Backed up by Manchester and Birmingham with a business of 6% and 5% each.



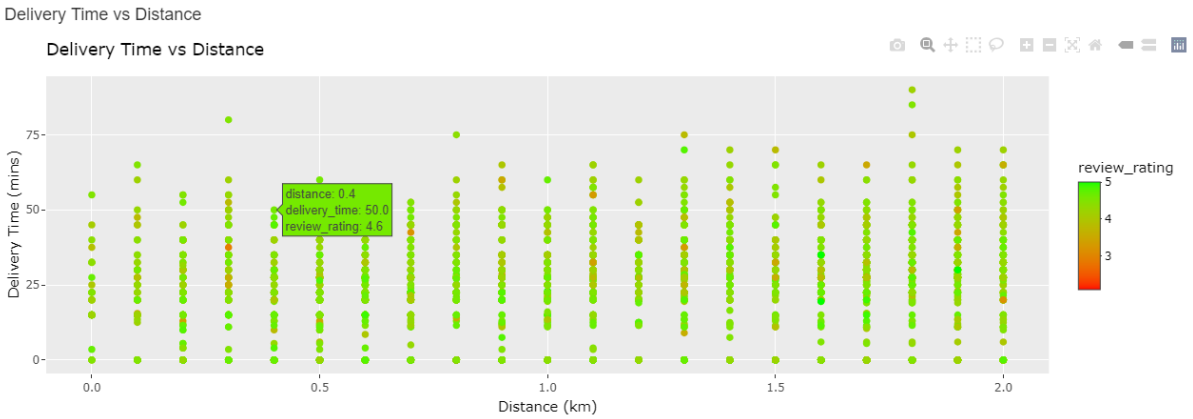
Let’s, analyze these restaurants and customer behavior in these four regions.

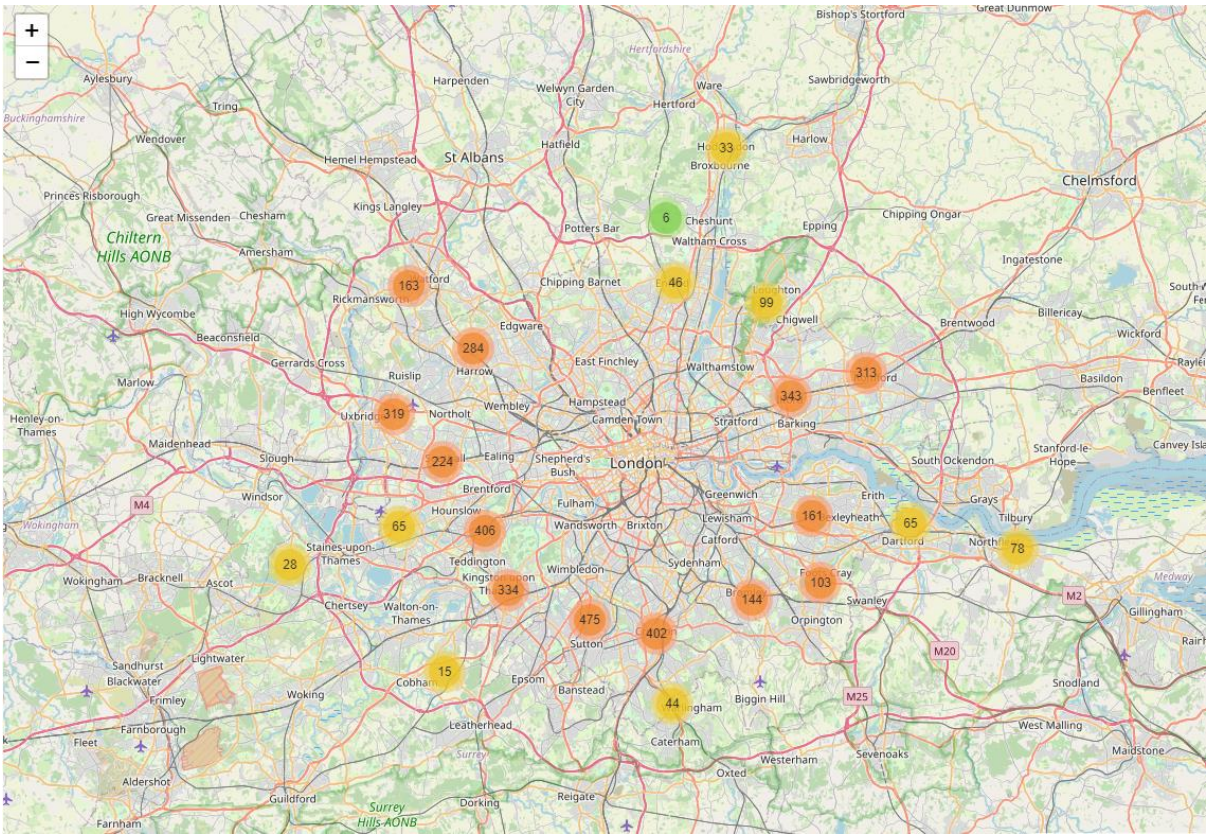
1. London Center Region:

Approx 10k restaurants are popular among customers with an average of 4.45 stars rating and 18.54 mins average delivery time. It is better than the average of the entire UK region of 20 mins. Most of the orders are delivered with 50mins. Also, in the bubble plot for delivery time vs review count it can be seen that 3 restaurants Greek on Broadway and Pret A Manger in 2 delivery fee ranges are performing well as compared to the rest of them. Surprisingly American cuisine is more popular compared to British cuisine. Others cuisines such as Italian, Indian, and Asian are also popular. Food items like Chicken burgers, desserts, and pizzas are more popular. Also trends like healthy, sandwiches, salads and breakfast also popular.

2. London Suburbs Region:

Around 4k restaurants are in this region with a 4.28 average rating and delivery time of 21 mins which is slightly higher than the UK region average. This region has a range of 0 to 75 mins of delivery time which is not great. The majority of the restaurants have delivery fee within 0 to 3 pounds range. After American and British, Indian cuisine is also more popular in restaurants along with Italian and Turkish cuisines. Food items such as chicken burgers, curry, dessert also popular. Unique trends like wings, wraps, seafood, and noodles are famous.



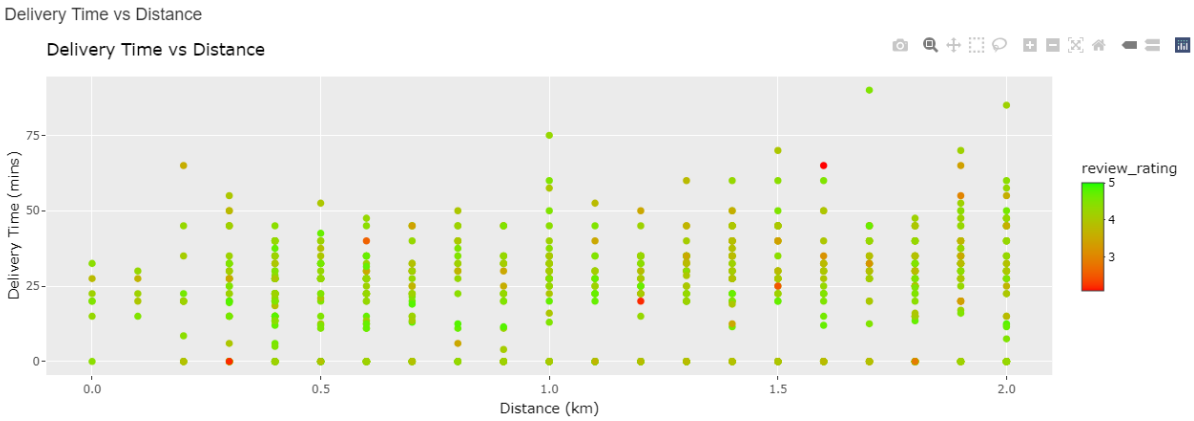


3. Manchester Region:

There is a total of approx. 1000 restaurants with an average delivery time of 20 mins and an average review rating of 4.32 stars. Delivery time ranges from 20 mins to 60 mins which is a good range. The delivery fee ranges from 0 to 4 with the majority of the restaurants charging less than 2 pounds. American, Indian, and British cuisines and unique food trends such as Mediterranean, grocery, and fried food are also popular.

4. Birmingham Region:

There are 950 restaurants with 20.38 mins of average delivery time and a 4.18 average customer rating. Among the top 10 restaurants, 4 have 5 stars,2 have 4.9 stars and the remaining 4 have 4.8 stars ratings. The majority delivery time range is from 10 to 40mins which is comparatively better than other regions. Apart from the other cuisines kebabs are equally popular in this region. Cakes, chips, and ice creams are popular food trends on the Deliveroo app.



<u>Inferences</u>:

For UK region, in major regions like London, Manchester, and Birmingham American and British cuisine restaurants are more popular, along with Italian and Indian cuisine. Whereas for the coastal regions fried fish and seafood are quite popular. Mediterranean cuisine in the Manchester region and Kebabs in Glasgow are unique popular customer preferences.

In the London center region, maximum restaurants have free delivery whereas in the London suburbs region, most of the restaurants have paid delivery. Despite the long-distance customer satisfaction are more for restaurants with more delivery time.