

Uber Supply-Demand Gap Presentation

SUBMISSION

Name: Manohar Shanmugasundaram

Roll No: DDA1730068

Uber Supply-Demand Gap Analysis

Background

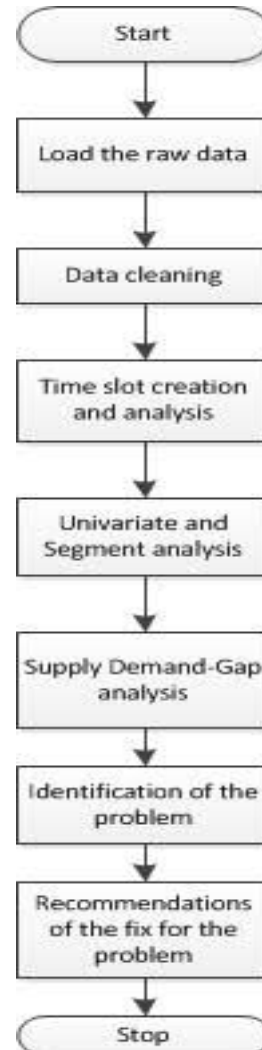
Uber (India) is a taxi technology company, where customer can book the taxi using a more convenient ways like mobile app, online, etc. The way it works is customer can request a taxi by selecting their pickup location and tap request and nearest driver will pick the request and will come to the customer.

Business Objectives

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. As a result of this analysis are presented in the further sections of this document and with the root cause(s) for the problem and possible hypotheses of the problem(s) and recommended ways to improve them.

Problem solving methodology

The following flowchart provides the steps carried out for this Supply-Demand Gap analysis:

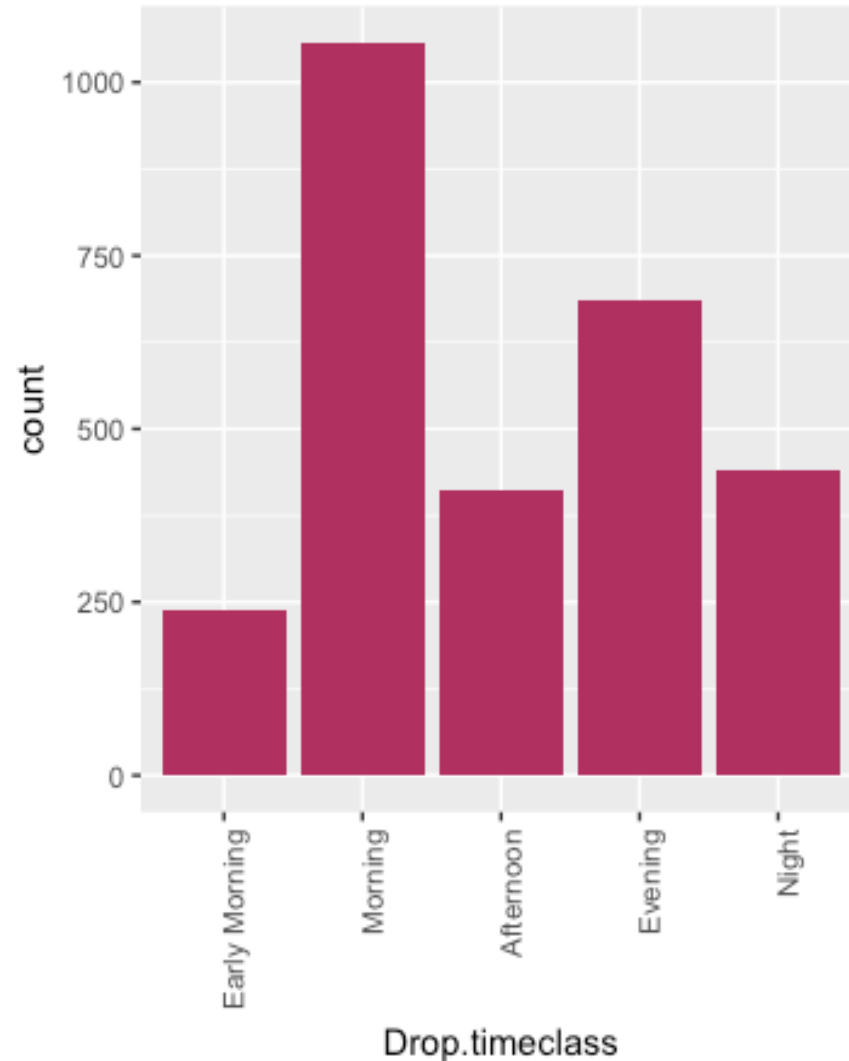
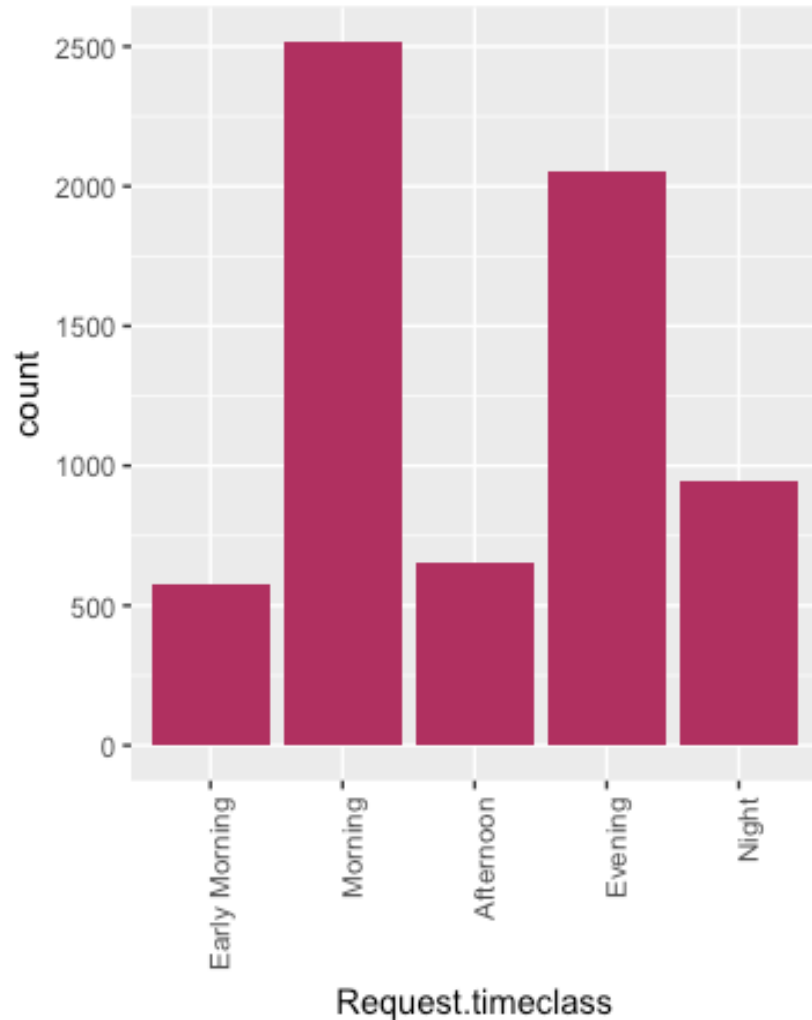


Time Slot Analysis

Created the following time slots for Request and Drop timelines provided in the data set, this will help in analyzing and identifying the time slot segment which is causing the problem. All further analysis and findings will be based on this below time slots in this presentation.

Time period	Time slots
00:00 to 04:59	Early Morning
05:00 to 11:59	Morning
12:00 to 15:59	Afternoon
16:00 to 20:59	Evening
21:00 to 23:59	Night

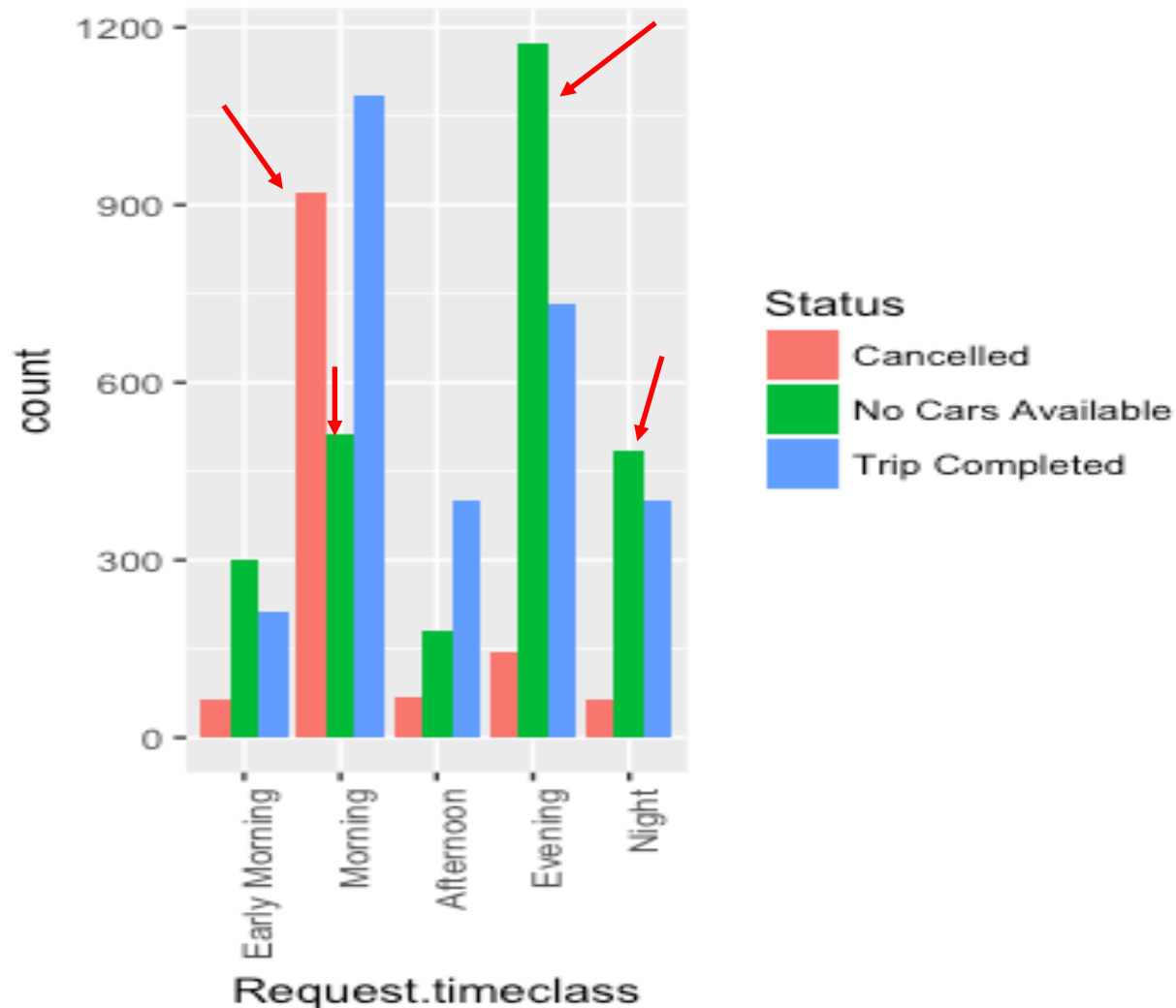
Trip Time Slot Analysis



The plot shows the pickup and drop timeslots groups like morning, evening, etc. This will given a indication for the time slot analysis.

This plot clearly indicates that the **Morning** and **Evening** are the time slots where the taxi requests are high.

Trip Status Analysis



This plot analyze the status of the trip requests ('Cancelled', 'No Cars Available' and 'Trip Completed') against the timelines.

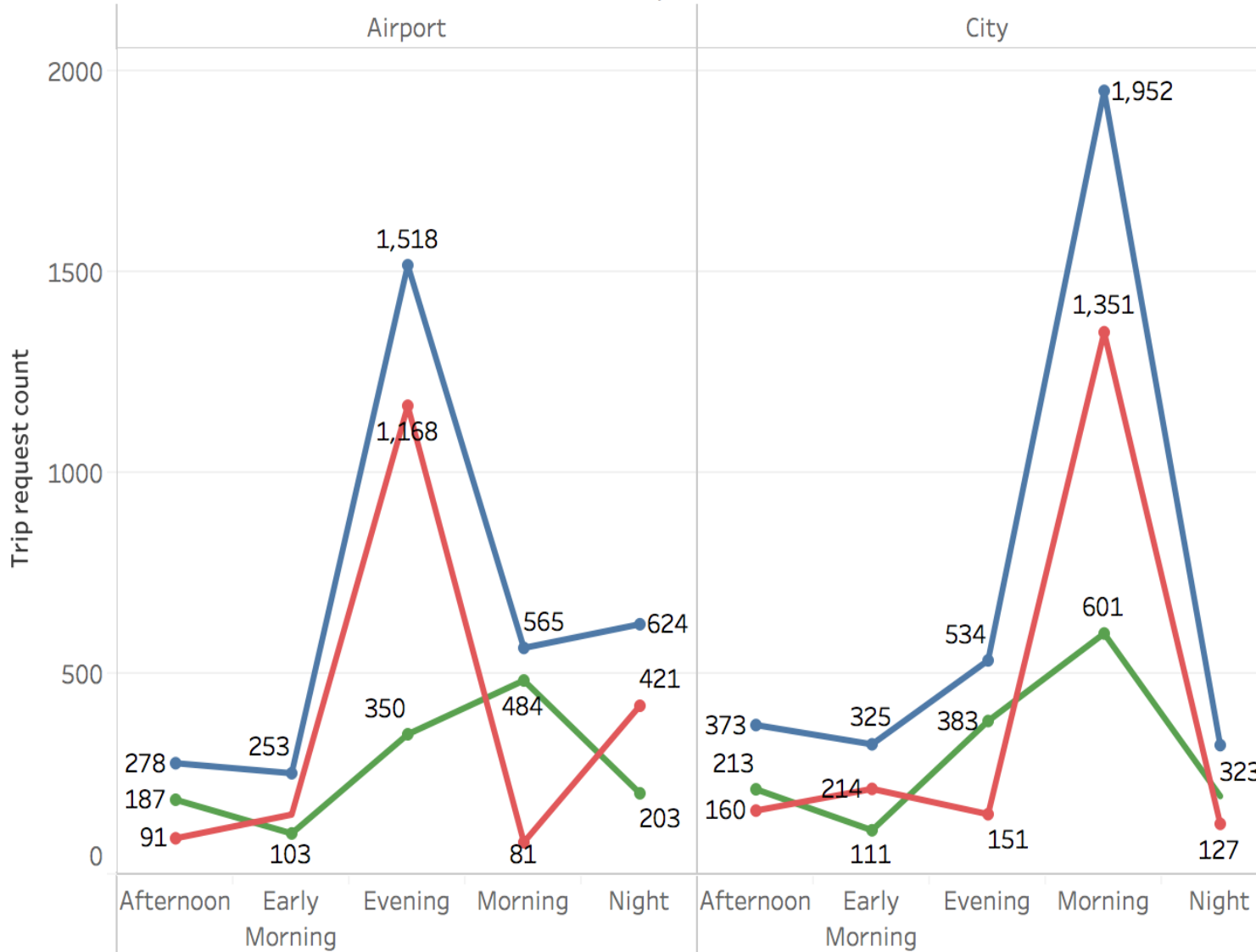
This plot clearly indicates the below:

1. The number of '**cancelled**' are high in the **morning** time slot.
2. The number of '**No Cars Available**' are high in the **evening, morning** and **night** time slots.

So from this plot it is clear, the problem time slots to look are **morning, evening and night**.

Supply Demand-Gap Analysis

Pickup.point / Request.timeclass



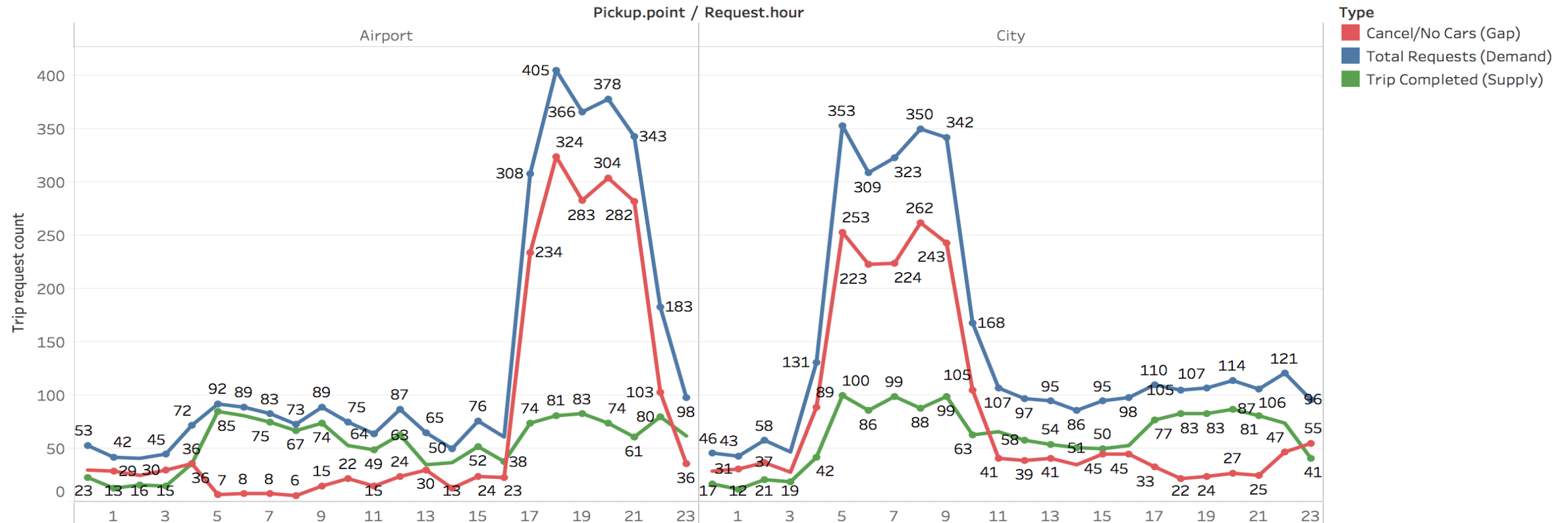
Type

- Cancel/No Cars (Gap)
- Total Requests (Demand)
- Trip Completed (Supply)

This plot is for the supply demand-gap analysis and below are the findings on the problem areas for the location and timeslots :

Pickup Point	Gap (Red lines in the plot)
Airport	Evening timeslot - where the supply is only 350 and gap is 1158 requests (total requests 1518).
Airport	Night timeslot - where the supply is only 203 and gap is 421 requests (total requests 624).
City	Morning timeslot – where the supply is only 601 and gap is 1351 requests (total requests 1952).

Supply Demand-Gap Analysis (Hourly)



This plot is an extension of the previous supply demand-gap analysis plot and this provide further insight at hourly level. Below are the conclusions from the above plot.

Pickup Point	Gap (hours)
Airport	The supply is very low in Airport from 17:00 to 22:00 hours.
City	The supply is very low in City from 04:00 to 10:00 hours.

Reason for the Supply Demand-Gap

From the previous plots we identified that the following timings and locations are the problem areas for Supply Demand-Gap. The below table lists the possible reasons for this type of gap in the supply.

Pickup Point	Gap (hours) where supply is very low	Reason
Airport	17:00 to 22:00 hours	One possible reason for this issue could be more flights landing in the airport between evening hours from 17:00 and 22:00 and the corresponding supply is not enough in the airport location to cater to this demand in this time slot.
City	04:00 to 10:00 hours	One possible reason for this issue could be more flights taking off from the airport between morning hours from 04:00 and 10:00 and the corresponding supply is not enough in the city locations to cater to this demand in this time slot.

Recommendations to resolve the supply-demand gap

Below are the recommendations from this analysis for the improvements of the problem (i.e. cancellation and non-availability of cars) organically.

- **Increase the supply of taxi** in the following pickup points organically during the following hours based on the supply-demand gap analysis.
- Frequent analysis required similar to this to see whether there is an increase or decrease in the demand and decide the taxi supply based on the findings.

Airport		City		Recommendations
Hours	Gap (no of requests)	Hours	Gap (no of requests)	
17:00	234	04:00	89	<ul style="list-style-type: none"> Organically increase the number of taxis on evening in the Airport and also increase the taxis in the City for the morning hours. The actual increase of the taxis can be based on the number of requests which are currently not supplied during this period (based on this table).
18:00	324	05:00	253	
19:00	283	06:00	223	
20:00	304	07:00	224	
21:00	282	08:00	262	
22:00	103	09:00	243	
		10:00	105	