

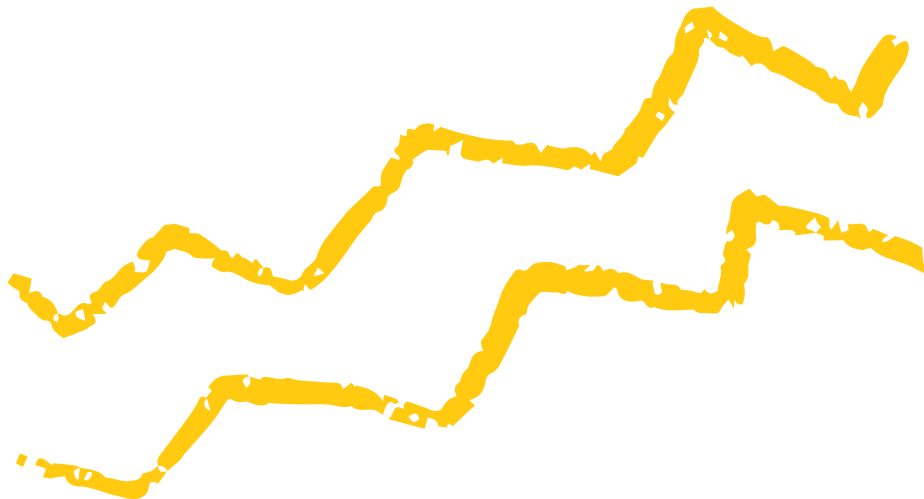


food
DELIVERY



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RESEARCH PROBLEM

- **DEBI** is a start-up food delivery application that started operating in **Saudi Arabia** since September 2021. **Users** can make orders via the application to get food from a variety of different cuisines restaurants.
- Generally, across all business, there is an ultimate sought-after goal which is maximizing profits.
- According to DEBI's business model, its main and direct source of profits is a commission on the delivered orders. Like any other business, DEBI needs to maximize its profits.
- Thus, DEBI may need to increase the number of delivered orders to increase its profits.



RESEARCH QUESTION

1. Does the number of monthly delivered orders **meet our target?**
2. What is the **regional performance** of our app?
3. Which **cuisines** our App users prefer?
4. What is our users' **ordering behaviour?**
5. How do users **pay** for their orders?
6. How do users **rate** the app? **Why?** How to **improve** the rating?

RESEARCH OBJECTIVE

Increasing the number of **monthly delivered orders** to reach or exceed a target of **100K** delivered orders per month.



About the Data

Since **September 2021**, users in **Saudi Arabia** have used DEBI app to enjoy food and drinks from their homes just by placing **orders** via the app from any desired restaurant. This dataset describes the delivered orders across Saudi Arabia since DEBI started operating. It's extracted from **DEBI's transactional orders database**.

Data Content

Order Id: the order unique identifier, **ex: Hjdkgy452xccd**.

Order Date: the date where the order has been made, **ex: 2021 - 06 - 10**.

Lat: is the latitude of the place where the order was delivered, **ex: 24.8288108957754**.

Long: is the longitude of the place where the order was delivered, **ex: 42.9209892937493**.

Restaurant Id: the restaurants unique identifiers, **ex: sdv574voij**.

Restaurant Name: the restaurants' names that is in the app, **ex: Willies**.

Cuisine: the cuisine of the ordered restaurant, **ex: Italian**.

Payment Mode: The payment method by which the user paid for the order, **ex: credit card or cash**.

Region: the name of Saudi Arabia regions, **ex: Makkah**.

Delivery Time Taken (mins): the total time taken in terms of minutes to deliver the order, **ex: 26**.

Customer Rating-Delivery: is how the user rates the order delivery, **ex: 4. (i.e. 4 stars)**

Geometry: is the geometrical polygon corresponding to each region, it exists in a shape file (**.shp**)

Data Collection

- Using a **SQL query** to extract data from DEBI's data warehouse (**DWH**) in the form of a **CSV file**. (i.e. orders - Restaurants) in the form of a CSV file.
- Using a shape file (**.shp**) holding Saudi Arabia **regions** and their names.

Data Preparation

- **Data Cleaning:** Renaming Columns - Dropping the columns, we don't need in our analysis.
- **Data Merging:** Inner Joins of orders and restaurants info.
- **Spatial Join:** it works by intersecting the location coordinates into a specific geometry (**i.e. makepoint(lat, long) ~ Intersects ~ Geometry polygon ~ Inner Join**)



Q1: DOES THE NUMBER OF MONTHLY DELIVERED ORDERS MEET OUR TARGET?

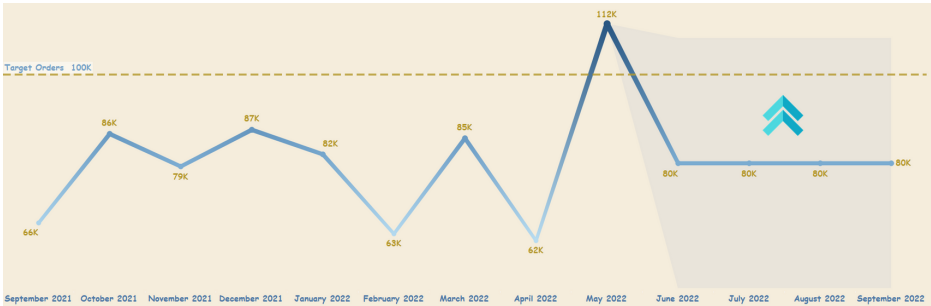
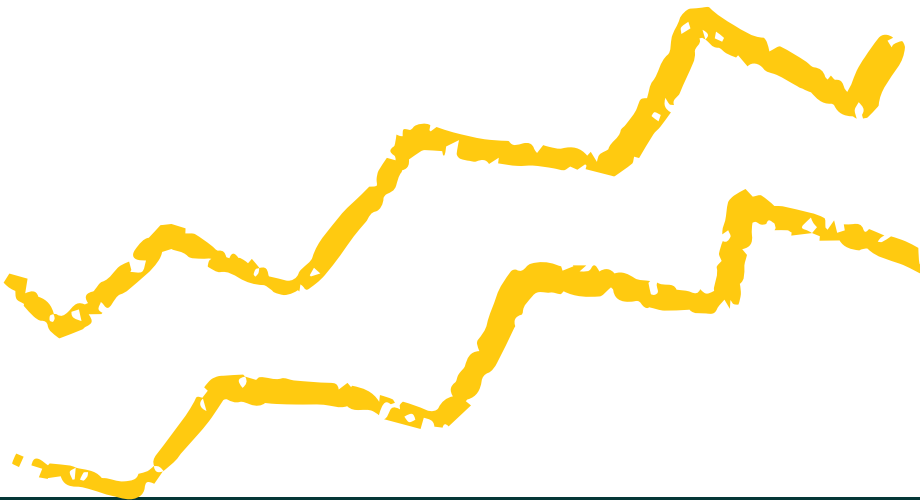


Fig. 1

Referencing the line chart above, we will observe the fluctuations in the number of monthly delivered orders. Also, we will observe that the expected number of the delivered orders in the following future months is below our target: 100K. So, we need to increase the number of monthly delivered orders.

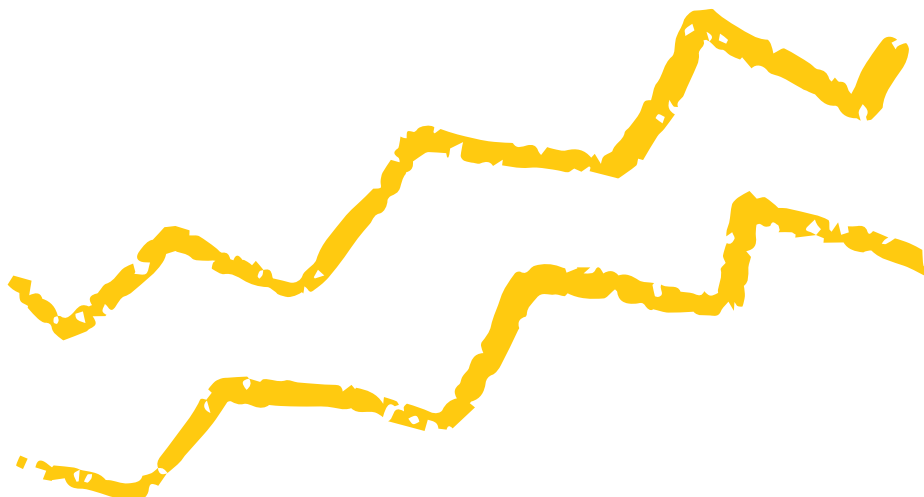


Q2: WHAT IS THE REGIONAL PERFORMANCE OF OUR APP?



Fig. 2

The map above illustrates the regional performance of our application based on the delivered orders. There are regions less active than others (i.e fewer delivered orders). So in the less active regions, our marketing team may launch a campaign promoting our application in the form of promo codes and discount vouchers as an incentive for users to order more delivered orders.



Q3: WHICH CUISINES OUR APP USERS PREFER?

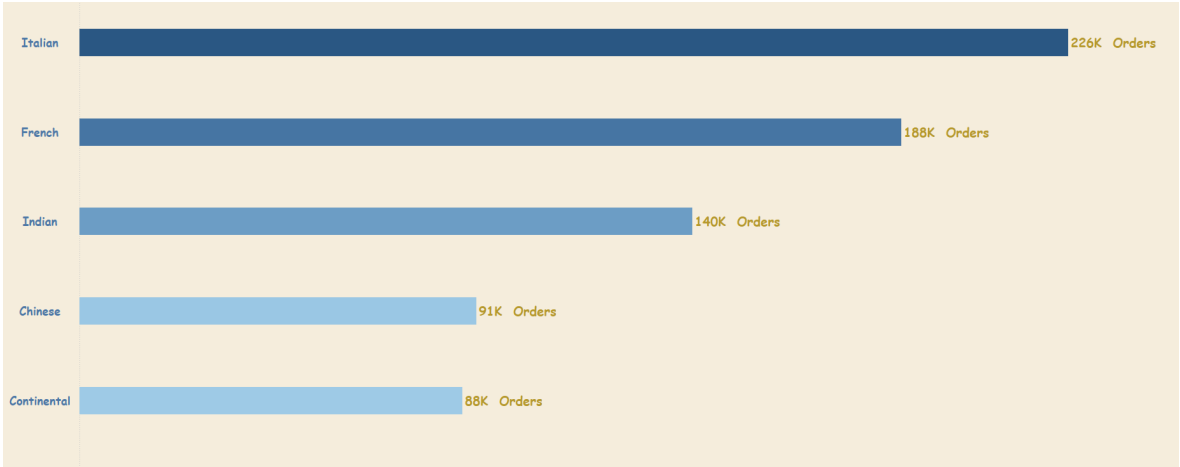


Fig. 3

Referring to the bar chart above, we find that Italian, French and Indian restaurants are the most preferred cuisines among our app users. So, when it comes to expanding our app by dealing with new restaurants, the public relations (PR) team may deal with restaurants of the same cuisines. Consequently, our app users will have more varieties that meet their preferences which increases the likelihood of more monthly delivered orders.



Q4: WHAT IS OUR USERS' ORDERING BEHAVIOUR?

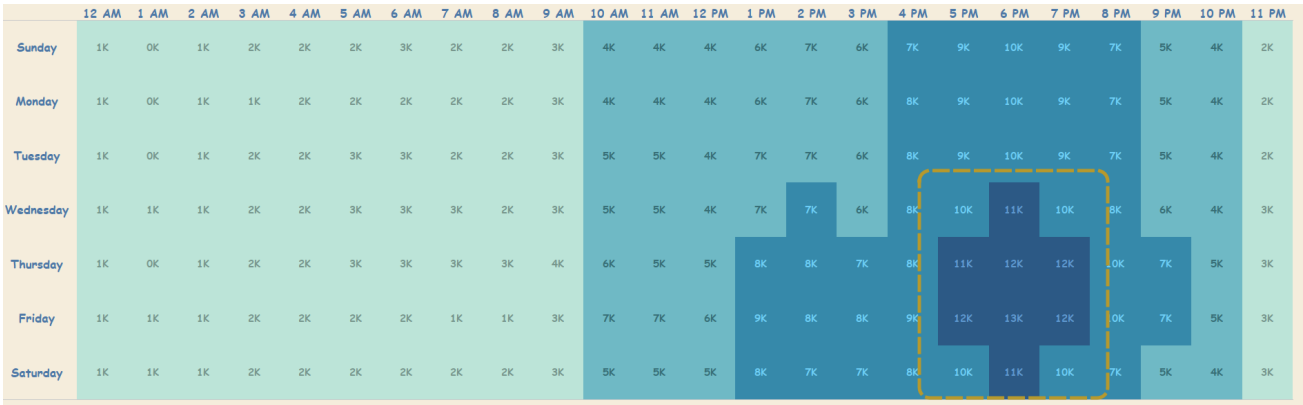
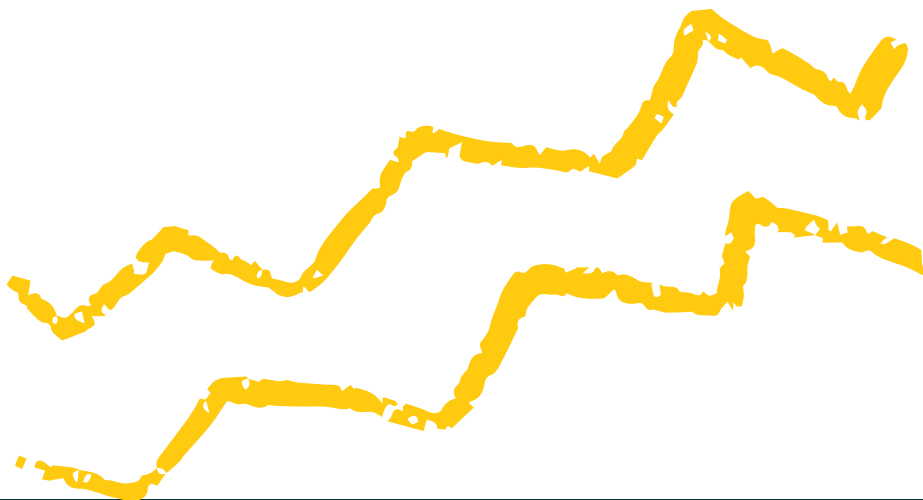


Fig. 4

Referencing the heatmap above, we're gonna find that there are rush hours where users make too many orders compared to the rest of the hours across the week, these hours are: From 5 PM to 8 PM and on Wednesdays, Thursdays, Fridays, and Saturdays. So the supply team is highly recommended to make sure of delivery men availability at these hours to meet our users' demand. Consequently, this will increase the fulfillment rate (i.e delivered orders/users made orders), customer satisfaction, and loyalty instead of using another food delivery application. Eventually, the number of delivered orders will increase.



Q5: HOW DO USERS PAY FOR THEIR ORDERS?

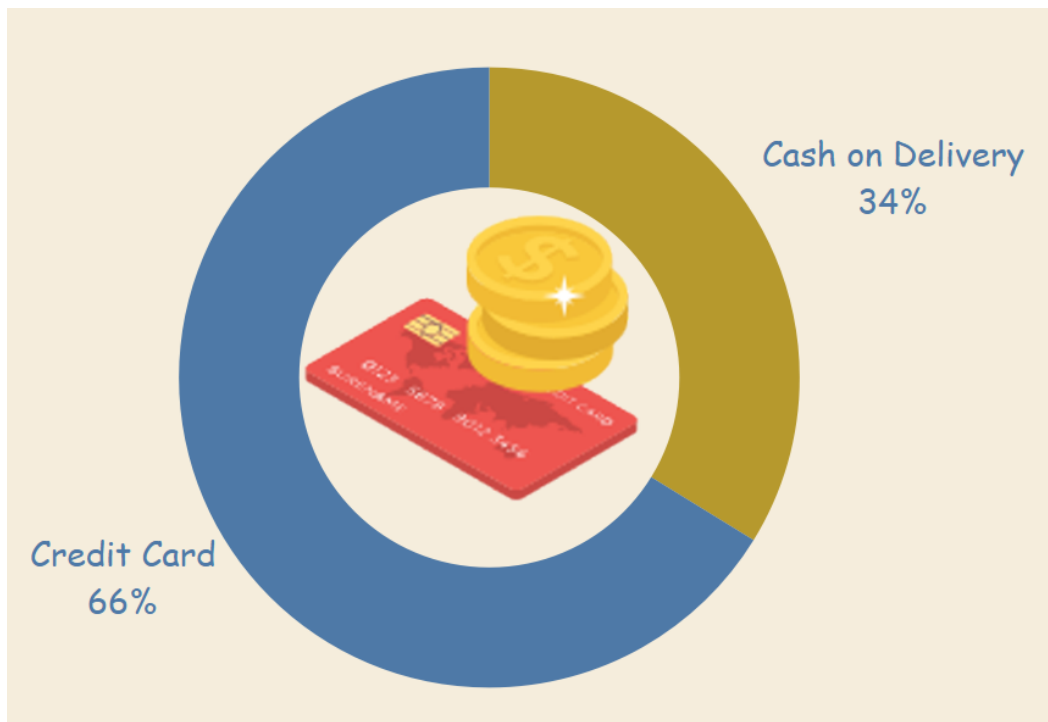
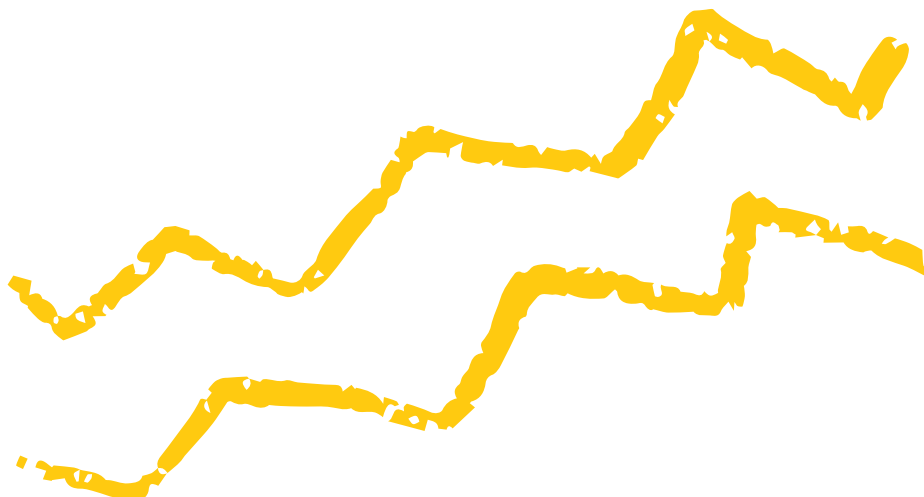


Fig. 5

- The chart above illustrates the relative contributions of our users' payment methods. (i.e Credit Cards vs. Cash on delivery). It sounds like the app users prefer paying for their orders using credit cards over cash on delivery. So, it's good for the finance team to improve credit payment facilities and security. Consequently, this will make the users more satisfied and loyal to our application. Eventually, it will be highly expected that the number of delivered orders increases.



Q6: HOW DO USERS RATE THE APP? WHY? HOW TO IMPROVE THE RATING?

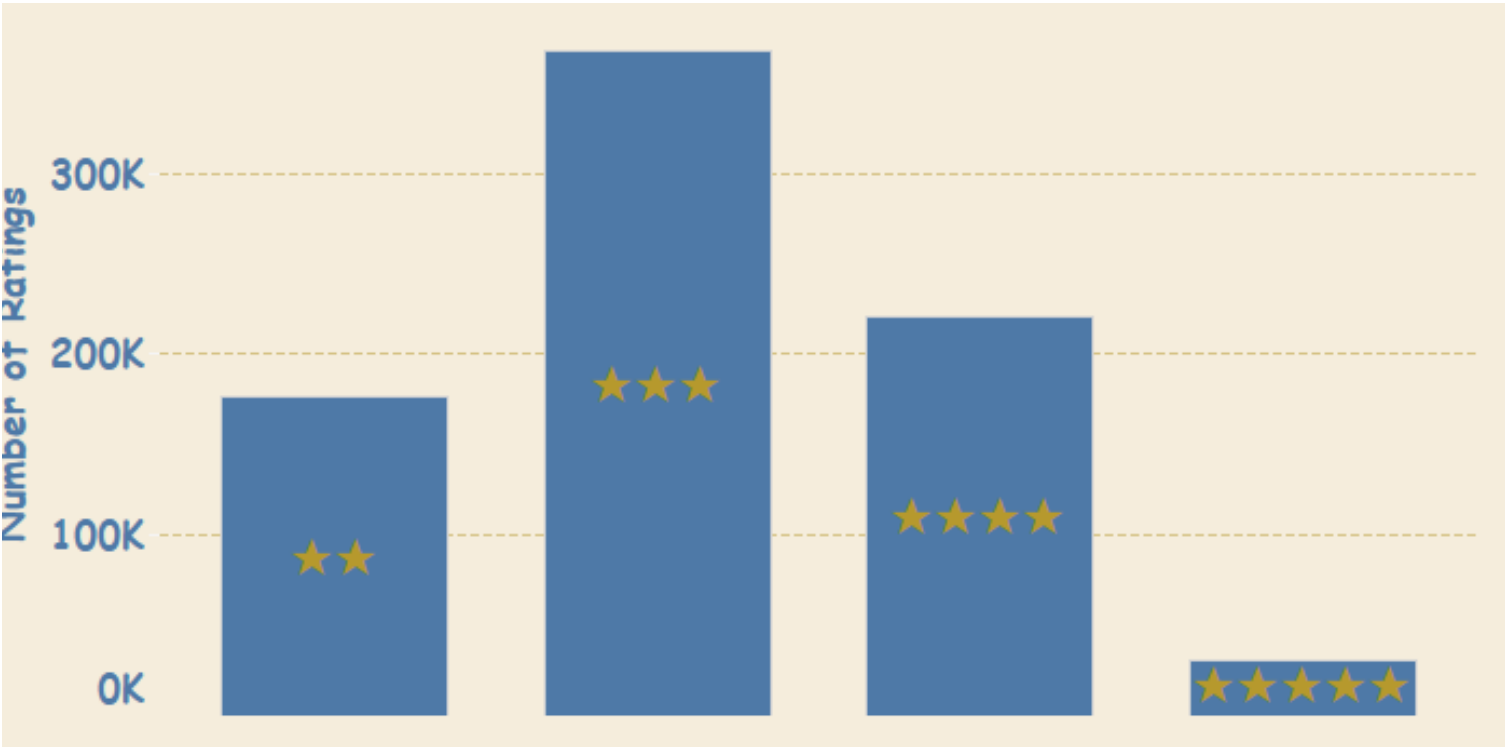
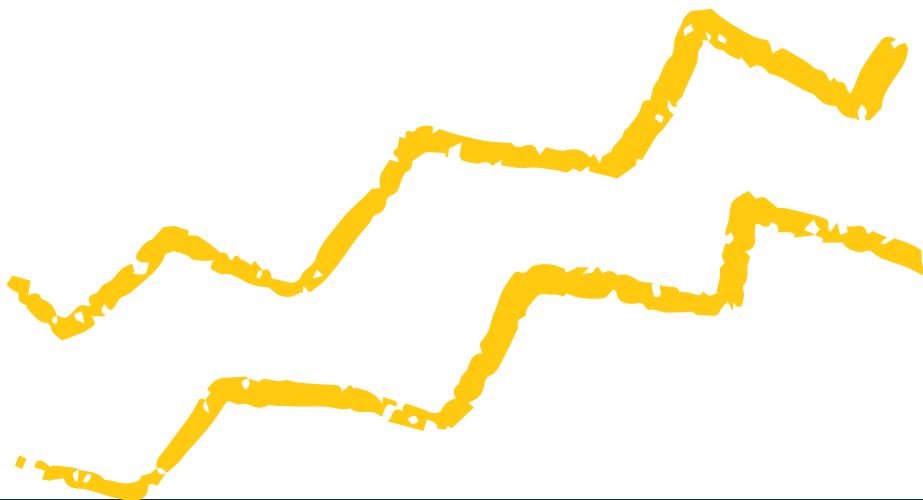


Fig. 6

In the bar chart above, we observe that the users' rating tends to be of fewer stars than more. (i.e tends to be less than 4 stars)

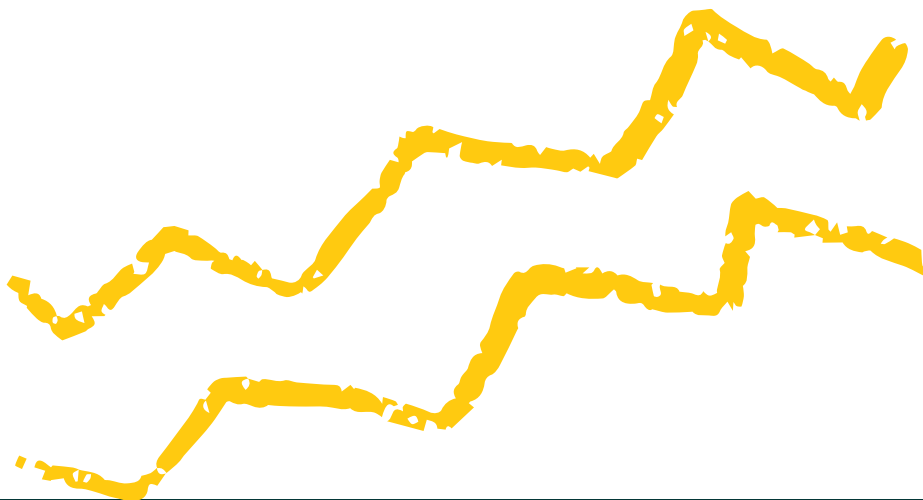


Q6: HOW DO USERS RATE THE APP? WHY? HOW TO IMPROVE THE RATING?



Fig. 7

Digging deeper into our data, we found that the reason for such a low rating is the delivery time. The more delivery time taken the less user's rating is. (i.e rating is inversely proportional with delivery time)



Q6: HOW DO USERS RATE THE APP? WHY? HOW TO IMPROVE THE RATING?

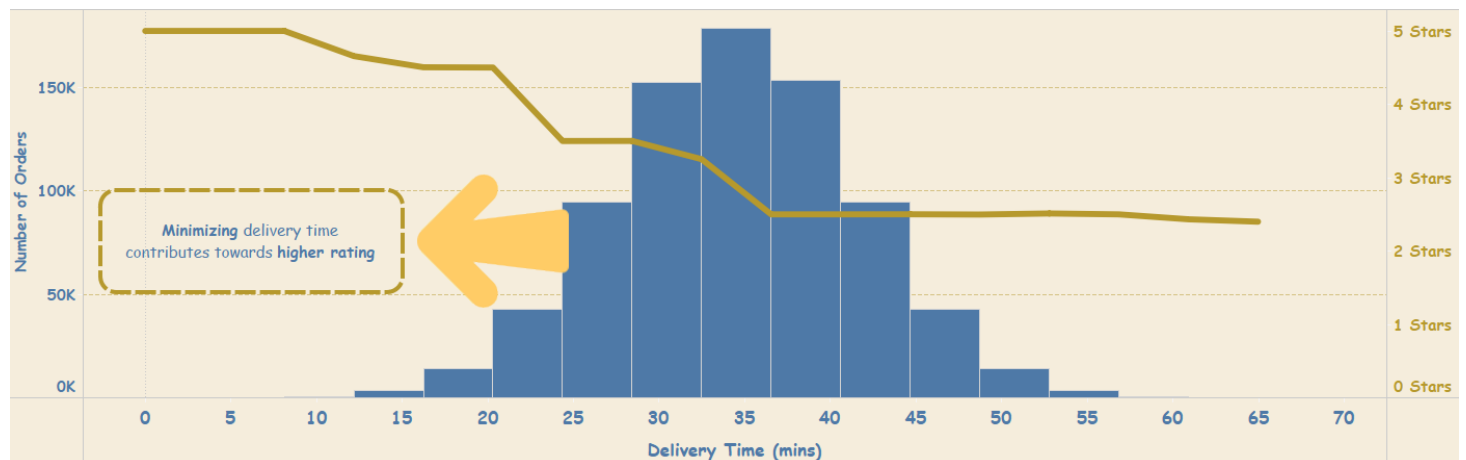


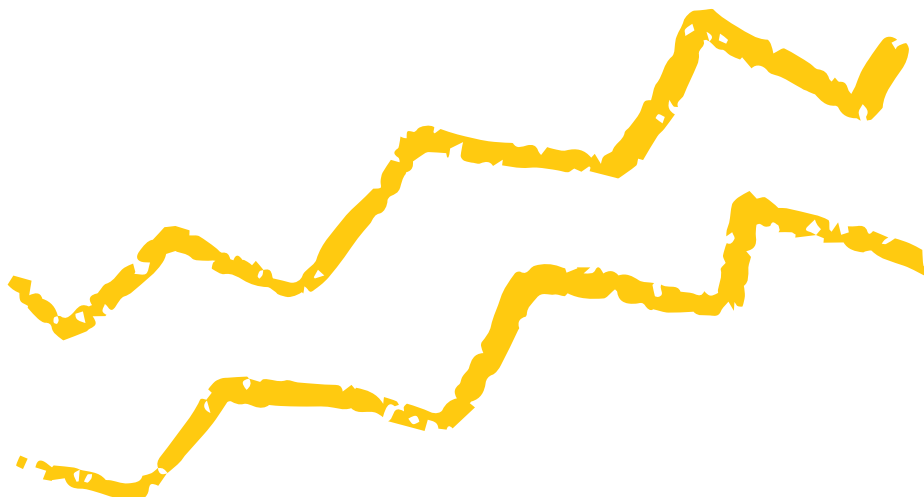
Fig. 8

Comparing Delivery time distribution to avg. users' rating, we found that decreasing delivery time taken will lead to higher users' rating, this is because low delivery time makes users have good experiences with our application. With the cooperation of the finance and supply team, we can implement a new strategy to decrease the delivery time and increase users' ratings:

--> Incentives for delivery men who deliver orders before 20 mins to contribute towards a 4 stars rating or more.

--> Compensating users for late delivery orders to avoid low ratings.

Consequently, this will improve the users' satisfaction, loyalty, and the app's reputation as well. Eventually, there will be a high likelihood of increments in the number of delivered orders.



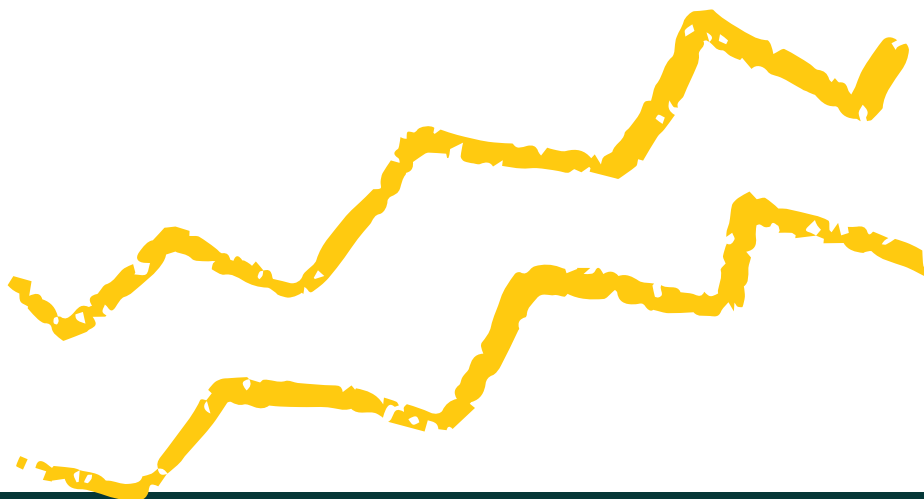
BRIEF SUMMARY OF RECOMMENDATIONS

- The marketing team may launch a campaign promoting our application in the form of promo codes and discount vouchers as an incentive for users to order more orders in the less active regions.
- The public relations (PR) team may deal with restaurants of our users' preferred cuisines to add more varieties to our app users.
- The supply team is highly recommended to make sure delivery men availability during rush hours to meet our users' demand and increase the fulfillment rate.
- The finance team is recommended to improve credit payment facilities and security.
- Both finance and supply teams have to implement a new strategy to decrease the delivery time and increase users' ratings.

(Consequently as discussed previously, these recommendations will help in increasing the number of monthly delivered orders to meet or even exceed the 100k monthly delivered orders target threshold.)

LIMITATIONS

- There were no enough historical data for predicting the future number of delivered orders accurately.
- Some visuals represent scalable data at a very low-level granularity (i.e order level). So, it is sometimes computationally inefficient.



Thank
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