Uber Supply Demand Gap

The analysis highlights crucial **supply-demand gap insights**. **(Fig 1)** shows a high number of cancelled and unfulfilled requests, indicating a **supply shortage to meet demand**. **(Fig 2)** reveals that demand is **higher in city pickups** compared to the airport, suggesting an imbalance in driver allocation. **(Fig 3)** identifies **early morning and evening** as peak demand hours with insufficient supply, causing customer dissatisfaction. **(Fig 4)** indicates **Fridays have the highest ride requests**, leading to greater supply-demand gaps if driver availability is not increased. **(Fig 5)** shows different peak hours across days, implying that **supply planning must be customised daily** to match demand trends effectively. **(Fig 6)**reveals airport pickups face higher cancellations, creating a **supply deficit for airport demand**. **(Fig 7)** indicates demand is slightly higher in **PM slots**, requiring better supply coverage in evenings. **(Fig 8)** shows most trips are **short-duration intra-city rides**, but gaps persist due to limited drivers in peak slots. **(Fig 9)** shows weak numerical correlations, indicating supply-demand gaps are driven more by **categorical factors like pickup point and status**. Overall, the insights emphasise the need for **strategic driver incentives, shift scheduling, and location-based supply planning** to bridge the supply-demand gap efficiently.

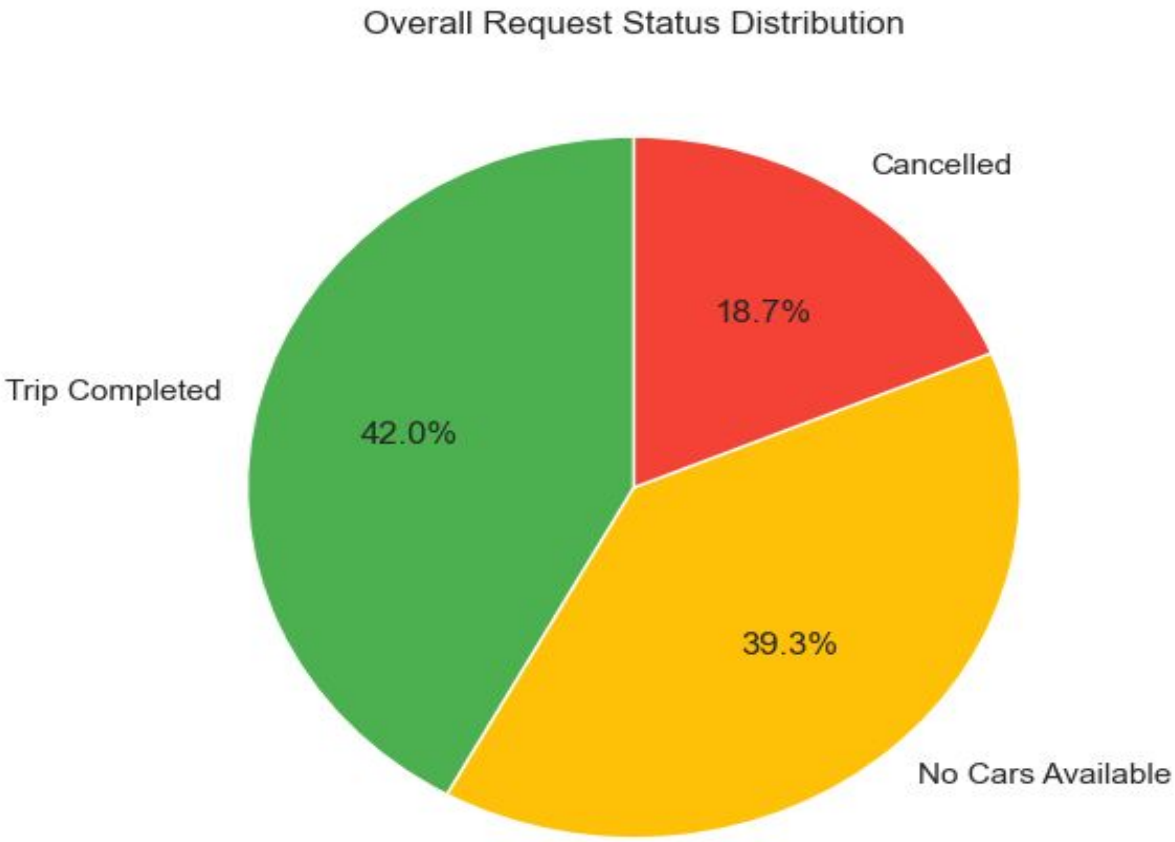

Overall Request Status Distribution
Cancelled
18.7%
Trip Completed
42.0%
39.3%
No Cars Available

Fig 1

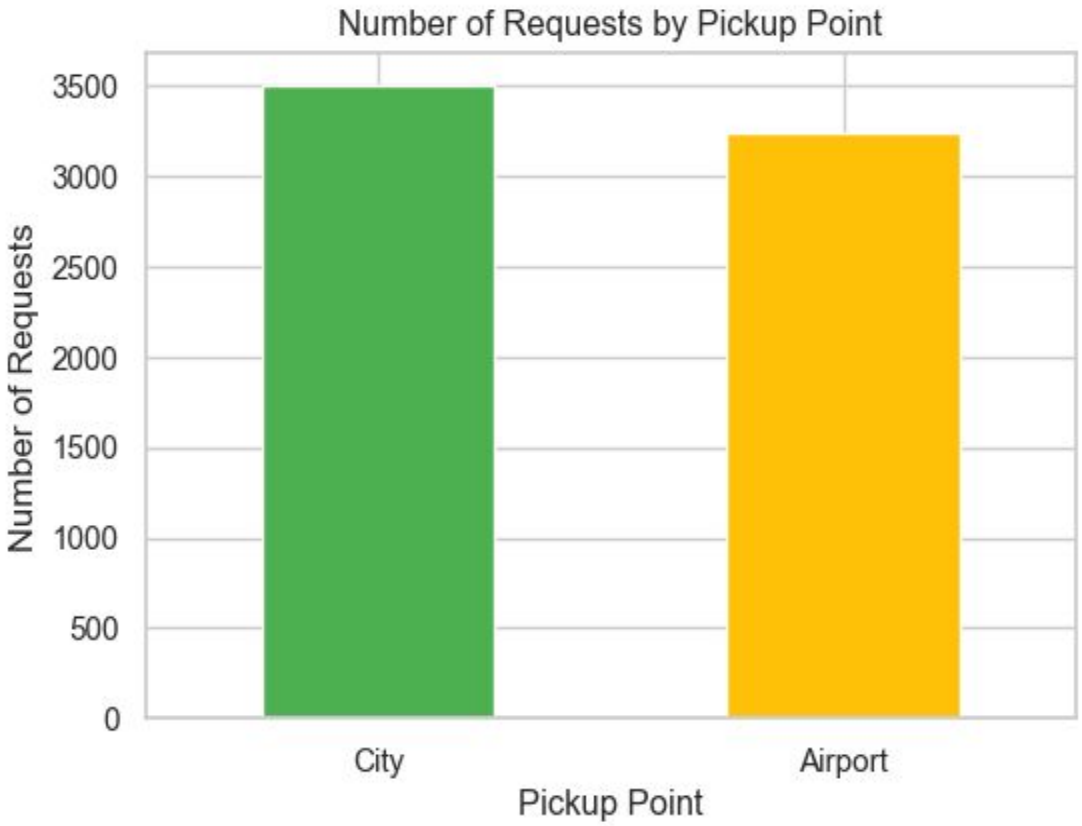
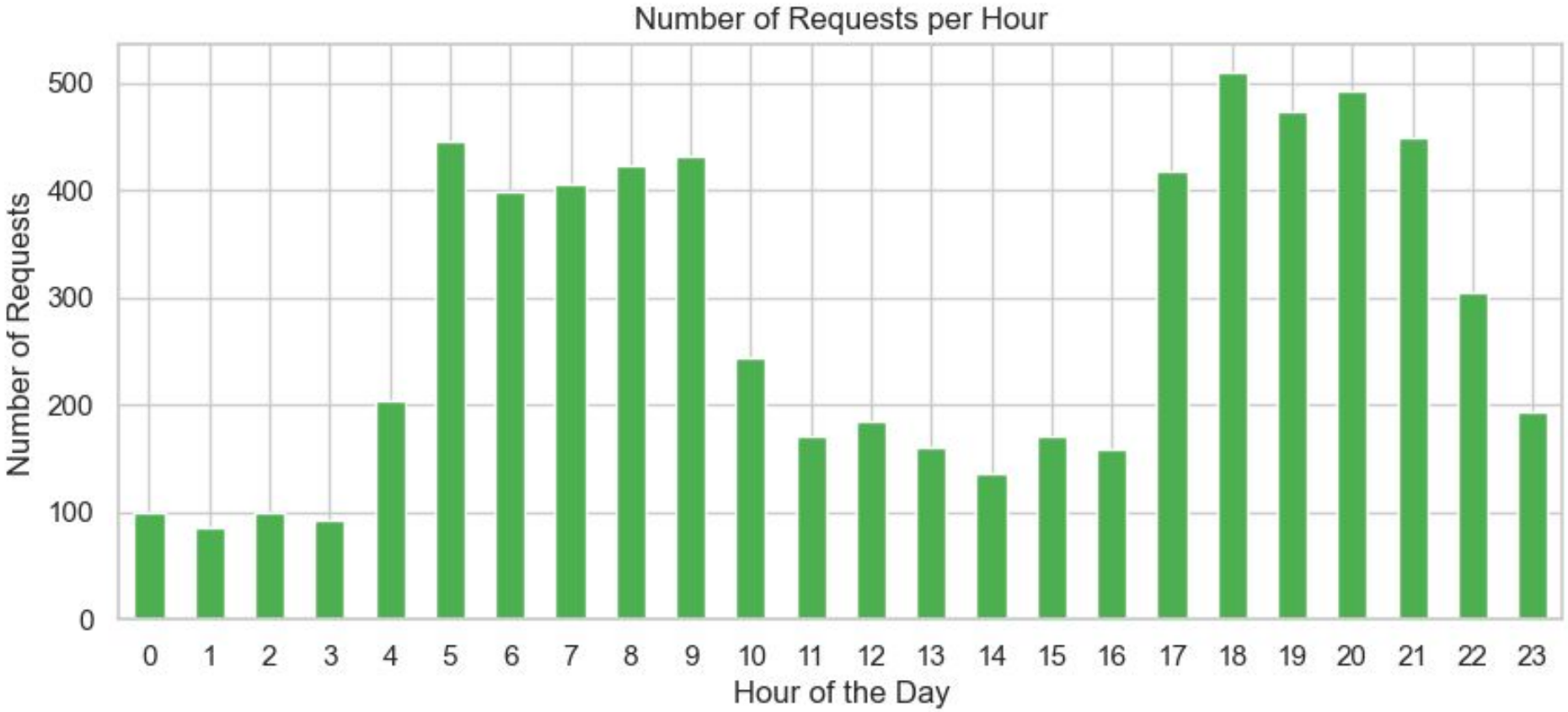

Number of Requests by Pickup Point
Number of Requests
3500
3000
2500
2000
1500
1000
500
0
City
Airport
Pickup Point

Fig 2


Number of Requests per Hour
Number of Requests
0
100
200
300
400
500
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Hour of the Day

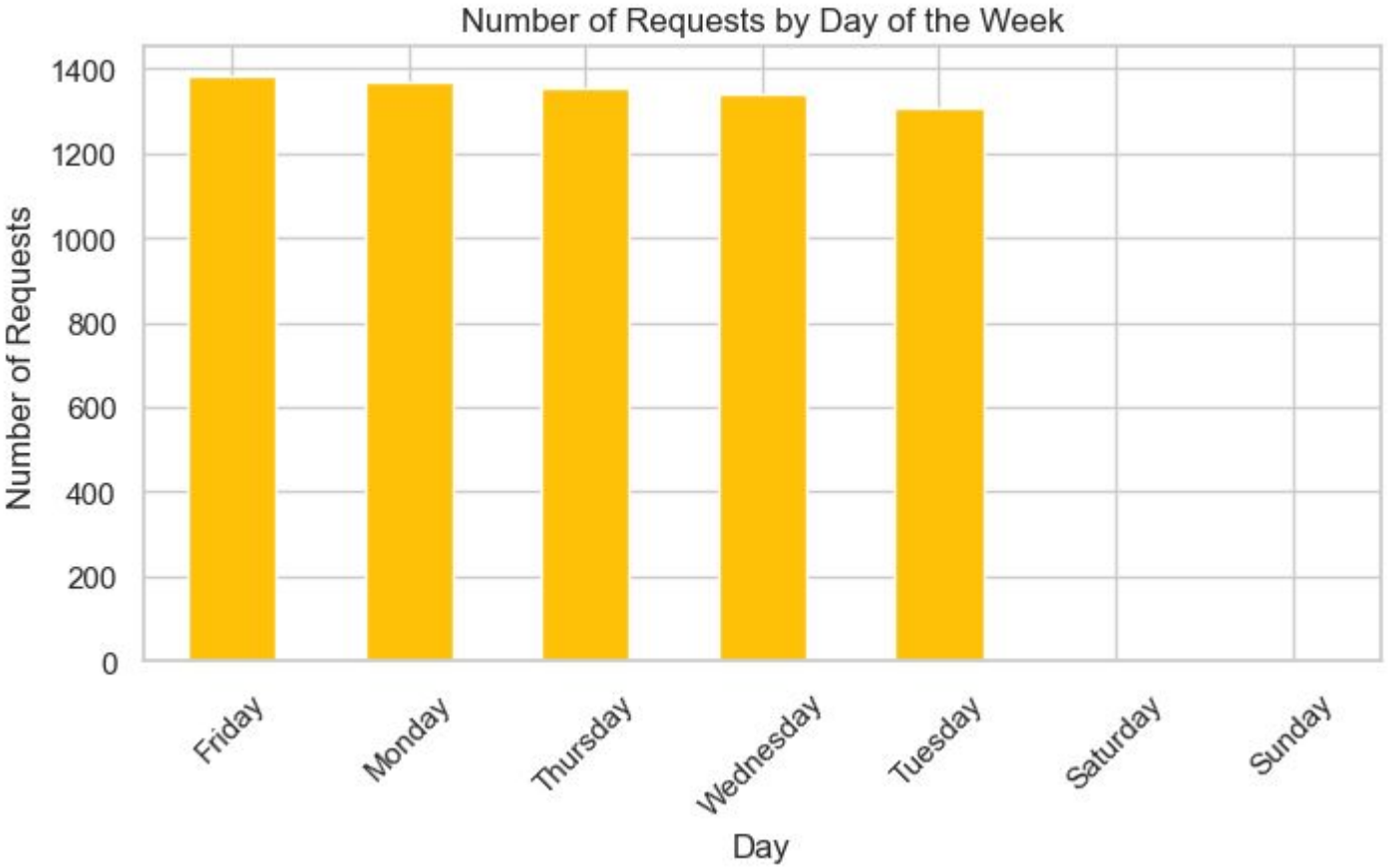

Number of Requests by Day of the Week
Number of Requests
1400
1200
1000
800
600
400
200
0
Friday
Monday
Thursday
Wednesday
Tuesday
Saturday
Sunday
Day

Fig 4

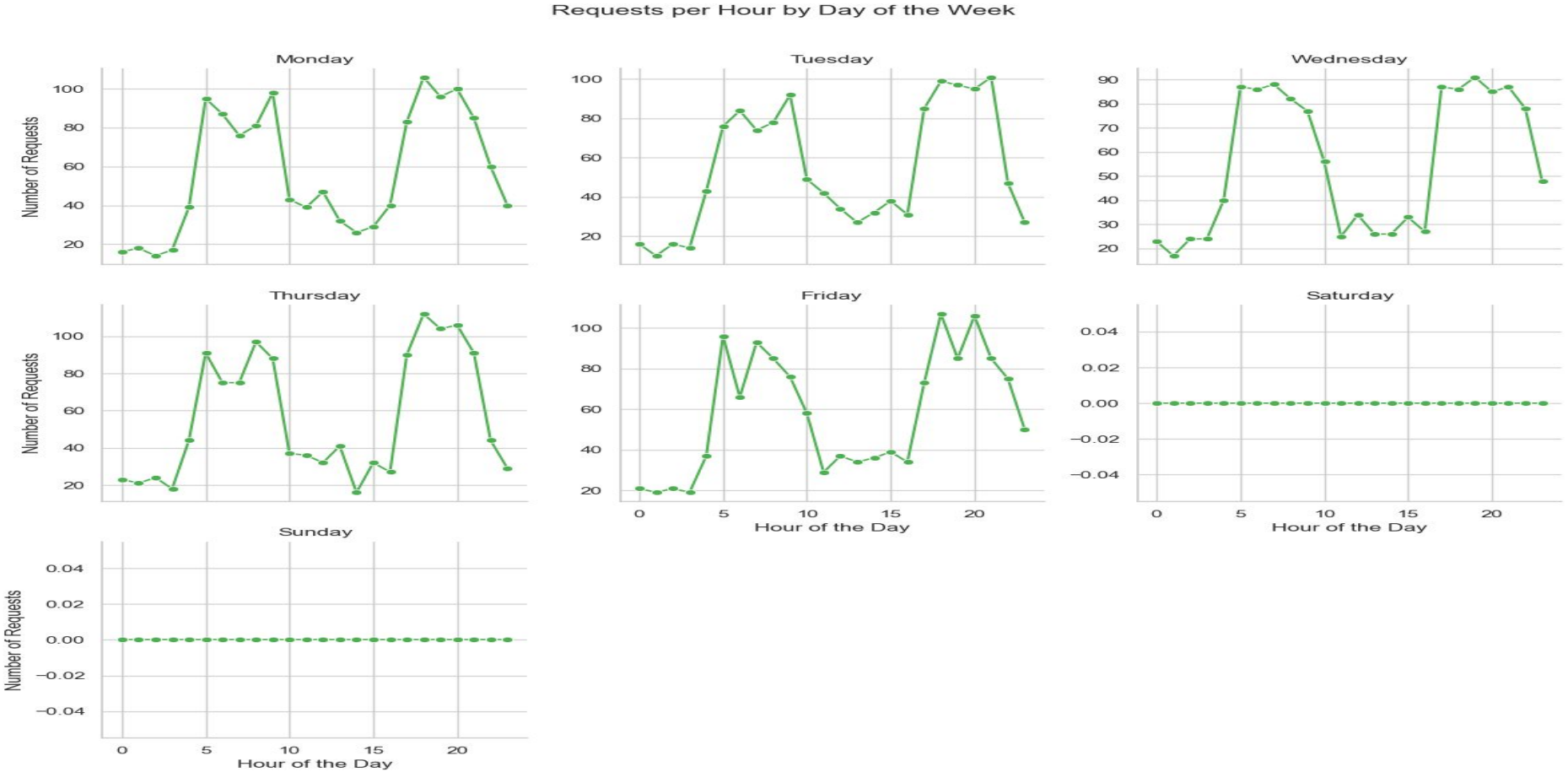

Requests per Hour by Day of the Week
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Number of Requests
Hour of the Day

Fig 5


Status Distribution by Pickup Point
Number of Requests
3500
3000
2500
2000
1500
1000
500
0
Airport
City
Pickup Point
Status
Cancelled
No Cars Available
Trip Completed

Fig 6

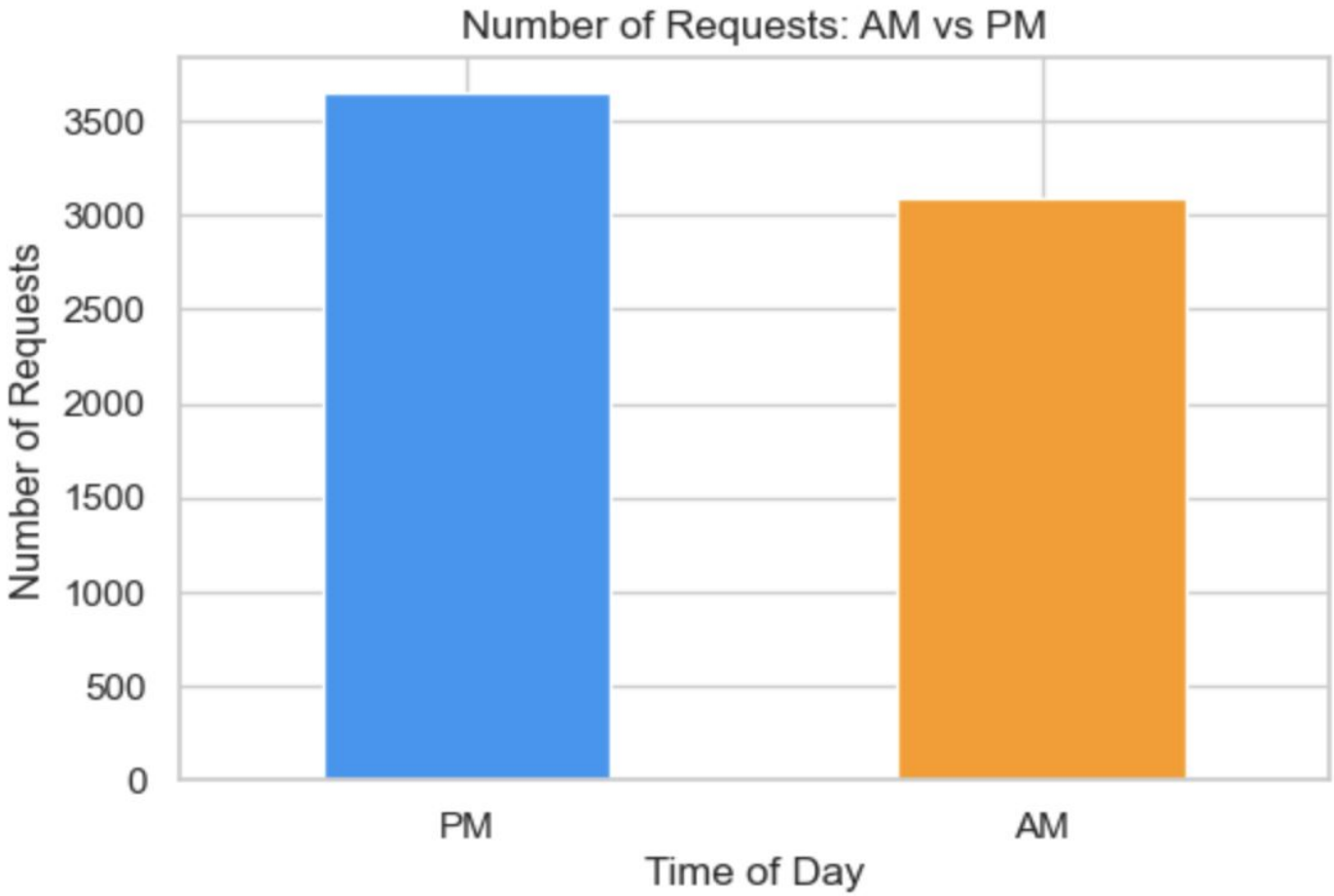

Number of Requests: AM vs PM
Number of Requests
3500
3000
2500
2000
1500
1000
500
0
PM
AM
Time of Day

Fig 7

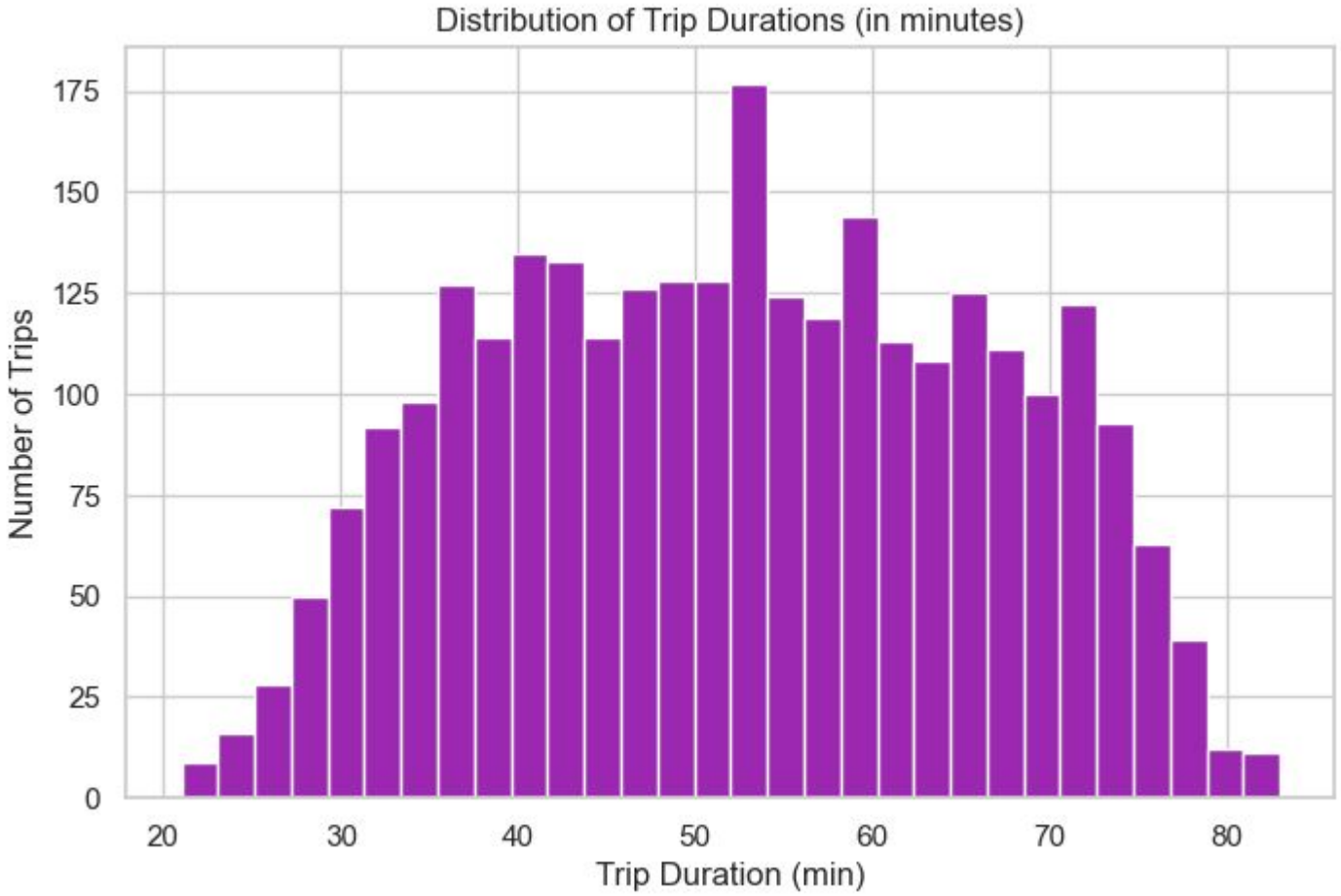

Distribution of Trip Durations (in minutes)
Number of Trips
0
25
50
75
100
125
150
175
20
30
40
50
60
70
80
Trip Duration (min)

Fig 8

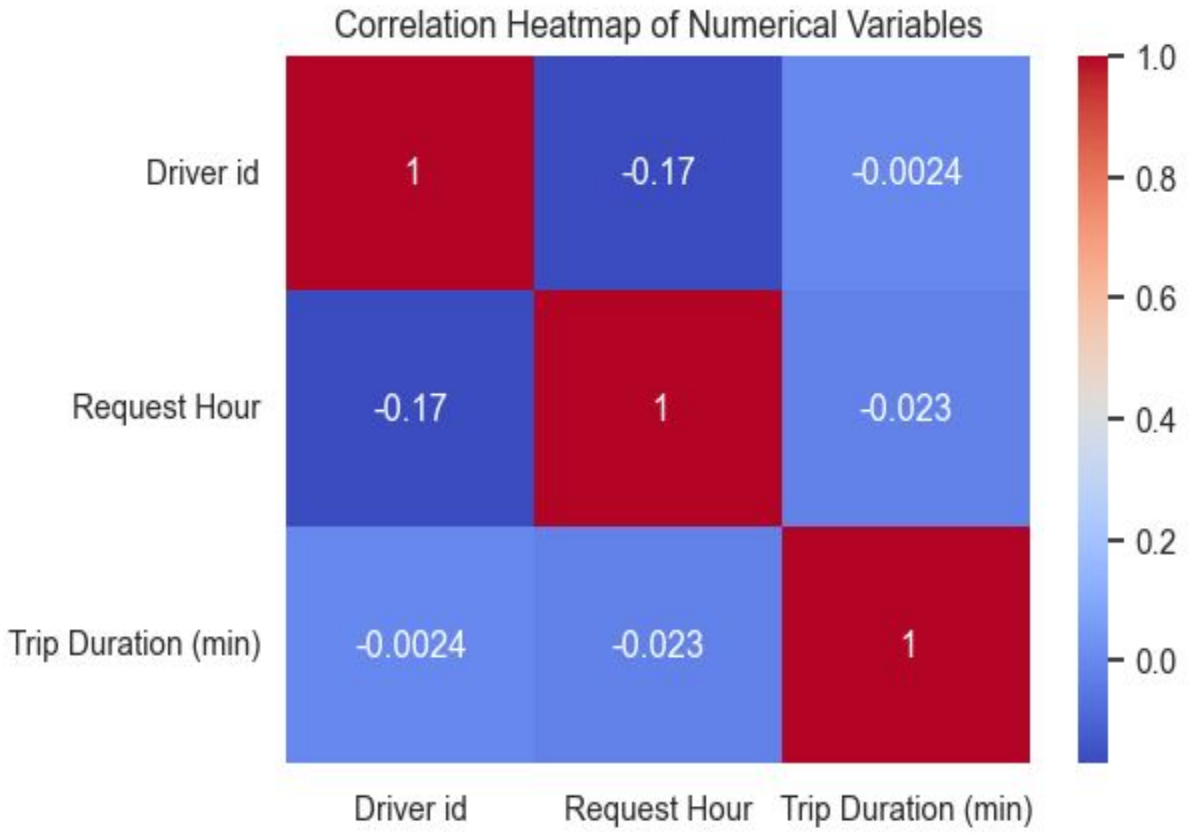

Correlation Heatmap of Numerical Variables
Driver id
Request Hour
Trip Duration (min)
1
-0.17
-0.0024
-0.17
1
-0.023
-0.0024
-0.023
1
Driver id
Request Hour
Trip Duration (min)
1.0
0.8
0.6
0.4
0.2
0.0

Fig 9

Solutions for Supply Demand Gap

To bridge the supply-demand gap, Uber should **implement targeted driver incentives** during peak hours such as early morning and evening to encourage driver availability and reduce cancellations. Introducing **surge pricing and bonus schemes** during high-demand slots will motivate drivers to accept more rides. **Location-based driver allocation** is crucial; more drivers should be deployed in city areas where demand is higher, while dedicated shifts for airport pickups can reduce cancellations and improve fulfilment rates. Additionally, **day-specific scheduling** based on daily demand patterns will ensure optimal driver presence throughout the week. Offering **night shift bonuses** can increase availability during late hours when unavailability is highest. Since most trips are short, **optimising pricing strategies for short commutes** will maintain profitability while ensuring efficient driver rotations. Overall, combining **incentives, strategic scheduling, and location-focused planning** will effectively reduce the supply-demand gap, improve operational efficiency, and enhance customer satisfaction for Uber.