

FOOD DELIVERY ANALYSIS

By: Group B - G7

MENTOR



Nguyen Tan Huy

LEADER



Bao Chau

MEMBER



Bao Ngoc

MEMBER



Trong Tung

AGENDA

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INTRODUCTION**

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VISUALIZATION
ANALYSIS**

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RECOMMENDATIONS

DATASET INTRODUCTION

- Date
- Time customer placed order
- Time order placed at restaurant
- Time driver arrived at restaurant
- Delivery time
- Driver ID
- Driver Name
- Restaurant ID
- Customer ID
- Delivery Area
- ASAP
- Sub Total
- Delivery fee
- Service fee
- Discount
- Tip
- Refunded amount

01

Provides comprehensive details on food delivery orders from various restaurants and food outlets.

02

Includes key attributes such as order ID, restaurant name, order date, delivery time, and time order placed at the restaurant.

03

The data is meticulously organized to cover different aspects of each order, enabling in-depth analysis and insights into the food delivery business.

DATASET INTRODUCTION

DATA SOURCE

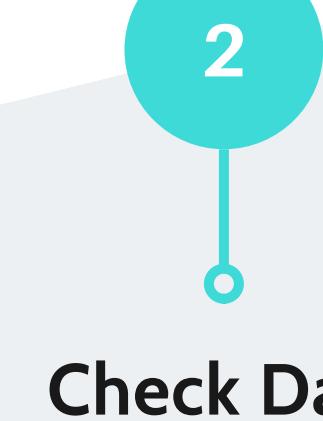
Column Name	Description
Date	The date when the order was placed
Time customer placed order	The specific time when the customer placed the order
Time order placed at restaurant	The time when the restaurant received the order
Time driver arrived at restaurant	The time when the delivery driver arrived at the restaurant to pick up the order
Delivery time	The total time taken for the delivery from the restaurant to the customer
Driver ID	The unique identifier assigned to the delivery driver
Driver Name	The name of the delivery driver
Restaurant ID	The unique identifier assigned to the restaurant
Customer ID	The unique identifier assigned to the customer
Delivery Area	The area or region where the delivery is made
ASAP	Indicates if the delivery is required as soon as possible
Sub Total	The total cost of the food items ordered before adding any fees or discounts
Delivery fee	The fee charged for delivering the order
Service fee	The additional fee for the services provided
Discount	Any discounts applied to the order
Tip	The amount of money given as a tip to the delivery driver
Refunded amount	The amount of money refunded to the customer, if applicable

DATA CLEANSING



USE PYTHON

Import & Load
Data



Remove
unnecessary
data columns



Handle missing
values, data
formatting and
type conversion



Create 2 new
tables



Export
Cleaned Data

Check Data

```
[7] data.shape  
→ (72314, 17)
```

```
[13] data.describe().T  
→

|               | count   | mean         | std          | min       | 25%       | 50%       | 75%       | max       |
|---------------|---------|--------------|--------------|-----------|-----------|-----------|-----------|-----------|
| Driver ID     | 72314.0 | 9.221850e+03 | 124.060497   | 9007.0    | 9115.0    | 9222.0    | 9329.0    | 9438.0    |
| Restaurant ID | 72314.0 | 7.205541e+03 | 117.798753   | 7002.0    | 7104.0    | 7204.0    | 7307.0    | 7409.0    |
| Customer ID   | 72314.0 | 1.100286e+06 | 57847.182260 | 1000052.0 | 1050173.0 | 1101445.0 | 1149893.0 | 1200360.0 |


```

```
▶ data.info()  
→ <class 'pandas.core.frame.DataFrame'>  
RangeIndex: 72314 entries, 0 to 72313  
Data columns (total 17 columns):  
 # Column Non-Null Count Dtype  
--- ---  
 0 Date 72314 non-null object  
 1 Time customer placed order 72314 non-null object  
 2 Time order placed at restaurant 72154 non-null object  
 3 Time driver arrived at restaurant 54190 non-null object  
 4 Delivery time 72314 non-null object  
 5 Driver ID 72314 non-null int64  
 6 Driver Name 72314 non-null object  
 7 Restaurant ID 72314 non-null int64  
 8 Customer ID 72314 non-null int64  
 9 Delivery Area 72314 non-null object  
 10 ASAP 72314 non-null object  
 11 Sub Total 72314 non-null object  
 12 Delivery fee 72314 non-null object  
 13 Service fee 72314 non-null object  
 14 Discount 72314 non-null object  
 15 Tip 72314 non-null object  
 16 Refunded amount 72314 non-null object  
dtypes: int64(3), object(14)  
memory usage: 9.4+ MB
```

```
[10] data.duplicated().sum()  
→ 0  
  
[11] print(data.isnull().sum())  
→ Date 0  
Time customer placed order 0  
Time order placed at restaurant 160  
Time driver arrived at restaurant 18124  
Delivery time 0  
Driver ID 0  
Driver Name 0  
Restaurant ID 0  
Customer ID 0  
Delivery Area 0  
ASAP 0  
Sub Total 0  
Delivery fee 0  
Service fee 0  
Discount 0  
Tip 0  
Refunded amount 0  
dtype: int64
```

Dataset checked:

The dataset contains 72,314 entries with 17 columns.

Most columns are complete, but:

- "Time order placed at restaurant" has 160 missing values.
- "Time driver arrived at restaurant" has 18,124 missing values.

No duplicated values were found.

Key columns include order timestamps, driver details, customer information, and delivery metrics.

Data types vary across columns, with 3 numeric columns (int64) and 14 object columns

Remove unnecessary data columns

```
[ ] # 1. Đổi tên các column có name chứa khoảng cách thành không có khoảng cách  
data.columns = [col.replace(' ', '_') for col in data.columns]  
  
[ ] # 2. Xóa cột Time_driver_arrived_at_restaurant và ASAP  
columns_to_drop = ['Time_driver_arrived_at_restaurant', 'ASAP']  
data.drop(columns=[col for col in columns_to_drop if col in data.columns], inplace=True)
```

Date	Time_customer_plac	Time_order_placed	Delivery_time	Driver_ID	Driver_Name	Restaurant_ID	Customer_ID	Delivery_Area	Sub_Total	Delivery_fee	Service_fee	Discount	Tip	Refunded_amount
2020-01-01	2020-01-01 2:52:12	2020-01-01 3:00:25	2020-01-01 3:35:20	9329	Christy	7263	1143515	Fremont	\$21.39	\$0.43	\$3.83	\$2.00	\$1.40	\$0.00
2020-01-01	2020-01-01 15:58:57	2020-01-01 17:56:45	2020-01-01 18:57:01	9175	Elizabeth	7247	1136820	Hayward	\$99.74	\$6.05	\$2.30	\$2.00	\$11.03	\$0.00
2020-01-01	2020-01-01 19:02:37	2020-01-01 19:12:51	2020-01-01 19:31:09	9051	Janet	7293	1081871	Hayward	\$21.97	\$2.74	\$2.39	\$8.00	\$4.31	\$0.00
2020-01-01	2020-01-01 4:01:57	2020-01-01 4:08:18	2020-01-01 4:37:57	9389	Jacquelyn	7046	1128255	Union City	\$32.79	\$0.12	\$2.55	\$2.00	\$8.55	\$0.00
2020-01-01	2020-01-01 23:46:38	2020-01-01 23:49:32	2020-01-02 0:37:15	9187	Lauren	7385	1051183	Hayward	\$67.56	\$3.77	\$3.35	\$2.00	\$8.82	\$0.00
2020-01-01	2020-01-01 3:54:30	2020-01-01 3:57:30	2020-01-01 4:41:00	9203	Chloe	7064	1129838	Hayward	\$21.18	\$6.78	\$3.79	\$8.00	\$1.59	\$0.00
2020-01-01	2020-01-01 4:14:15	2020-01-01 4:14:41	2020-01-01 4:53:25	9180	Shannon	7121	1169616	Union City	\$63.91	\$4.76	\$2.44	\$2.00	\$10.09	\$0.00
2020-01-01	2020-01-01 4:20:10	2020-01-01 4:20:25	2020-01-01 5:04:19	9107	Jill	7118	1177600	Fremont	\$46.82	\$2.54	\$1.99	\$8.00	\$2.33	\$0.00
2020-01-01	2020-01-01 22:45:41	2020-01-01 23:22:33	2020-01-01 23:49:14	9034	Bethany	7286	1052229	Hayward	\$46.96	\$5.39	\$1.84	\$2.00	\$3.42	\$0.00
2020-01-01	2020-01-01 1:41:41	2020-01-01 2:07:07	2020-01-01 2:30:18	9398	Theresa	7034	1189667	Fremont	\$23.96	\$5.29	\$1.86	\$2.00	\$2.89	\$0.00
2020-01-01	2020-01-01 20:13:31	2020-01-01 20:15:39	2020-01-01 21:01:46	9110	Denise	7342	1032661	Hayward	\$24.25	\$2.69	\$1.31	\$2.00	\$4.75	\$0.00
2020-01-01	2020-01-01 4:58:55	2020-01-01 4:59:31	2020-01-01 5:24:01	9279	Ebony	7146	1179405	Hayward	\$53.30	\$4.73	\$1.98	\$2.00	\$8.17	\$0.00
2020-01-01	2020-01-01 17:55:46	2020-01-01 19:09:27	2020-01-01 19:29:56	9043	Wendy	7242	1055719	Fremont	\$26.30	\$6.61	\$2.17	\$2.00	\$1.09	\$0.00
2020-01-01	2020-01-01 16:49:32	2020-01-01 17:50:50	2020-01-01 18:25:00	9383	Jennifer	7275	1067334	Union City	\$76.10	\$3.51	\$2.12	\$2.00	\$4.96	\$0.00
2020-01-01	2020-01-01 20:50:57	2020-01-01 20:56:41	2020-01-01 21:45:20	9189	Diana	7408	1153261	Hayward	\$56.08	\$0.85	\$2.43	\$14.00	\$7.32	\$0.00
2020-01-01	2020-01-01 17:47:16	2020-01-01 17:47:37	2020-01-01 18:57:23	9267	Amanda	7109	1157169	Fremont	\$29.95	\$3.71	\$1.00	\$2.00	\$0.00	\$0.00
2020-01-01	2020-01-01 2:14:46	2020-01-01 2:32:55	2020-01-01 3:15:50	9222	Shirley	7178	1033392	Union City	\$23.53	\$1.08	\$1.05	\$8.00	\$0.00	\$0.00
2020-01-01	2020-01-01 2:23:37	2020-01-01 2:29:44	2020-01-01 2:59:30	9185	Emily	7407	1108599	Hayward	\$32.72	\$6.79	\$2.89	\$2.00	\$2.14	\$0.00
2020-01-01	2020-01-01 19:21:54	2020-01-01 19:25:02	2020-01-01 20:32:06	9327	Janice	7262	1181283	Fremont	\$35.65	\$3.08	\$2.43	\$2.00	\$4.99	\$0.00
2020-01-01	2020-01-01 1:03:47	2020-01-01 1:19:43	2020-01-01 2:02:51	9096	Nancy	7027	1037547	Hayward	\$30.65	\$3.09	\$2.66	\$2.00	\$4.00	\$0.00
2020-01-01	2020-01-01 18:23:45	2020-01-01 18:49:22	2020-01-01 19:23:17	9216	Michelle	7267	1174703	Hayward	\$158.61	\$2.82	\$3.73	\$2.00	\$25.72	\$0.00
2020-01-01	2020-01-01 2:32:46	2020-01-01 2:36:38	2020-01-01 3:30:03	9056	Joyce	7293	1125608	Union City	\$64.78	\$5.88	\$2.19	\$2.00	\$3.40	\$0.00
2020-01-01	2020-01-01 4:09:48	2020-01-01 4:10:21	2020-01-01 4:40:34	9165	Sara	7054	1066989	Fremont	\$38.49	\$6.03	\$3.73	\$2.00	\$2.51	\$0.00

Handle missing values

```
[ ] # Xử lý các giá trị Null của cột 'Time_order_placed_at_restaurant'  
data['Date'] = pd.to_datetime(data['Date'], format='%m/%d/%Y')  
  
[ ] # Chuyển các cột thời gian sang datetime kết hợp với Date  
data['Time_customer_placed_order'] = pd.to_datetime(  
    data['Date'].dt.strftime('%Y-%m-%d') + ' ' + data['Time_customer_placed_order'],  
    format='%Y-%m-%d %H:%M:%S'  
)  
data['Time_order_placed_at_restaurant'] = pd.to_datetime(  
    data['Date'].dt.strftime('%Y-%m-%d') + ' ' + data['Time_order_placed_at_restaurant'],  
    format='%Y-%m-%d %H:%M:%S'  
)  
data['Delivery_time'] = pd.to_datetime(  
    data['Date'].dt.strftime('%Y-%m-%d') + ' ' + data['Delivery_time'],  
    format='%Y-%m-%d %H:%M:%S'  
)  
  
# Xử lý thời gian qua ngày mới  
data.loc[data['Time_order_placed_at_restaurant'] < data['Time_customer_placed_order'], 'Time_order_placed_at_restaurant'] += pd.Timedelta(days=1)  
data.loc[data['Delivery_time'] < data['Time_customer_placed_order'], 'Delivery_time'] += pd.Timedelta(days=1)
```

```
[ ] # Tính trung bình của (Delivery_time - Time_order_placed_at_restaurant)  
valid_time_diff = data['Delivery_time'] - data['Time_order_placed_at_restaurant']  
average_time_diff = valid_time_diff[~valid_time_diff.isna()].mean()  
# Làm tròn giây của average_time_diff  
average_time_diff = average_time_diff.round('S')
```

Handle missing values

```
[ ] print("Average time difference:", average_time_diff)
→ Average time difference: 0 days 01:24:18

[ ] # ĐIỀN GIÁ TRỊ NULL TRONG 'Time_order_placed_at_restaurant'
    data['Time_order_placed_at_restaurant'] = data.apply(
        lambda row: (row['Delivery_time'] - average_time_diff).round('S')
        if pd.isna(row['Time_order_placed_at_restaurant'])
        else row['Time_order_placed_at_restaurant'].round('S'),
        axis=1)
```

```
[ ] # ĐỊNH DẠNG LẠI CỘT DATE CHỈ LẤY NGÀY
    data['Date'] = pd.to_datetime(data['Date']).dt.date
```

Create 2 new tables

```
[ ] #Tạo table Driver (gồm Driver_ID với Driver_Name)
if 'Driver_ID' in data.columns and 'Driver_Name' in data.columns:
    driver_table = data[['Driver_ID', 'Driver_Name']].drop_duplicates()

[ ] #Tạo table Restaurant (gồm Restaurant_ID với Delivery_Area)
if 'Restaurant_ID' in data.columns and 'Delivery_Area' in data.columns:
    restaurant_table = data[['Restaurant_ID', 'Delivery_Area']].drop_duplicates()
```

A	B
Driver_ID	Driver_Name
9329	Christy
9175	Elizabeth
9051	Janet
9389	Jacquelyn
9187	Lauren
9203	Chloe
9180	Shannon
9107	Jill
9034	Bethany
9398	Theresa
9110	Denise

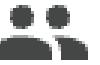
=> Store drivers' information

Store Restaurant ID with the <= locations it is assigned for delivery.

A	B
Restaurant_ID	Delivery_Area
7263	Fremont
7247	Hayward
7293	Hayward
7046	Union City
7385	Hayward
7064	Hayward
7121	Union City
7118	Fremont
7286	Hayward
7034	Fremont

Export Cleaned Data

```
[ ] # Lưu dữ liệu  
    data.to_csv('Cleaned_Data.csv', index=False)  
  
[ ] driver_table.to_csv('driver_table.csv', index=False)  
    restaurant_table.to_csv('restaurant_table.csv', index=False)
```

 **restaurant_table.csv** 

 **driver_table.csv** 

 **Cleaned_Data.csv** 

Create 3 new columns in Power BI

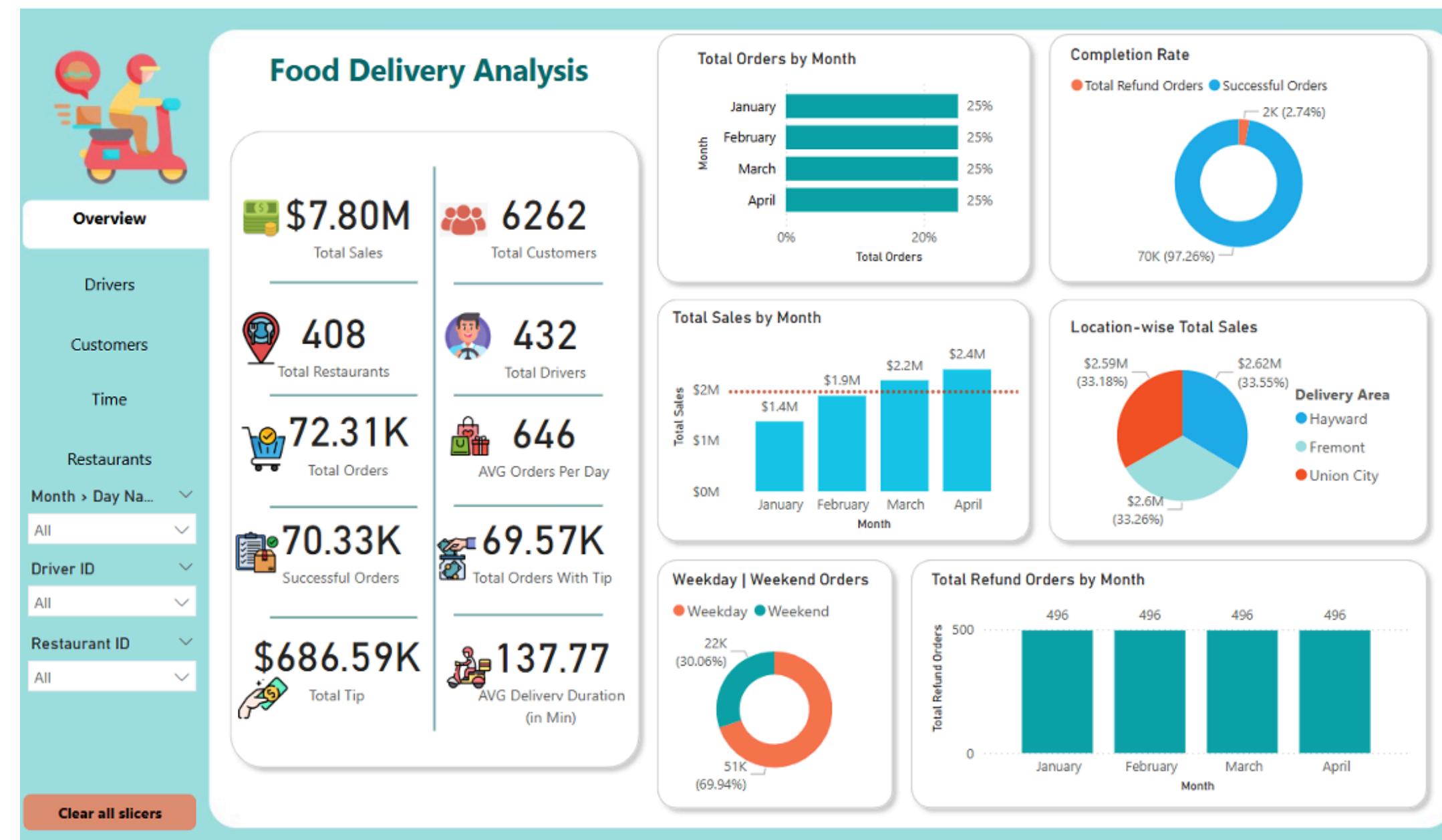
Restaurant Processing Duration = The time between Time customer placed order & Time order placed at restaurant

Delivery Duration = The time between Time Customer Placed Order and Delivery Time

Total Fee = Sum of the Sub Total, Delivery Fee, Service Fee, and Tip, minus the Discount and Refunded Amount.

3. DATA VISUALIZATION ANALYSIS

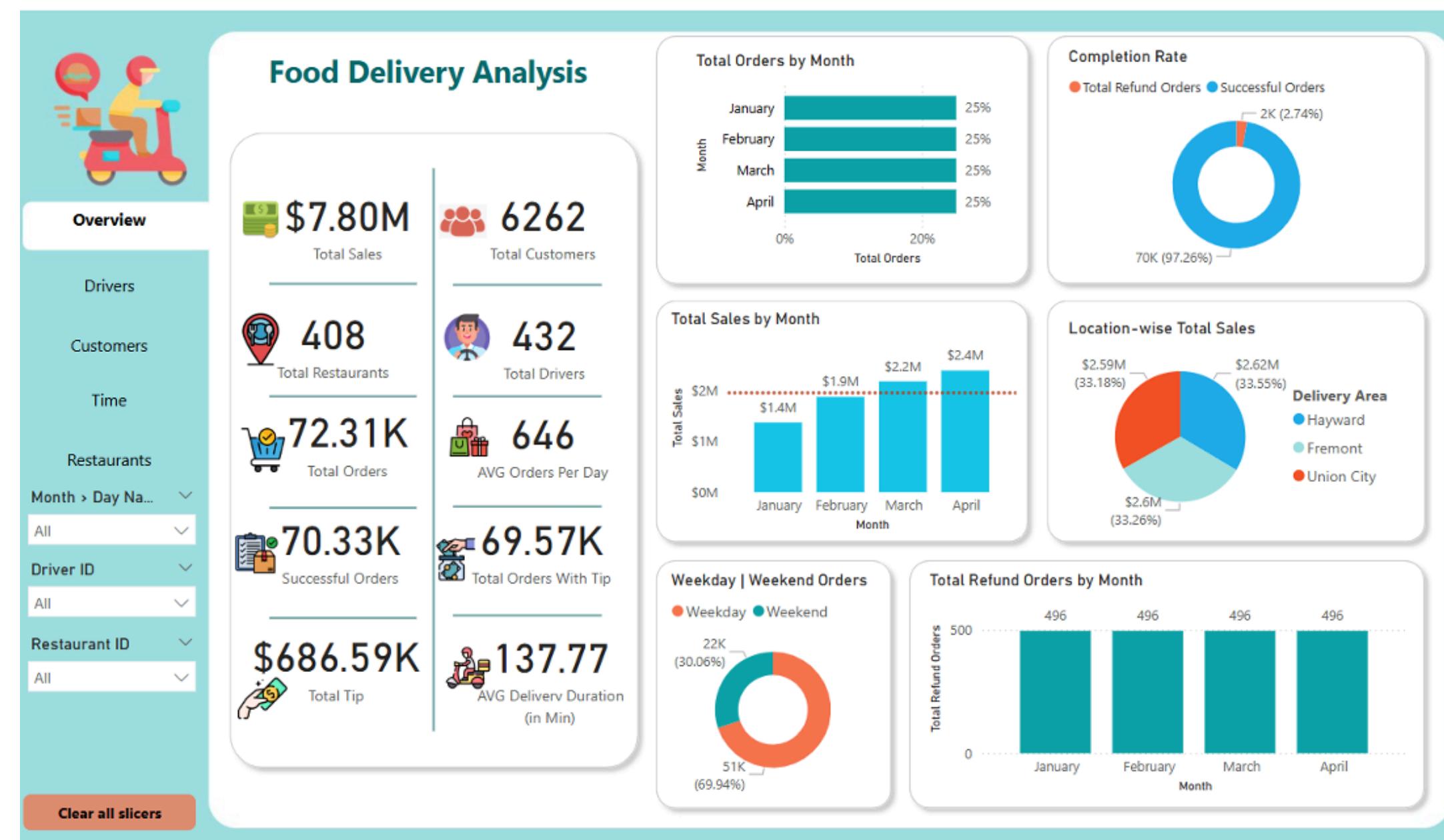
OVERVIEW



- High Total Sales, Moderate Customer Base:** The company boasts \$7.8 million in total sales, but the customer base is relatively moderate at 6,262 customers. This suggests a potential for growth by expanding the customer reach.
- Low Average Order Value:** With \$7.8 million in sales and 72,310 total orders, the average order value is approximately \$108. This indicates that the majority of orders are likely for smaller amounts, possibly individual meals.
- Good Driver and Restaurant Network:** The company has a solid network of 408 restaurants and 432 drivers, suggesting good coverage and delivery capacity.
- High Order Completion Rate :** The completion rate is exceptionally high at 97.26%, indicating efficient operations and customer satisfaction.

3. DATA VISUALIZATION ANALYSIS

OVERVIEW



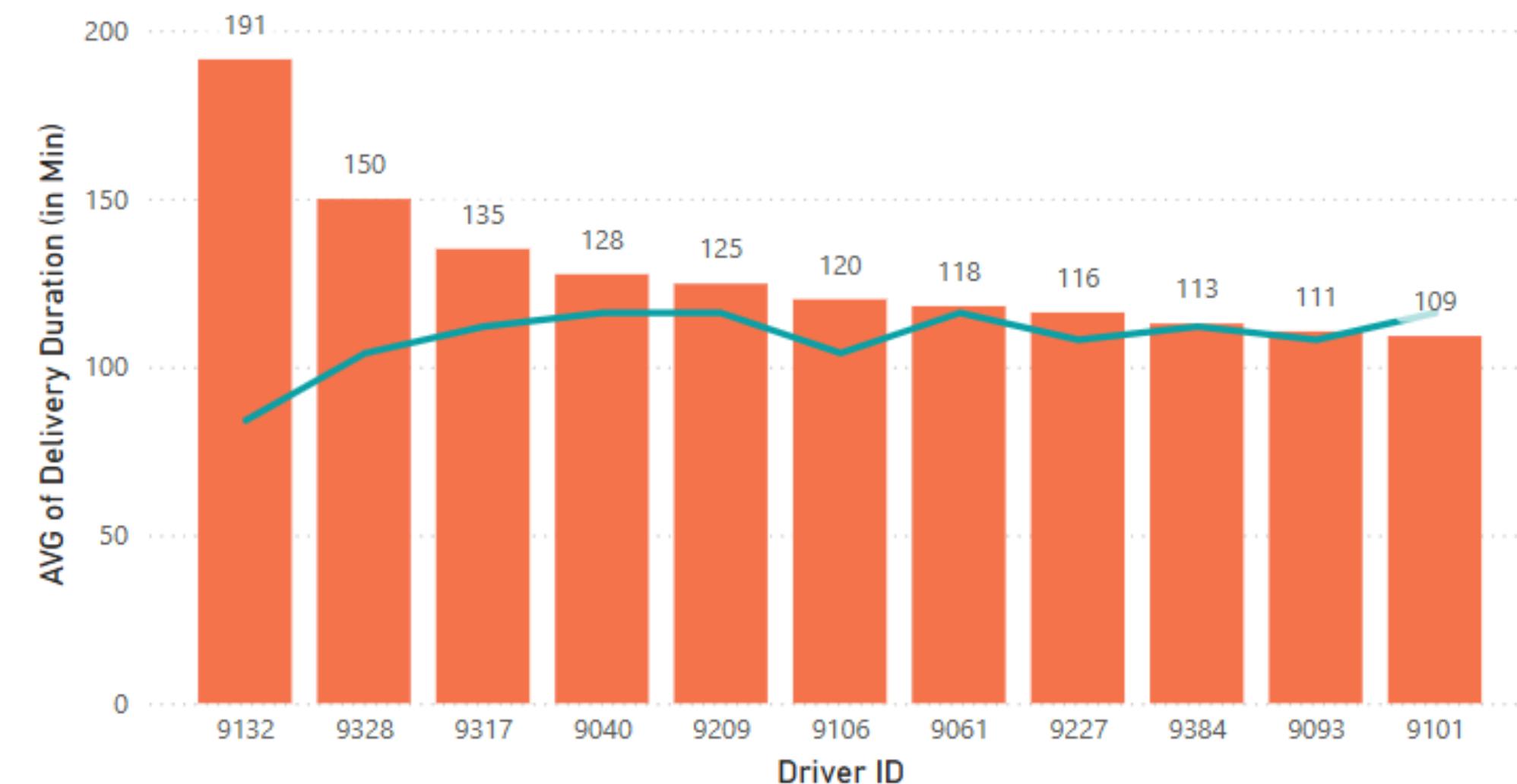
- Low Refund Rate:** The refund rate is very low at 2.74%, which is a positive sign of quality control and order accuracy.
- Peak Sales in January and April:** The sales are highest in January and April, suggesting potential seasonal trends or marketing campaign effectiveness during these months.
- Concentrated Sales in Hayward and Fremont:** The majority of sales are concentrated in Hayward and Fremont, indicating a need to explore expansion opportunities in other areas.
- Majority of Orders are Weekday Orders:** The majority of orders are placed on weekdays, indicating that the service is primarily used for lunch or dinner during the work week.

3. DATA VISUALIZATION ANALYSIS

DRIVERS ANALYSIS

How did Delivery Time affect the Total Orders?

● AVG of Delivery Duration (in Min) ● Total Orders



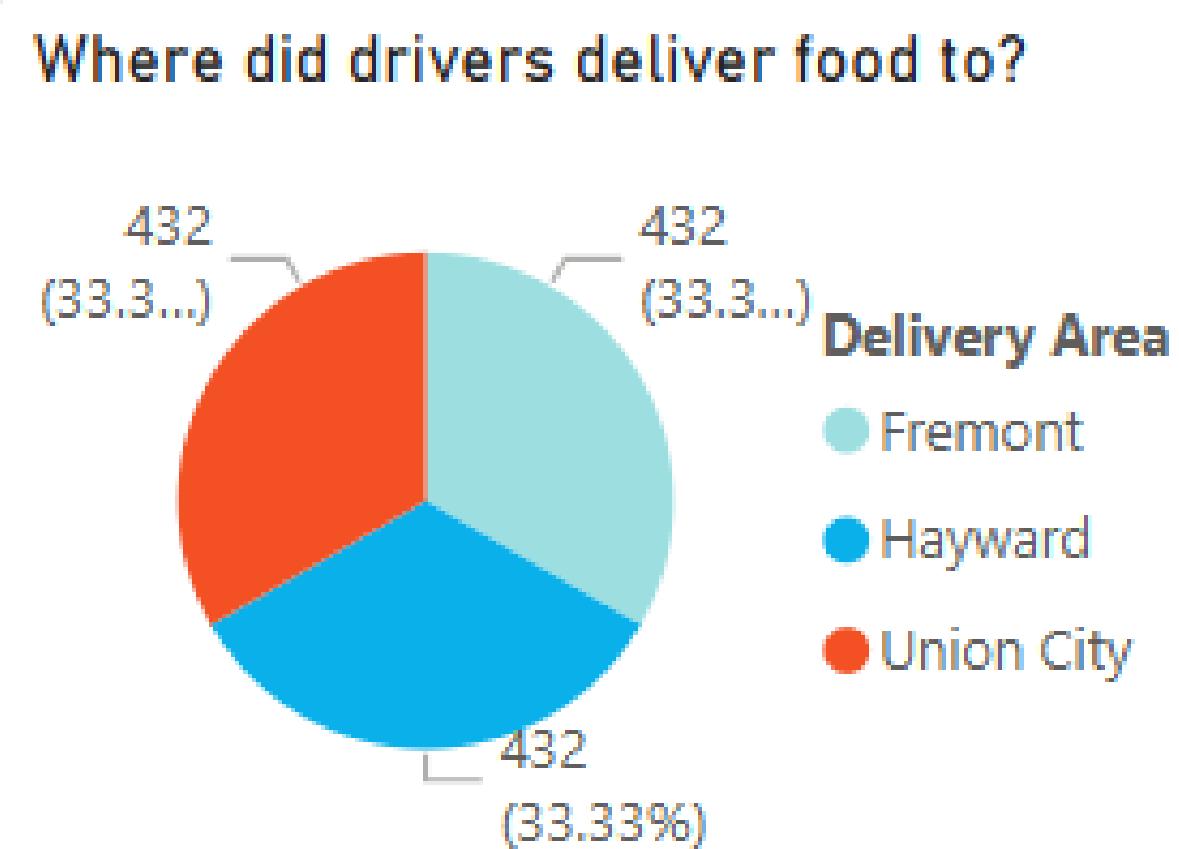
Delivery Time vs. Total Orders

- The chart illustrated the correlation between delivery time and total orders. As delivery time increased, the total orders decreased.
- For example, Driver with ID 9101 delivered orders in within **109 mins** could complete **116 orders** in total. However, Driver with ID 9132 had average delivery time of **191 mins** completed only **84 orders**.

This suggests that customers may be dissatisfied with slow delivery times, leading to fewer orders.

3. DATA VISUALIZATION ANALYSIS

DRIVERS ANALYSIS



Balanced Distribution of Orders Across Three Regions

- The even distribution of orders across all three regions indicated a significant demand for food delivery in these three cities of California. California has the largest population in the United States, so there is a need to improve service quality and optimize routes on the map. This will enable drivers to take the fastest routes, thereby increasing the number of orders and enhancing customer satisfaction.

3. DATA VISUALIZATION ANALYSIS

DRIVERS ANALYSIS

Top 5 Drivers with Highest Total Orders

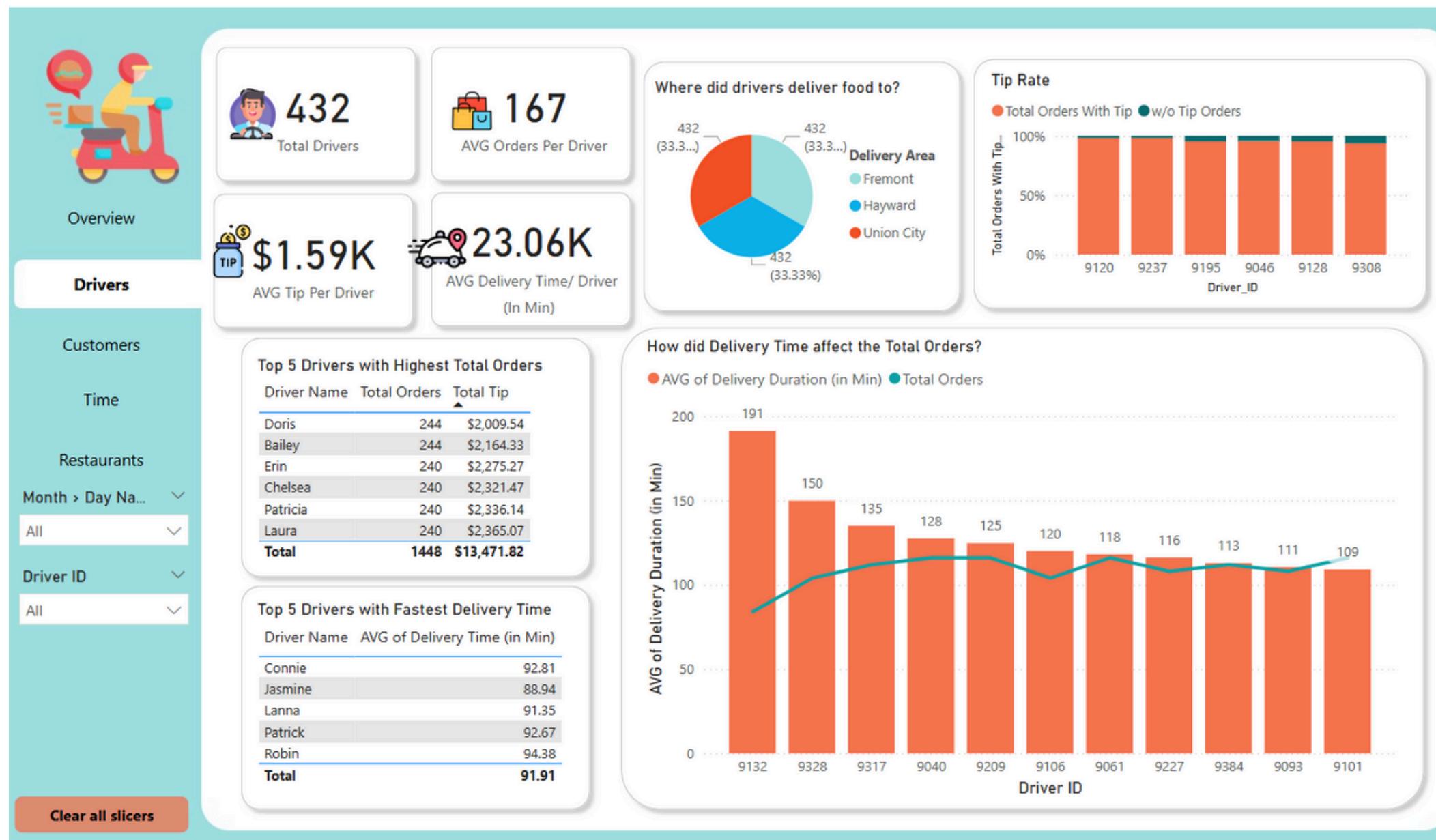
Driver Name	Total Orders	Total Tip
Doris	244	\$2,009.54
Bailey	244	\$2,164.33
Erin	240	\$2,275.27
Chelsea	240	\$2,321.47
Patricia	240	\$2,336.14
Laura	240	\$2,365.07
Total	1448	\$13,471.82

Top 5 Drivers with Highest Total Orders

- The table showed that the more deliveries a driver made, the better their productivity, which was directly proportional to the tips they deserved to receive. The higher the total tip amount, the more satisfied customers were with that driver. Other drivers should strive to improve and learn from these top performers to achieve similar productivity.

3. DATA VISUALIZATION ANALYSIS

DRIVERS ANALYSIS



- To improve operational efficiency and increase the number of orders, a comprehensive strategy is needed to include many factors which optimize delivery time, improve driver productivity and service quality, reasonable resource allocation, and improve routing.
- It is necessary to have a high reward regime for top drivers by rewarding them and having special preferential policies when repairing vehicles or additional incentive based on the % of successful orders for top drivers.

3. DATA VISUALIZATION ANALYSIS

CUSTOMERS ANALYSIS



Customers

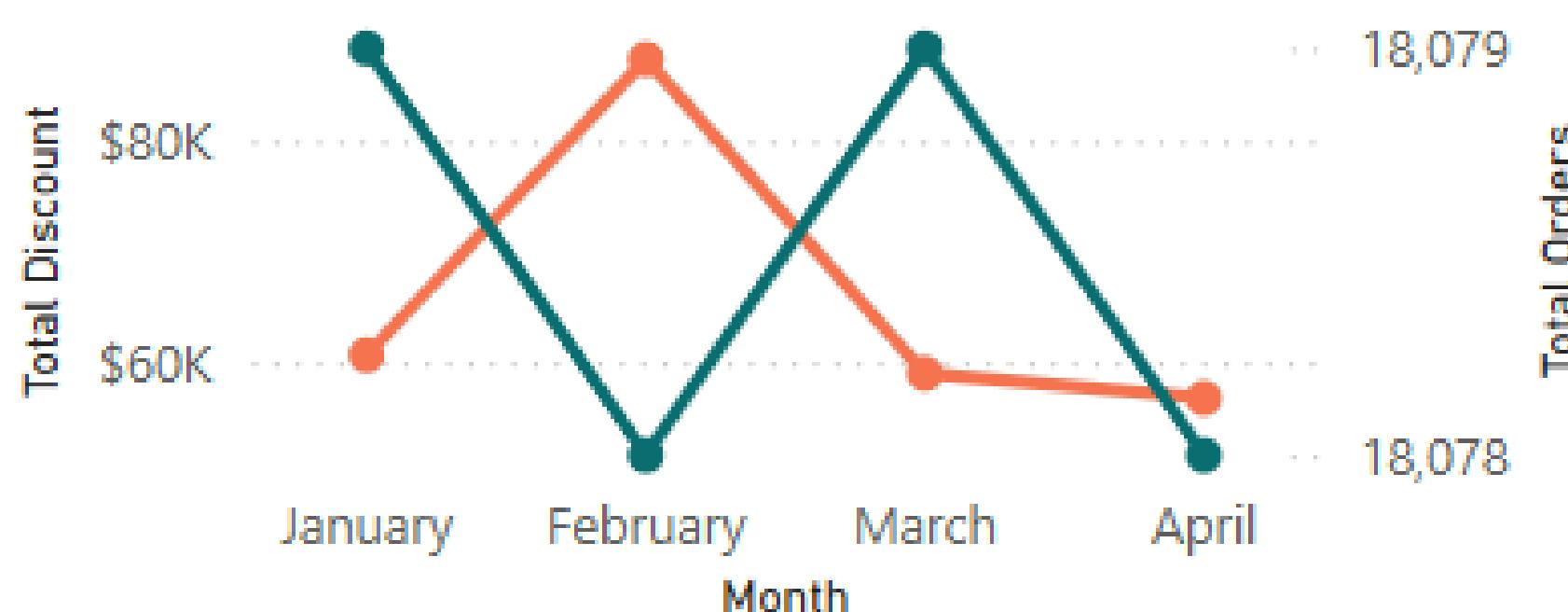
- There were a total of 6262 customers, and all of them were loyal customers, as they all returned to order food more than twice. This indicated a strong level of trust in the restaurants.
- Restaurants should continue to build on this foundation by improving various aspects, from order processing time to communication with drivers in order to minimize delivery time as possible. This could increase the likelihood of customers returning in the future.

3. DATA VISUALIZATION ANALYSIS

CUSTOMERS ANALYSIS

How did Discount affect Total Orders?

● Total Discount ● Total Orders

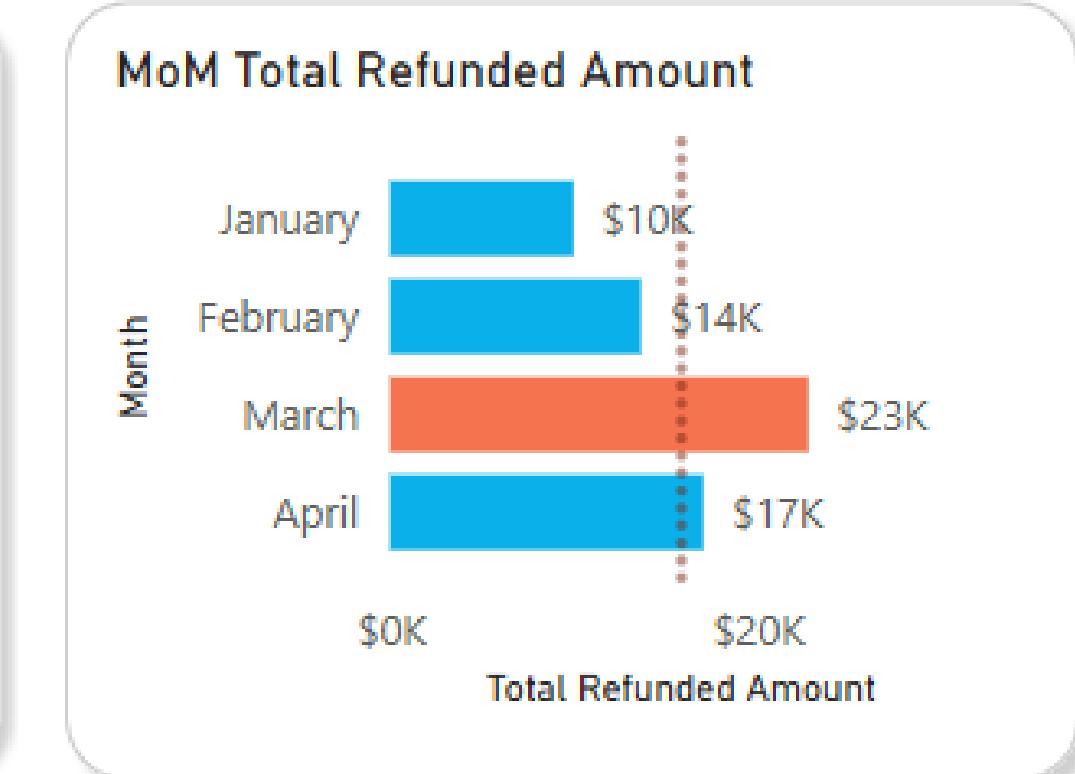
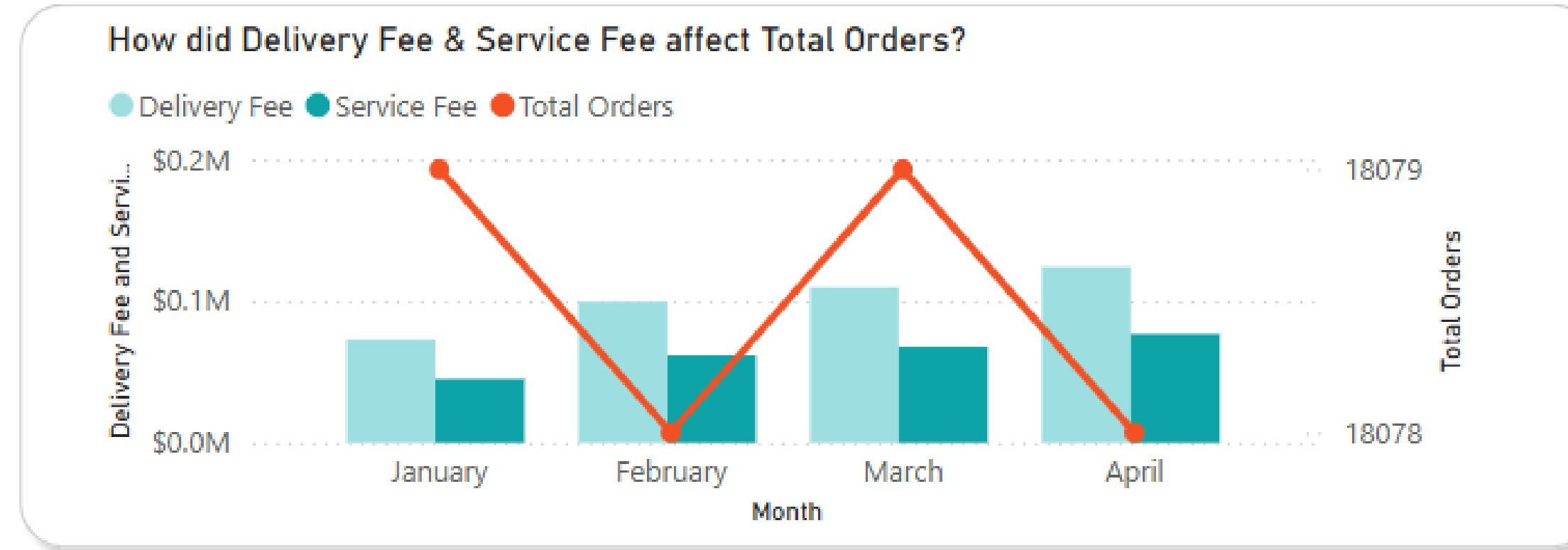


Discount Amount vs. Total Orders

- The chart showed a correlation between the total discount amount and the total orders. It appeared that applying discounts could stimulate the growth in order volume. However, careful consideration is needed to ensure profitability.

3. DATA VISUALIZATION ANALYSIS

CUSTOMERS ANALYSIS



Delivery Fee/Service Charge vs. Total Orders

- Similar to discounts, the chart suggested a correlation between delivery/service fees and total orders. Adjusting these fees could impact customers on ordering decisions.

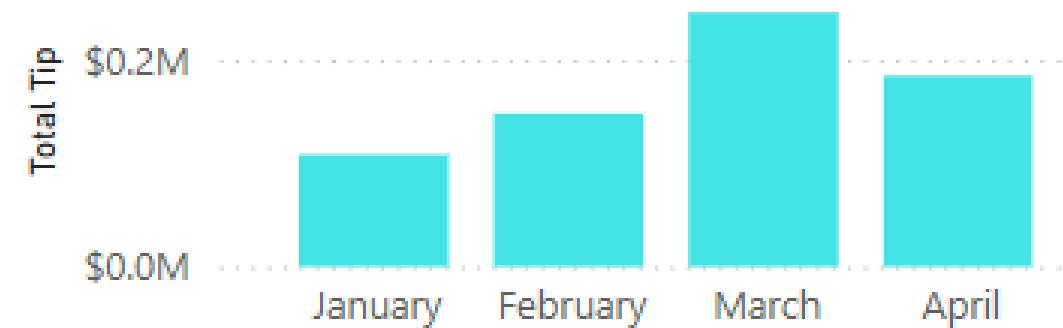
Total Refund Amount

- There were fluctuations in the total refund amount, with a peak in March (\$23,000) followed by a decrease in April (\$17,000). This suggested the need to carefully review the reasons for refunds in March. This could be the result of March having the highest total orders, leading to the highest refund amount. The ratio of refunds to total orders in March was almost the same as in other months.

3. DATA VISUALIZATION ANALYSIS

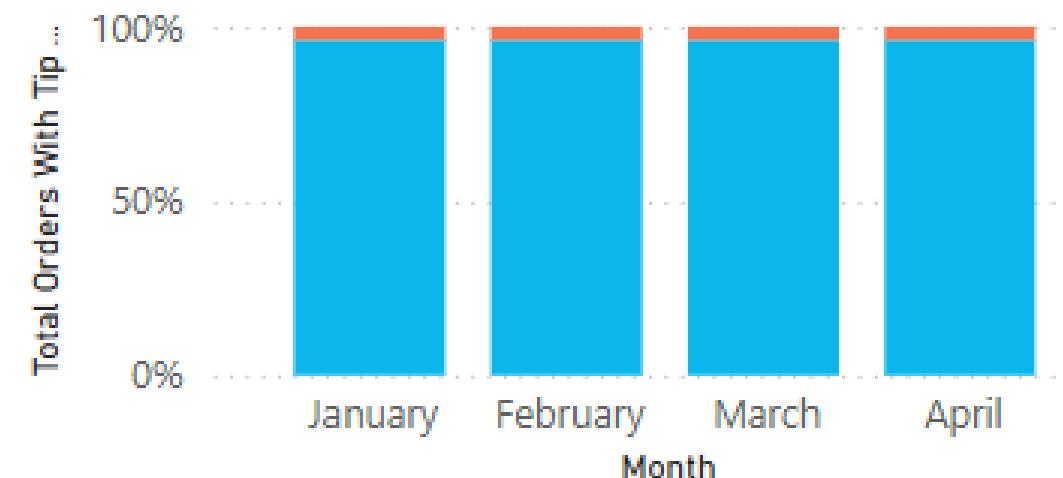
CUSTOMERS ANALYSIS

Which was The Best Tipped Month?



MoM Tip Rate

● Total Orders With Tip ● w/o Tip Orders



The surge in tip rates suggested that there may be a change in customer policies or habits. It is necessary to thoroughly investigate the reasons why March had the highest total tipped amount and why the tip amount slightly decreased in April to make appropriate adjustment, improve service quality, and conduct quality trainings for drivers to encourage customers to leave more tip.

This may be related to factors such as:

- **Promotional policies:** There may be some promotional programs or special events in March that encouraged customers to leave higher tipped amount.
- **Weather:** Weather could affect the mood and tipping habits of customers.
- **Changes in tipping policies:** There may be changes in the company's or application's tipping policies.
- **Service quality:** Uneven service quality between months could also affect tipped amount

3. DATA VISUALIZATION ANALYSIS

CUSTOMERS ANALYSIS



To grow revenue and profit, there should be a comprehensive strategy combining many factors such as maintaining customer loyalty, carefully considering discount programs, adjusting delivery/service fees reasonably, analyzing the causes of refunds, optimizing the correlation between discounts/fees and total orders, and understanding changes in the tip rate.

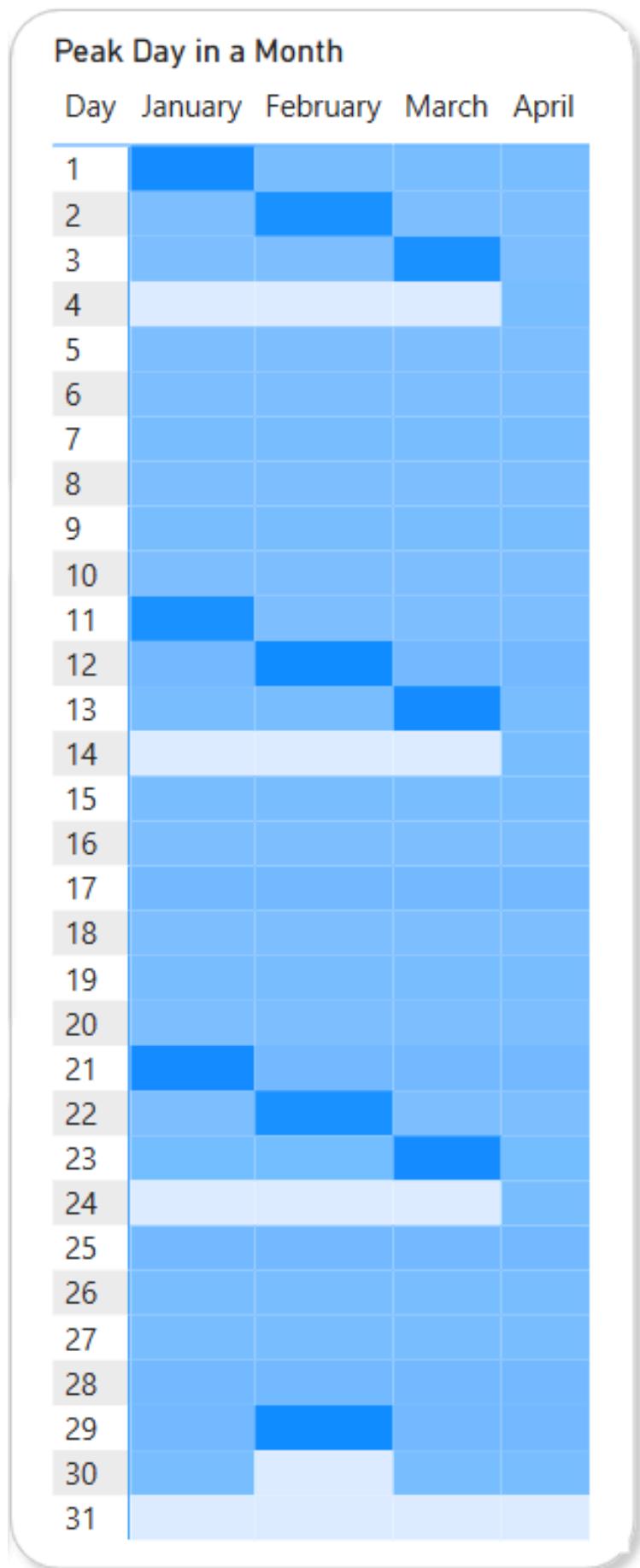
3. DATA VISUALIZATION ANALYSIS

TIME ANALYSIS



The months containing higher-than-average Total Sales per weeks were February, March and April (affected by holidays and some special occasions celebrated in California)

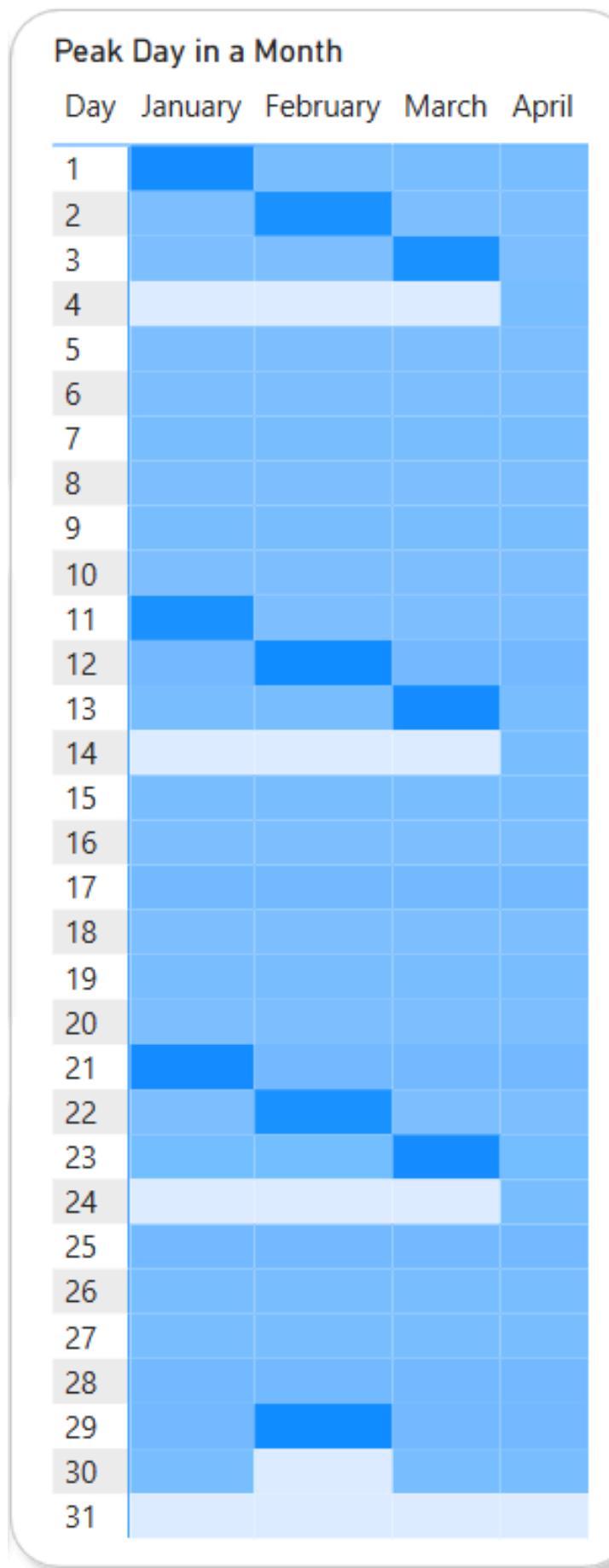
TIME ANALYSIS



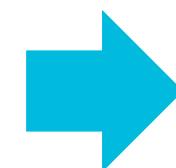
3. DATA VISUALIZATION ANALYSIS

- Peak Order Days in January:
 - 01/01 (New Year's Day)
 - 11/01 (Saturday)
 - 21/01 (Tuesday)
- Peak Order Days in February:
 - 02/02 (Super Bowl Sporting Event)
 - 12/02 (Wednesday)
 - 22/02 (Saturday)
 - 29/02 (Saturday)
- Peak Order Days in March:
 - 03/03 (Super Tuesday)
 - 13/03 (Friday)
 - 23/03 (affected by COVID-19 lockdown)
- In April: Total Orders placed were steady every day. There weren't any peak days in this month.

TIME ANALYSIS



3. DATA VISUALIZATION ANALYSIS



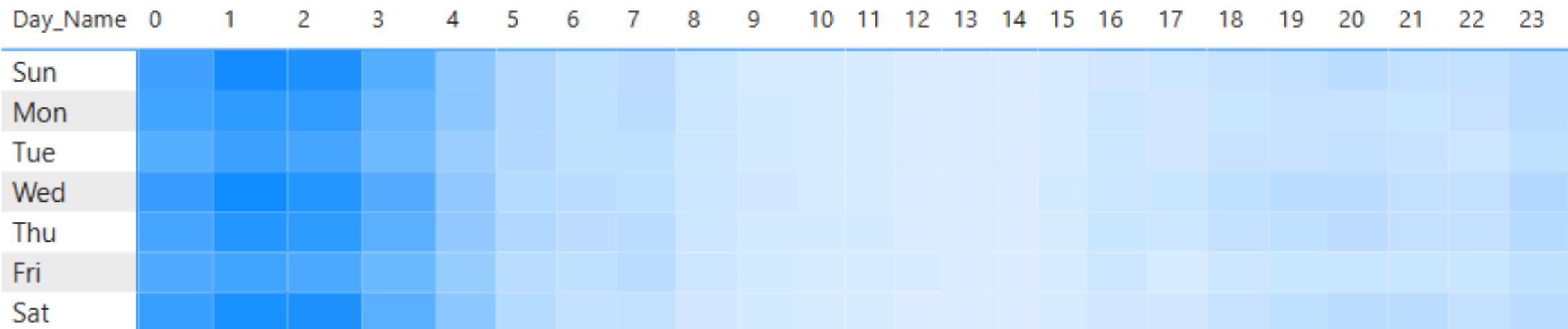
- The demand for food delivery service increased due to the impact of certain holidays and weekends. However, there weren't any incredible increase in total orders on some other occasions (Valentine, International Women's Day, April Fool's Day, and Easter)
- A mandatory statewide stay-at-home order of California was issued on March 19, 2020. Therefore, since then the demand for delivery service was steady.

3. DATA VISUALIZATION ANALYSIS

TIME ANALYSIS



Peak Day & Time of the Week



Order Trends:

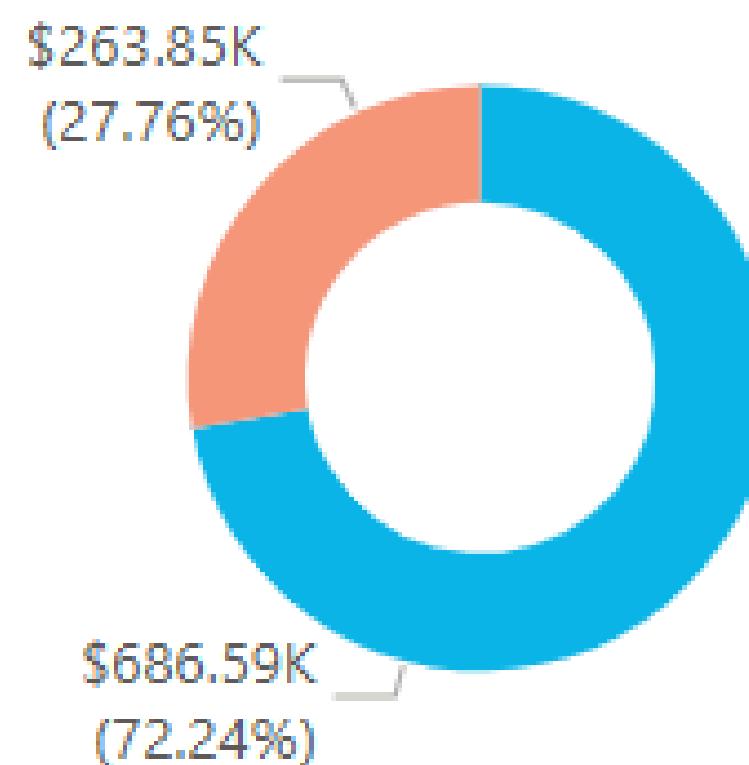
- Total Orders placed were incredibly high during the shift of 0:00 A.M-5:00 A.M, contributed approximately 70% of total orders.
- Peak days of the week: Wednesday, Thursday, Saturday and Sunday
- The demands for food delivery at working time (8:00 A.M - 5:00 P.M) and on working days (Monday - Friday) was consistently low
- Total Orders conducted during lunchtime (11:00 A.M -1:00 P.M) was remarkably low

3. DATA VISUALIZATION ANALYSIS

RESTAURANTS ANALYSIS

Total Tip v.s. Total Discount

● Total Tip ● Total Discount



Total Tip vs. Total Discount

- Total Tip Amount received was **nearly 4 times** higher than the Discount Amount.

It indicated the effectiveness of Discount promotion by increasing the tipped value, which showed customers' pleasure of delivery service.

3. DATA VISUALIZATION ANALYSIS

RESTAURANTS ANALYSIS

Restaurant with Highest Total Orders

7320  256

Restaurant with Lowest Total Orders

7228  96

Restaurant with Highest Total Sales

7213  \$29K

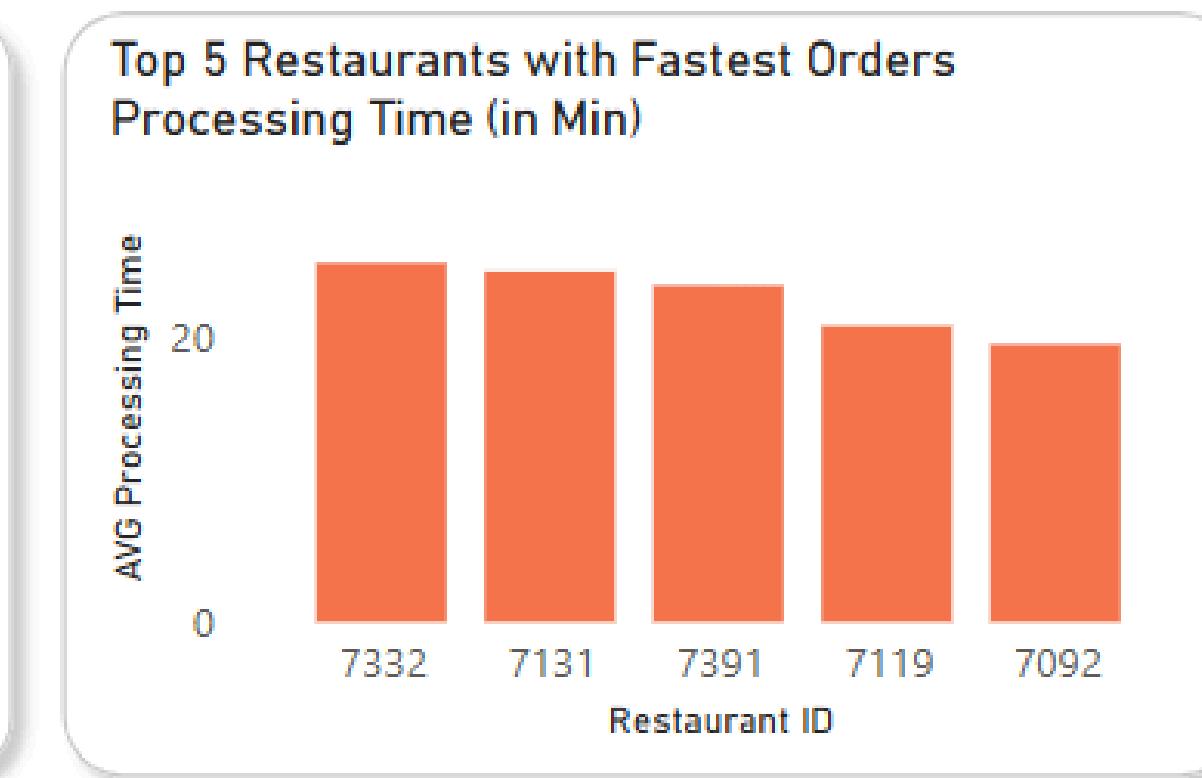
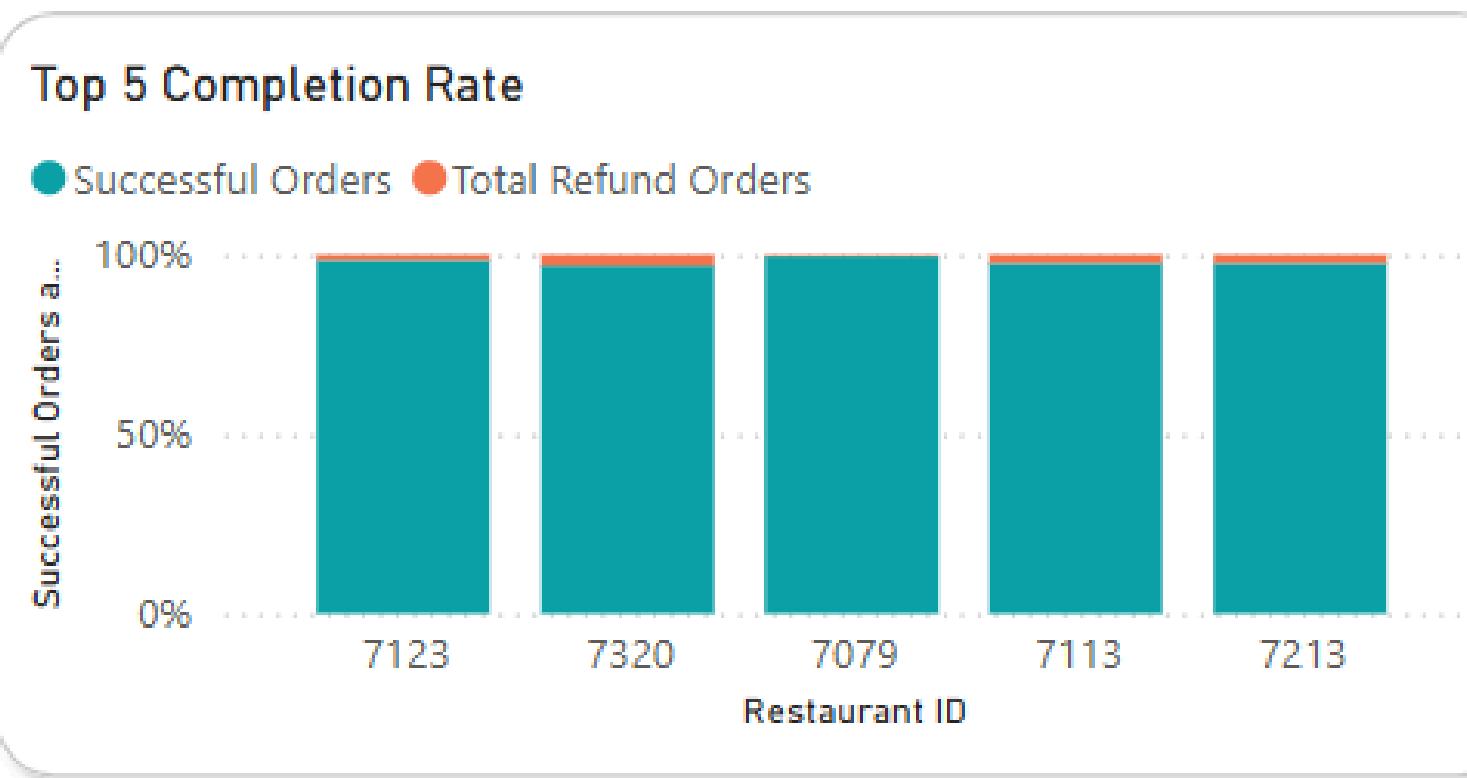
Restaurant with Lowest Total Orders

7259  \$10.4K

- The Total Orders had the range from 96 to 256 orders. The Restaurant with ID 7320 completed the most orders (256), **2.67 times higher** than the Restaurant (ID 7228) with fewest orders (96)
- The Total Sales ranged from **\$10.4K to \$29K**, Restaurant received highest sales (ID 7213) was **3 times higher** than the lowest (ID 7259)

3. DATA VISUALIZATION ANALYSIS

RESTAURANTS ANALYSIS



- **Top 5 Restaurants with the Most Successful Orders:**
7123, 7320, 7079, 7113, 7213
- **Top 5 Restaurants with the Fastest Orders Processing Time (AVG Processing Time):**
7332, 7131, 7391, 7119, 7092

3. DATA VISUALIZATION ANALYSIS

RESTAURANTS ANALYSIS

How did Orders Processing Time affect Total Orders?



Orders Processing Time vs. Total Orders:

- The Processing Time and Total Orders didn't have the same trend. Restaurant with ID 7113 spent long time to process the orders (**25.65 mins**) but received high volumes of orders (**244**), while Restaurant with ID 7092 spent **19.45 mins** processing orders but received only **112 orders** in totals.



The length of orders processing time didn't play role of the direct influence of the orders received. Therefore, other statistics should be taken into account.

4. RECOMMENDATIONS

Sales and Marketing:

- Further information of customers should be collected (e.g.: gender, age...) as there's only Customer ID noted in the sales records.
- Targeted Marketing: Provide multiple customer-centered promotions to increase sales to serve different groups of customers (by age, by gender, by working status...)
- Revise current promotion plans as low sales was seen during daytime and on special occasions.

Customers Strategy:

- Expand customer data following current customer segmentation or provide “refer-a-friend” program to customers basing on the current good foundation of loyal customers.
- Improve after-sales customer support and collect feedback to improve the existing delivery service
- Promote member benefits for long-term customers to encourage customers to frequently use our food delivery service

Drivers and Restaurants Approach:

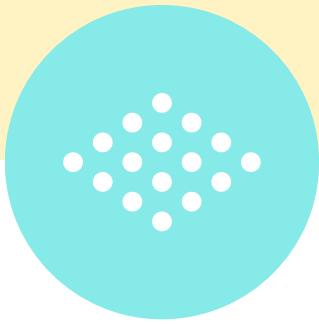
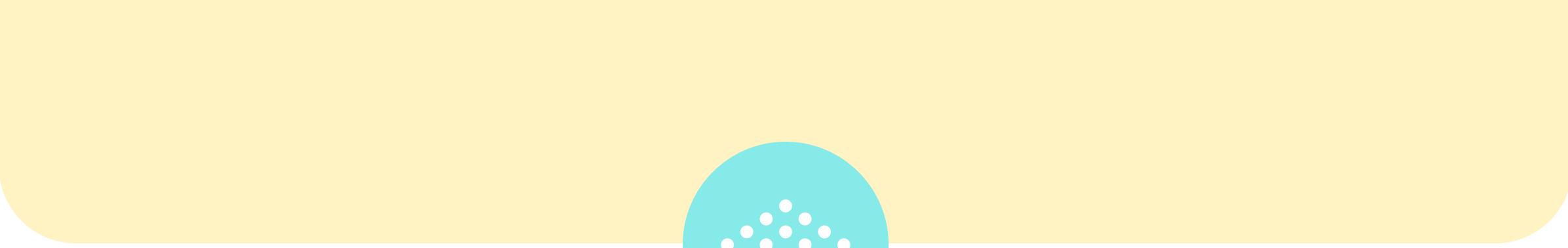
- Provide incentive for drivers who can complete certain volumes orders per day to encourage drivers to deliver more orders, and also to boost the sales status.
- Provide promotion or level-up programs for restaurants that reached certain amount of sales and orders to improve the service and quality.
- Higher order volume was witnessed on Wednesday, Thursday, Saturday and Sunday, drivers and restaurants' staff can flexibly arrange day-offs on the remaining days.

Product Analysis:

- Further researches on products' quality and delivery service should be conducted as refunded amount was steady during this period of time (from January to April)

5. SOURCES

Data Source: FP20 Analytics - Challenge 6: Food Delivery Analysis
<https://fp20analytics.com/datasets/>



THANK YOU!

