Uber

NCR Bookings Analytics

PROJECT SUMMARY

Analyzing ride cancellations, wait times, and revenue impact in the ride-hailing industry

KEY ANALYTICS THEMES

- *Customer vs Driver Cancellations*
- *Vehicle Arrival Time (VTAT) & Customer Wait Time (CTAT)*
- *Revenue Loss from Cancelled Rides*
- *High-Risk Pickup Locations*
- *Vehicle Type Performance*

Python & Pandas | KPI Analysis | *Feature Engineering* | Data Visualization

HITESH

Aspiring Data Analyst / Business Analyst

January 2026

uber

BUSINESS CONTEXT & OBJECTIVE

Ride-hailing platforms operate in a highly time-sensitive environment where delays, cancellations, and incomplete rides directly **impact revenue realization, customer experience, and driver efficiency**.

Thisreport analyzesUber ride booking data to identifythe operationaland behavioral drivers behind ride failures and service delays, and to propose data-backed recommendations to improve ride completion rates.

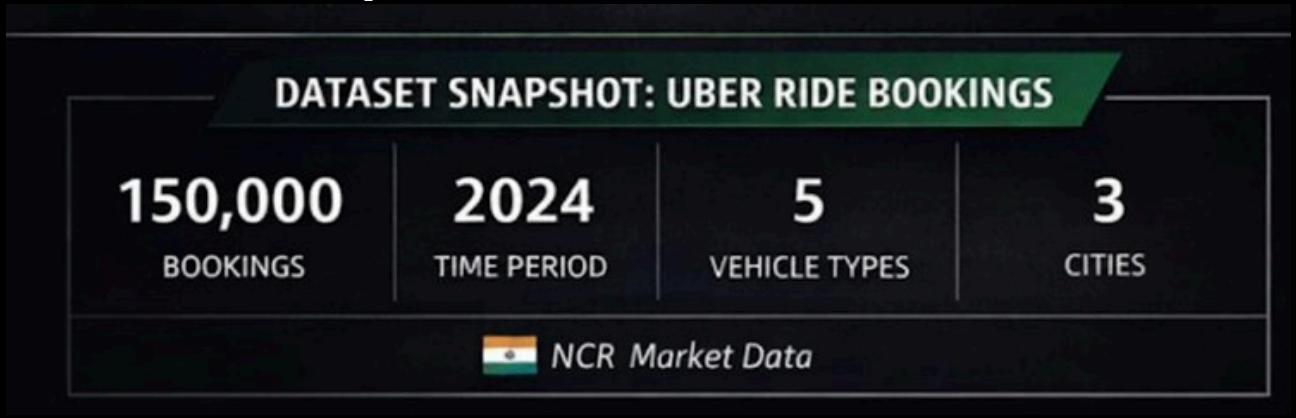
Business Objectives

- Identify key drivers of ride cancellations
- Measure operational delays using **VTAT & CTAT**
- Quantify revenue loss from **non-completed rides**
- Highlight **high-risk locations, time slots**, and **vehicle type**s

KEY BUSINESS QUESTIONS

1. When does demand peak in NCR?
2. What % of rides are completed vs cancelled?
3. Who cancels more — customer or driver?
4. Why do rides get cancelled or incomplete?
5. Does long waiting time increase cancellations?
6. Which vehicle types and payments drive revenue?

Dataset snapshot table



uber

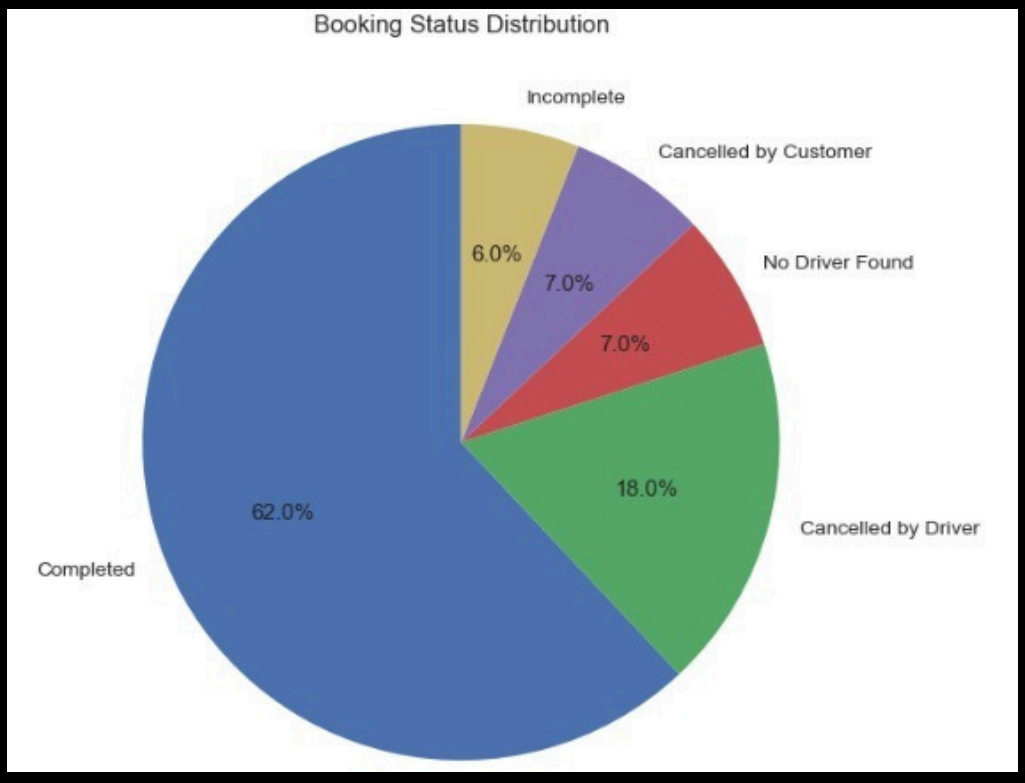
KPI OVERVIEW

The following KPIs provide ahigh-level view ofUber'soperational performance and highlight the scale of ride failures across the platform.

>>>

KPI	Definition
Completion Rate	% of completed
Cancellation	% of cancelled
Incomplete Rate	% of incomplete
Avg VTAT	Avg driver arrival
Avg CTAT	Avg customer
ARPR	Avg revenue per
Total Revenue	Sum of booking

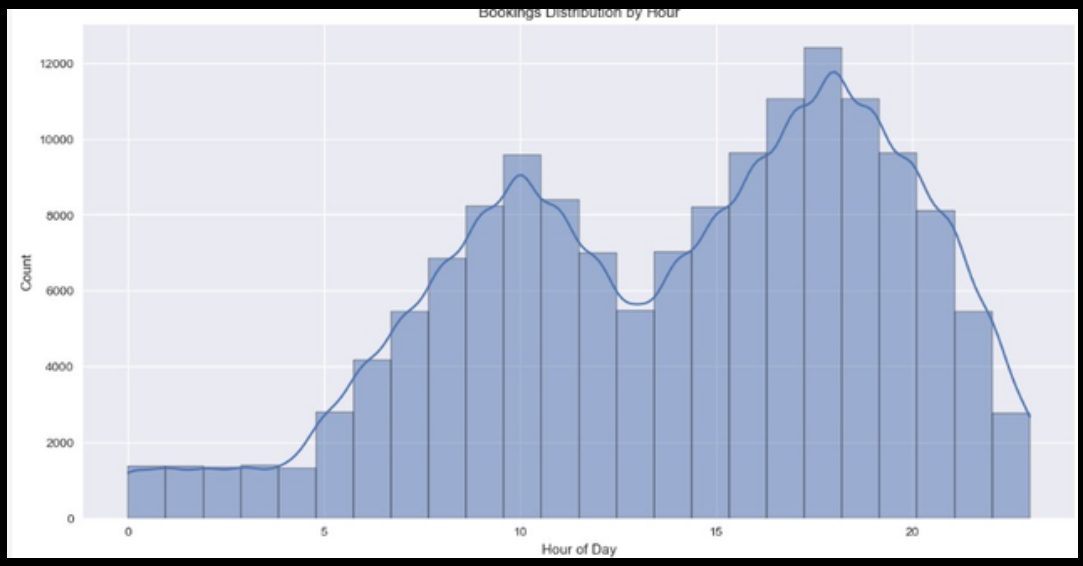
```
Completion Rate (%)                 62.00
Customer Cancellation Rate (%)       7.00
Driver Cancellation Rate (%)        18.00
Incomplete Ride Rate (%)             6.00
Avg VTAT (mins)                      8.46
Avg CTAT (mins)                     29.15
dtype: float64
```



uber

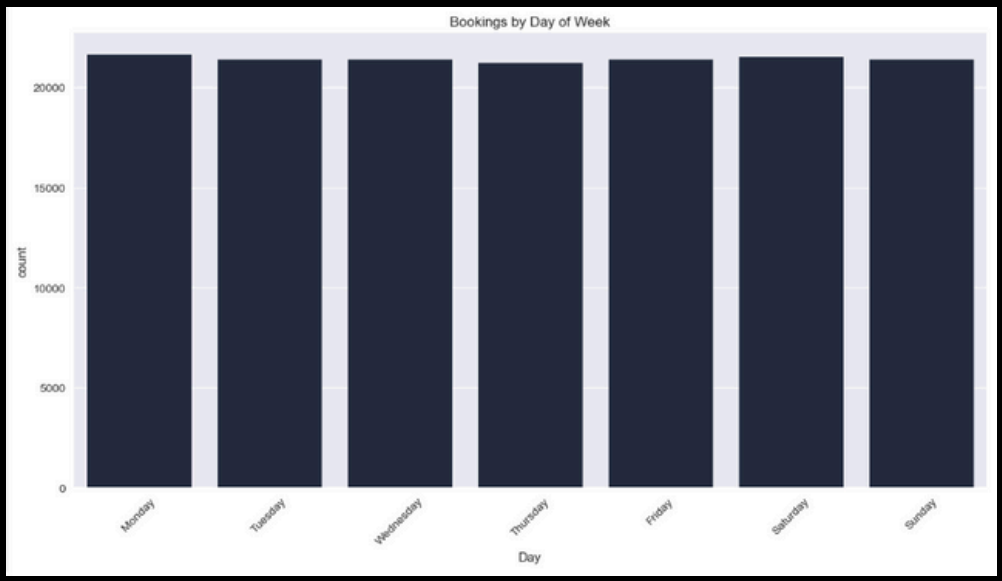
DEMAND ANALYSIS (TIME-BASED)

Analysis of booking trends shows clear time-based demand patterns:



Hourly Trends

- Bookings peak during evening hours (6–9 PM)
- Morning demand aligns with office commute
- Late-night demand remains low but stable



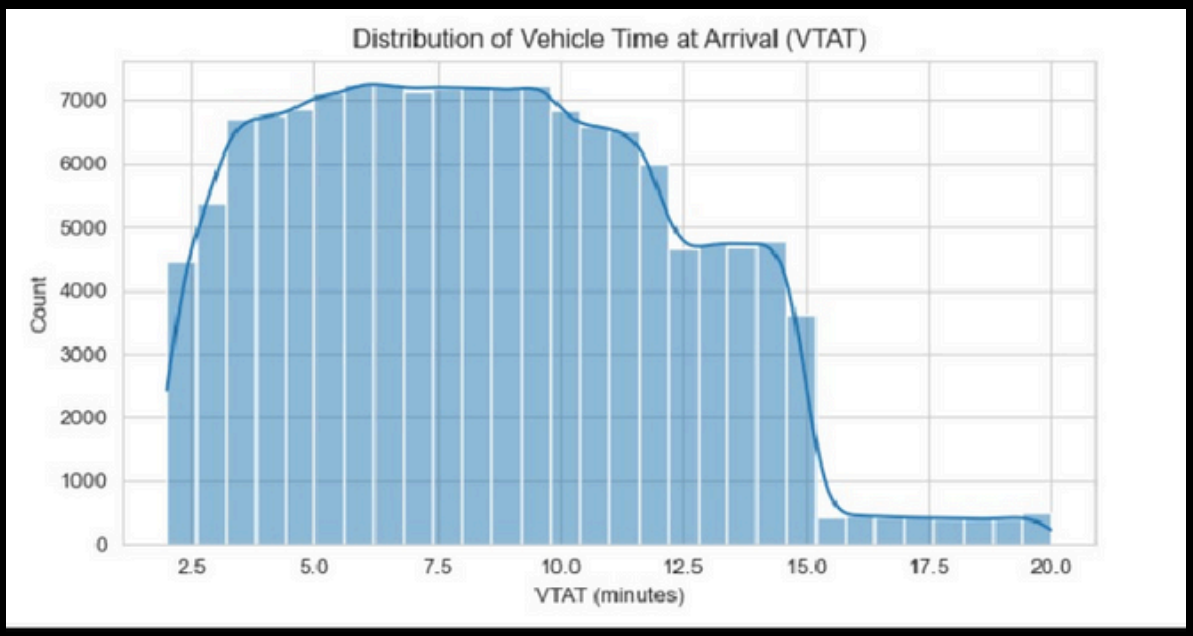
Days-wise Trends

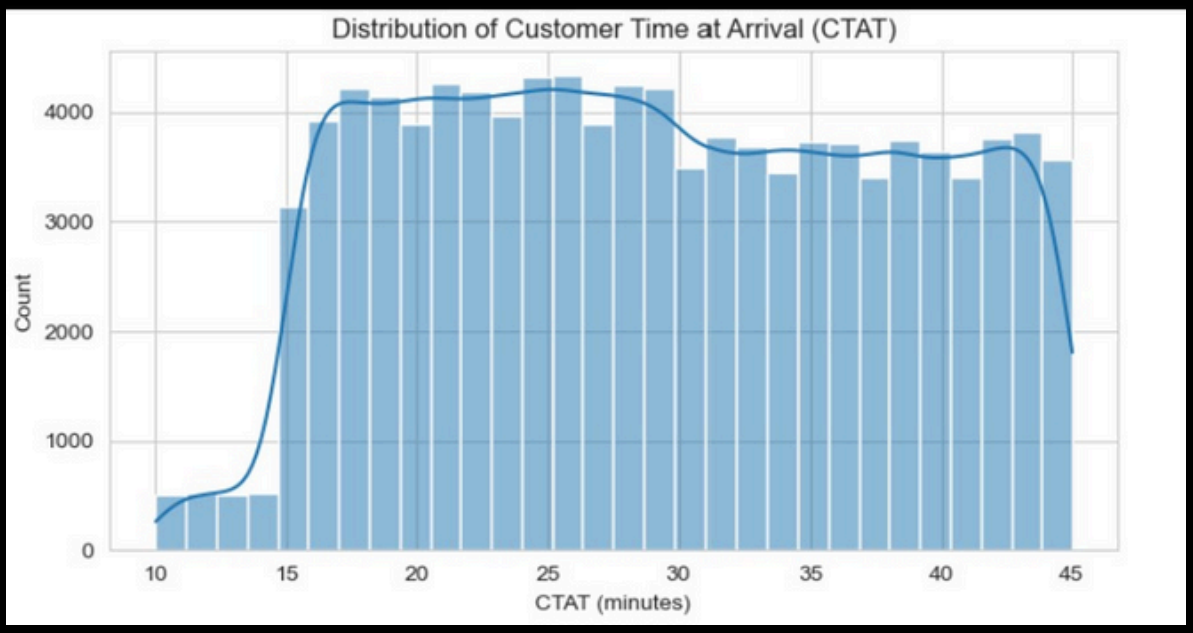
Day-wise analysis indicates relatively consistent weekday demand with slightly higher weekend usage.

uber

WHAT DRIVES RIDE CANCELLATIONS ?

Ride cancellations arestrongly linked to operational delays.As vehicle arrival times increase, customers are more likely to cancel rides, leading to lost revenue and poor experience.





Key Insight

-Higher VTAT and CTAT significantly increase the probability of ride cancellation.

uber

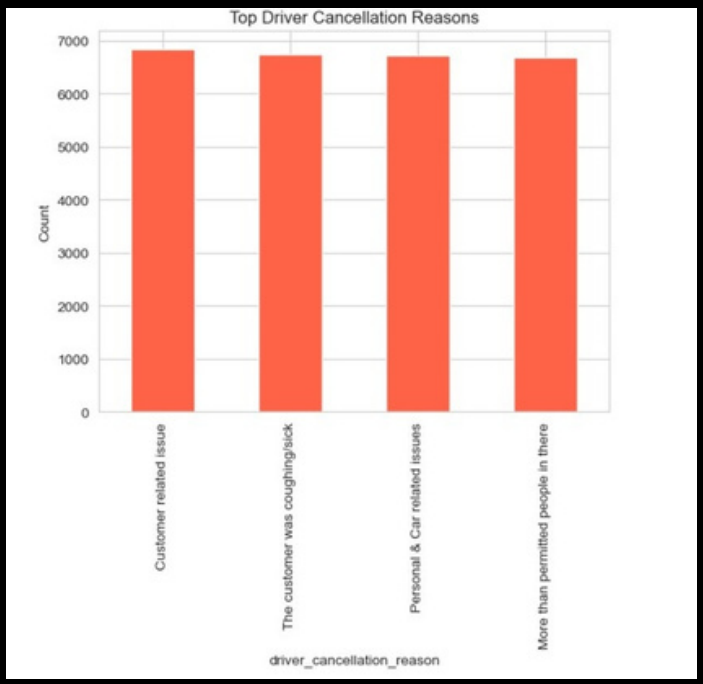
WHO IS CANCELLING: CUSTOMER OR DRIVER?

Booking Distributiong

Key Insight

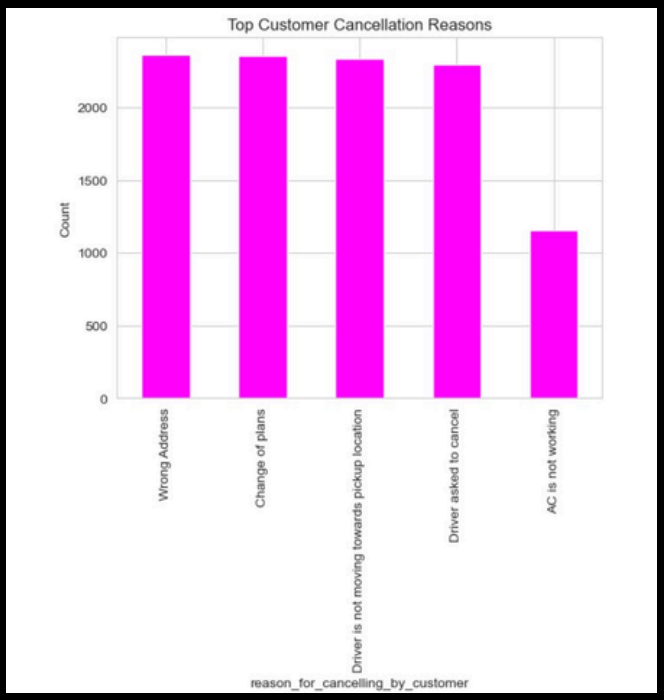
Driver-sidecancellations are the largest contributor to non-completed rides.

Top cancellation reasons Driver



Driver cancellations are largely driven by operational and coordination issues such as route feasibility and customer availability.

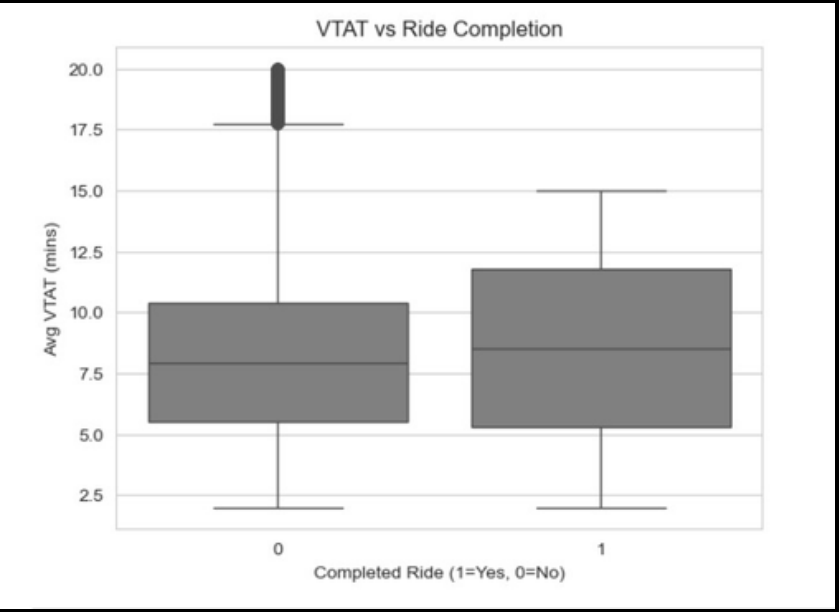
Top cancellation reasons Customer



Customer cancellations are primarily driven by long wait times and changes in travel plans, reinforcing the importance of accurate ETAs.

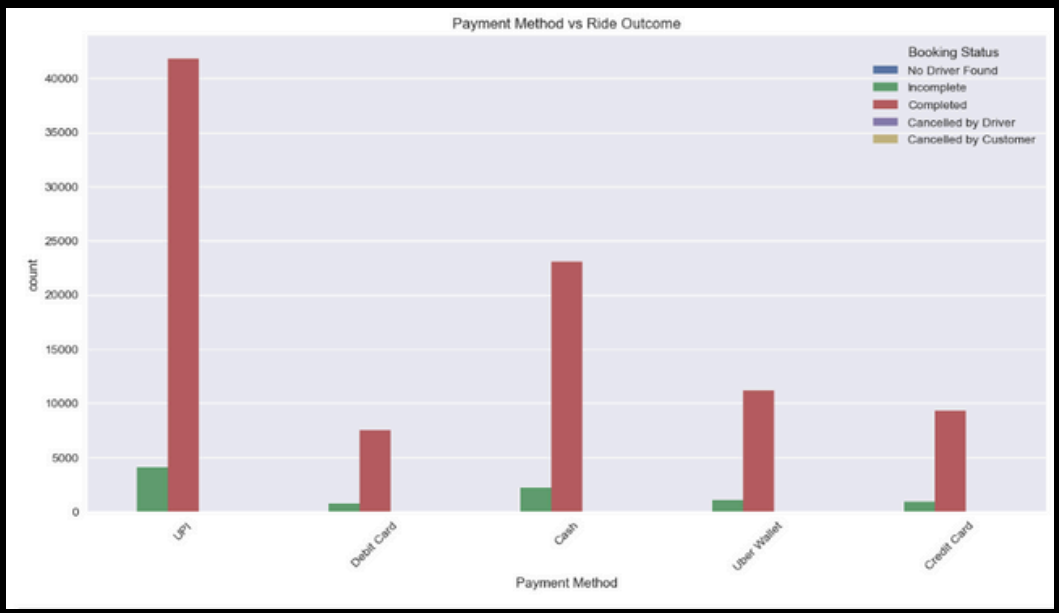
uber

DEMAND DELAY → CANCELLATION LINK



Cancelled and incomplete rides show significantly higher VTAT values compared to completed rides, confirming wait time as the strongest operational risk factor.

Payment Method Impact



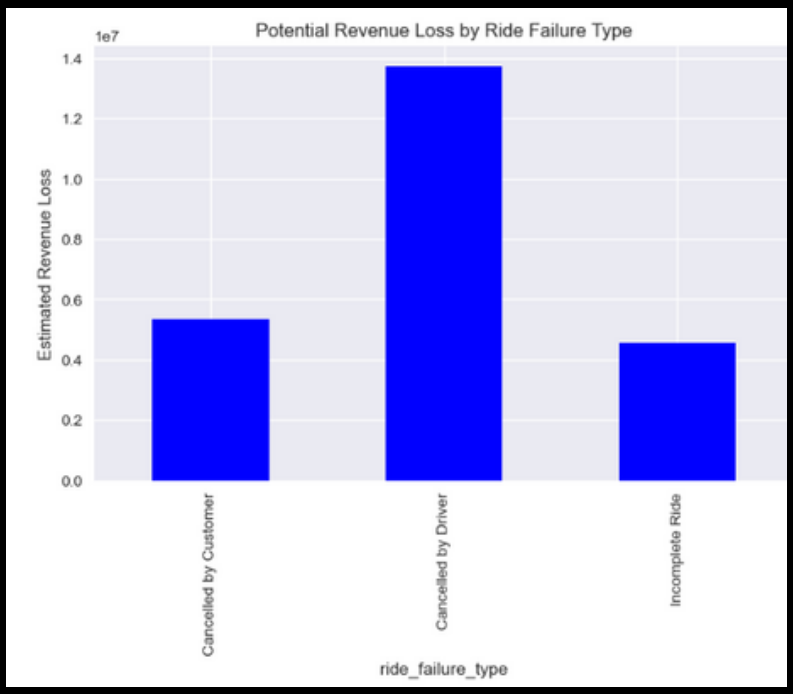
Key Insights

Cash payments show a relatively higher share of incomplete rides, suggesting increased operational friction compared to digital payment methods.

uber

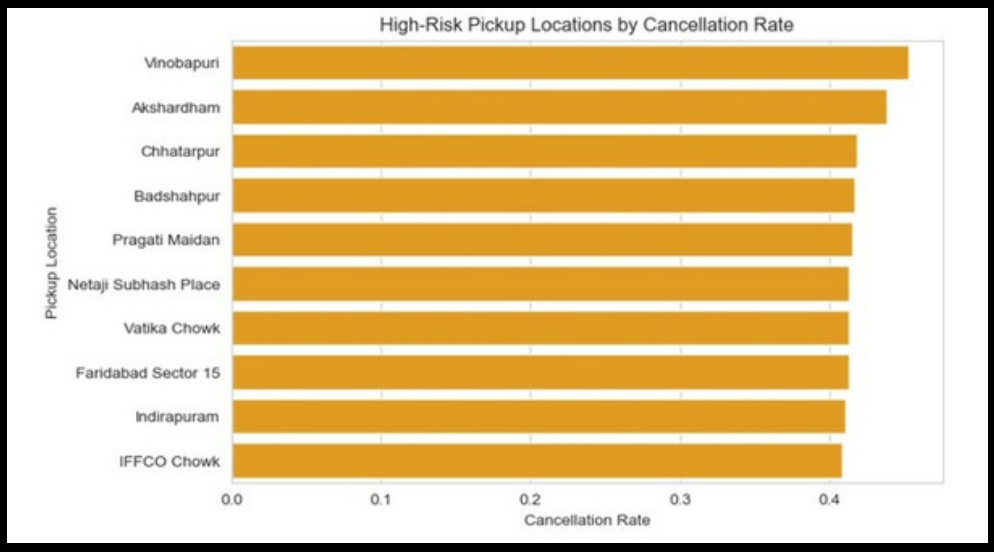
REVENUE LEAKAGE ANALYSIS

Each cancelled orincompleteriderepresents directrevenueloss. This section quantifies the financial impact of ride failures and identifies where losses are concentrated.



Key Insighs

>>This plot show that maximum revenue loss is due to Driver ,Customer cancellations and incomplete rides.



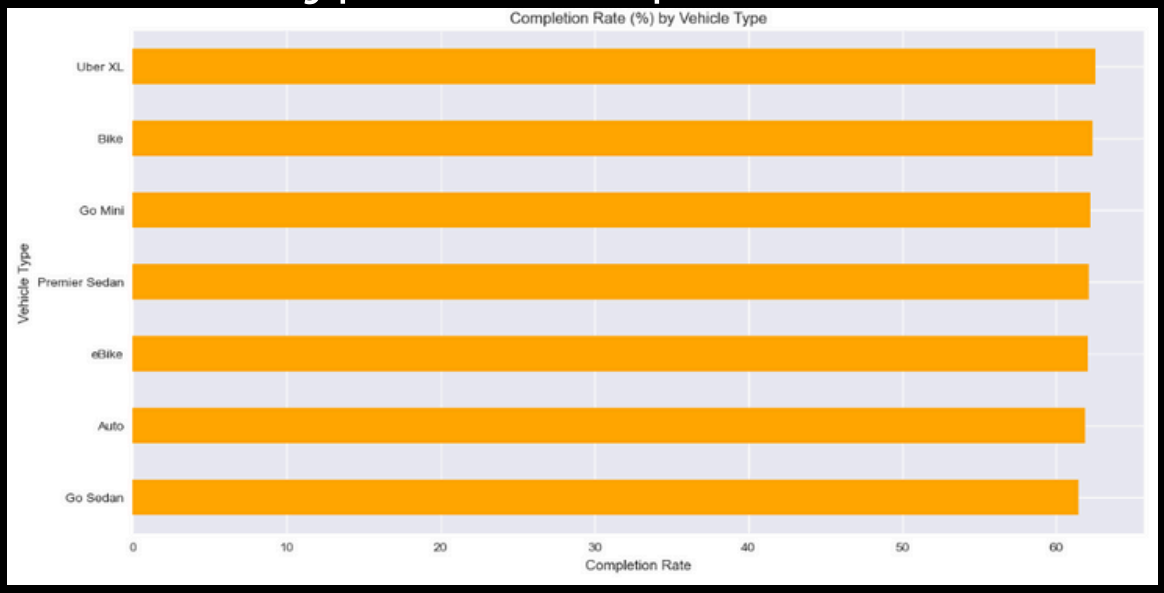
Key Insights

A small number of pickup locations contribute disproportionately to ride failures, suggesting the need for localized supply optimization.

uber

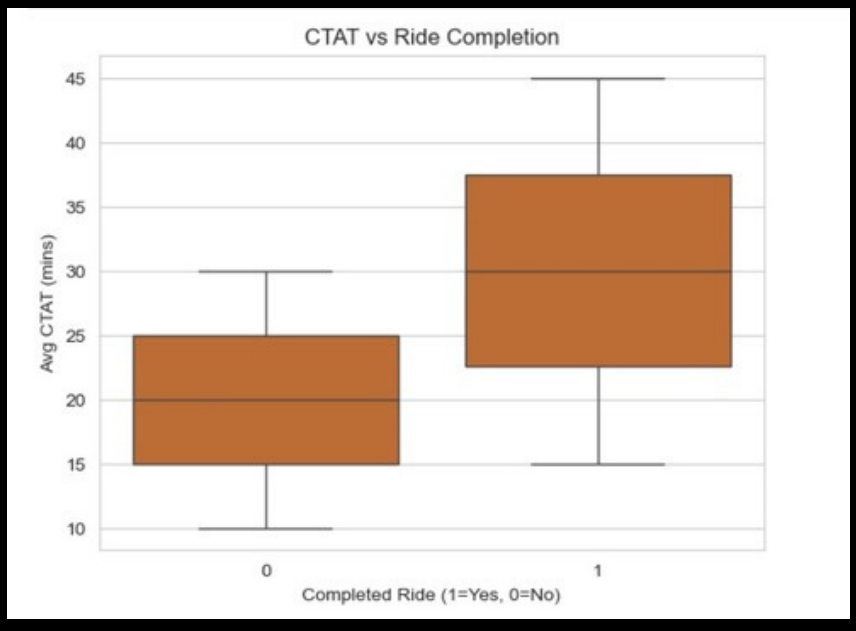
VEHICLE TYPE & CUSTOMER EXPERIENCE IMPACT

Vehicle Type Vs Completion Rate



Certain vehicle types such as Auto, Go-Mini, and Go-Sedan show lower completion rates, indicating higher operational risk in these segments.

CTAT Vs Ride Completion



Key Insight

Increased customer waiting time is associated with lower ride completion and declining customer satisfaction, negatively impacting long-term platform trust.

uber

INSIGHTS & BUSINESS RECOMMENDATIONS

Key Insights:

Waiting time is the primary driver of ride cancellations

Higher VTAT and CTAT significantly increase the likelihood of ride cancellations, especially during peak hours.

Driver-side cancellations contribute more to ride failures

Driver cancellations exceed customer cancellations, indicating supply-side reliability issues.

Revenue loss is concentrated in specific areas

A significant share of booking value is lost due to cancellations, with a small set of pickup locations contributing disproportionately.

Vehicle performance varies by category

High-volume vehicle types such as Auto, Go-Mini, and Go-Sedan show lower completion rates compared to premium segments.

Customer experience deteriorates with delays

Increased CTAT is associated with lower ride completion and reduced customer ratings.

Business Recommendations

>Operations

- Increase driver availability in high-VTAT zones
- Pre-position drivers before peak hours
- Penalize repeat driver cancellations.

>Customer Experience

- Auto-reassign rides when CTAT exceeds a threshold
- Improve ETA transparency and pickup clarity

>Revenue Protection

- Flag high-value rides for priority dispatch
- Focus optimization efforts on top vehicle types first