Food Hub Project

Dharitri Bollini

Food Hub Back ground

- Food hub is an aggregator company that provides a access to different restaurants and cuisine types.
- The company revenue is based on charging the orders of each restaurant depending on the order price.

Contents / Agenda

- Business Problem Overview
- Data Overview
- Exploratory Data Analysis(EDA)
- Key Insights & Recommendations
- Conclusion

Business Problem Overview

Objective

- To enhance the customer experience through a data analysis on a dataset with information about the orders and rating provided by the users.
- The dataset contains 9 features and 1,898 observations from orders for different kind of cuisines and restaurants.
- Analyze the data to get a idea about the demand & perform further exploratory data analysis to find insights.

Data Overview

- **Data Provided**

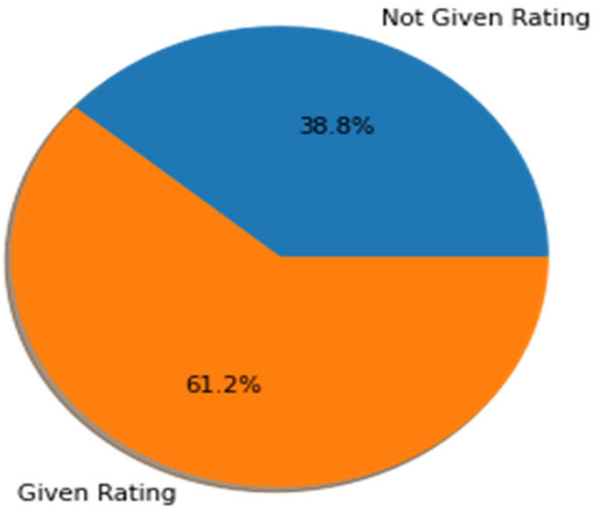
The data contains the different data related to a food order. Each observation has information about the order ID, customer ID, restaurant name, cuisine type, cost of the order, if the order were on weekday or weekend, food preparation time, delivery time and the rating provided by the customer.

- **Changes made to data**

- 3 object type values converted to categorical values('restaurant_name', 'cuisine_type' and 'day_of_the_week')
- 'rating' feature has all 'Not given' values by 'NaN' and then so converted the values from object type to float.

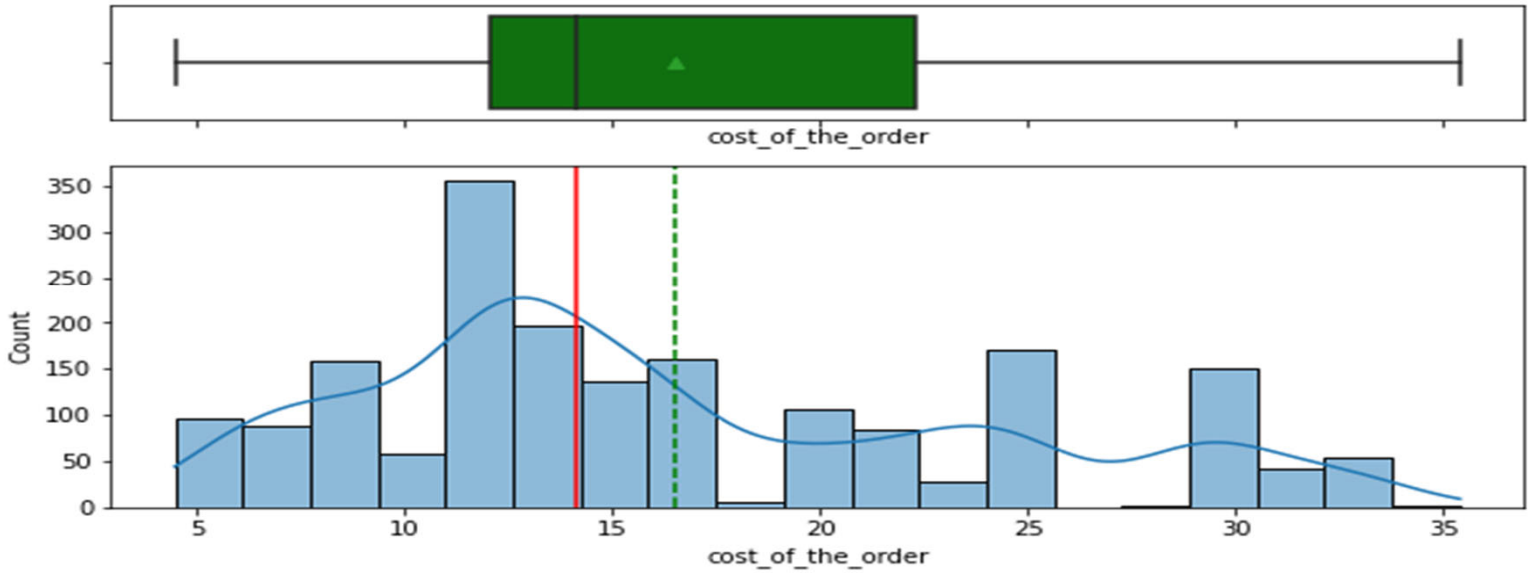
Exploratory Data Analysis(EDA)-Ratings

- Not given rating are 38.8% of the orders which is 736 orders
- Given rating are 61.2% orders which is 1,162 orders.
- Increase the number of customers who will rate the orders in app so company can solve the problem.



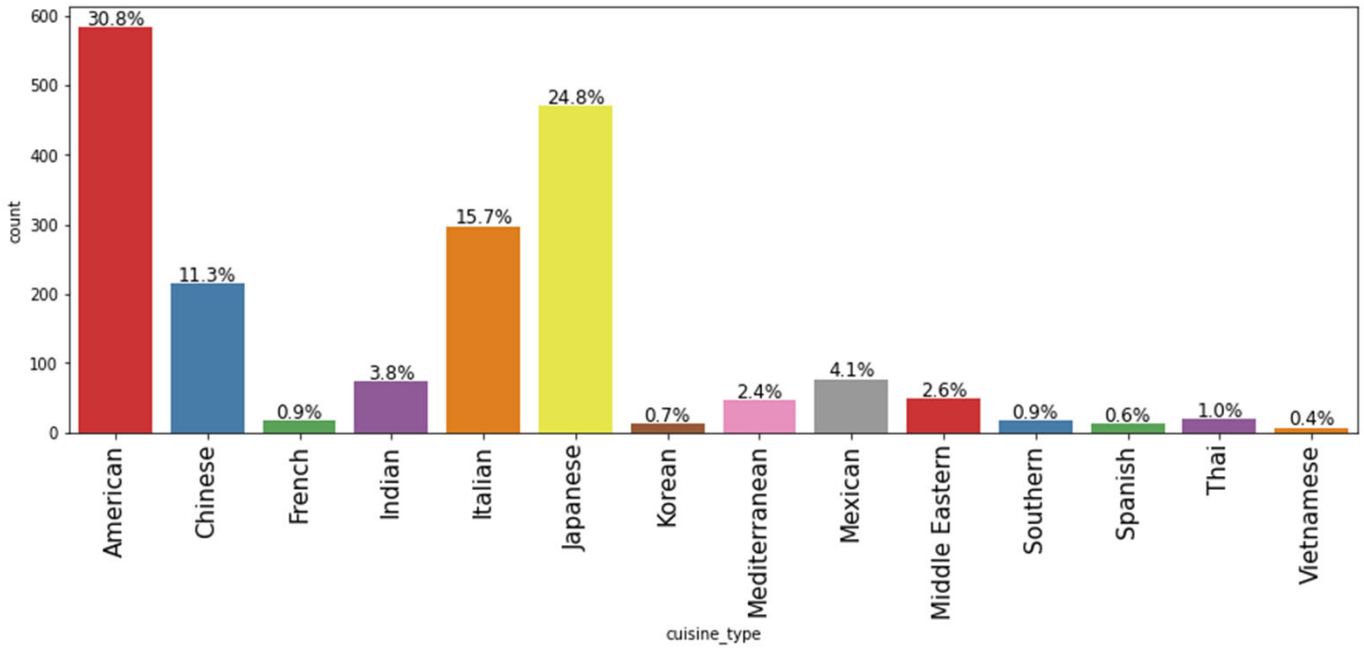
Exploratory Data Analysis(EDA)-Order Costs

- Almost 50% of the orders are in the range of 10-15 & median is around 14$.
- Most of the orders are below average cost in this analysis.
- Order costs are right skewed & mean is also to the right.



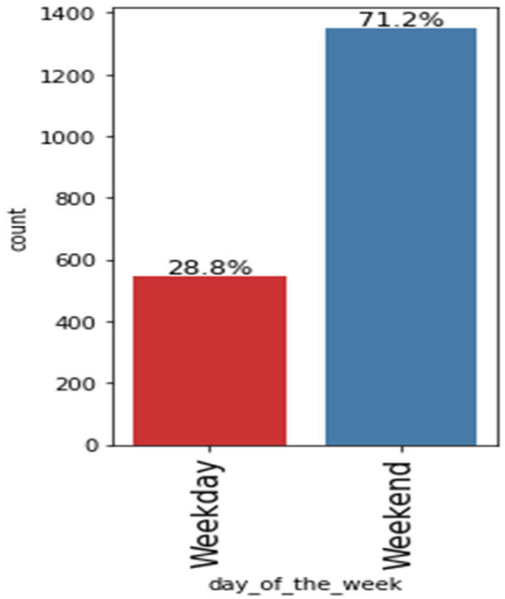
Exploratory Data Analysis(EDA)-Restaurants

- Based on the graph we can see that American cuisine is the preferable one.
- American cuisine plus the Japanese cuisine do make up to more than 50% of all the orders .
- Vietnamese & Spanish are the least ordered cuisines.



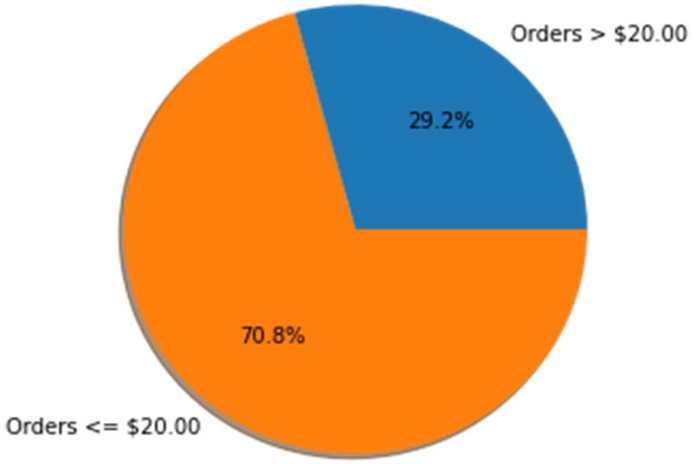
Exploratory Data Analysis(EDA)-Day of the week

- 71.2% orders are placed on the weekends.
- Only 28.8% of the orders are placed on weekdays.
- Improvement is needed for food delivery on weekdays.



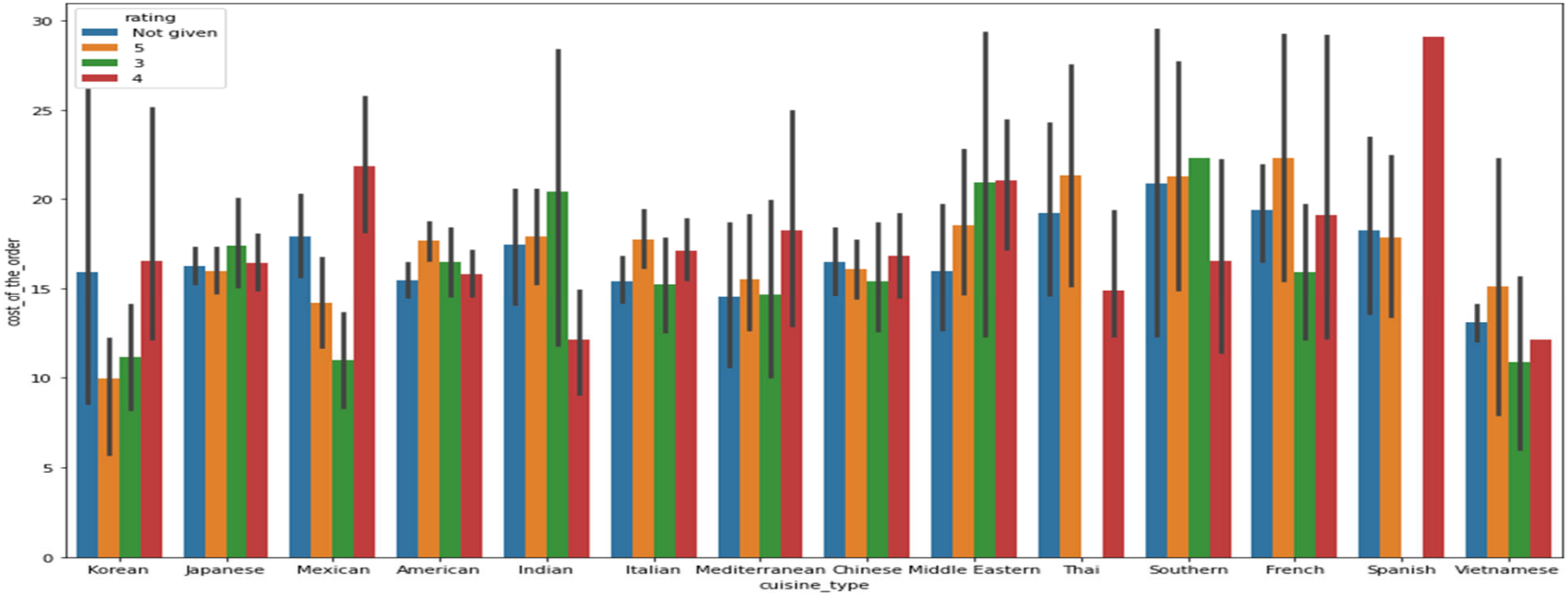
Exploratory Data Analysis(EDA)-Order Costs

- 29.2% of the orders are placed are greater than $20.00
- Orders less than $20.00 are more but orders over $20.00 are charged by the company in 25% to generate the revenue.



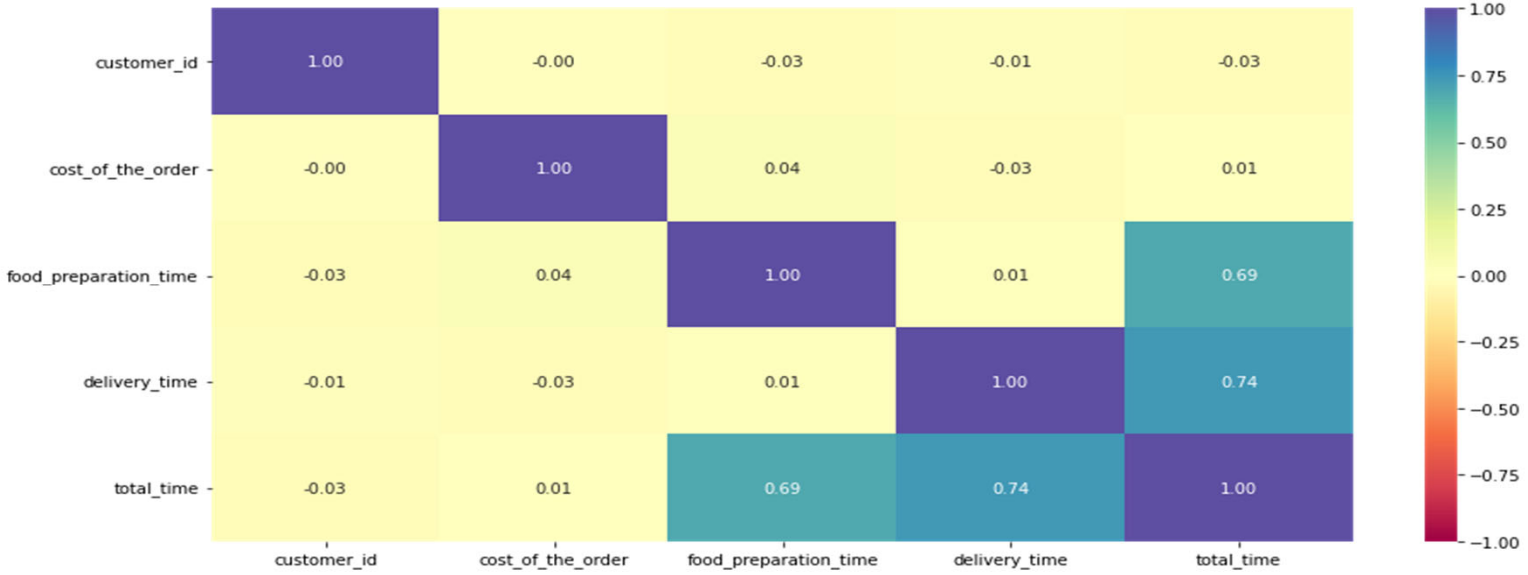
Exploratory Data Analysis(EDA)-Cuisine type/order costs

- French cuisine is better rated on food which costs above the mean price .
- Vietnamese food & Mexican food are not well rated for food below mean price.
- Korean food are well rated on food below mean price.



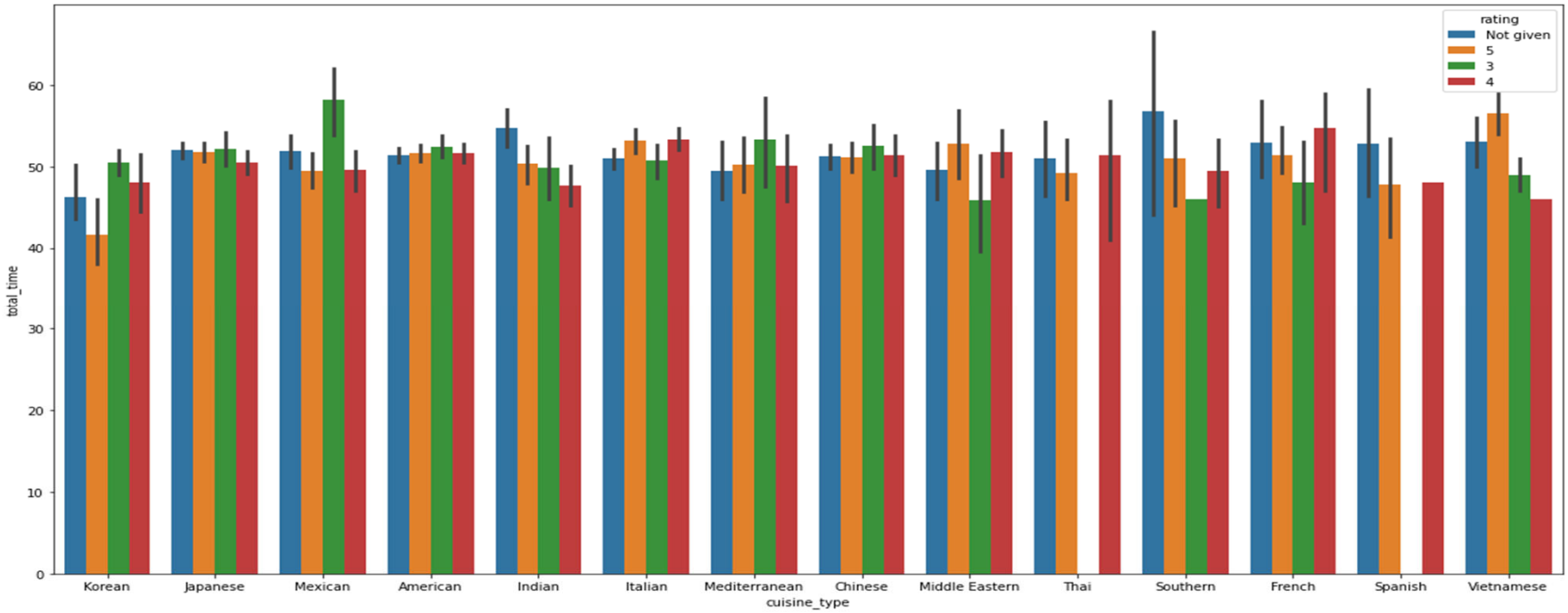
Exploratory Data Analysis(EDA)-Heat map

- Correlation is good between ‘total_time’ and ‘delivery_time’ and it is also good between ‘food_preparation_time’ and ‘total_time’.
- Correlation is 1.0 in the diagonal of the heat map and correlation between other pairs of features are not important because all of them are almost zero.



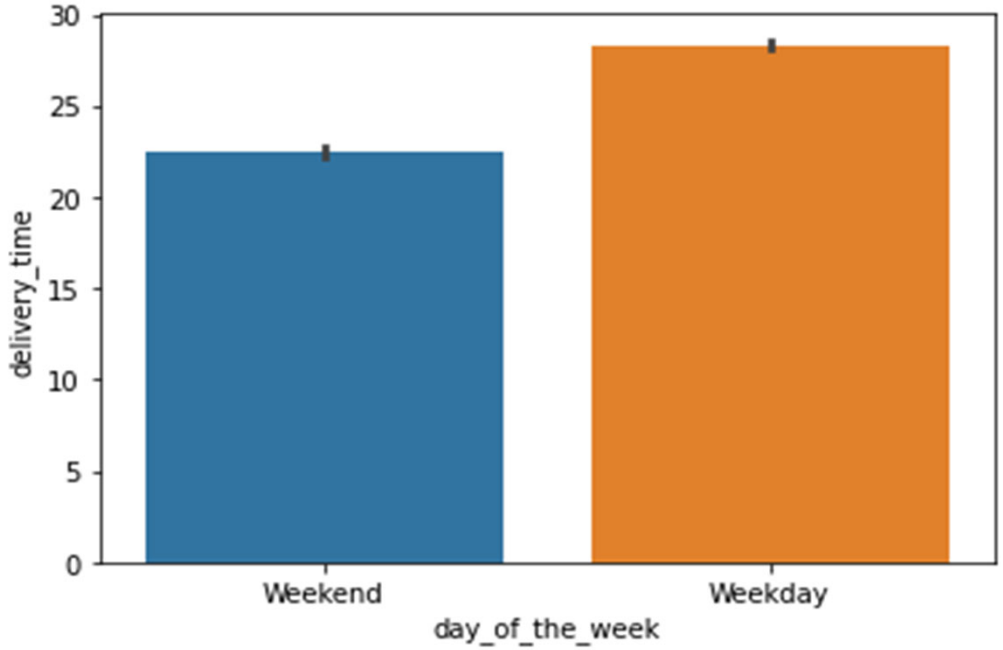
Exploratory Data Analysis(EDA)-Total time/Rating

- American food is well rated when the total time to get the food is fast.
- French food needs more time for better rating & Vietnamese is not well rated.



Exploratory Data Analysis(EDA)-Delivery Time

- Mean delivery time on weekdays is 28 minutes
- Mean delivery time on weekends is 22 minutes
- Delivery time is higher on weekday than on weekend.



Key Insights & Recommendations

Key Insights:

- Food hub objective is to improve the customer experience so it is important to have most of the orders rated. In the dataset there are 736 orders which corresponds to 38.77% with 'Not given' rating.

  - **Recommendation**: Increase the number of customers who will rate the orders in app so company can solve the problem.

- Almost 50% of the orders are in the range of $10.00 to $15.00.

  - **Recommendation**: Invite more costly restaurants to use the app so the revenue on charges will increase the net revenue.

- Orders are placed only 28.8% from weekdays and 71.2% from weekends.

  - **Recommendation**: Promote marketing campaigns or discounts to use the app on weekdays so that more orders can be delivered to generate more revenue.

Key Insights & Recommendations

- Delivery time is greater on weekdays which is 28 minutes though there are less orders maybe because of the heavy traffic on the streets or low orders.
  - **Recommendation**: Use more efficient delivery vehicles like motorcycles and bicycles to avoid being stuck at traffic rush.
- Total orders where cost is above 20 dollars is only 29.24% of all orders. These are important orders which can provide revenue to the company as company takes 25%.
  - **Recommendation**: Weekend customers are the biggest population so focusing on increasing there order cost where the price on each order are at least 20 dollars .This will help the company to increase the net revenue.
- American, Japanese and Italian cuisine types are the preference customers meal. These cuisine types rating are also greater than other not well desired cuisines, like Vietnamese.
  - **Recommendation**: Provide to the restaurants some kind of training skills for better food preparation and delivery. This will engage more customers to order through app.

Conclusion

- Based on the data analysis, key insights and recommendations there are some opportunities on business growth that will depend on faster delivery time, more orders especially on weekdays.
- Rating is concentrated around the high score of 5, its possible that mostly only the very satisfied customers that bother to rate the service. However a lot of data about (38%) is lost in the unrated orders.
- Also, some restaurants at certain cuisine types needs attention on food preparation process to increase the customer experience rating.
- The company needs to put some effort on trying to get more relevant restaurants with higher food prices to increase the revenue.
- There is a tie of 4 customers on the 5th position given the reward criteria proposed. It requires further analysis or decision on how to handle such.
- Another key point is to increase the users of the app that rate the order for each restaurant. This will generate a more solid dataset.