

# UBER DEMAND Vs SUPPLY CASE STUDY

SUBMISSION

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# Objective

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

# Data cleaning Steps

Driver ID

- Driver ID- Missing values has “No Cars Available” status which is intuitively correct. Hence, labelled as “Missing”.

Request Time

- Request Time is converted in single format and then to date type. Hours are extracted from Request Time for analysis.

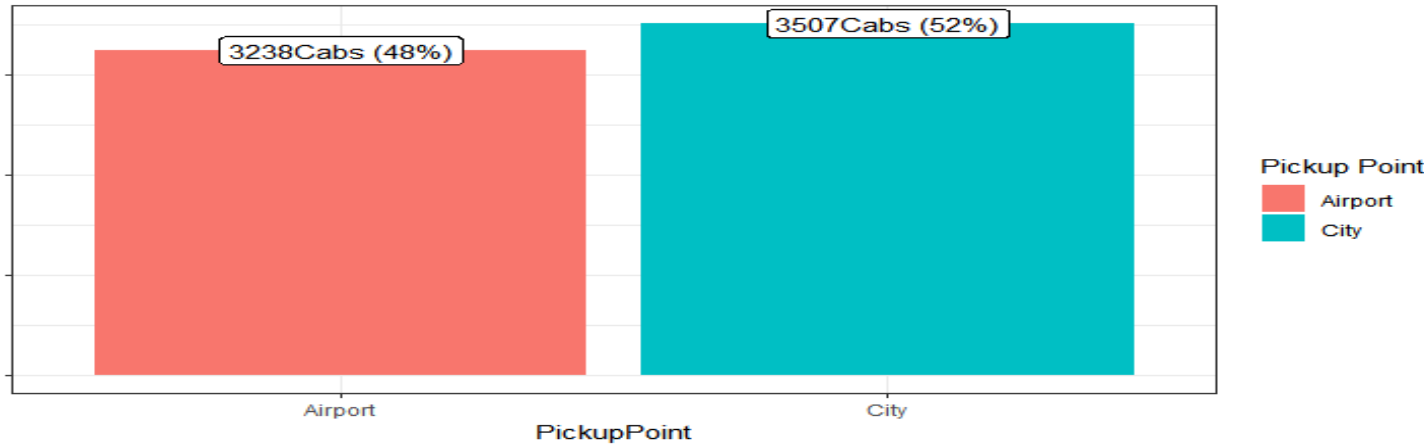
Drop Time

- Drop Time has Missing Values. These Missing values has “No Car Available” and “Cancelled” Status. All the missing Values are labelled as “Missing”.

# Demand and Supply of Cabs by Pickup Point

**Cab Requests by Pickup Point**

There is no significant difference for Cab Demand by Pickup Point



- There is 42% Supply for Cab Requests across Pickup Points
- There is no Significant variation in Cab Demand and Supply with respect to the Pickup Points

**Trips Completed (Supply) by Pickup Point**

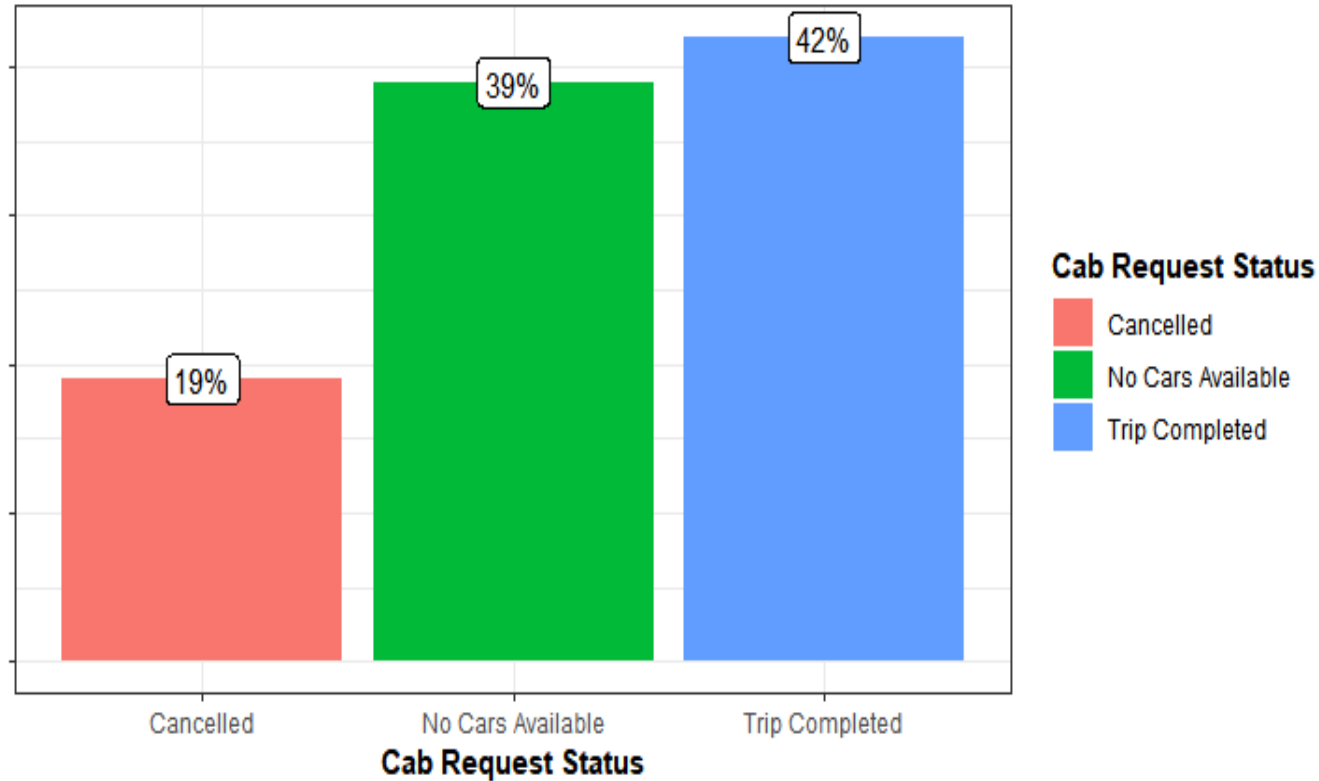
There is no significant difference for Cab Supply by Pickup Point



# Cab Requests vs Cab Request Status

## Percentage of Cab Requests by Cab Request Status

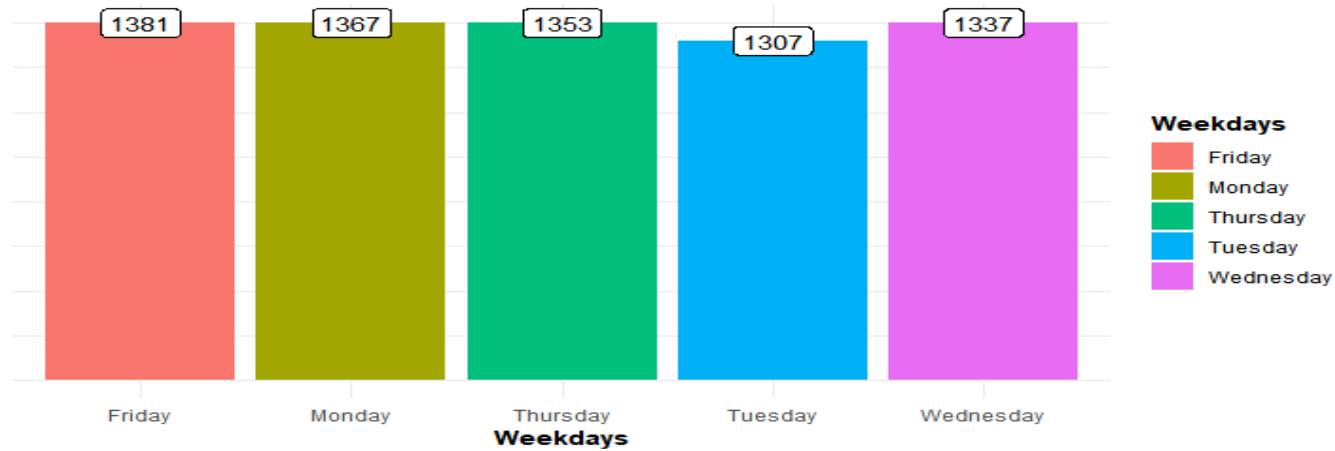
42% Requested Trips Completed and 58% not completed



- Trips completed for 42% of the Cab Requests
- 58% of the Cab Requests show either “Cancelled” or “No Cars Available” status

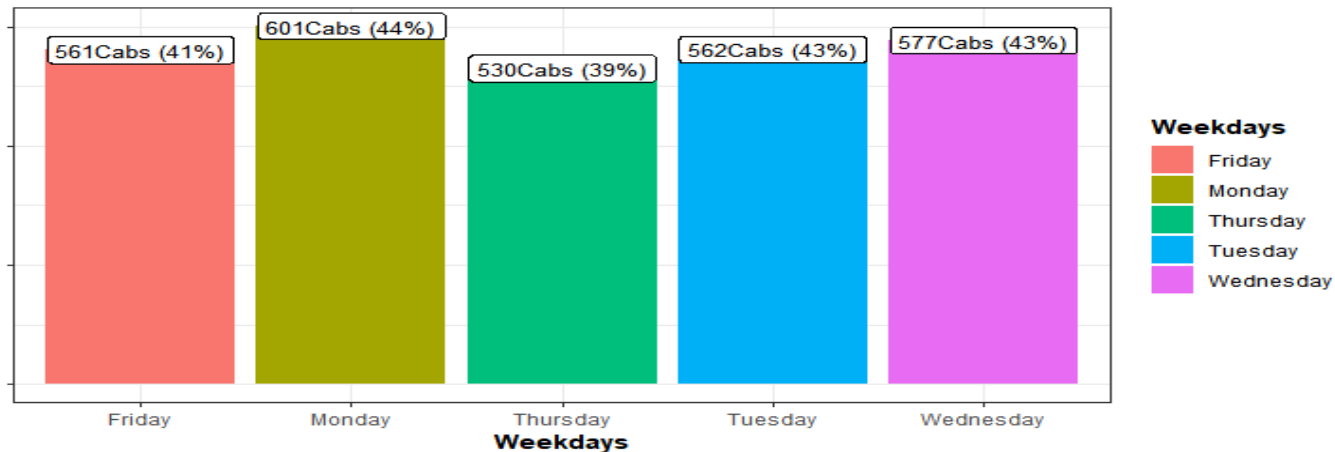
# Cab Demand Vs Supply by Weekdays

**Percentage of Cab Requests by Weekdays**  
Not Significant Variation in Cab requests by Weekdays



- There is no Significant Variation in Cab Demand and the corresponding Supply across Weekdays

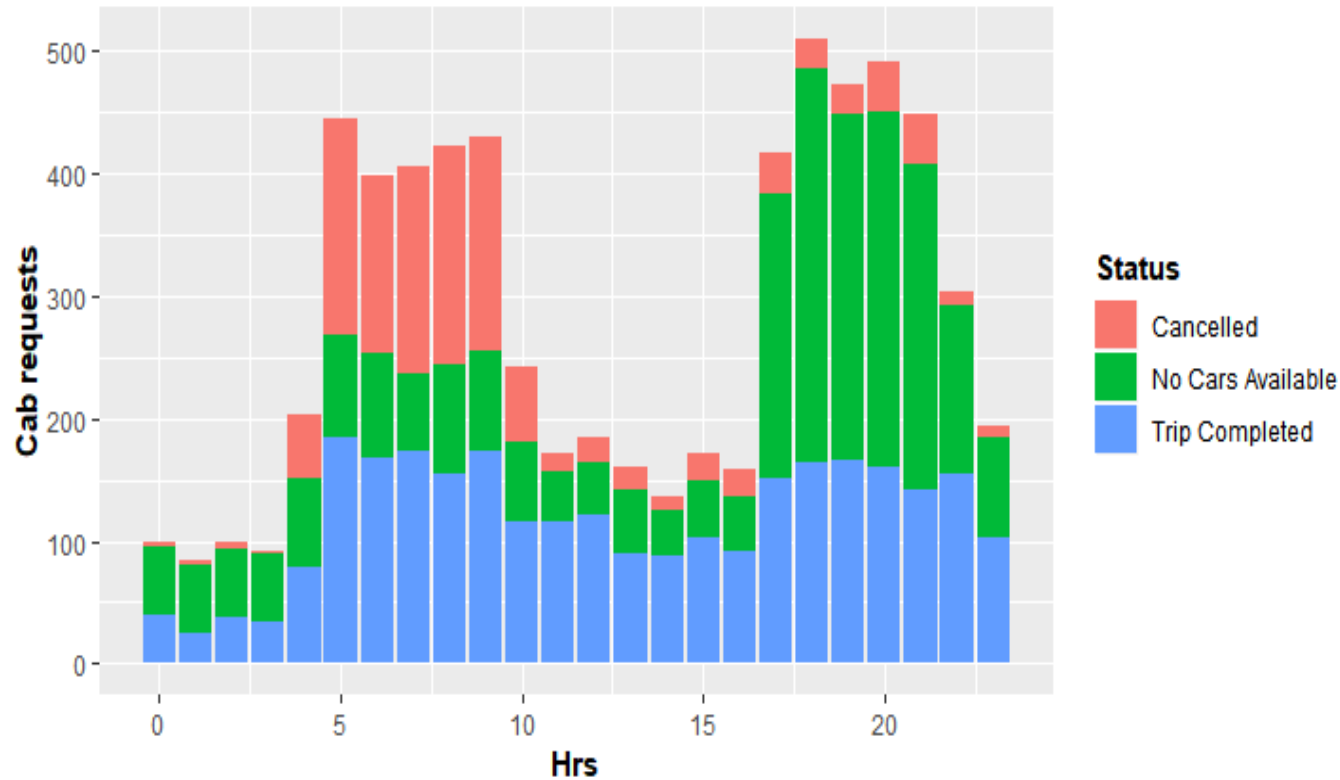
**% Supply for Demand by Weekdays**  
Not Significant Variation in % Supply for Demand across Weekdays



# Cab Demand/Supply by Time

## Cab Demand/Supply Pattern by Time

Peak hrs 5-10AM: High Cancellations, Peak hrs 5-10PM: High Cab unavailability

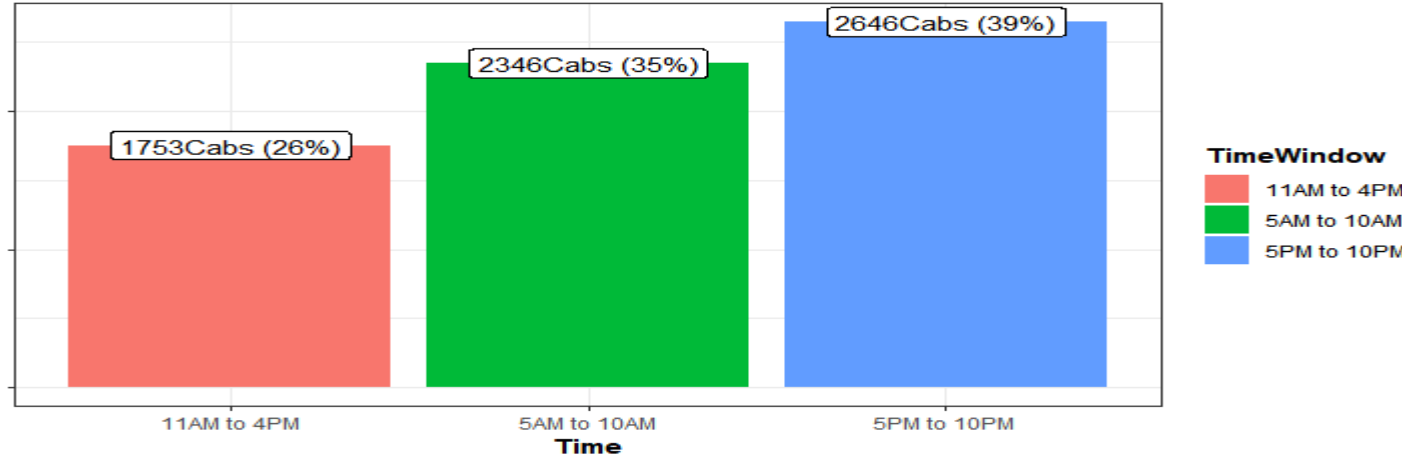


- Cab Requests Frequency is higher for 5 AM to 10 AM and 5 PM to 10 PM
- High Cancellation for 5 AM to 10 AM
- High Cab unavailability for 5 PM to 10 PM

# Cab Demand and Supply by Time

**No of Cab requests by TimeWindow**

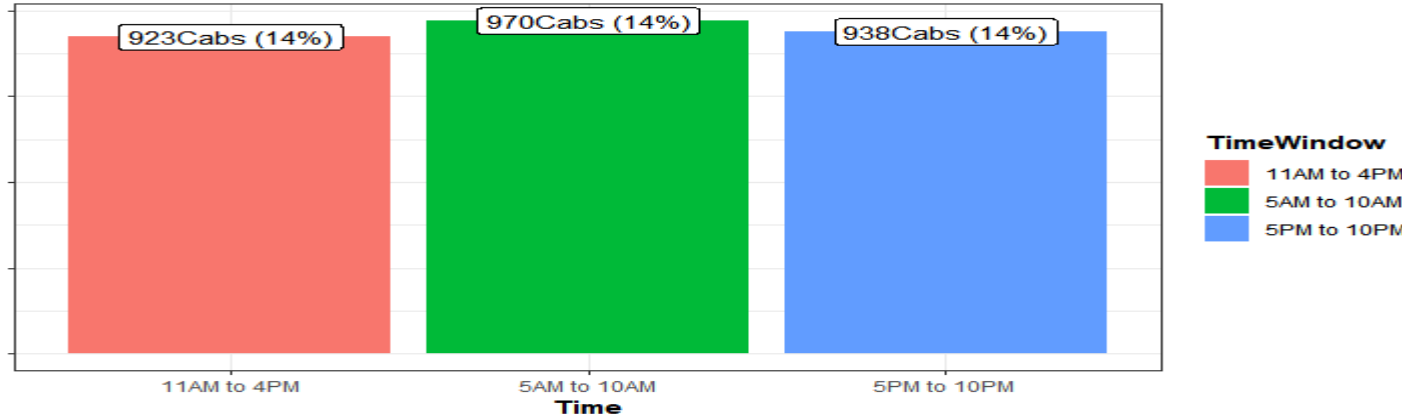
Cab requests are higher between 5 to 10 AM and 5 to 10 PM



- Supply of Cabs during 5 AM to 10 AM and 5 PM to 10 PM is like the rest of the day in spite of Increase in Demand for Cabs.

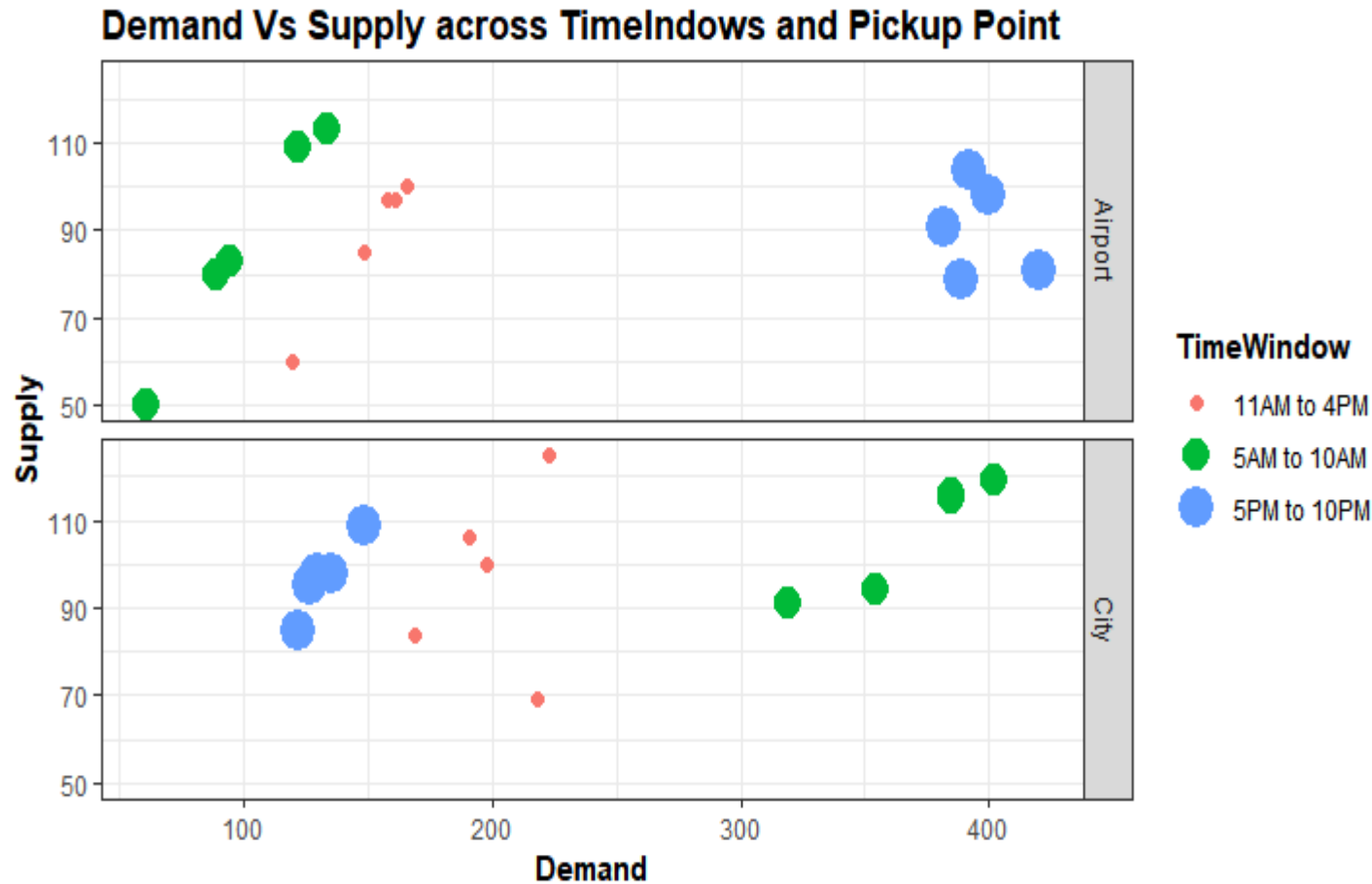
**No of Trips completed by TimeWindow**

Supply of Cab between 5 to 10 AM and 5 to 10 PM is same as rest of the day





# Cab Demand and Supply by Time and Pickup Point



- There is increase in Cab Demand between 5 AM to 10 AM for City Pickups
- There is increase in Cab Demand between 5 PM to 10 PM for Airport Pickups
- However, no corresponding increase in supply for both pick up points

## Pickup Point Vs Trip Status

	Cancelled	No Cars Available	Trip Completed
Airport	198	1713	1327
City	1066	937	1504

	Cancelled	No Cars Available	Trip Completed	Total
Airport	6%	53%	41%	100%
City	30%	27%	43%	100%

	Cancelled	No Cars Available	Trip Completed
Airport	16%	65%	47%
City	84%	35%	53%
Total	100%	100%	100%

- Supply shortage for City to Airport Trips is due to Cancellation of cabs and Cabs unavailability
- Supply shortage for Airport to city is majorly due to Cars unavailability

# Problem Identification and Proposed Solution

## **Demand and Supply between 5 AM to 10 AM -**

- The Demand and Supply gap during 5 AM to 10 AM for City to Airport Pickups is majorly due to cancellation of cabs. It is observed that out of total cabs cancelled, 85% are cancelled between this time.  
Introducing Higher Incentive Model will improve the supply shortage during this time.
- To plug the demand supply gap (2300 Cabs requirement) we need to fix the cancellation issue which would result in availability of 2000 cabs .

## **Demand and Supply between 5 PM to 10 PM -**

- 53% of the cab requests between 5 PM to 10 PM for Airport to City Pick up are not met due to Unavailability of the cabs.
- One reason for unavailability of the cabs could be that the drivers are not accepting the trip requests to the airport due to long waiting period as there is less Cab demand between 11 AM to 4 PM.
- There is a need to resolve the above issue however the data provided is insufficient to address this issue.