

FoodHub Data Analysis

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Business Problem Overview and Solution Approach

Perform the data analysis to extract actionable insights from the data of the food orders that have been placed by different registered customers in the FoodHub online portal.

We will be majorly focusing on the below areas.

- Understand the demand of restaurants in the FoodHub portal
- Cuisine preference of the New York customers
- Get an idea about the cost of the ordered food
- Understand the volume of the orders over weekdays and weekends
- Estimate the revenue generated by the company
- Help the company to take decision on promotional offers
- Order rating analysis

Data Overview

Variable	Description
order_id	Unique ID of the order
customer_id	ID of the customer who ordered the food
restaurant_name	Name of the restaurant
cuisine_type	Cuisine ordered by the customer
cost_of_the_order	Cost of the order
day_of_the_week	Indicates whether the order is placed on a weekday or weekend
rating	Rating given by the customer out of 5
food_preparation_time	Time (in minutes) taken by the restaurant to prepare the food
delivery_time	Time (in minutes) taken by the delivery person to deliver the food package

Observations	Variables
1898	9

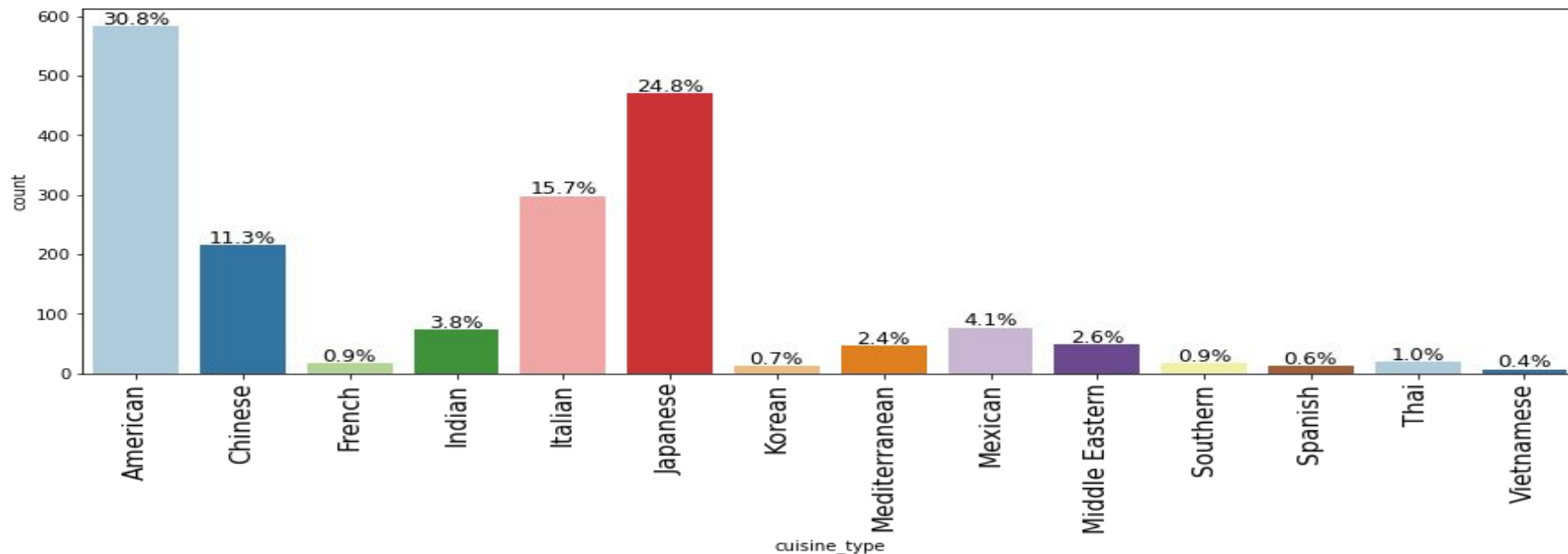
Note:

- There are no missing values in the dataset.
- The restaurant_name, cuisine_type and day_of_the_week columns have been converted to category.
- The rating column has been converted to numerical column after removing the non-rated orders.

Univariate Analysis - Order ID, Customer ID & Restaurants

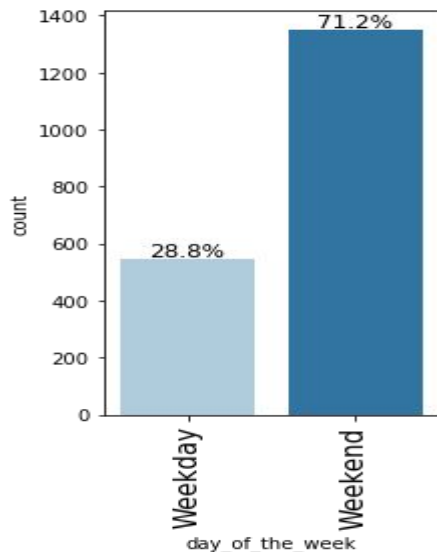
- There are 1898 unique orders. Order ID is just an identifier for the orders.
- There are 1200 unique customers. Similar to Order ID, Customer ID is also an identifier for the customers.
- There are 178 unique restaurants in the dataset.
- The restaurant that has received maximum number of orders is Shake Shack.

Univariate Analysis - Cuisine type

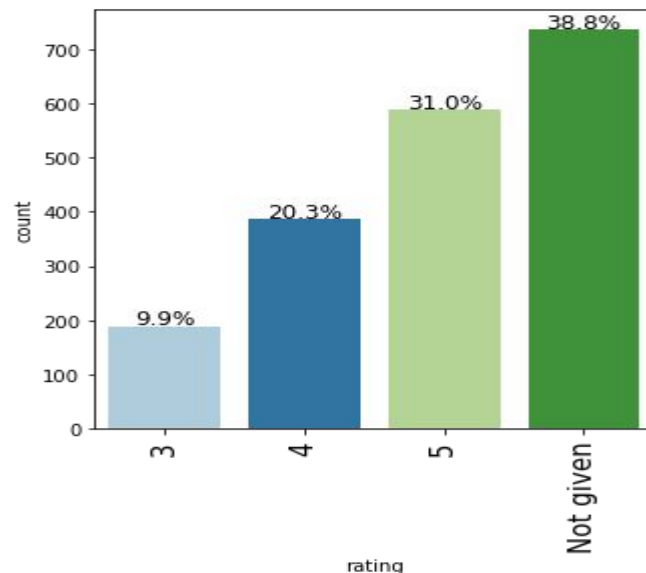


- The distribution of cuisine types show that cuisine types are not equally distributed.
- The most frequent cuisine type is American followed by Japanese and Italian.

Univariate Analysis - Day of the week & Rating

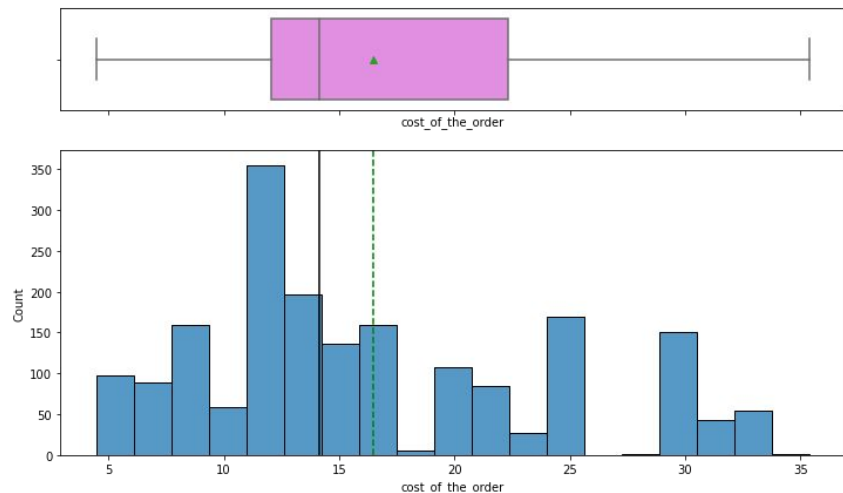


- The 'day_of_the_week' column consists of 2 unique values - Weekday and Weekend
- The distribution shows that around 71% of all orders are placed on weekends.



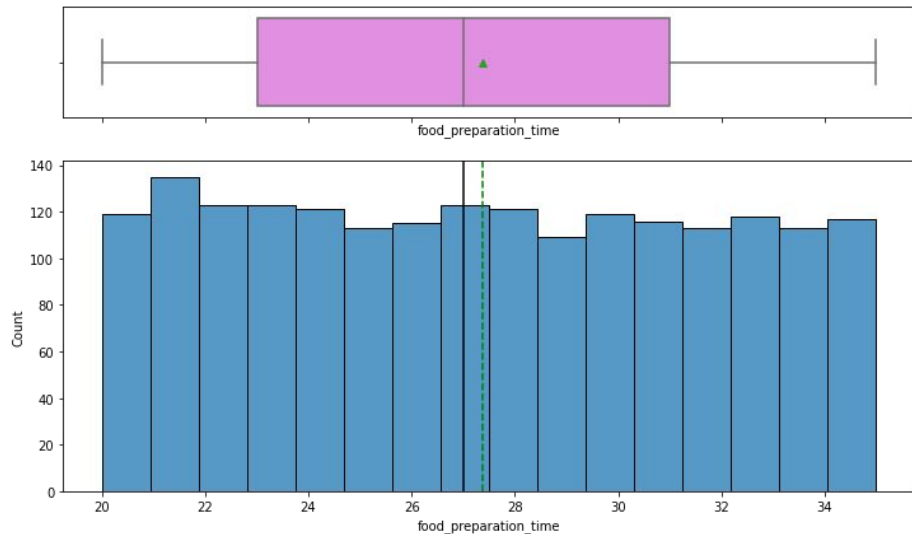
- The distribution of 'rating' shows that the most frequent rating category is 'not given' (around 39%), followed by a rating of 5 (around 31%).
- Only 10% orders have been rated 3.

Univariate Analysis - Cost of the order



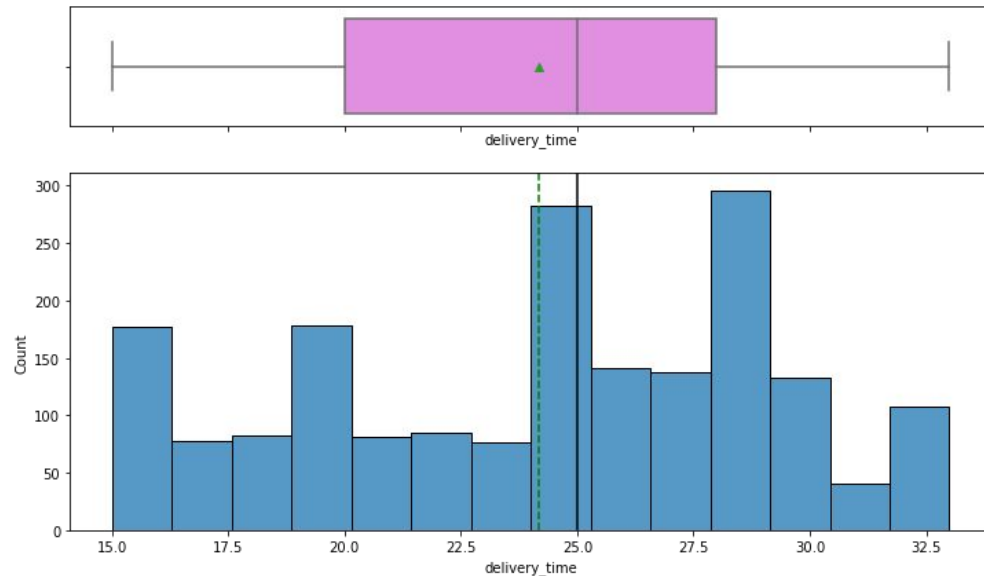
- The average cost of the order is greater than the median cost indicating that the distribution for the cost of the order is right-skewed.
- The mode of the distribution indicates that a large chunk of people prefer to order food that costs around 10-12 dollars.
- There are few orders that cost greater than 30 dollars. These orders might be for some expensive meals.

Univariate Analysis - Food preparation time



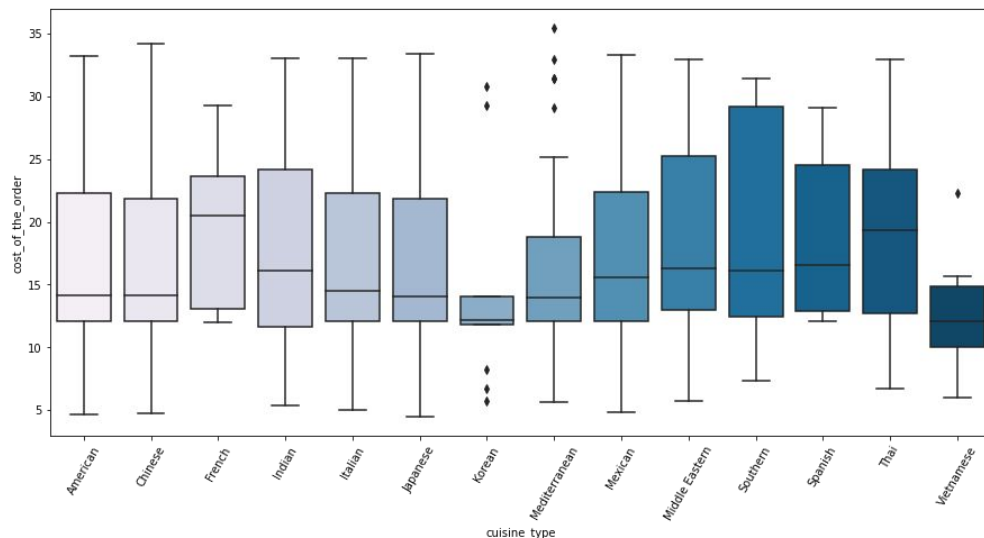
- The average food preparation time is almost equal to the median food preparation time indicating that the distribution is nearly symmetrical.
- The food preparation time is pretty evenly distributed between 20 and 35 minutes.
- There are no outliers in this column.

Univariate Analysis - Delivery time



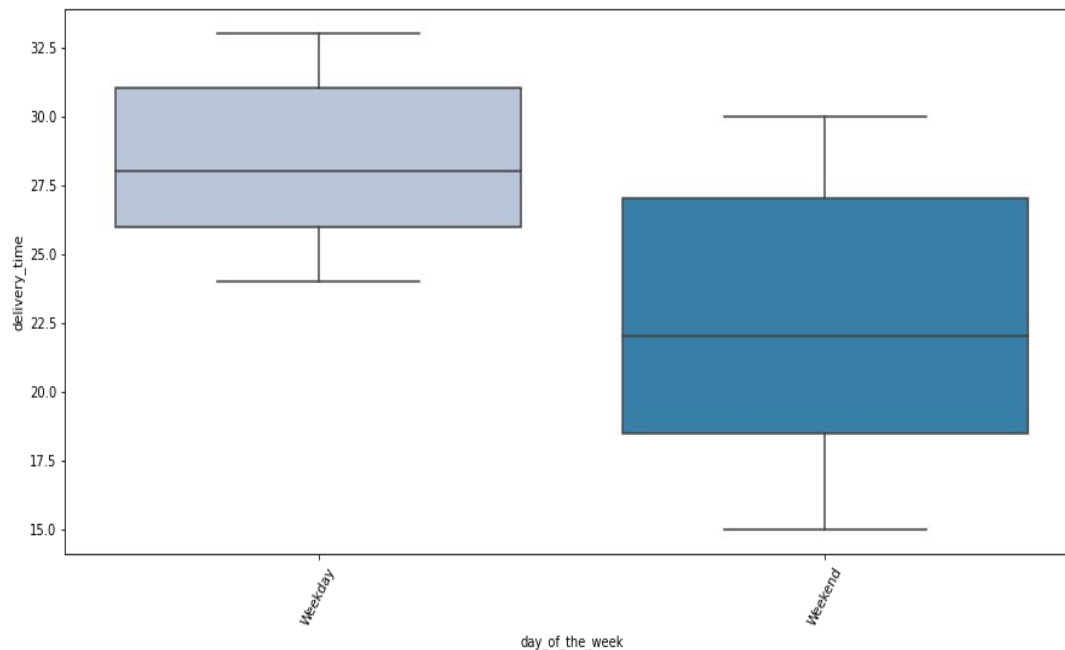
- The average delivery time is a bit smaller than the median delivery time indicating that the distribution is a bit left-skewed.
- Comparatively more number of orders have delivery time between 24 and 30 minutes.
- There are no outliers in this column.

Bivariate Analysis - Cuisine type & Cost of the order



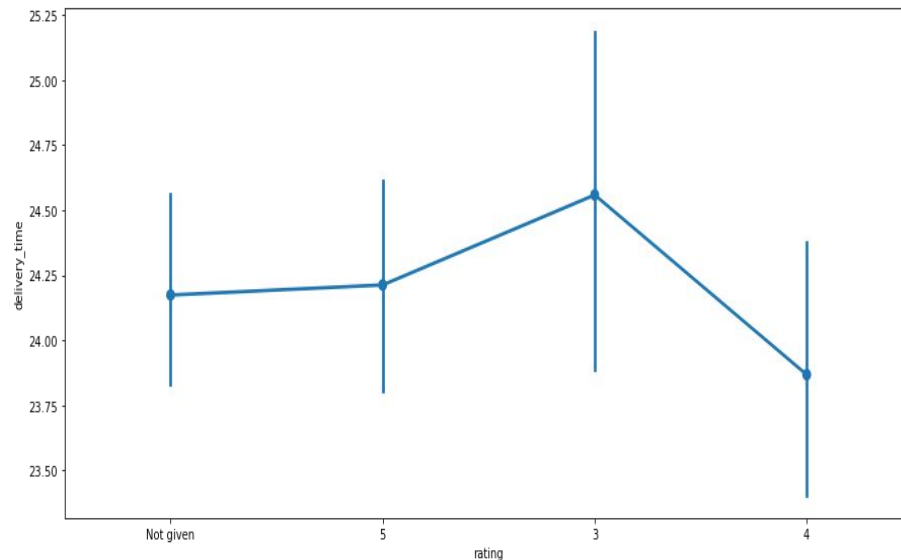
- Vietnamese and Korean cuisines cost less compared to other cuisines.
- The boxplots for Italian, American, Chinese, Japanese cuisines are quite similar. This indicates that the quartile costs for these cuisines are quite similar.
- Outliers are present for the cost of Korean, Mediterranean and Vietnamese cuisines.
- French and Spanish cuisines are costlier compared to other cuisines.

Bivariate Analysis - Day of the week & Delivery time

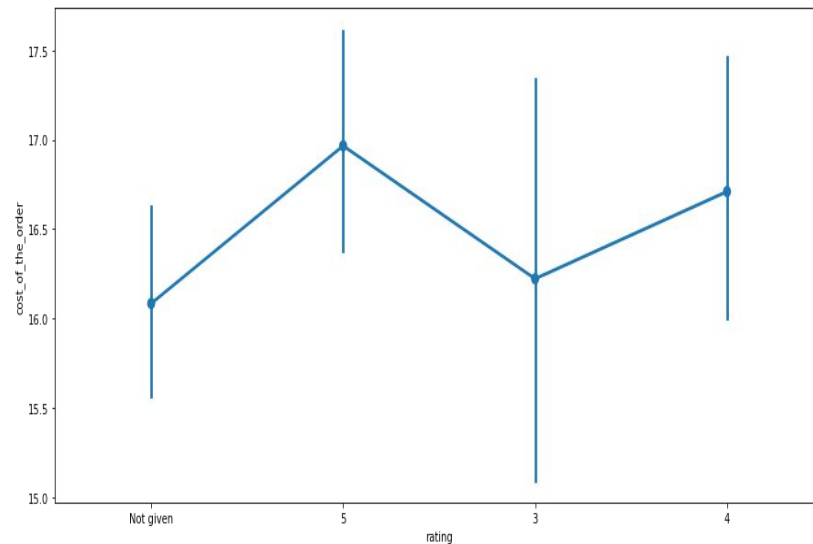


- The delivery time for all the orders over the weekends is less compared to weekdays. This could be due to the dip in traffic over the weekends.

EDA - Rating Analysis



- It is possible that delivery time plays a role in the low-rating of the orders.



- It seems that high-cost orders have been rated well and low-cost orders have not been rated.

Key Insights

- Around 80% of the orders are for American, Japanese, Italian and Chinese cuisines. Thus, it seems that these cuisines are quite popular among customers of FoodHub.
- Shake Shack is the most popular restaurant that has received the highest number of orders.
- Order volumes increase on the weekends compared to the weekdays.
- Delivery time over the weekends is less compared to the weekdays. This could be due to the dip in traffic volume over the weekends.
- Around 39% of the orders have not been rated.

Business Recommendations

- FoodHub should integrate with restaurants serving American, Japanese, Italian and Chinese cuisines as these cuisines are very popular among FoodHub customers.
- FoodHub should provide promotional offers to top-rated popular restaurants like Shake Shack that serve most of the orders.
- As the order volume is high during the weekends, more delivery persons should be employed during the weekends to ensure timely delivery of the order. Weekend promotional offers should be given to the customers to increase the food orders during weekends.
- Customer Rating is a very important factor to gauge customer satisfaction. The company should investigate the reason behind the low count of ratings. They can redesign the rating page in the app and make it more interactive to lure the customers to rate the order.
- Around 11% of the total orders have more than 60 minutes of total delivery time. FoodHub should try to minimize such instances in order to avoid customer dissatisfaction. They can provide some reward to the punctual delivery persons.

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