UBER SUPPLY DEMAND GAP ANALYSIS

UBER Supply-Demand Gap

-A Detailed Analysis

Problem Statement

You may have some experience of travelling to and from the airport. Have you ever used Uber or any other cab service for this travel? Did you at any time face the problem of cancellation by the driver or non-availability of cars?

Well, if these are the problems faced by customers, these very issues also impact the business of Uber. If drivers cancel the request of riders or if cars are unavailable, Uber loses out on its revenue. I'm analysing to address the problem Uber is facing - driver cancellation and non-availability of cars leading to loss.

Data Exploration

- Data set contains 6 columns :

  1. Request.id

  2. Pickup.point

  3. Driver.id

  4. Status

 5. Request.timestamp

  6. Drop.timestamp

Data Cleaning and Manipulation

- Possible data inconsistencies:

  1. Duplicate values of Request ID

  2. NA values in the columns of interest

- Other Issues:

  1. Request time stamp is object here.Convert it to date time format.

  2. Dates are separated by "/" and "-". Make this consistent for ease of data analysis.

Analysing Trends For Each Day

The pattern of request is common for all the days for the status of the of

 requests

Request Data - Hourly Number of Requests Day Wise
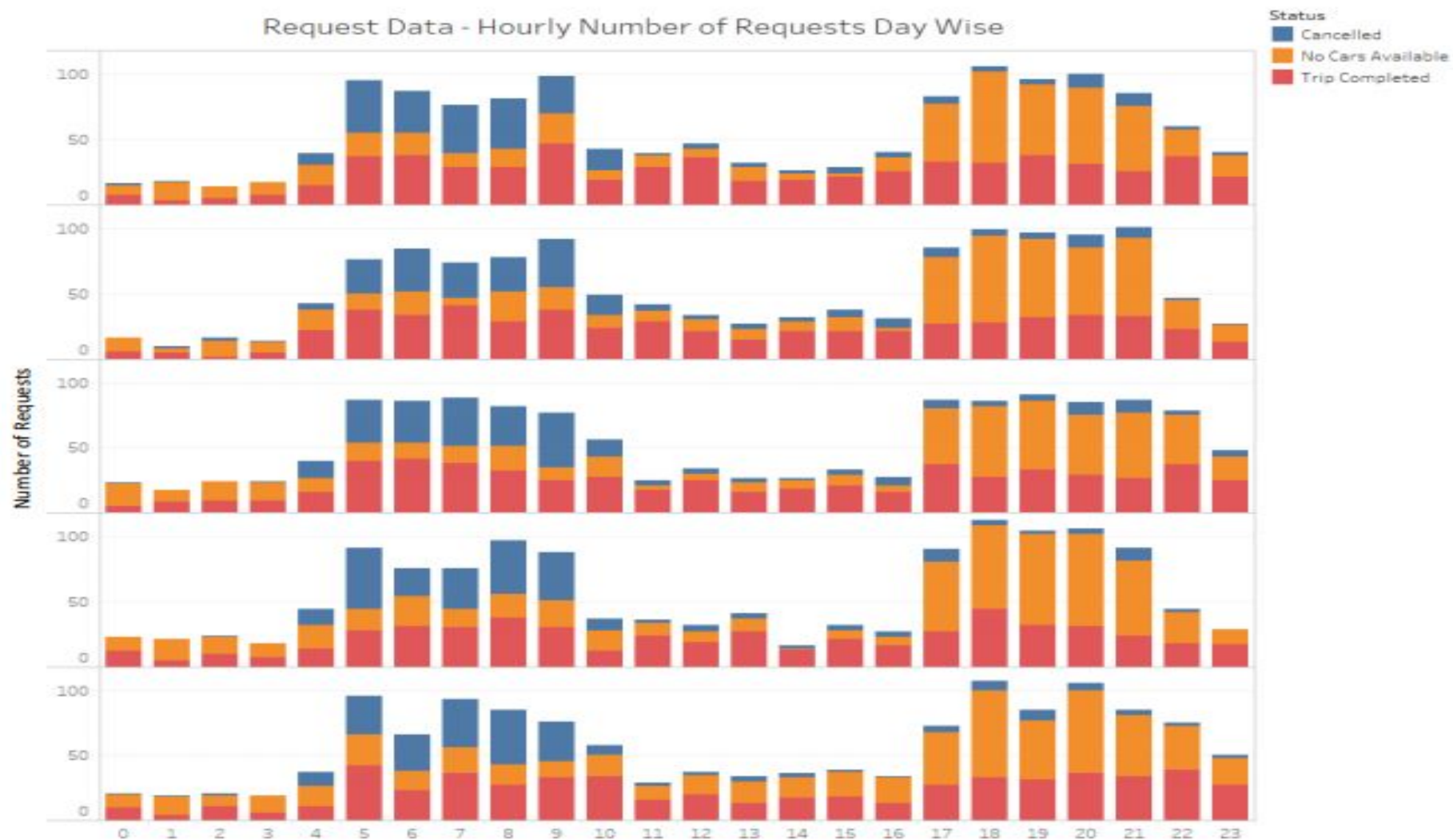
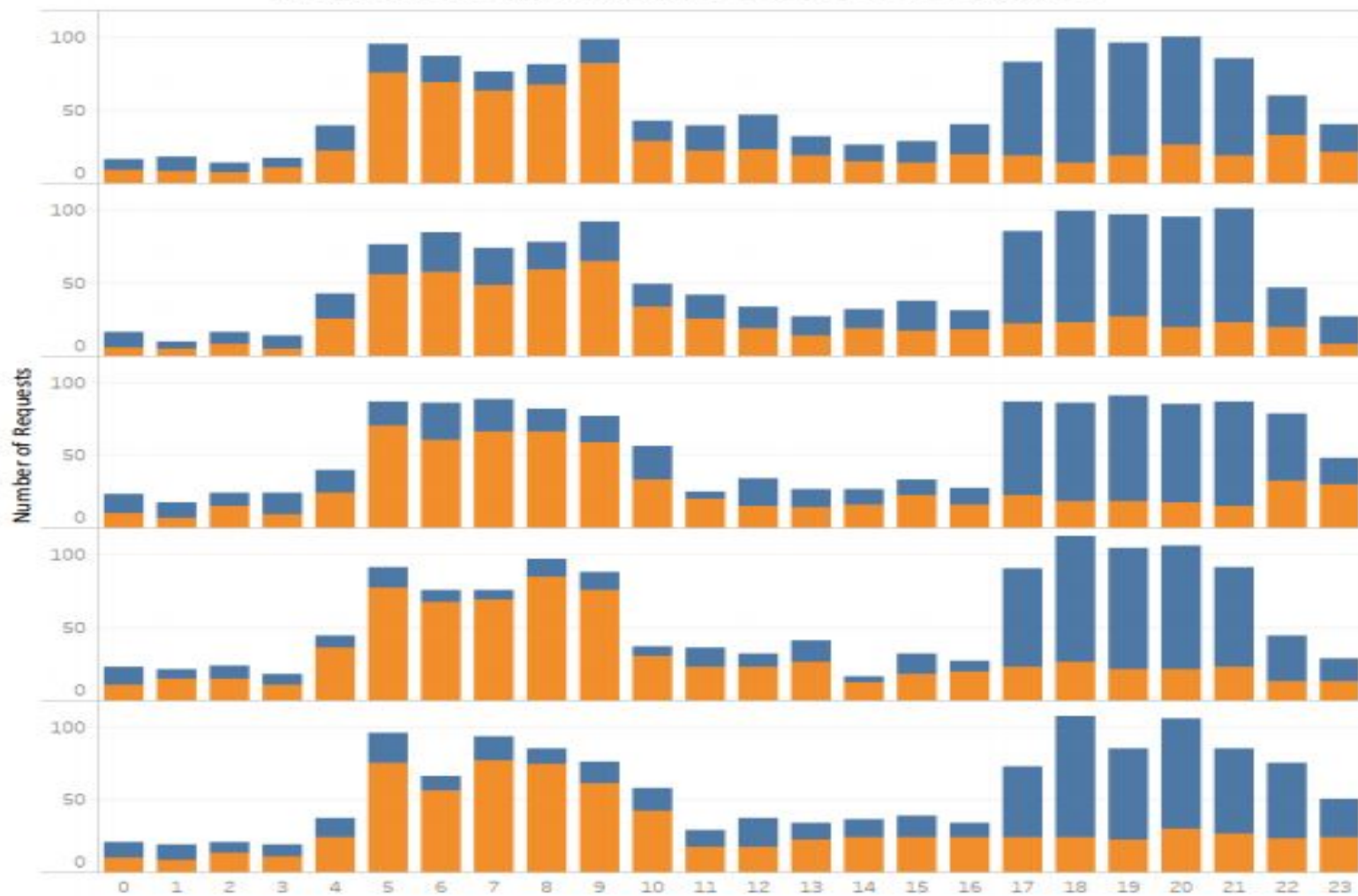# Analysing Trends For Each Day

The pattern of requests is common even for all the days for the pick up point where the requests have been generated.

Request Data - Hourly Number of Requests Day Wise

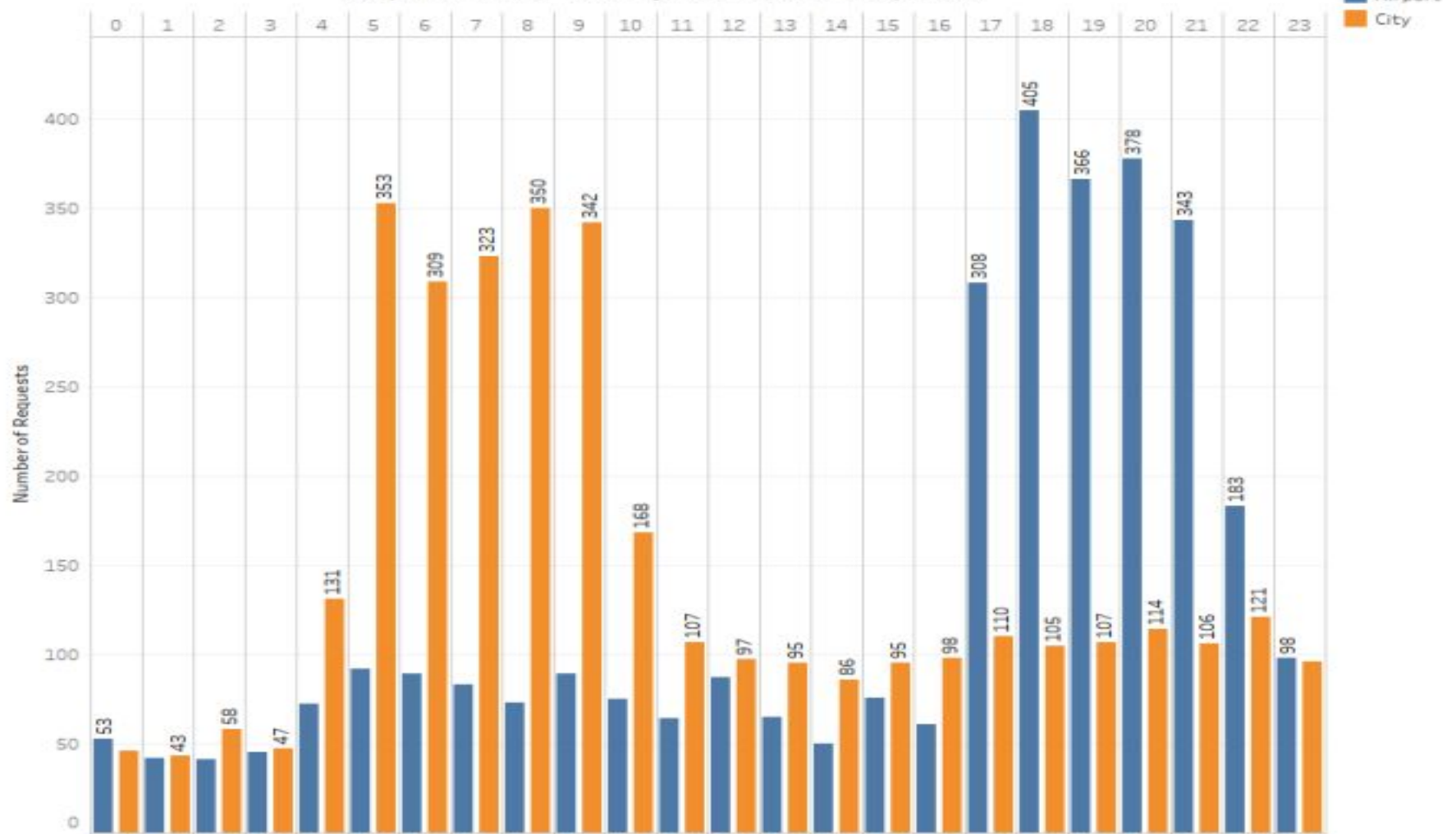# Combining Data For All Days

- Previous graphs show that all the days show common trends.
- Hence the number of requests can be clubbed together for further analysis.
- Conclusion:

  1. Number of trips in morning are high from the city

  2. Number of trips from the evening are high from the airport

Request Data - Hourly Number of Requests

Binning Time Into 5 Categories

- Requests generated are divided into 5 homogeneous categories based on the time of request

Time	Category
12 AM – 5 AM	Pre_Morning
5 AM – 10 AM	Morning_Rush
10 AM – 5 PM	Day_Time
5 PM – 10 PM	Evening_Rush
10 PM – 12 AM	Late_Night

Problem Identification – Morning and Evening

- Graph clearly shows that the major problems are:

  1. Cancelled trips during the morning rush

  2. Unavailability of cars during evening rush

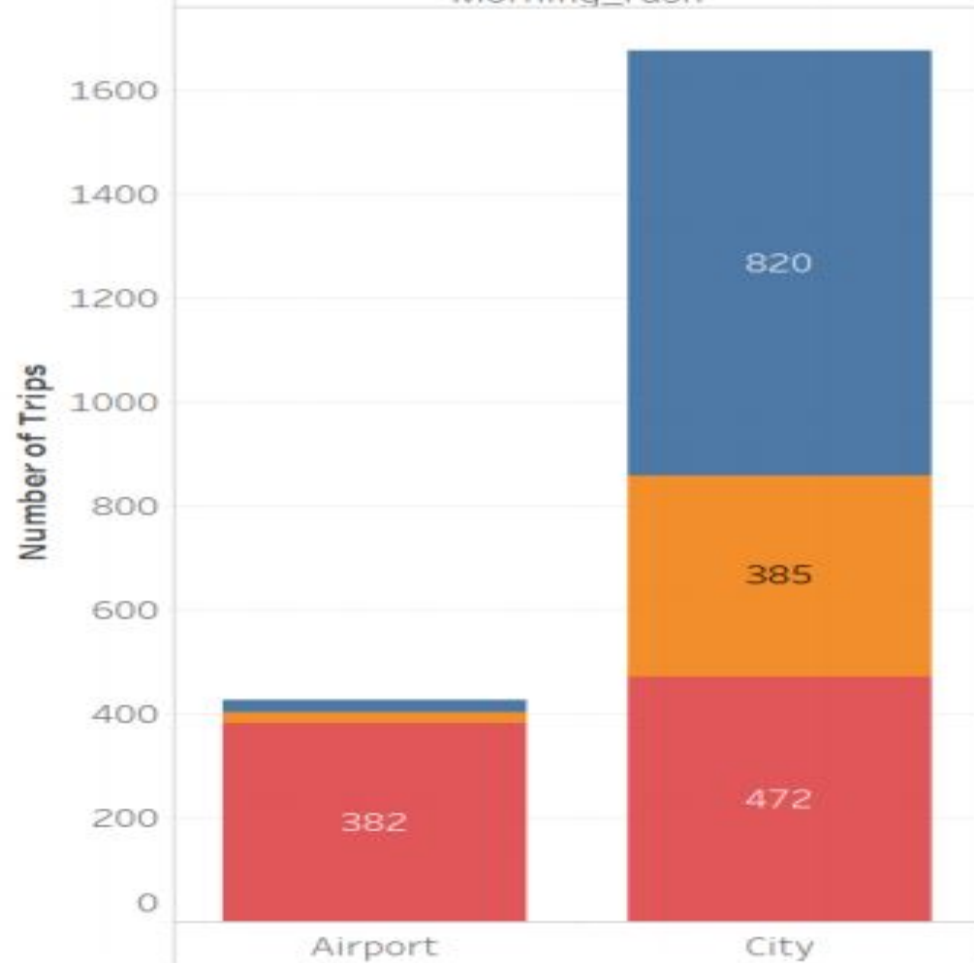Request Data - Hourly Number of Requests
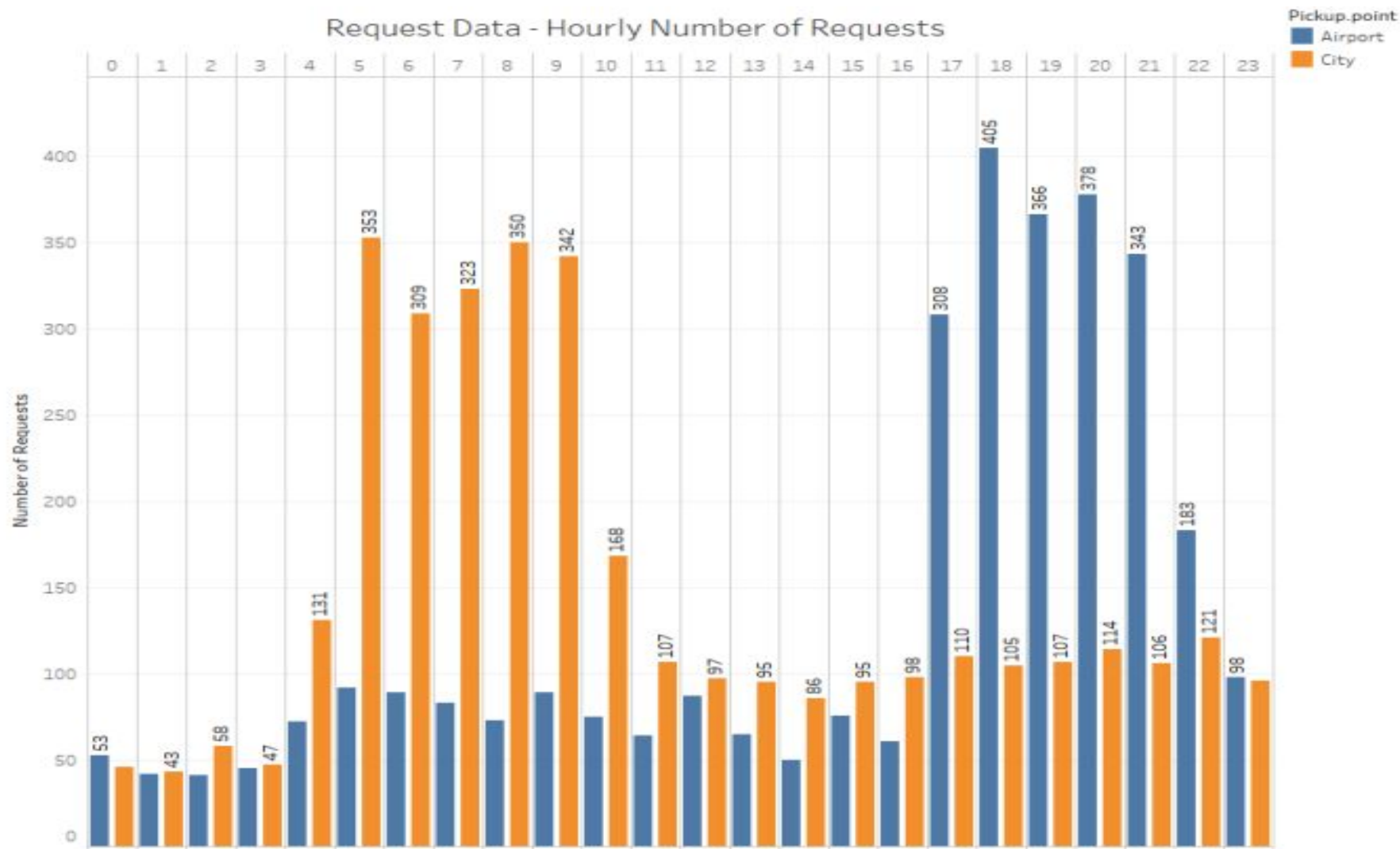
Cancelled trips - 50 % of total trips from city

- The supply from the city is 472, while the demand is

  472 + 385 + 820 = 1677 .

- The difference between the demand and the supply is 1205.

Trip Status for Morning Rush

Time Slot / Pickup.point
Morning_rush

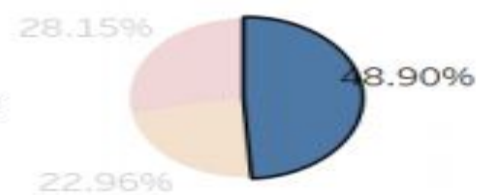**Number of Trips**

- Airport: 382
- City: 472, 385, 820

Status
- Cancelled
- No Cars Available
- Trip Completed

Trip Status for Morning Rush at City

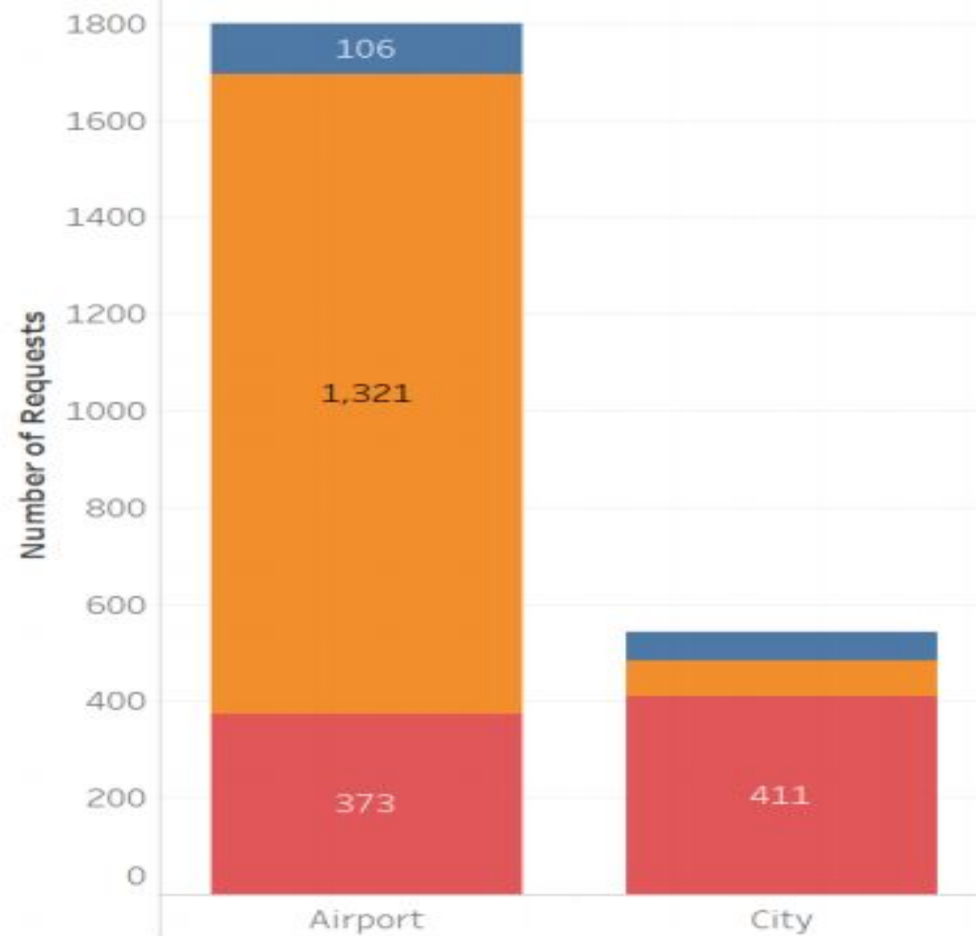**Time Slot**

Morning_rush

- 28.15%
- 48.90%
- 22.96%

No Cars - 70% of total trips from airport

- The supply from the airport is 373, while the demand is

  373 + 1321 +106 = 1800.

- The difference between the demand and the supply is 1427.

Trip Status for Evening Rush
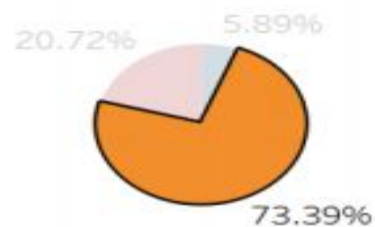
Time Slot / Pickup.point

Evening_rush

Status
- Cancelled
- No Cars Available
- Trip Completed

Trip Status for Morning Rush at Airport

Time Slot

Evening_rush

Number of Requests

- Airport: Cancelled 106, No Cars Available 1,321, Trip Completed 373
- City: Trip Completed 411

Pie chart: 20.72%, 5.89%, 73.39%

Recommendations

- For the trips in the morning, drivers can be incentivised to make those trips.

  1. They could be given a bonus for each trip they complete from the city to the airport in the morning rush.This will ensure that less number of trips are cancelled.

  2. Uber can pay for the gas mileage of drivers to comeback to the city without a ride.

  3. Uber can increase the demand at the airport to reduce idle time– by increased marketing and price cuts for the passengers.

- For the evening, since the number of drivers is less, some of the ways are:

  1. Drivers can again be given a bonus to complete a trip from the airport in the evening. This will ensure that the supply increases at the airport.

  2. Uber can also pay drivers to come without a passenger to the airport

  3. Another innovative way can be to pool the rides of passengers so that lesser number of cars can serve more passengers.