

UBER SUPPLY-DEMAND GAP CASE STUDY

By
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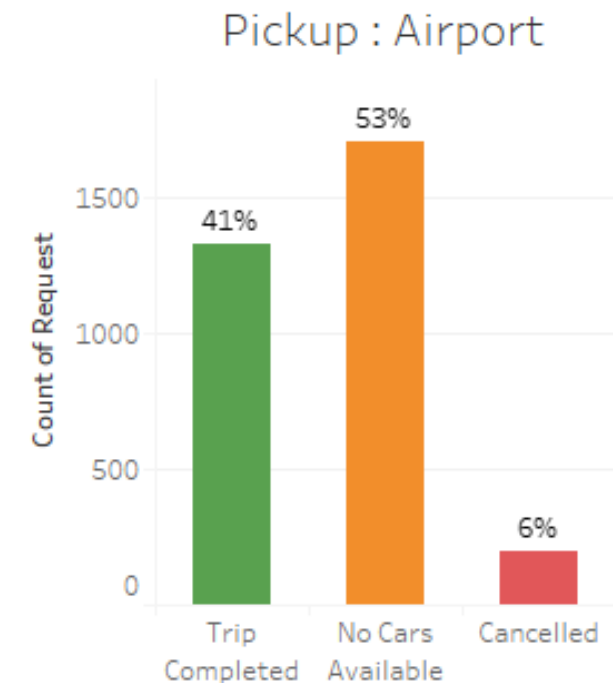
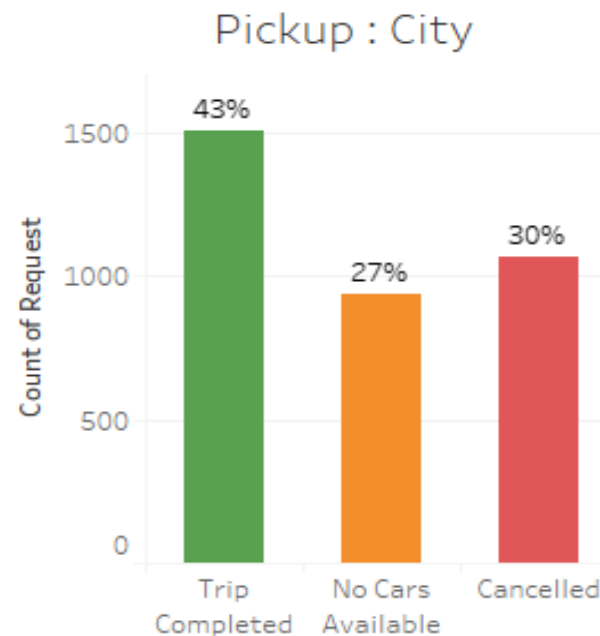
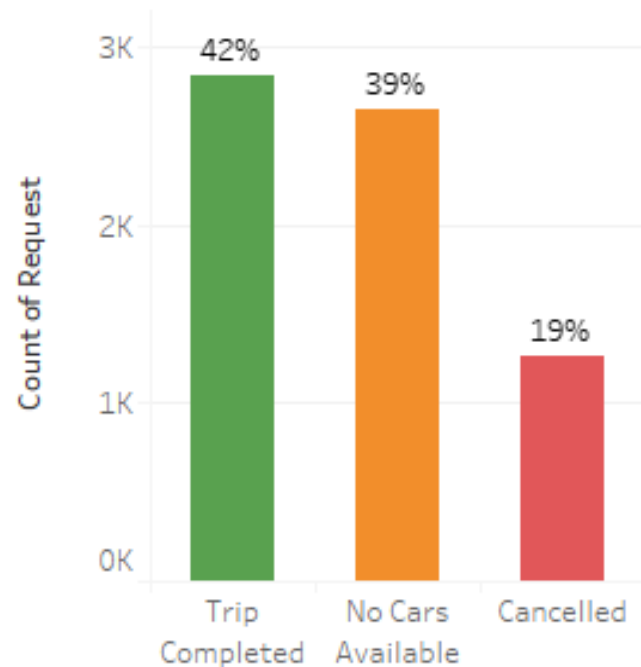
Objective

- ❖ Identify Root Cause of Uber Demand Supply Gap on Airport Route
 - Identify Root Cause of Driver Cancellation
 - Identify Root Cause of Car Unavailability
- ❖ Identify Most Problematic Route
 - Airport to City
 - City to Airport
- ❖ Recommendation to reduce Demand Supply Gap

- ❖ Total 6745 observation found.
- ❖ Final status of trip
 - Trip Completed
 - No Cars Available
 - Cancelled
- ❖ Pickup Points
 - City
 - Airport
- ❖ Car Booking Request Time & Drop Off Time not in proper format.
 - Covert column in Date Time format
 - Derive new columns like Hour and Time Of Day for booking request made.
- ❖ Missing data for Driver Id & Drop Off Time
 - Drop time is available only when trip is completed, according to this data is valid.
 - Driver id available when trip is completed or driver rejected/cancelled booking request, in this scenario also data is valid.

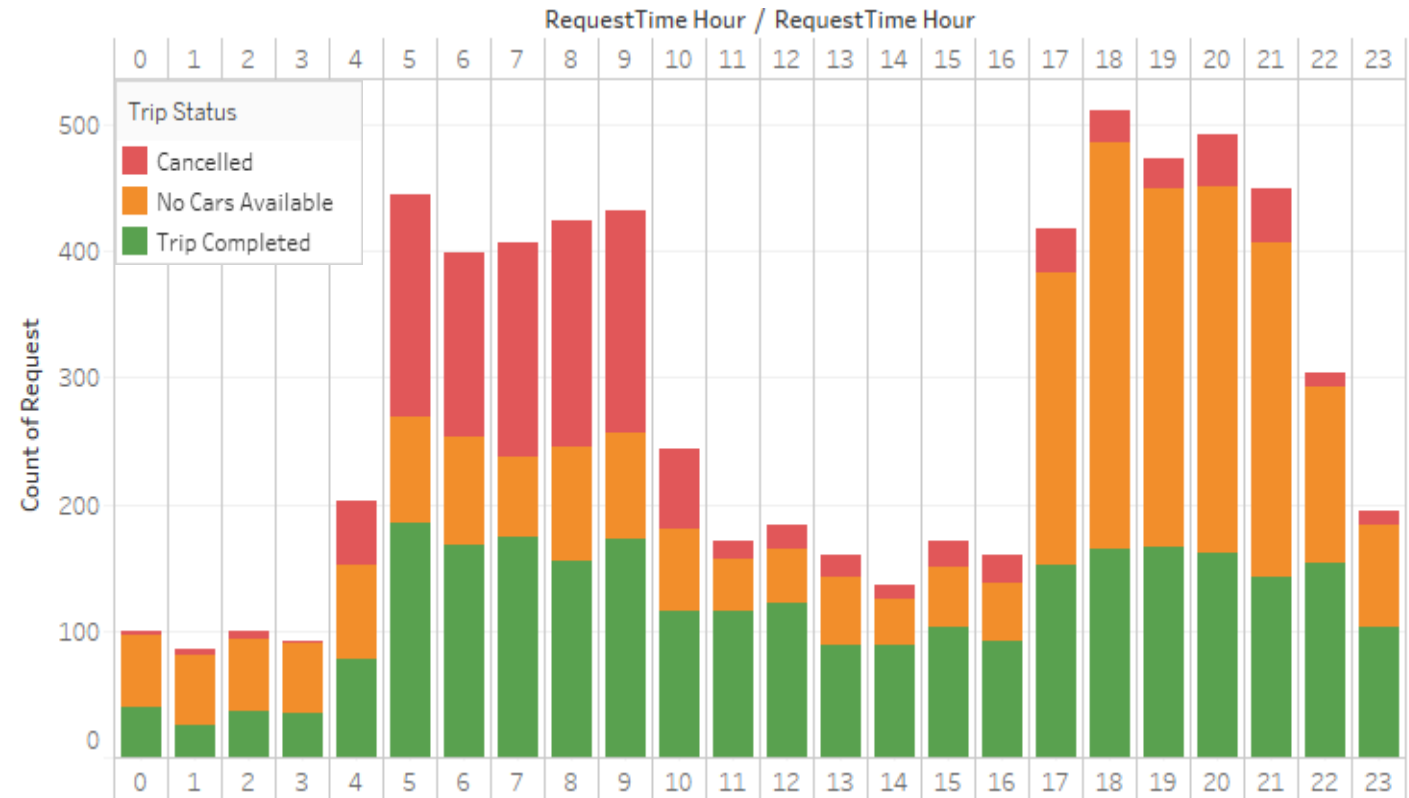
Observation

- ❖ On Airport route, overall only **42%** of total request get fulfilled.
- ❖ Approximately same pattern observed in **City to Airport(43%) & Airport to City (41%)** trip.
- ❖ In City pickup there are equal number of booking cancellation & car unavailability issue occurs.
- ❖ In case of Airport pickup, not much cancellation happening, major problem with **Cars Unavailability at Airport.**

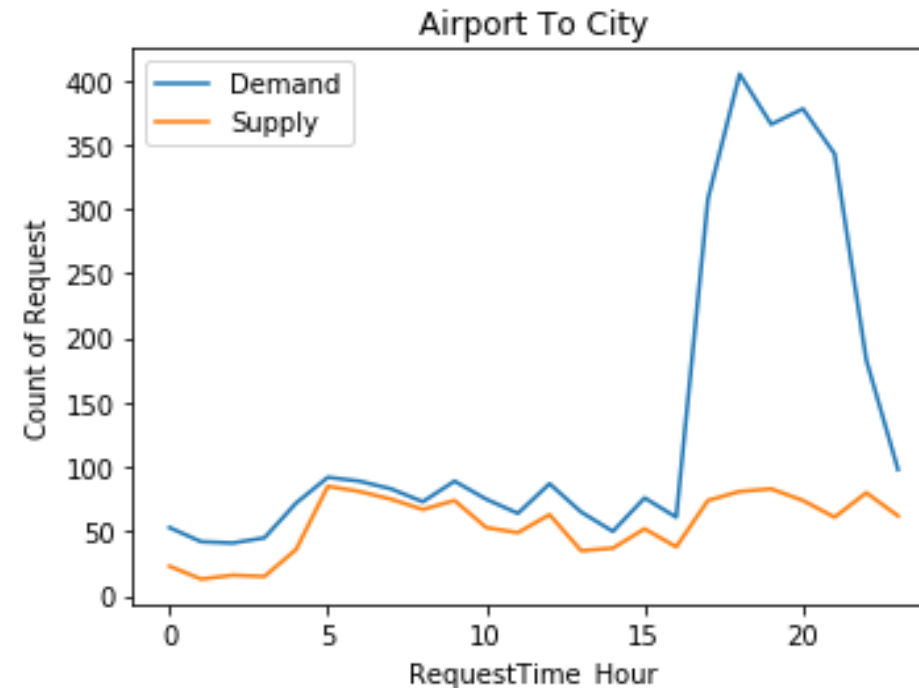
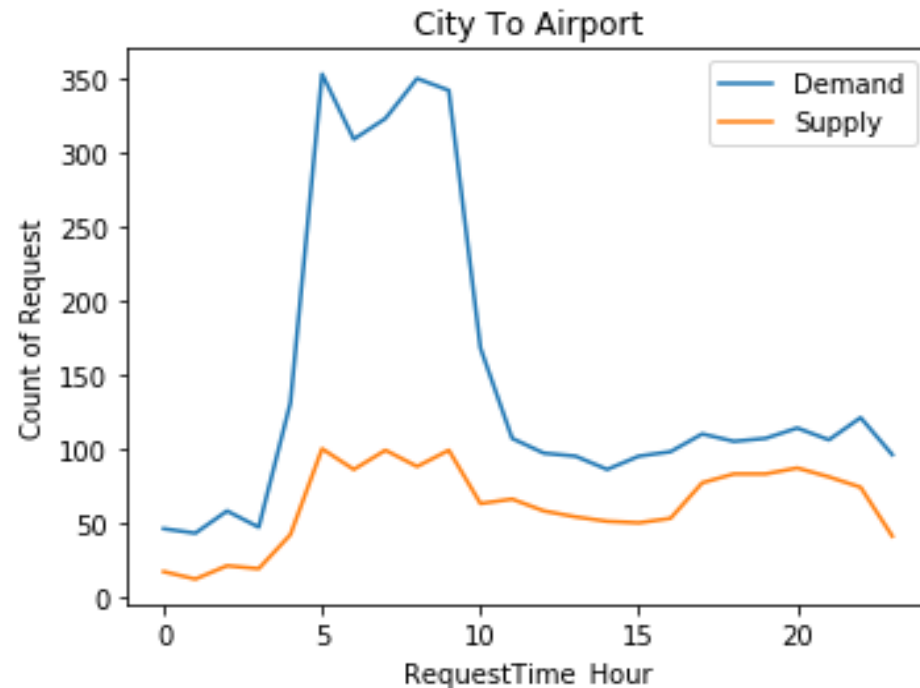


Observation

- ❖ Analyse cab demand & supply trend by hour of the day
- ❖ Graph shows **Bimodal Distribution** of request.
- ❖ First peak at **5 am to 9 am**
 - High rate of cancellation in this time slot
 - Few of the cases of car unavailability
- ❖ Where as second peak at **5 pm to 10 pm**
 - Very few cancellations happing
 - More than **50%** of request facing car unavailability issue in this slot.



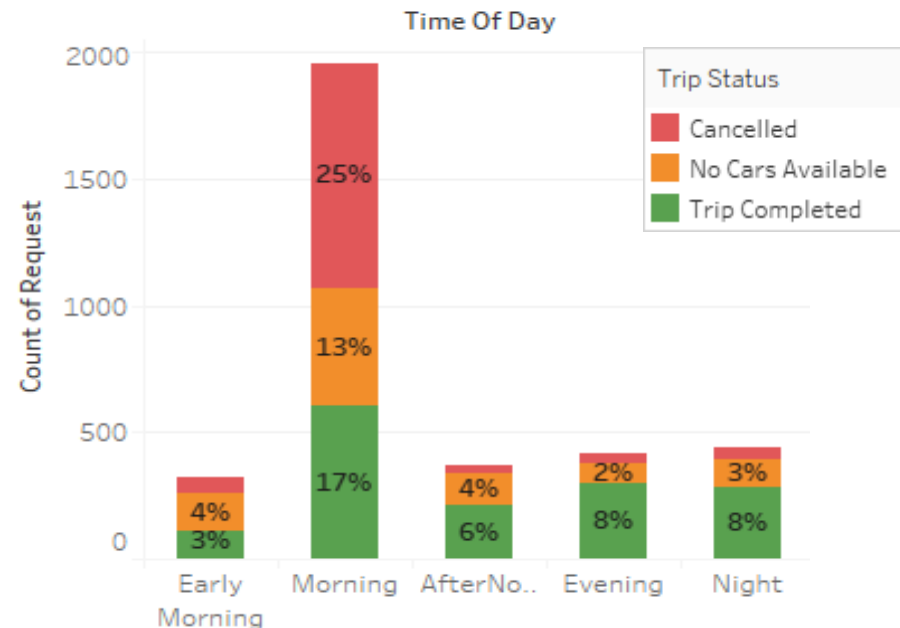
Observation : City vs Airport Pickup



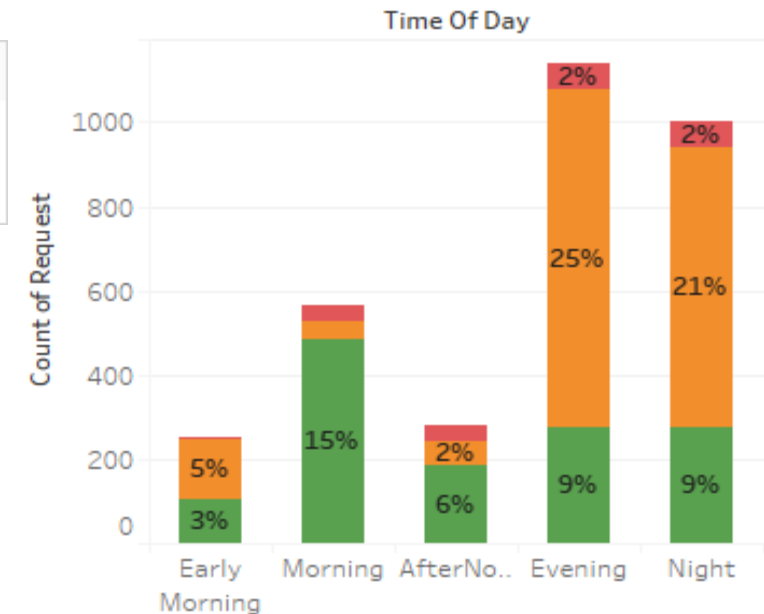
- ❖ Demand of cars are high for City to Airport trip from 5 am to 10 am, approximately 325 request coming per hour but the supply was very less around 100 request get fulfilled, so **approximately 70% of gap** in demand and supply.
- ❖ Whereas in Airport to City trip demand was high from 4 pm to 10 pm, here approximately 350 request per hour but around 75 request get fulfilled, so **approximately 80% of gap** in demand and supply.

Observation : City vs Airport Pickup

Demand - Supply Gap : City



Demand - Supply Gap : Airport



Derived Field

Early Morning: 12 AM To 5 AM

Morning: 5 AM To 12 PM

Afternoon: 12 PM To 4 PM

Evening: 4 PM To 8 PM

Night: 8 PM To 12 AM

- ❖ **City Pickup:** Overall **25% of cancellation** is happening in morning hours, apart from that **13% car unavailable** for airport drop
- ❖ **Airport Pickup:** Overall 50% of request of the day not getting fulfilled in Evening & Night hours, major reason is **car unavailability (46 %)**

Problem Area: City vs Airport Pickup

- ❖ Overall there is huge demand and supply gap in car booking.
- ❖ Reason behind heavy Cancellation in Morning hours for City pickup
 - City to airport trip normally take 50-55 minutes (average).
 - In Day time (Morning & Afternoon hours) there is very less demand from Airport to City.
 - So if driver accepted City to Airport trip, he have to wait for longer time at Airport for next trip.
 - Driver might get more trips within City in morning (peak) hours and can earn more as compare to Airport drop.
- ❖ Reason behind Car Unavailability in Evening & Night hours for Airport pickup
 - In evening & night hours many international and domestic flights are arriving, because of this sudden spike in demand of cars.
 - In evening hours very less cars moving towards Airport because of low demand for City to Airport trip
 - Hence Car Unavailability issue occurs at Airport in Evening & Night hours.
- ❖ **So problem is most of the drivers not willing to go Airport because of less demand in day time and can't wait ideal for long time.**
- ❖ **Demand & Supply Gap at Airport pickup in evening hours is 50% where as its 38% in morning hours for City pickup**

Recommendation

- ❖ Encourage driver to accept airport trips in morning hours by providing incentive per airport trip.
- ❖ Once driver accept City to Airport trip, try to reduce driver wait time at airport by providing near by pickup on priority basis.
- ❖ In night hours driver should to be at Airport or at near by location to accept Airport To City trip.
- ❖ Provide some incentive and additional benefit to such driver so they accept the Night airport trip..