FoodHub

The food aggregator company – A Deepdive Analysis

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Introduction

Understanding the data

The shared data base is composed of 9 columns and 1898 rows, with no missing values. A transformation was realized for 3 variables: restaurant_name, cuise_type, and day_of_the_week. As a result of the transformation the memory used was reduced form 133.6 kb to 102.7 kb, a decrease of 23.13% in the overall memory use.

Column	Dtype	Transformation
order_id	int64	int64
customer_id	int64	int64
restaurant_name	object	Category
cuisine_type	object	category
cost_of_the_order	float64	float64
day_of_the_week	object	category
rating	object	object
food_preparation_time	int64	int64
delivery_time	int64	int64

- 4 integer variables
- 3 category variables
- 1 float variable
- 1 object variable

Cost of the order, Food Preparation time, and delivery time

	Cost_of_the_order	Food_preparation_time	Delivery_time
Minimum	$ 4.47	20 mins	15 mins
Average	$ 14.14	27 mins	25 mins
Maximun	$ 35.41	35 mins	33 mins

Ratings

588

5 stars

386

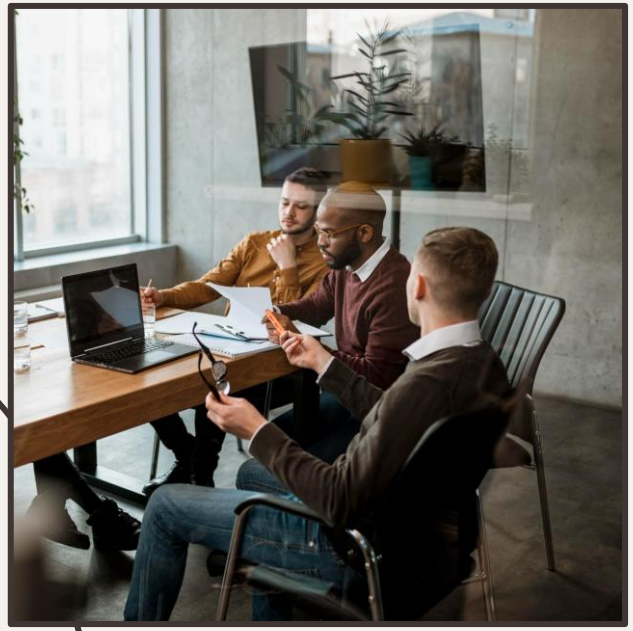
4 stars

188

3 stars

736

Not given

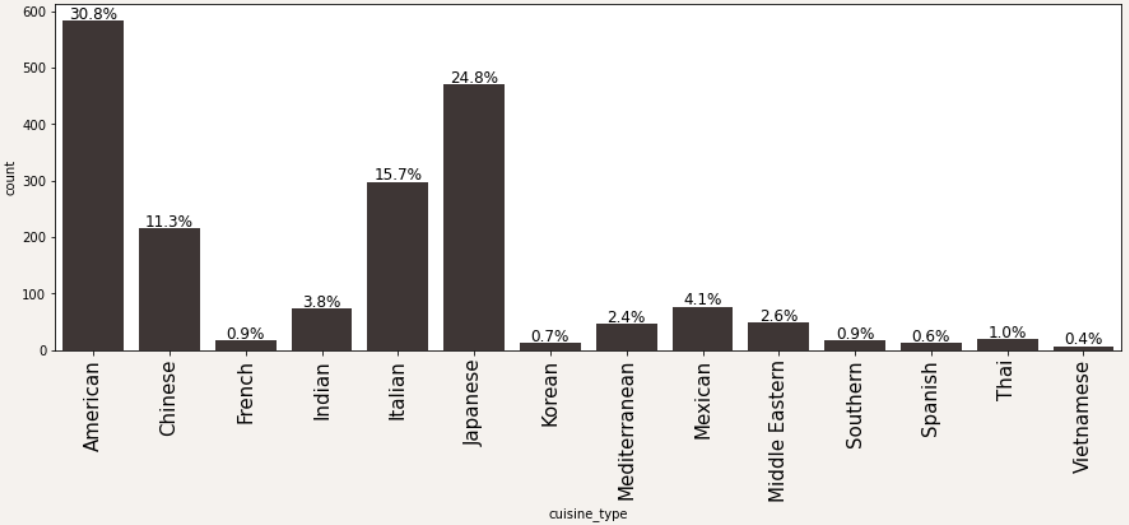


02
EDA - Analyis

Univariate Analysis

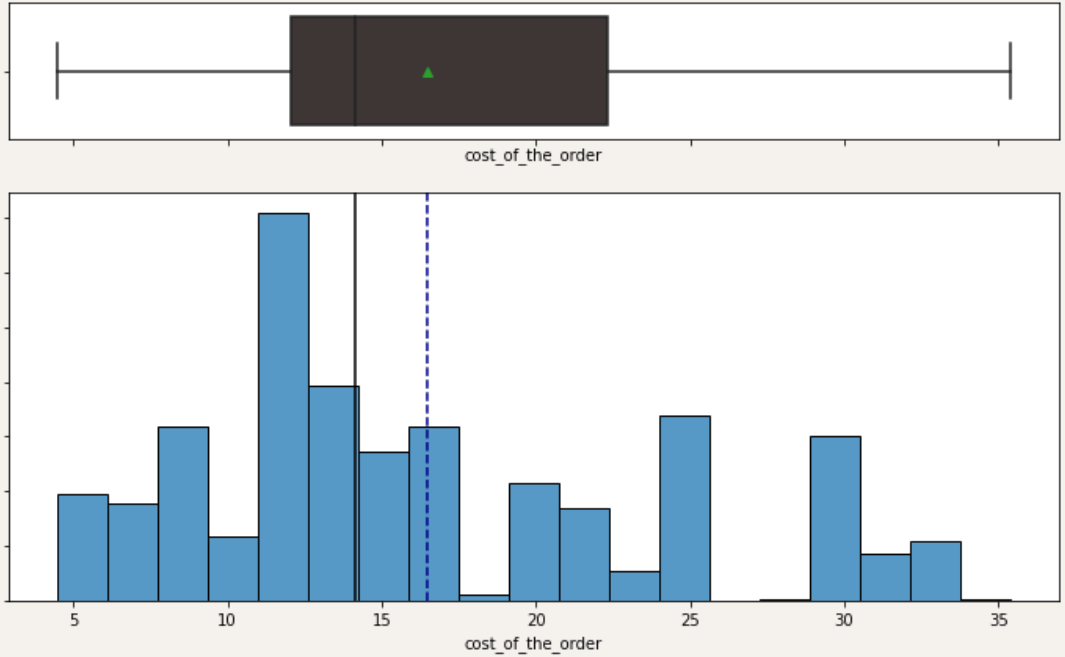
Cusine Type

The most popular cusine type ordered in the application is the American cuisine with 30.8% of the total orders. These are followed up by the Japanese cuisine with a total of 24.8% and the Italian cuisine with 15.7% of the total orders. The least requested food is Vietnamese with a 0.04% of the total orders.



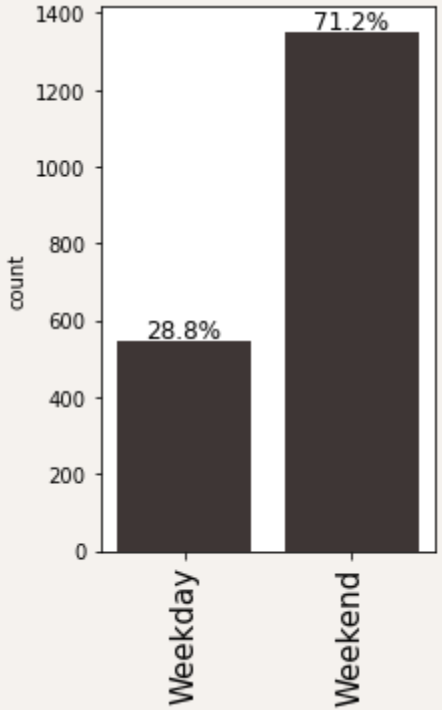
Cost of the order

The average order have a cost of **$ 14.14**. With minimum and highest order values being **$ 4.47** and **$ 35.41,** respectively. The cost of the orders doesn't seem to have any outlier values. Also, what can be seen since the mean is **$ 16.50** that most orders are under these price.



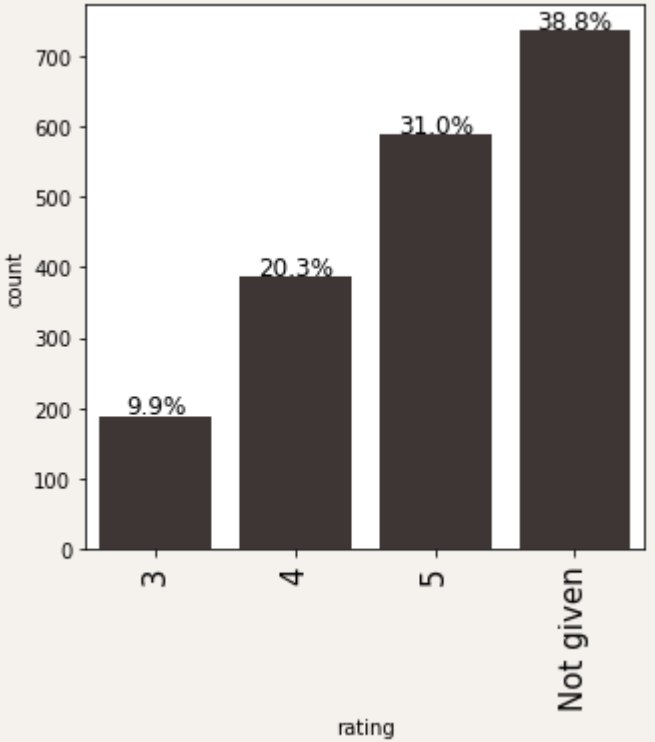
Day of the week

During the weekends is when most of the orders take place. As seen in the graph over 70% of the total orders take place during the weekends.



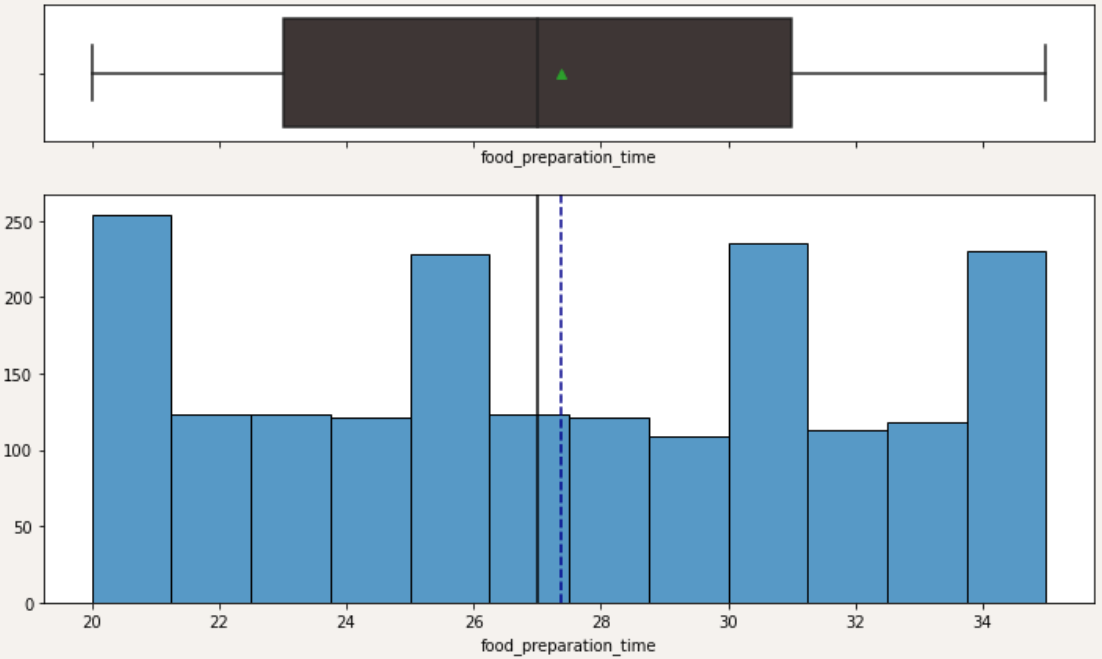
Rating

As had been previously mentioned most of the rated orders are over 5 stars and none order was rated below 3 stars. This tells us that most of the orders had been satisfied. Also, when people doesn't leave any rating can be understand as a satisfied order, since in many cases people use the rating to express their discomfort rather than an appreciation.



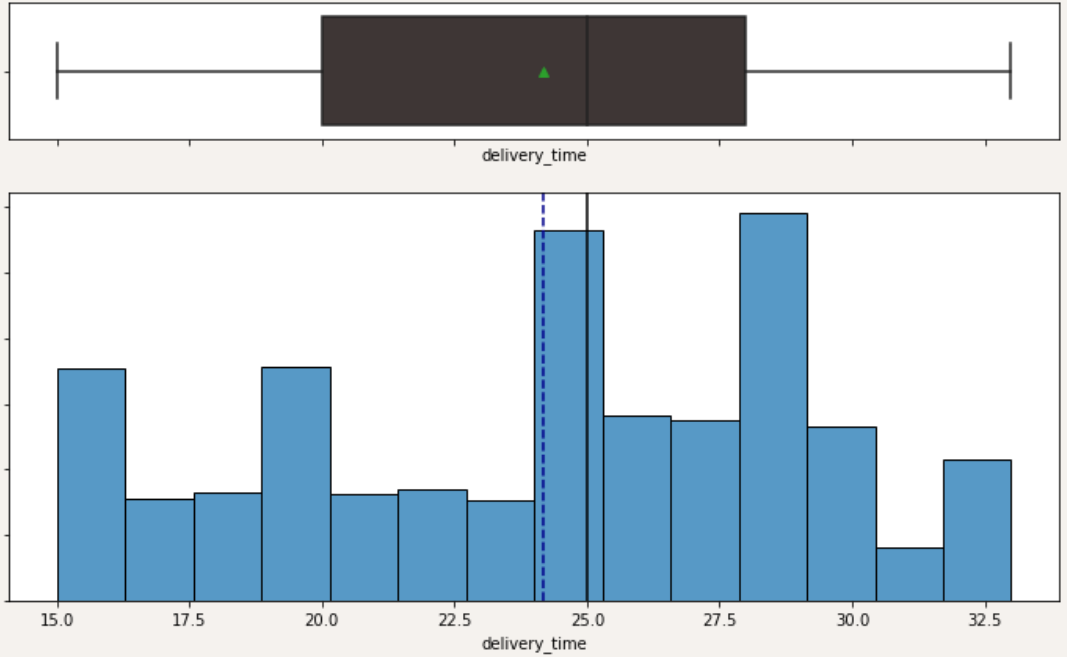
Food Preparation time

The average order have a preparation time of **27 mins**. With minimum and highest order taking up **20 mins** and **35 mins,** respectively. The preparation time of the orders doesn't seem to have any outlier values. Also, what can be seen since the mean is **27.37 mins** that most orders are prepared under this time, so there are values dragging the average to the right.



Delivery time

The average order have a delivery time of **25 mins**. With minimum and highest delivery taking up **15 mins** and **33 mins,** respectively. Must of the orders are under the mean of **24.16 mins.** Also, the orders doesn't have any outliers in any of the extremes.



Top 5 restaurants in terms of orders received ★

219

Shake Shack

132

The Meatball Shop

119

The Meatball Shop

96

The Meatball Shop

68

The Meatball Shop

Most popular cuisine on weekends

415

American

335

Japanese

207

Italian

163

Chinese

53

Mexican

Other relevant data

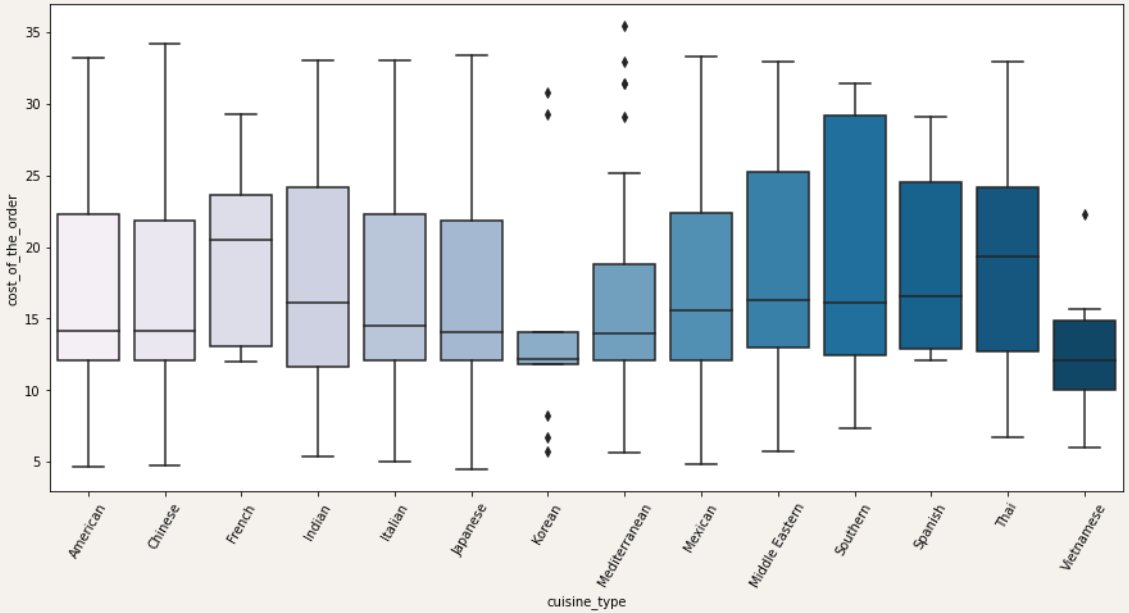
- The number of total orders that cost above 20 dollars is: 555
- Percentage of orders above 20 dollars: 29.24 %.
- The mean delivery time for this dataset is 24.16 minutes
- The 5 most frequent clients have a minimum of orders of 7 orders and a maximum of 13.

Customer ID	Total Orders
52832	13
47440	10
83287	9
250494	8
65009	7

Multivariate Analysis

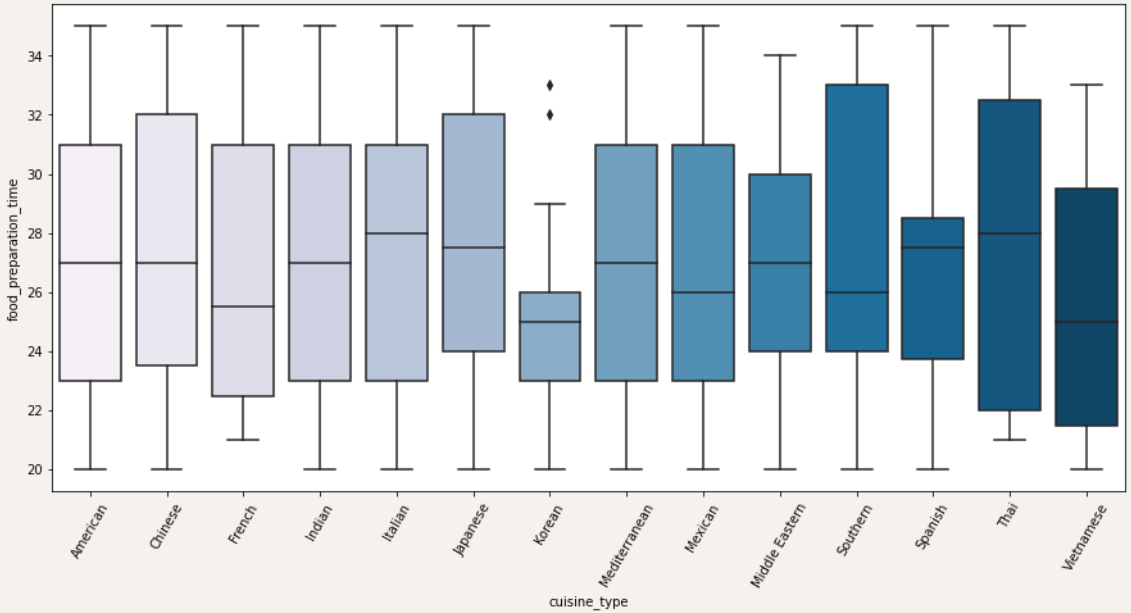
Cuisine vs Cost of the order

This analysis shows that most of the cuisines follows a standard cost of their orders. The three cases that shows the most variability are Korean, Mediterranean and Vietnamese. For the Korean it seams that the orders are so disperse that leaves many outliers. Also, this data shows that most of the cuisine types have a range between the minimum, $ 4.47 and the maximum $ 35.41.



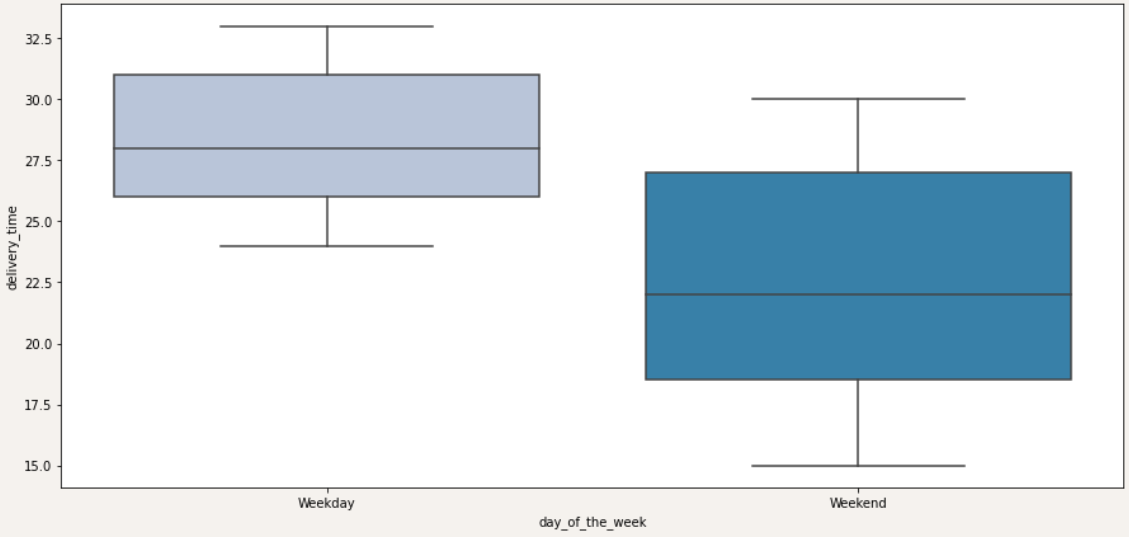
Cuisine vs Food Preparation time

As seen by the preparation time for the food it shows that almost all type of cuisines take a minimum of 20 mins of food preparation and maximum of 35 mins. The Korean cuisine shows two outliers' data, perhaps as part of the low quantity of orders request for this type of cuisine.



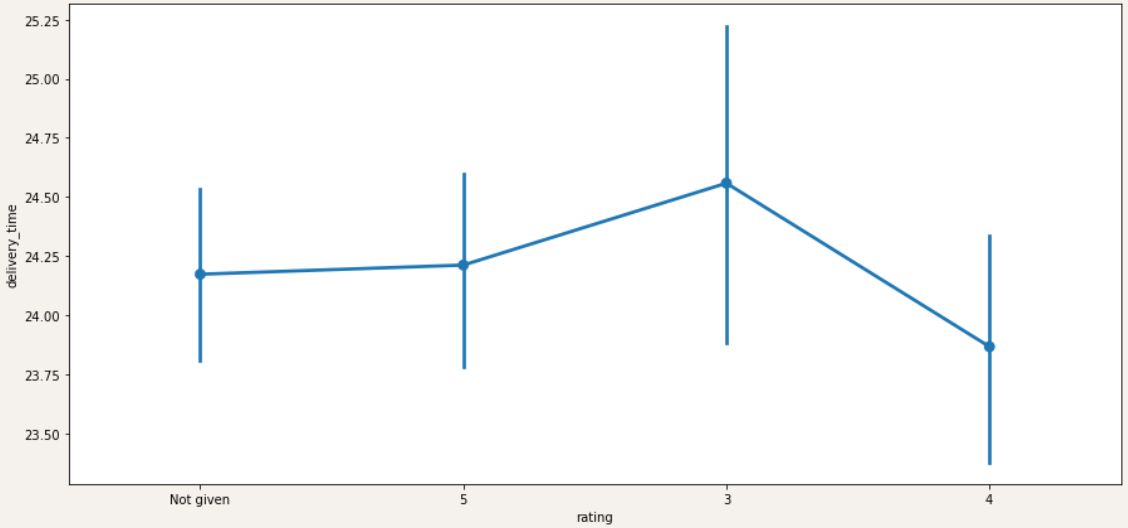
Day of the Week vs Delivery time

Enthought that the weekdays have less orders, it take more time to make the deliveries. This can be explained by the total of delivery persons available during the weekdays. During the weekends there are more orders and perhaps more delivery persons available. This could be an explanation to the improvement on delivery on times. Also, an analysis on hours of delivery could be helpful.



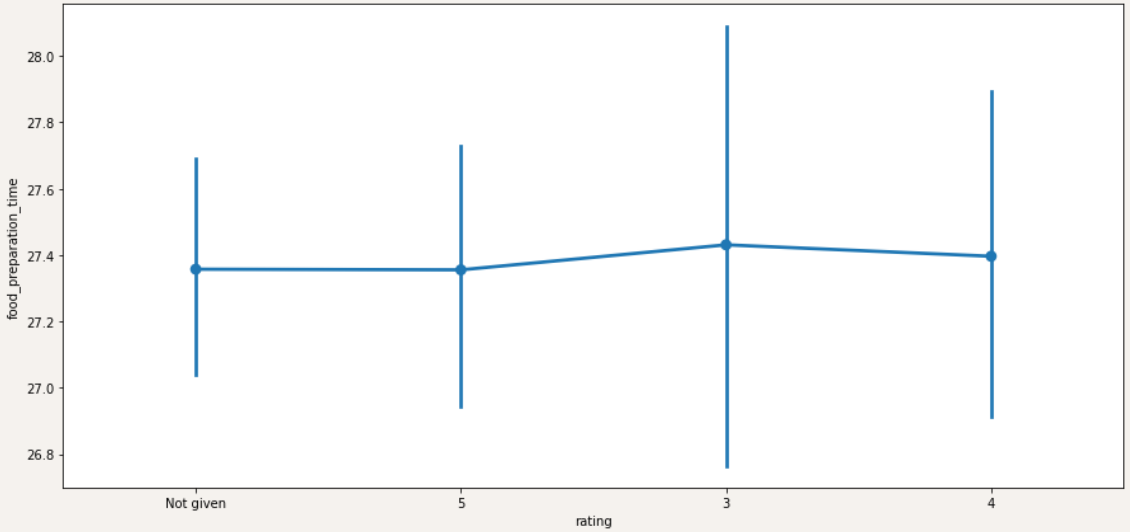
Rating vs Delivery time

Based on the chart of the comparison of the rating of the orders and their delivery time we can see that Not given rating and 5 stars rating are quite similar. But, for the 3 stars rating, the delivery time needs more time to be delivered, this seems to be an explanation to discomfort of the people who rated the service.



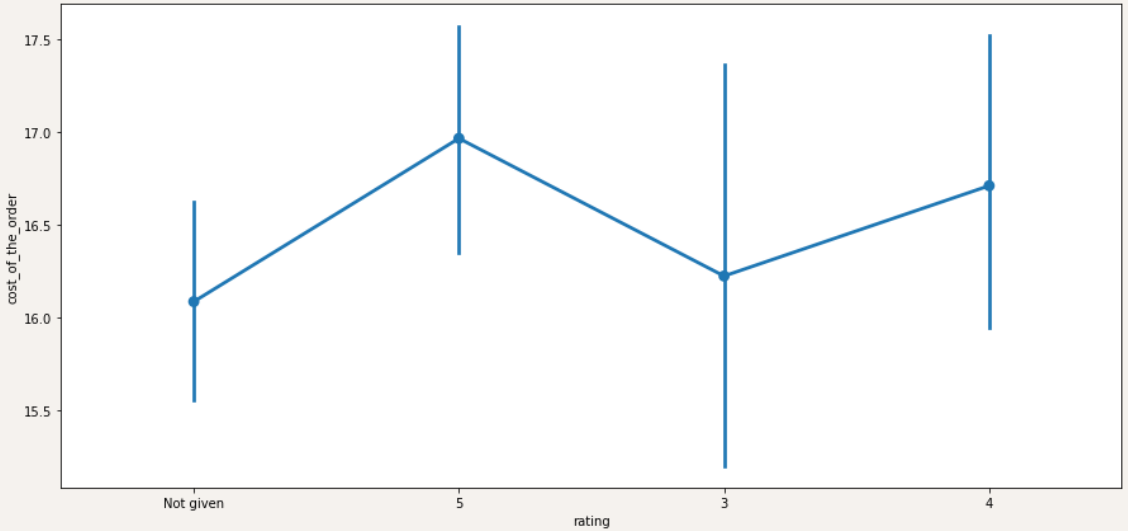
Rating vs Food prepration time

Based on the chart of the comparison of the rating of the orders and their preparation time we can see that Not given rating and 5 stars rating are quite similar. But, for the 3 stars rating, the delivery time shows a confidence above the rest of the ratings. Perhaps the extra minutes for the preparation is the explanation for the 3 stars rating.



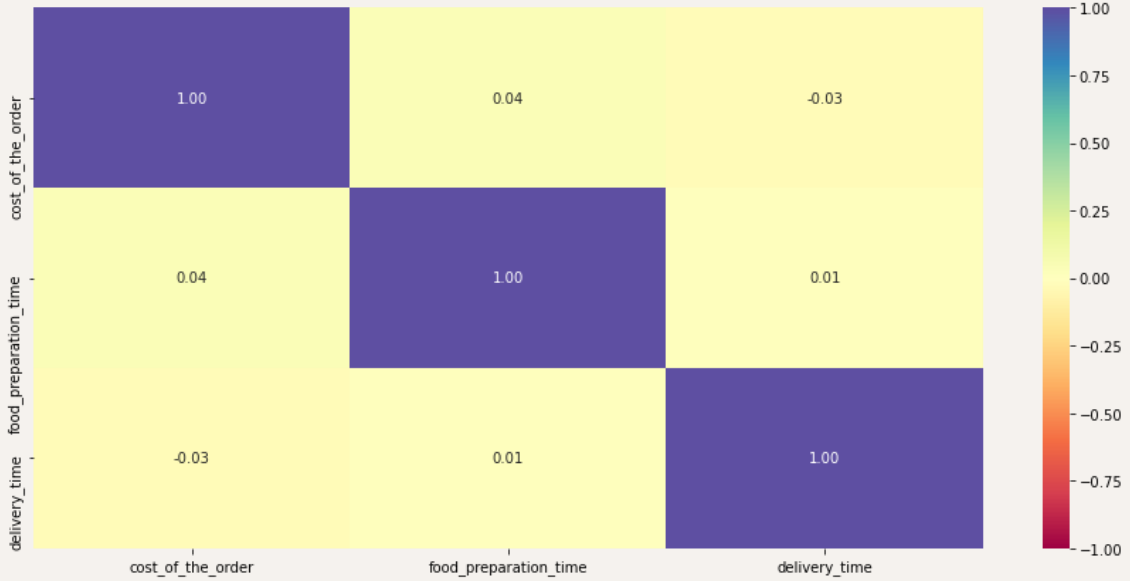
Rating vs Cost of the order

Based on the chart of the comparison the highest rating orders are pricier orders than the 3 stars orders. In these cases, perhaps, there is a bias behavior as someone who pay for expensive orders have a defined expectation in steed of a cheepier order.



Correlation among variables

The correlation between the Cost of the orders, the food preparation and delivery time shows these are independent variables. These helps to stablish the same sense of urgency for every order delivered.



FoodHub Strategies

Business Strategy – Promotional Offer

- Based on the company inputs to provide a promotional offer to the restaurants that have over 50 reviews and a 4 stars average the following result was obtained.

Customer ID	Reviews	Overall Rating
Shake Shack	133	4.51
The Meatball Shop	84	4.33
Blue Ribbon Sushi	73	4.28
Blue Ribbon Fried Chicken	64	4.22

Business Strategy – Revenue

- Foodhub has defined as their revenue based on a commission for the orders received. If the orders have a cost greater than $ 20.00 the commission of 25% is charged, if the order is above $ 5.00 then a commission of 15% is charged, else no commission is charged to the order.
- Based on the data generated of the 1898 orders Foodhub has generated a net revenue of **$ 6,166.30**

Business Strategy – Total Delivery Time

- The total delivery time of an order is the sum of the preparation time and delivery time of the order. As previously had been stipulated the average preparation time is **27 mins** and the average for the delivery is **25 mins.** The sum of this time give us a total average of **52 mins.**

- But for the delivery analysis the it's an important driver to understand the total of the orders that take over 60 mins to be delivered. Based on the given definition the 10.54 % of the orders are delivered in a timelapse over an hour.

Business Strategy –Delivery Time Weekdays vs Weekends

- In order to understand in a better how the business does on different time of the weekend, we have an average delivery time for the weekdays and weekends.
- The mean delivery time on weekdays is around 28 minutes
- The mean delivery time on weekends is around 22 minutes
- As seen during the weekdays it takes on average around 6 more minutes to deliver the orders of the business.

Our Conclusions and Recommendations

Conclusions

- Foodhub shows that most of their operation takes place during the weekend with over 70% of the total orders, leaving the rest of the orders during the weekdays.
- The preferred cuisine of the Foodhub users is the American, follow up by the Japanese and Italian cuisines. The lest requested food is the Vietnamese, Spanish and Korean cuisine.
- Regarding the ratings received by the clients of Foodhub it has almost 40% of the total orders without a rating.

Recommendations

- Foodhub can develop their business during the weekdays. As has been discussed the delivery time of the weekdays can be improved in order to reach more clients.
- Based on the preferences of the customers giving promotions on the popular restaurants leaves other business that can grow behind. If the promotions is given to less popular restaurants the customers will have an incentive to try out new types of cuisines boosting up. For example, every have different themes weekend.
- As many orders are leaved behind without a rating it leaves behind important information of the experience of the customers. In order to improve this, a promotion can of gift cards or coupons based on a series of ratings or based on a cumulative of ratings given by the community realize a raffle.

Out team

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