Assignment Submission
On
Uber Supply-Demand Gap

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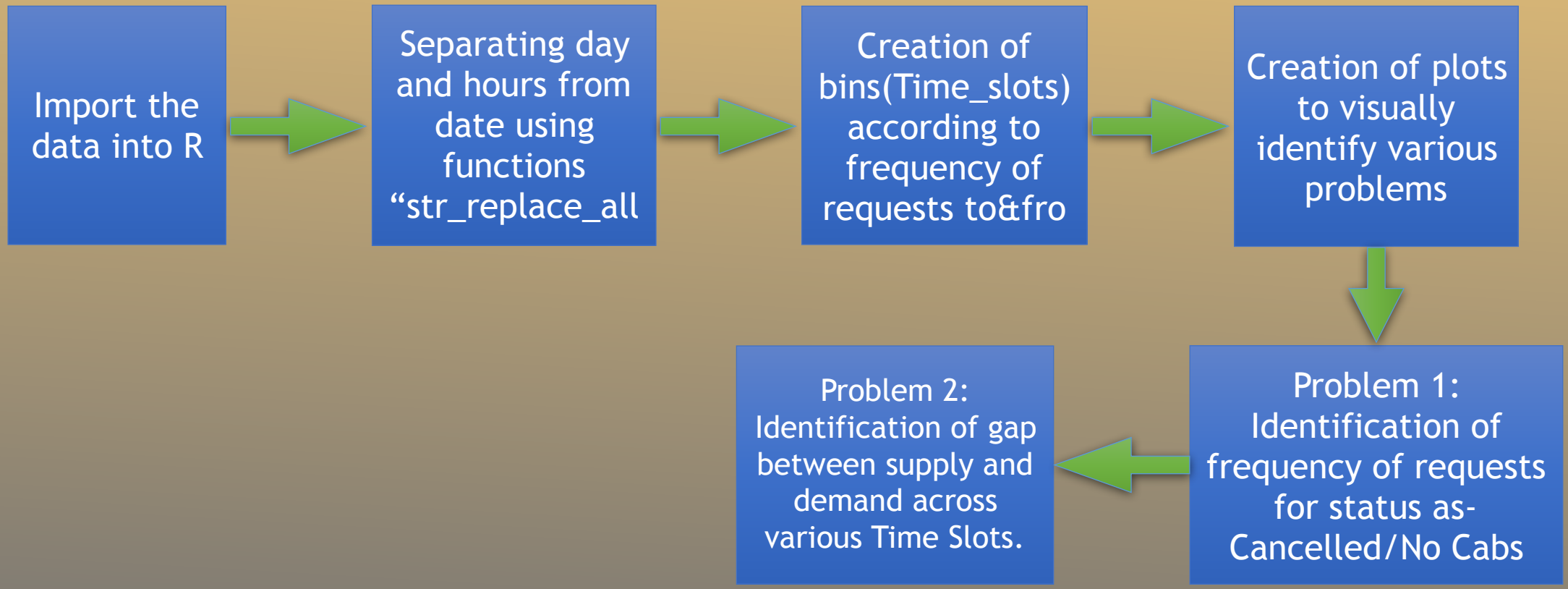
Summary of Analysis

From the data provided by Uber:

- An analysis is done to identify the “gap between demand and supply” of Cabs.
- Identification of most problematic hours of a day/Time Slots is done based on the frequency of requests.
- Most problematic requests (such as Unavailability of Cars/Cancellation of requests) from the Airport and from within the City are analysed to understand the reasons behind these problematic requests and ways are recommended to resolve these.

Methodology Used



Data Preparation using Derived Variables

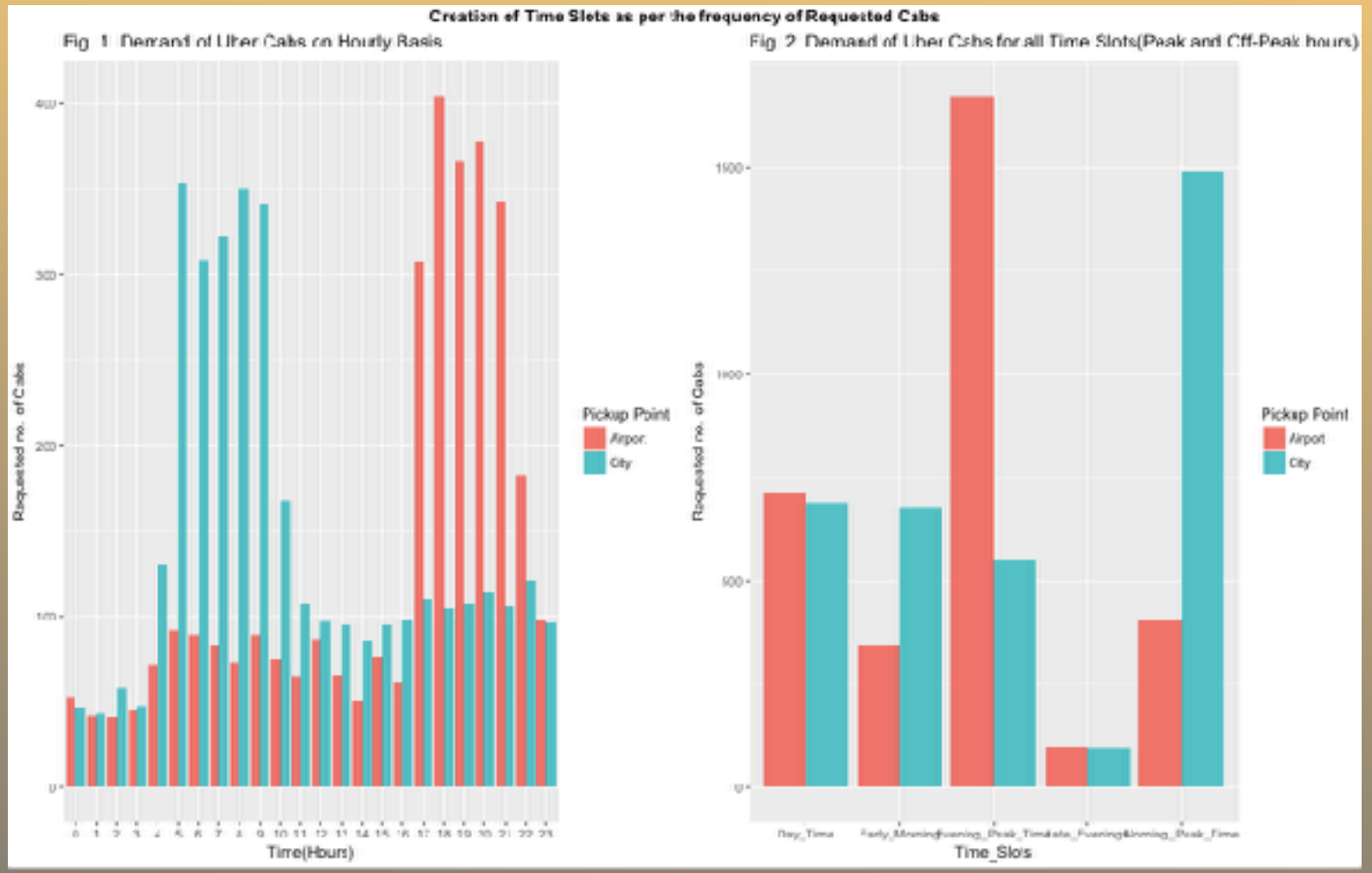
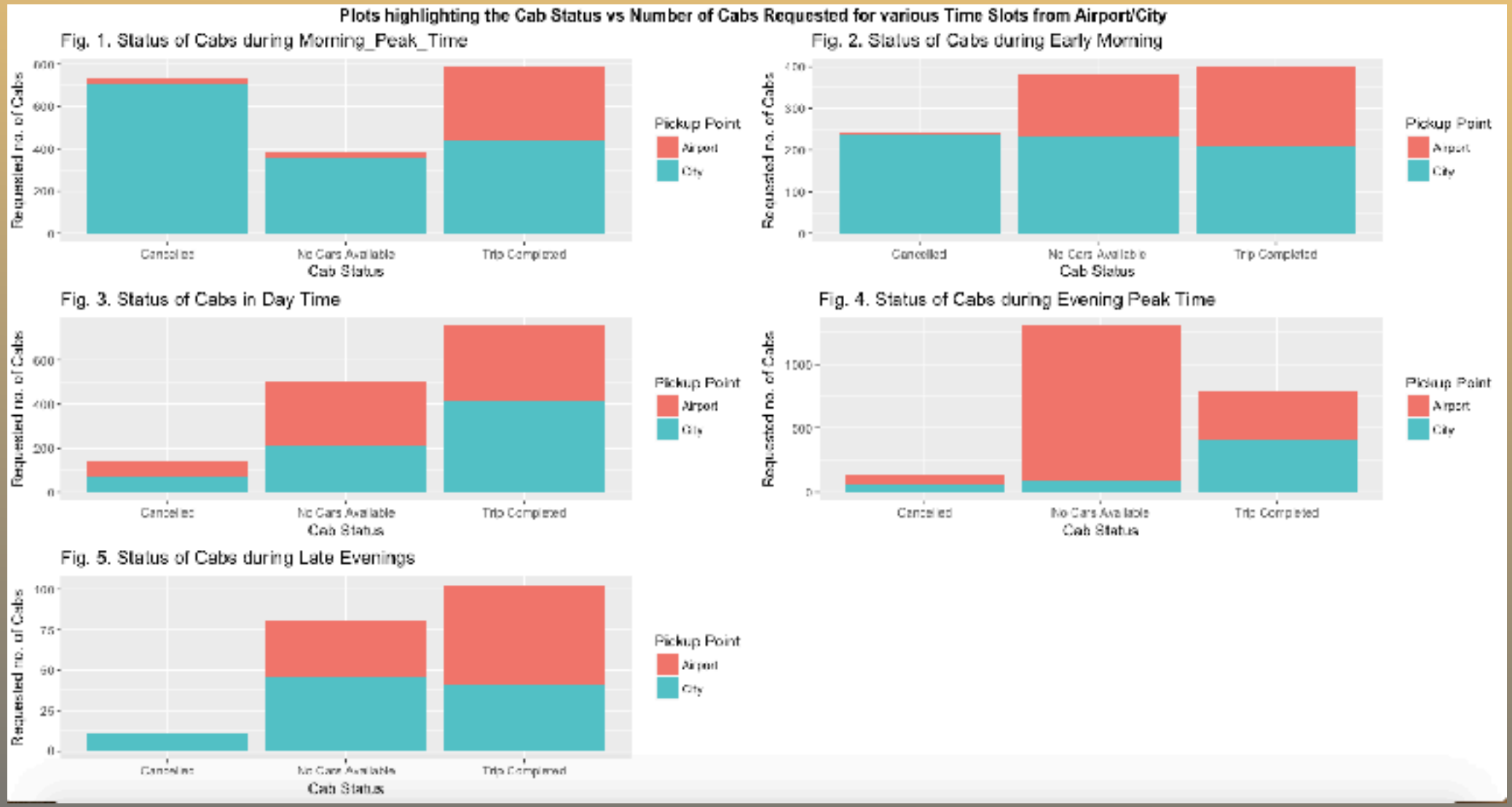


Fig.1. Depicts the frequency of Cabs requested for pick up points Airport and City on hourly basis on a 24 hrs scale
Fig.2. Represents the Time slots(derived bins) based on the frequency of requests made to & fro off Airport/City

Problem Analysis I-Identification of most Problematic type of requests(to & fro off Airport/City) Across various Time Slots



Problem Analysis I-Inferences from the Plot

- It is clearly visible from Fig1 and Fig 4 of the Plot that more number of requests were made during “Morning_Peak Time” and “Evening Peak Time” respectively than during the other Time Slots.
- From Fig 1 it is inferred that during “Morning_Peak Time”most of the requests are made from “City” and has high rate of cancellation of requests:
    A. Total Requested Cabs from City=1492
    B. Number of Cabs Cancelled from City=701
    C. Number of Completed Trips=435
    D. % cancelled trips from City=47%
- From Fig 4 it is inferred that during “Evening_Peak Time”most of the requests are made from “Airport” and not enough Cabs are available to fulfil the requests:
    E. Total Requested Cabs from Airport=1675
    F. Number of unavailable Cabs from Airport=1206
    G. Number of Completed Trips=350
    H. % cancelled trips from Airport=72%

Problem Analysis II-Gap in Demand vs Supply of Uber Cabs

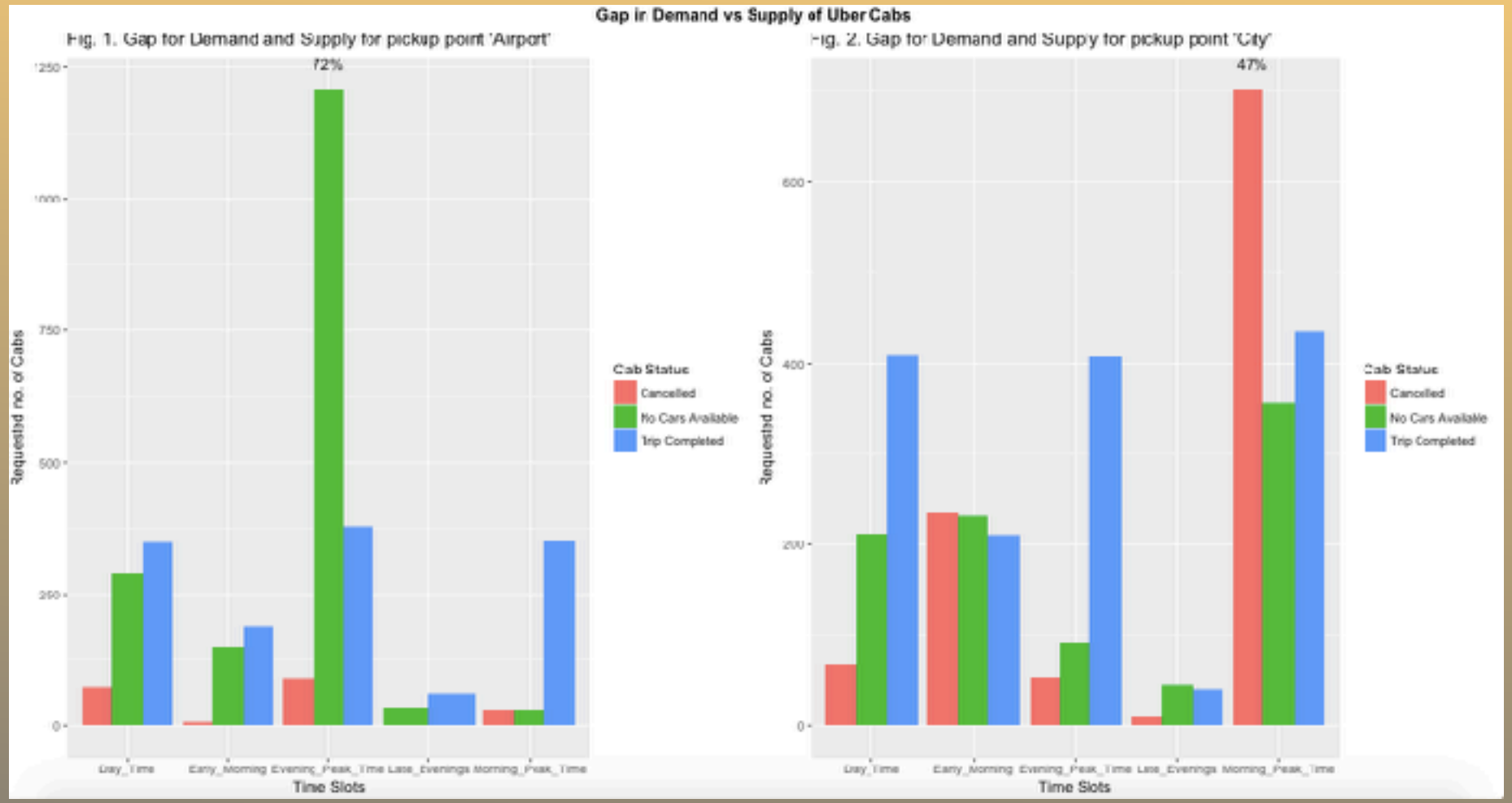


Fig.1. shows Status of Cabs vs Number of Cabs Requested where it is clearly visible that 72% of the total requested cabs from Airport, are not available during “Evening Peak Time”.

Fig.2. clearly shows that most of the cabs(47% of the total number of cabs requested from City are cancelled during “Morning Peak Time”.

What do you think is the reason for this issue for the supply-demand gap?

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Problem I- Cabs getting cancelled during Morning Peak Time
There are larger number of flights departing during Morning Peak Time hence high demand of cabs. But Cab drivers tend to cancel the cabs since :
1). there is no much demand from Airport towards the City during this duration therefore resulting in long hours of waiting time till a customer books a cab from Airport towards City.

2). Distance from Airport towards the City is more which results in more fuel and time consumption if the cab has to depart idle from Airport to take up the next journey from somewhere in the City.

Problem II- Unavailability of enough Cabs during Evening Peak Time:
There is a high demand of Cabs during evening Peak Time as during this period domestic as well as International flights land in the City.

Recommendations on ways to resolve the supply-demand gap

- Terms and conditions to be specified in what cases a cab driver can cancel a trip.
- Reducing the commission charged on cab drivers for coming idle from Airport to the City(which can be compensated by Uber by increasing the prices for the trips within the city during this Time slot.
- Offers/Discounts can be given to the passengers to encourage car pooling.

Thanks