



# UBER SUPPLY-DEMAND GAP ANALYSIS

MANOJ PATIL



# PROBLEM STATEMENT

Uber is facing - driver cancellation and non-availability of cars leading to loss of potential revenue.

Currently on City to Airport and vice-versa route, Uber is facing issue with is demand-supply.

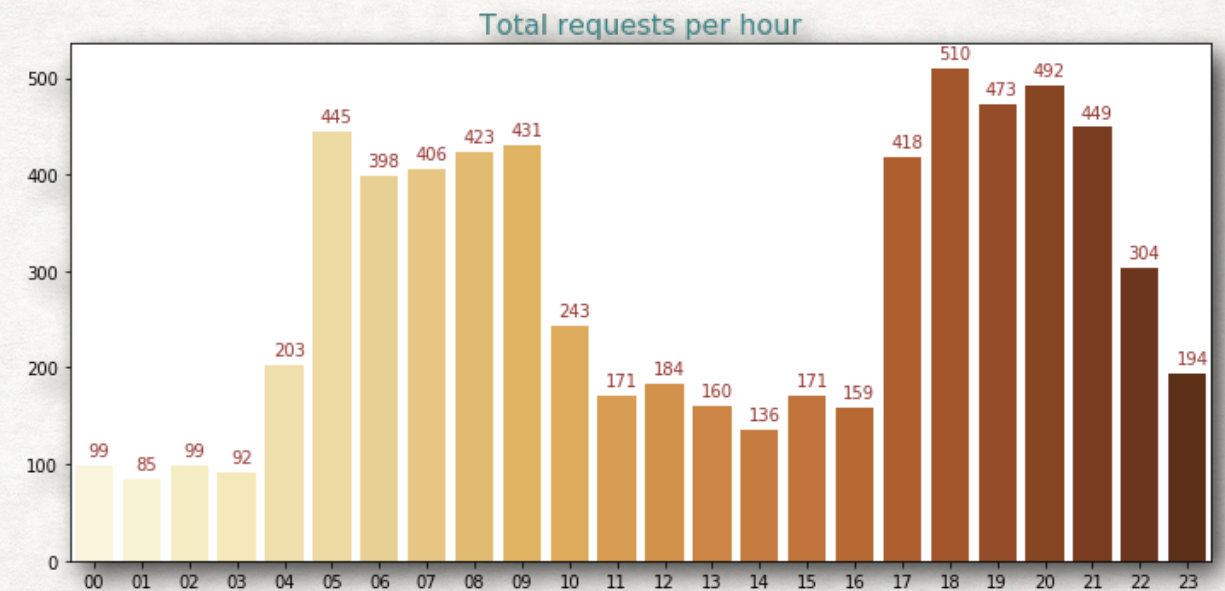
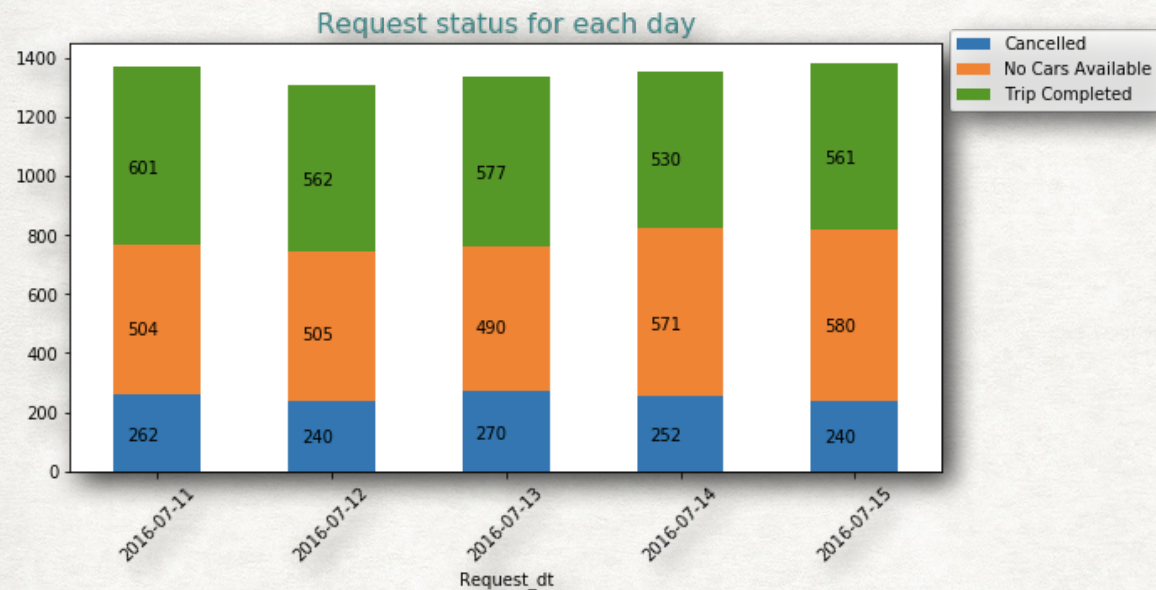
Average request status for this route is as below:

- Cancelled :- 252.8
- No Cars Available :- 530.0
- Trip Completed :- 566.2

The aim of analysis is to identify the root cause of the problem (i.e. cancellation and non-availability of cars) and recommend ways to improve the situation.



# REQUEST STATUS ANALYSIS

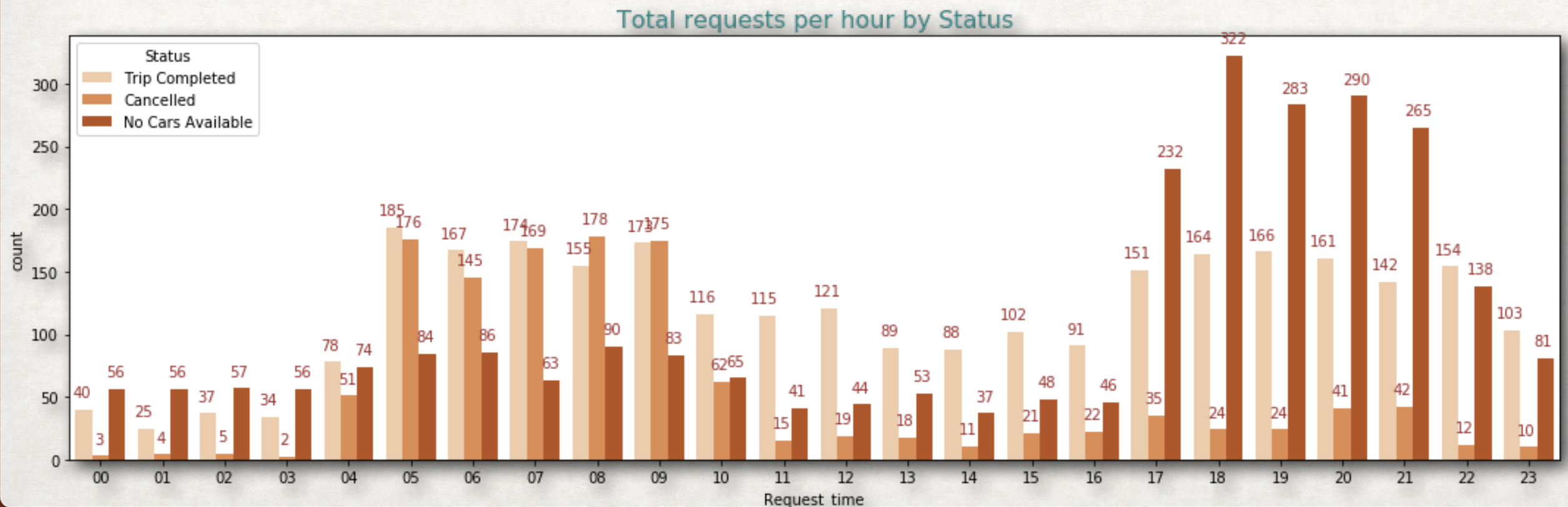


## Average request status :

- Cancelled by Driver :- 252.8
- Cars Unavailability :- 530.0
- Completed Trips :- 566.2

## Peak hours:

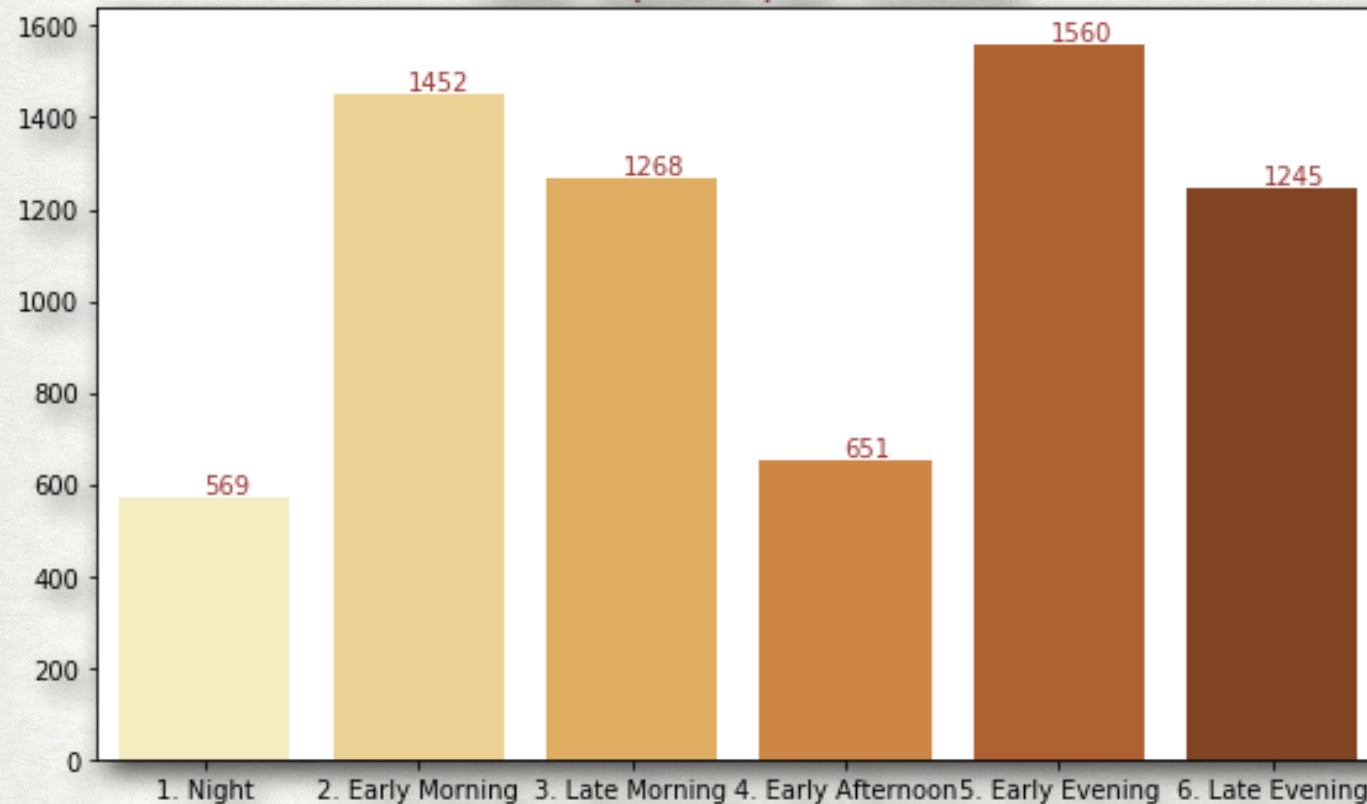
- Morning 5AM to 10 AM
- Evening 17PM to 23 PM





# REQUEST STATUS ANALYSIS

Total requests per Timeslot



## Timeslots:

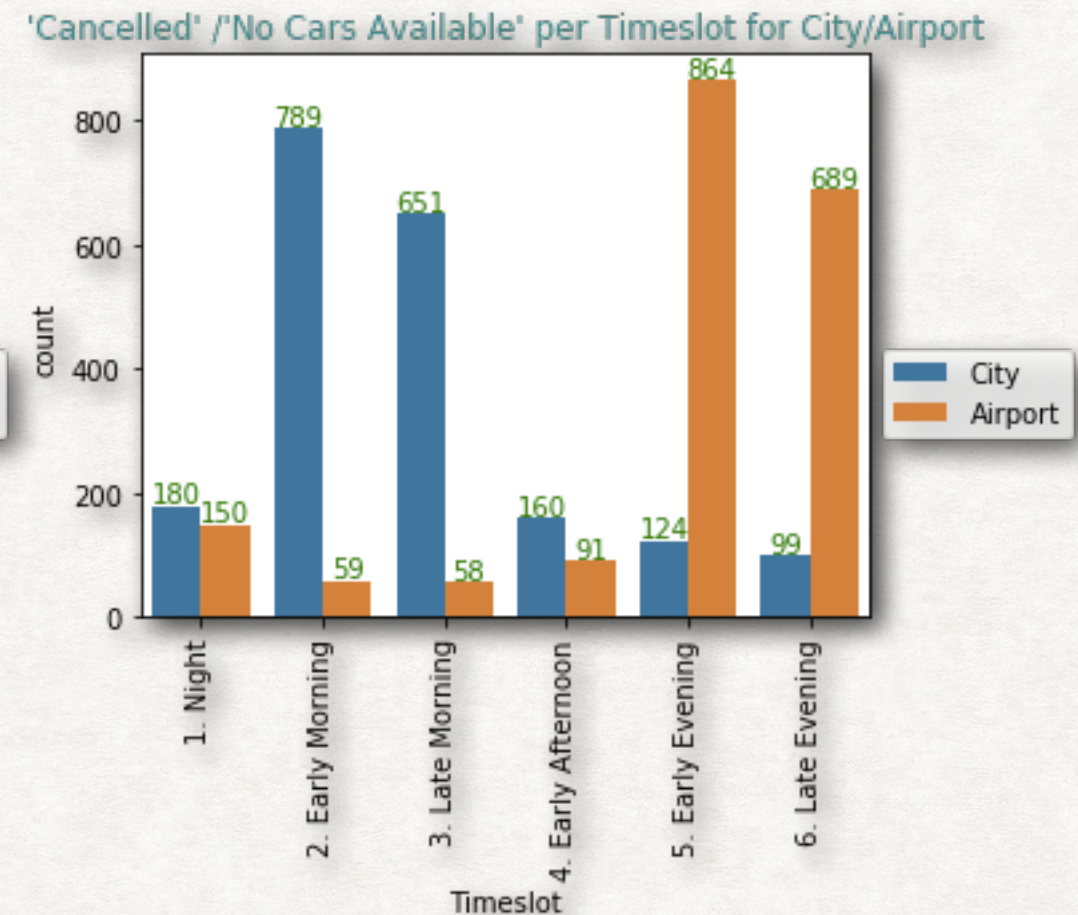
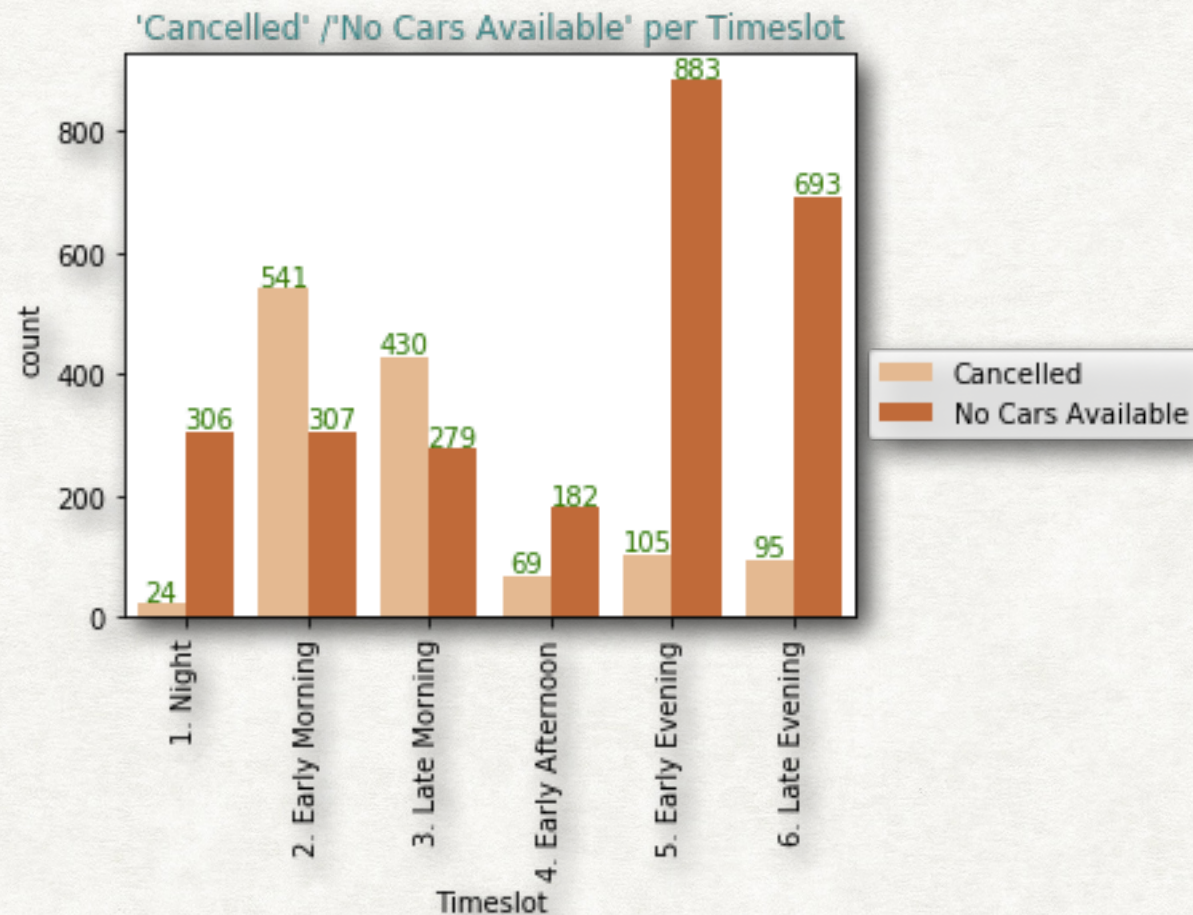
- Early morning: 3AM to 7 AM
- Late morning: 7AM to 11 AM
- Early afternoon: 11AM to 3 PM
- Early evening: 3PM to 7 PM
- Late evening: 7PM to 11PM
- Night: 11PM to 3AM

## Peak Hours:

- Early Morning
- Late Morning
- Early Evening
- Late Evening



# GAP ANALYSIS BY LOCATION



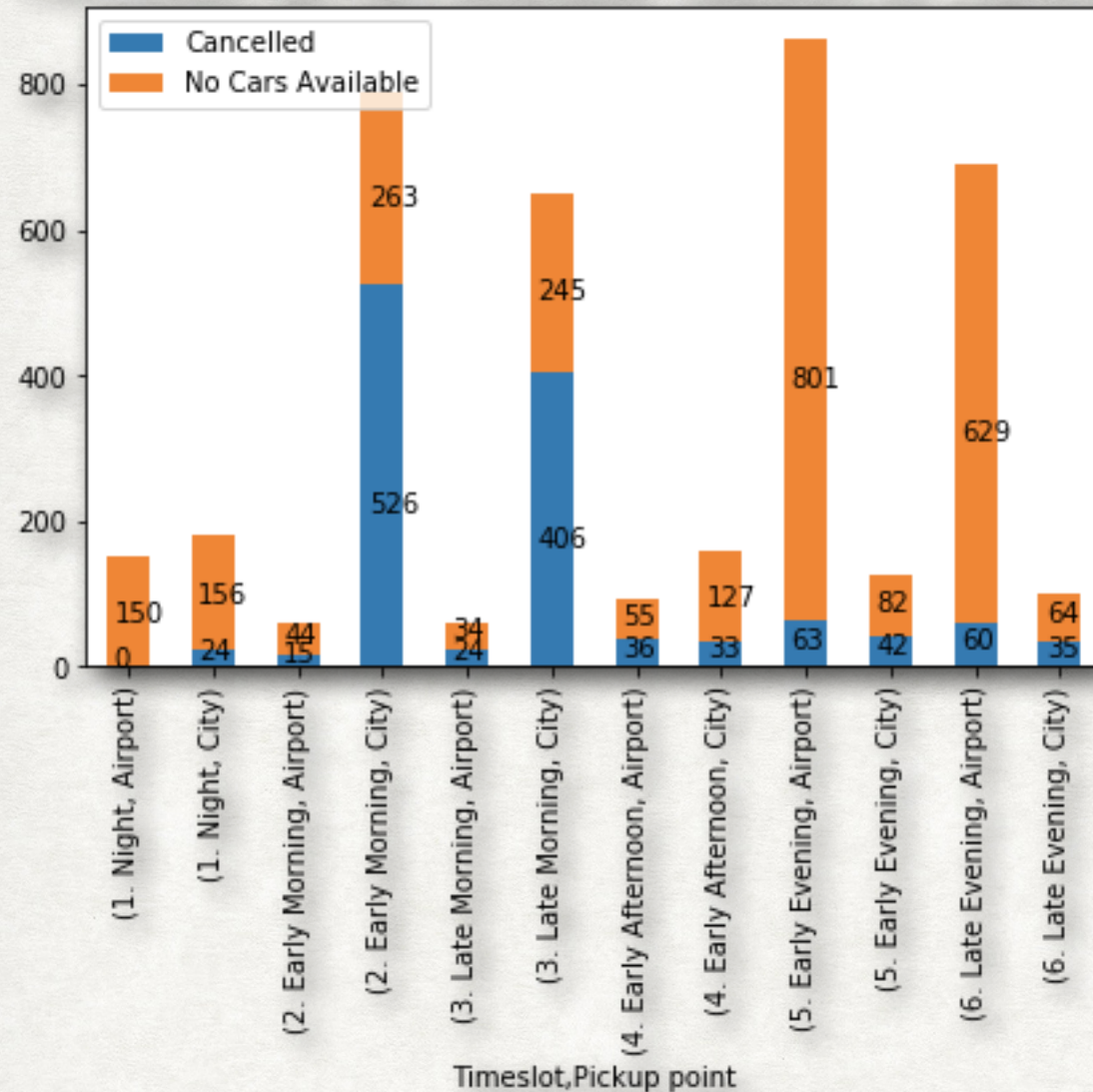
## Observations:

- It seems for City that number of cancelled requests are significant in the early morning and late morning
- Unavailability of cars are significant in the early and late morning for city location
- At the Airport unavailability of cars is significant in the early and late evening
- From night till late morning unavailability of cars is same which can be addressed by increasing driver partners
- Other than night, City location has more Trips completed



# GAP ANALYSIS BY SLOT

'Cancelled'/'No Cars Available' requests for City/Airport



## For the Morning:

- Car unavailability in city location is higher in the early and late morning
- No. of cancelled requests in Morning are higher for City location, almost double than car availability in the morning

## For the Evening

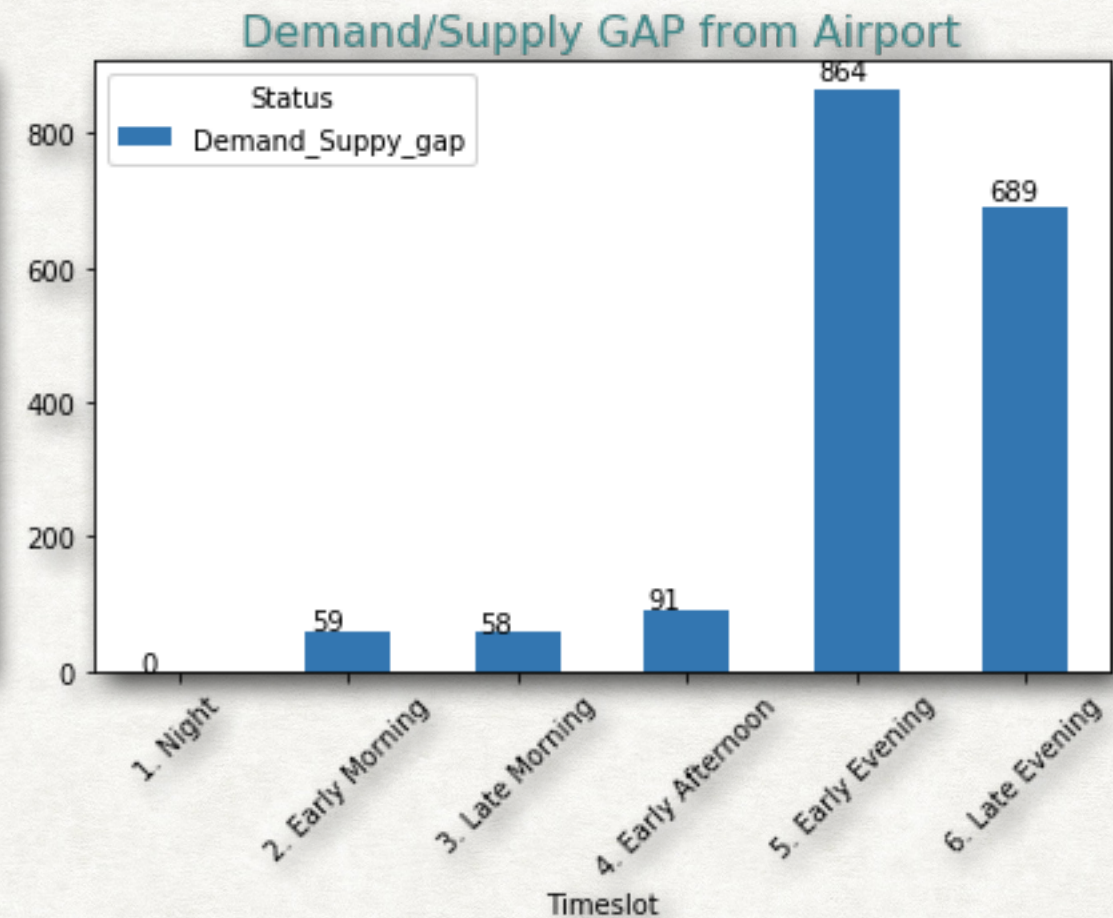
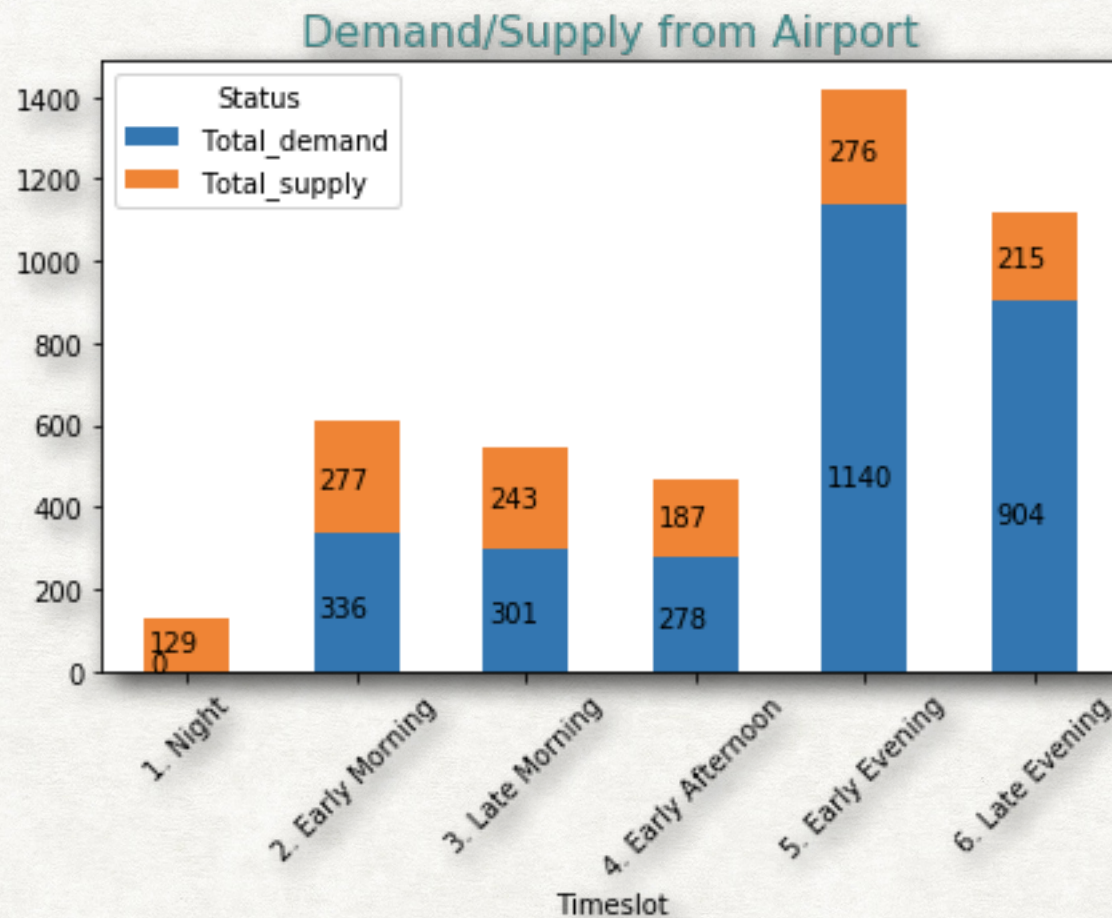
- Car unavailability at Airport location is higher in the early and late evening

## For the Night

- For City and Airport location number of cancellation and unavailability of cars is almost same and its significant
- For Airport location number of cancellation is minimum



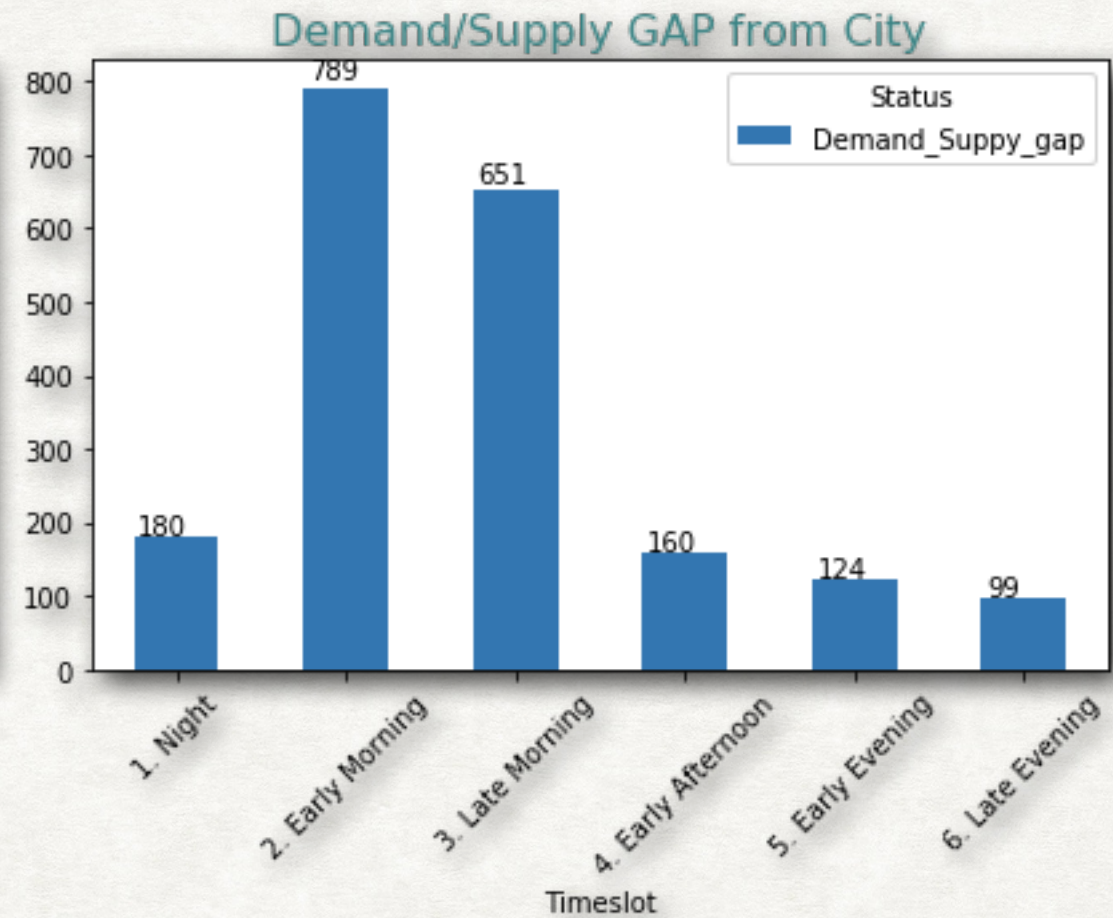
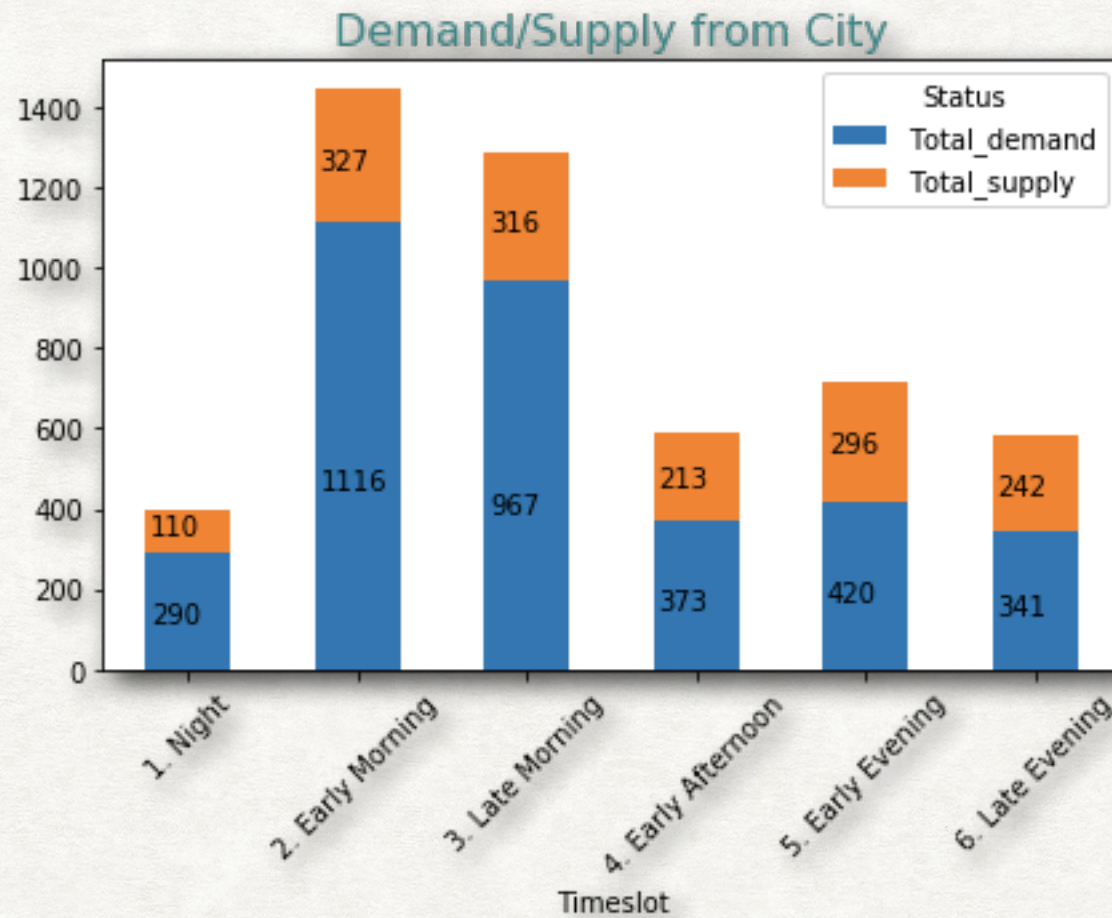
# DEMAND-SUPPLY GAP AT AIRPORT



- Demand-Supply gap is quite low in the early and late morning
- Demand-Supply gap is quite high in the early and late evening
- Demand-Supply gap is zero in the night
- Uber's Car supply is almost same at peak and off peak hours which is causing issues will lower supply for higher demand at peak hours



# DEMAND-SUPPLY GAP AT CITY



- Demand-Supply gap is quite high in the early and late morning as well as in the Night
- Uber's Supply is almost same at peak and off peak hours which is causing issues will lower supply for higher demand at peak hours



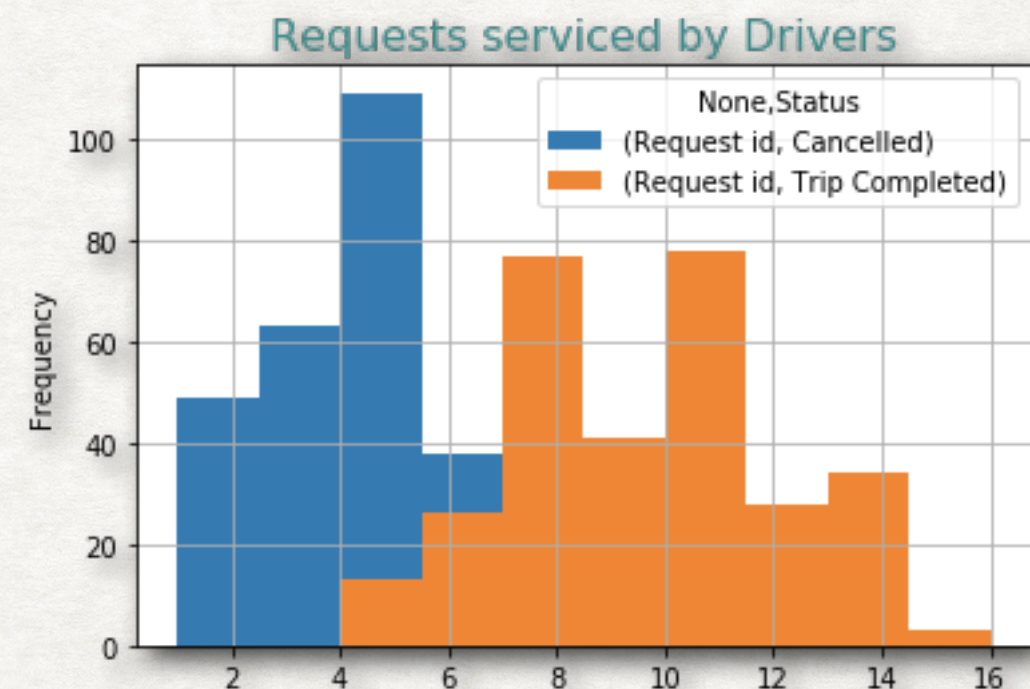
# STATUS CORRELATION AND DRIVER CANCELLATION



## Status correlation:

- Cancellation and Trip completed has high correlation of 0.61
- Cancellation and Cars unavailability has low correlation of 0.12
- Trip completed and unavailability has low correlation of 0.15

- around 40% have drivers cancelled  $\geq 4$  trips





# HYPOTHESIS

At city location we have noticed maximum cancellations in the morning.

## **Root-cause:**

if we look at the demand -supply gap, we can see that the demand supply gap at the Airport in the morning is low with negligible cancellation. The root cause for the cancellation at City can be fear of losing time and money after the driver finishes the trip to the airport.



# RECOMMENDATIONS

## **For City location:**

- Uber should increase supply at morning peak hours in the city to avoid cars unavailability
- Driver are cancelling trips in the morning in the city, which in turns causing Uber revenue loss this has to be looked into.
- Cars availability in the city is not proportional to the demand, this need to be addressed.
- Uber can look into providing some attractive perks to the drivers in the morning to reduce the cancellations.

## **For Airport location:**

- Uber should increase supply at evening peak hours at Airport to avoid cars unavailability
- Cars availability in the Airport is not proportional to the demand, this need to be addressed.
- To increase demand in the morning Uber can look into offering attractive fares to the customers.

## **Cancellation:**

- There are around 40% of drivers who have cancelled  $\geq 4$  trips, this need to be looked into to understand the reasons behind the cancellation



**THANK YOU!**