

Bangalore RapidoRide Analytics: Trends, Demand Forecasting

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❑ Rapido

Rapido is an Indian ride-hailing service, which primarily operates as a bike taxi aggregator. Its offerings also include auto rickshaw and taxicab hailing, parcel delivery, and third-party logistics services. Founded in 2015, the company is based in Bangalore and operates in over 100 cities.

❑ Problem Statement

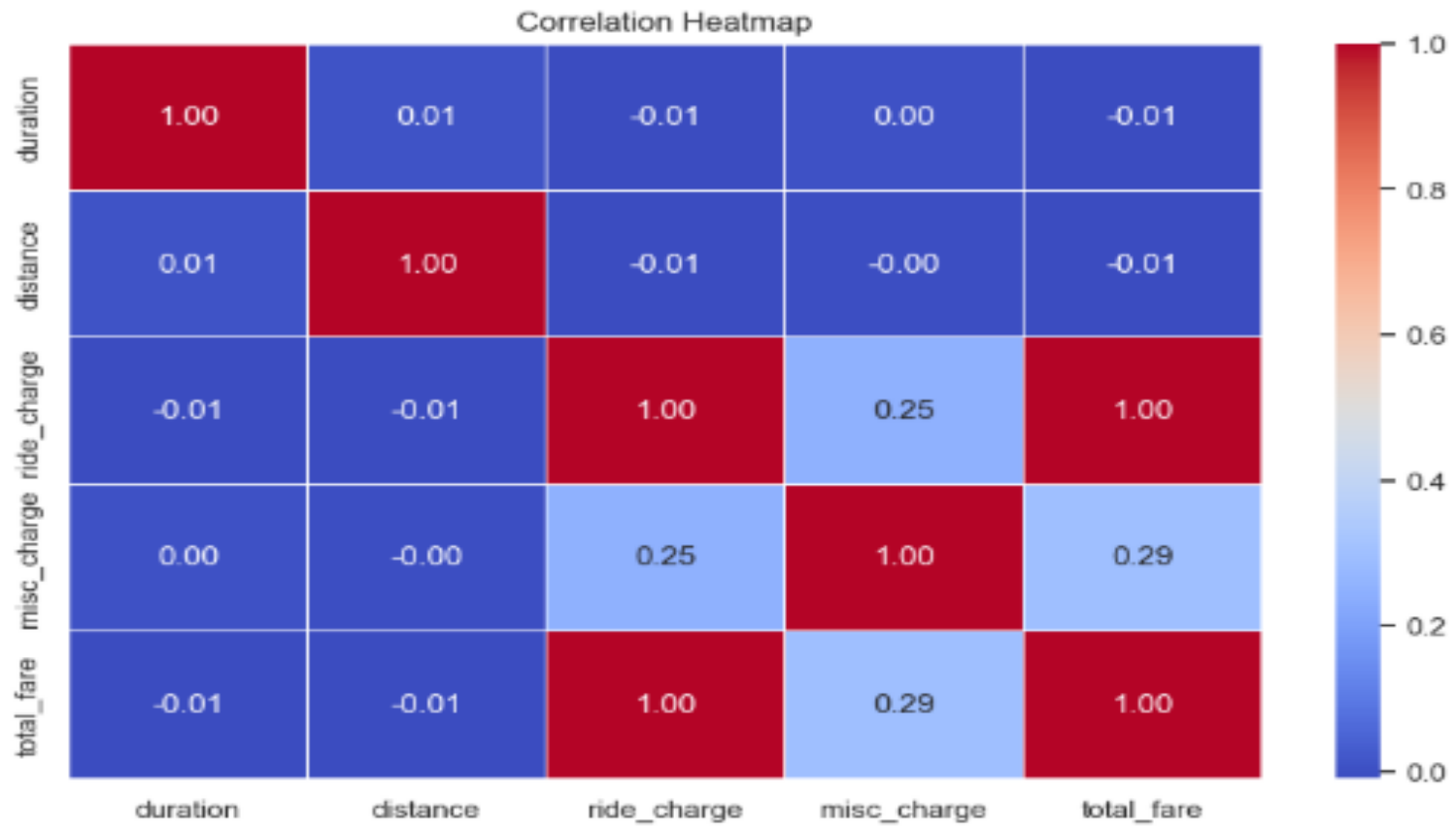
With the rapid growth of ride-sharing services in metropolitan areas, managing ride demand, optimizing service availability, and understanding fare patterns have become crucial for service providers like Rapido. The dynamic nature of the ride-sharing market, with fluctuations in demand across different times of day, seasons, and geographic regions, presents a unique challenge for efficient operations and resource allocation.

❑ Data Summary

The dataset contains information about ride-sharing services (such as Rapido) including details about rides, ride status, fares, and geographical locations, along with relevant time and payment data. It also includes various numerical and categorical attributes that help analyze the ride demand, fare patterns, and cancellation trends.

- Date
- Time
- Ride Status
- Service
- Source
- Destination
- payment method
- Duration
- Ride id
- Max Required
- Distance
- Ride charge
- Misc charge
- Total fare

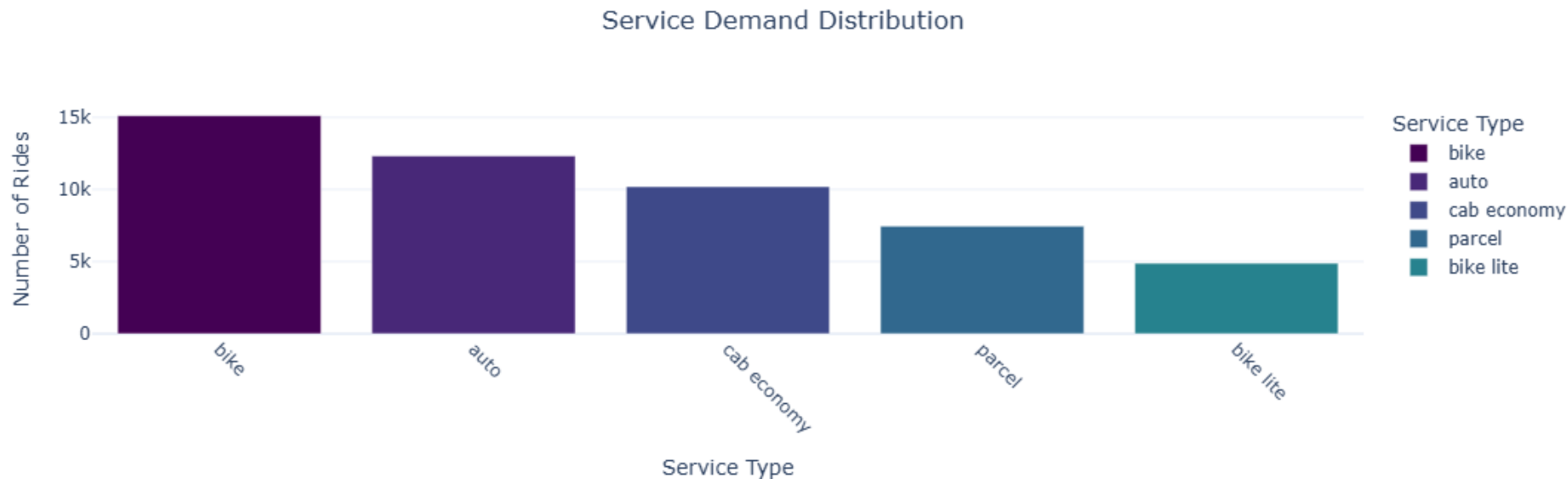
Correlation Matrix





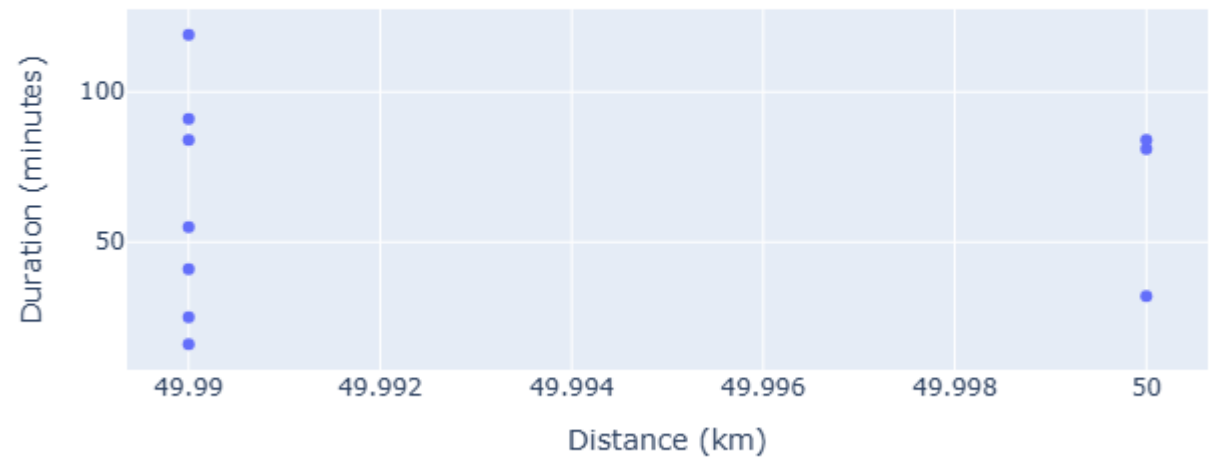
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Service Demand Distribution

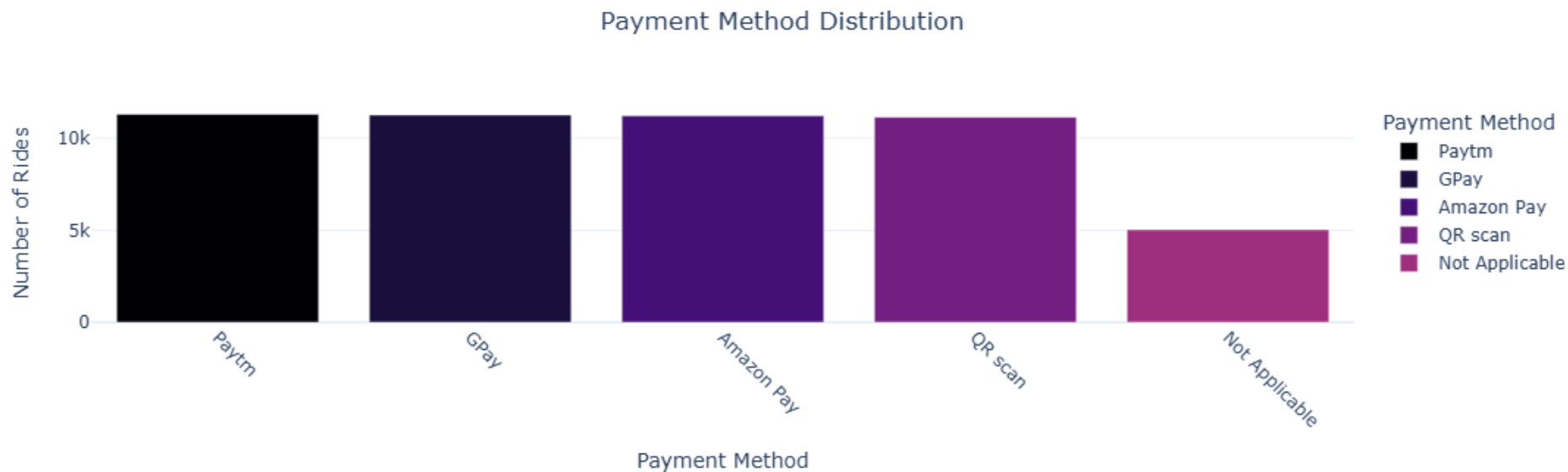


Ride Duration vs Distance

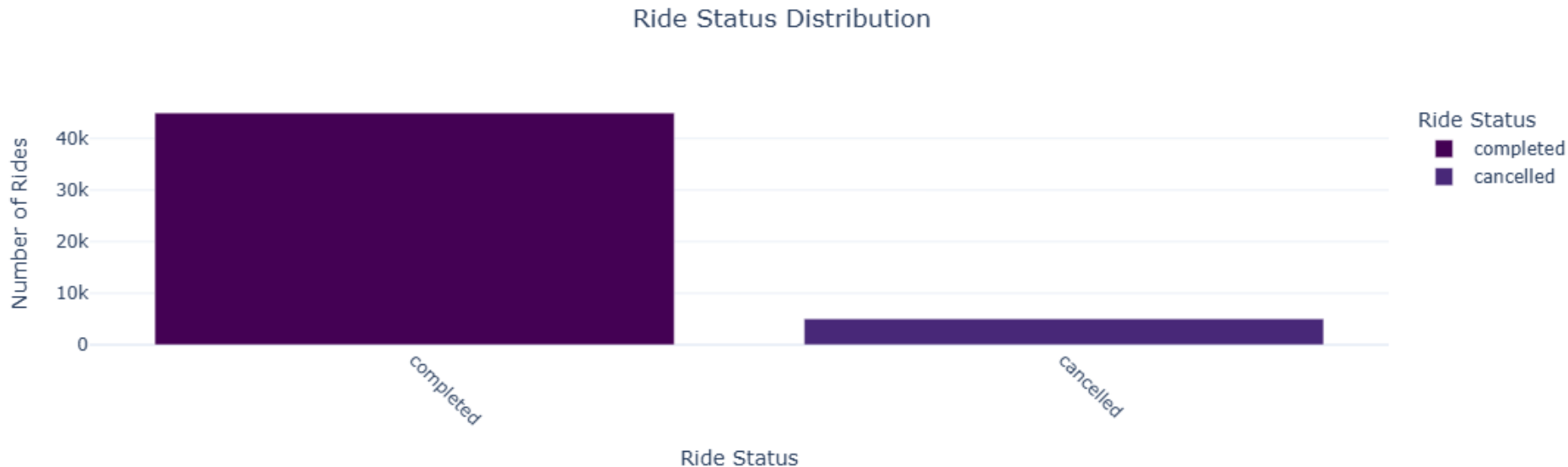
Top 10 Ride Duration vs Distance



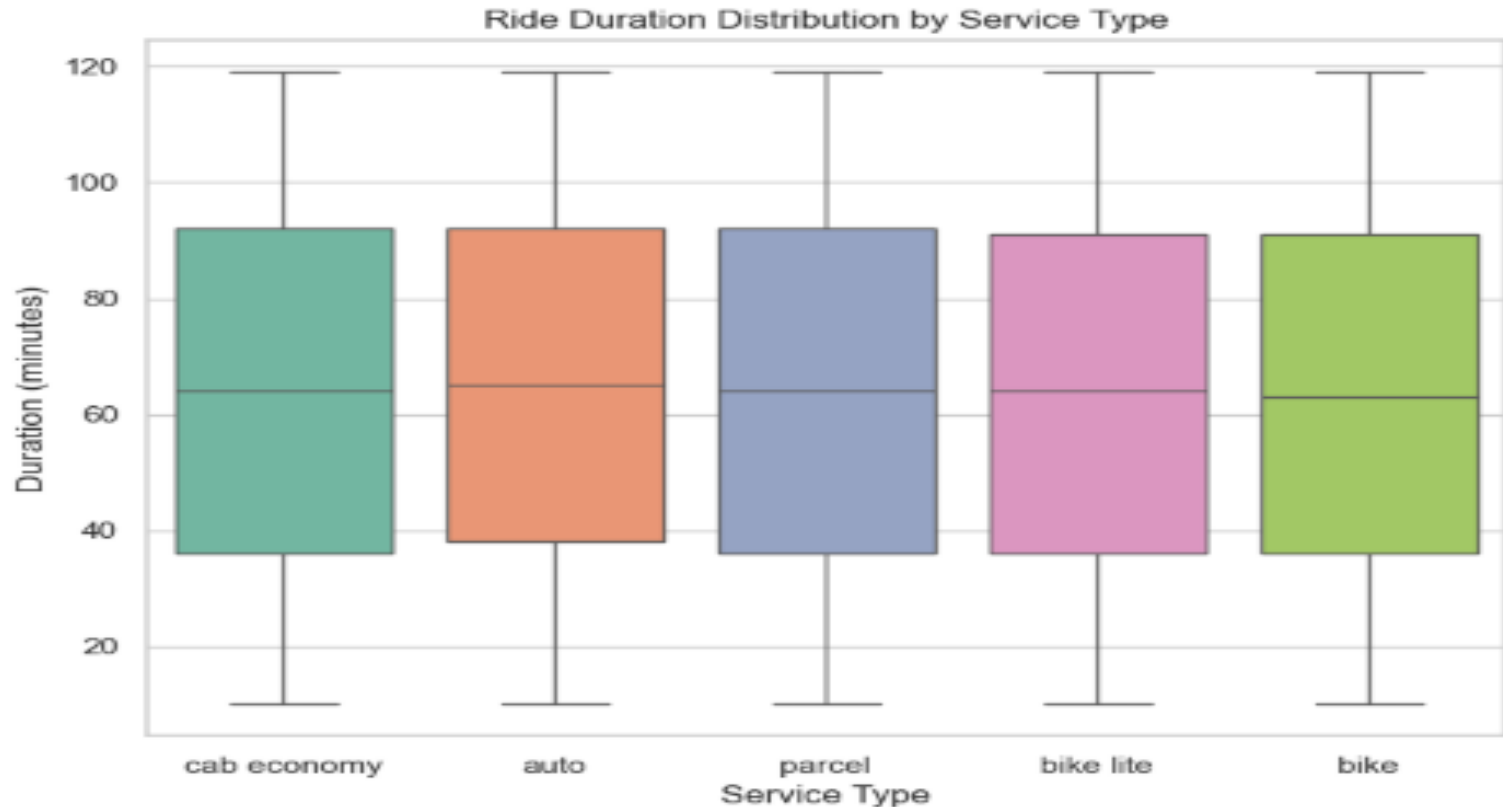
Payment Method Distribution



Ride Status Distribution

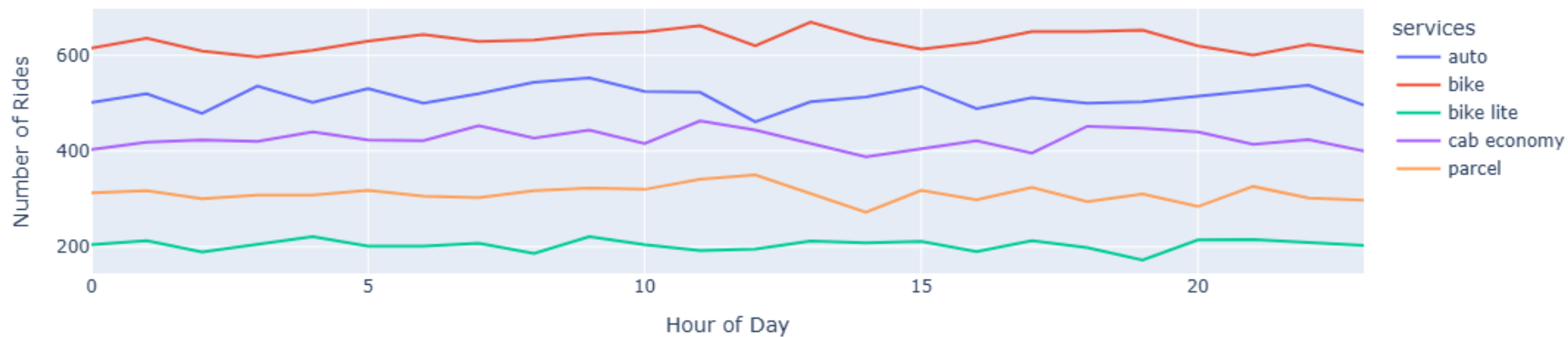


Ride Duration Distribution by Service Type

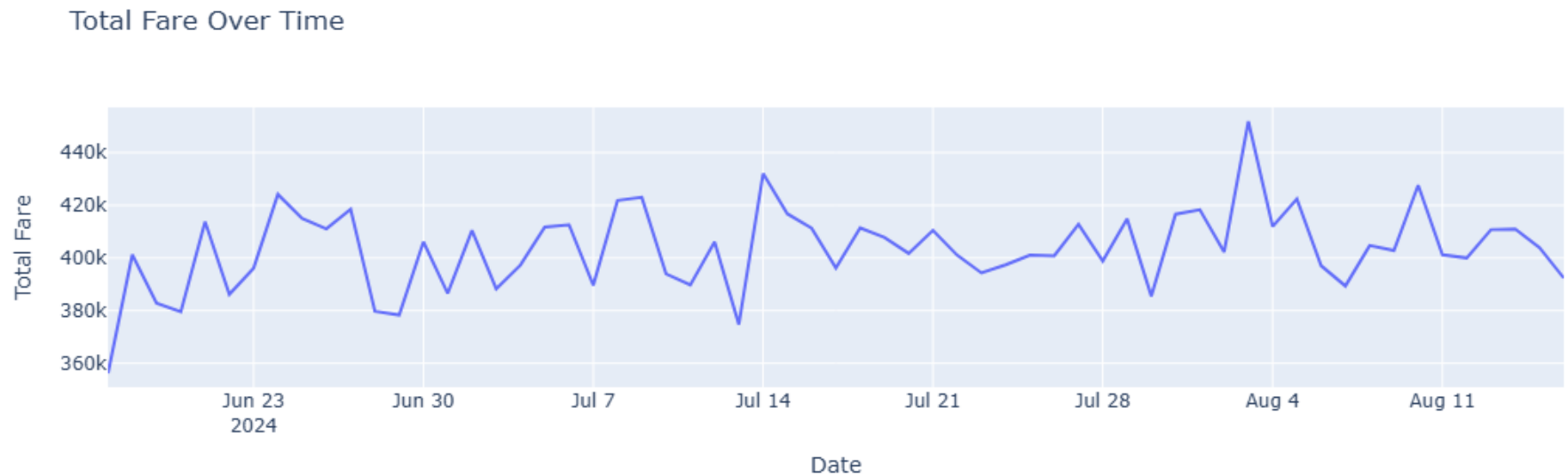


Service Demand by Hour of Day

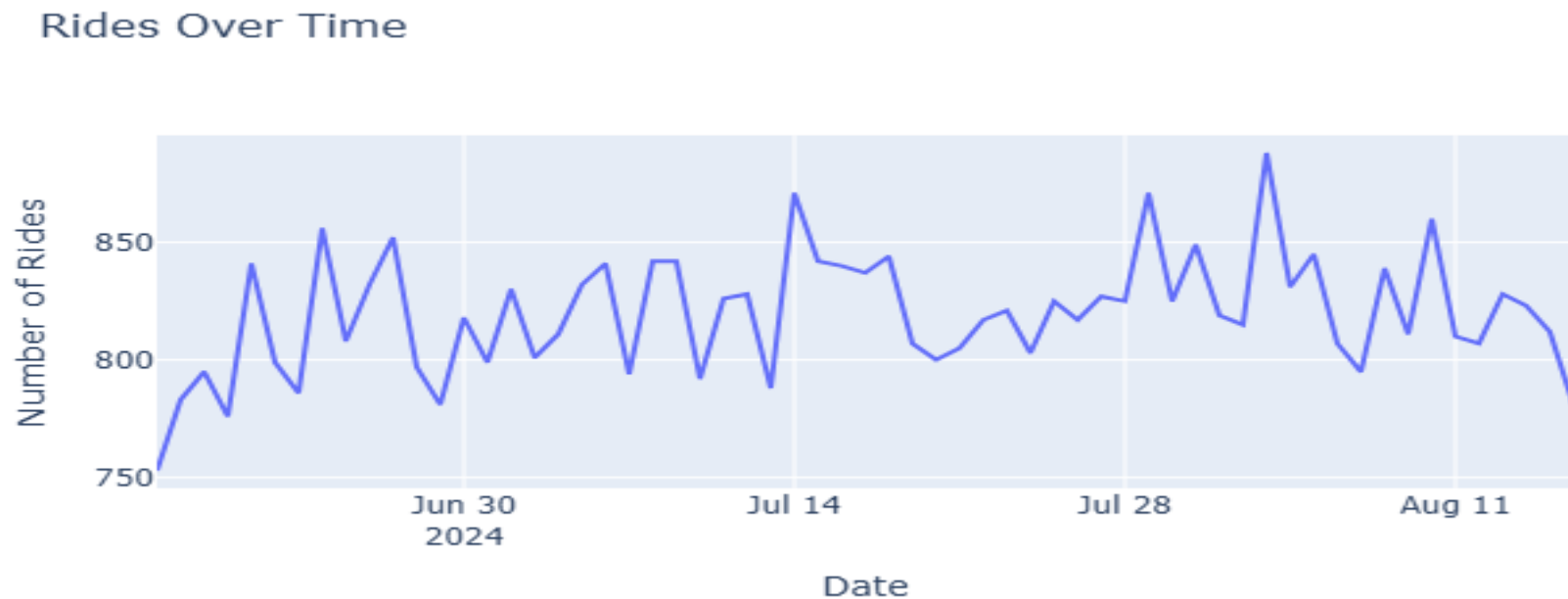
Service Demand by Hour of Day



Total Fare Over Time

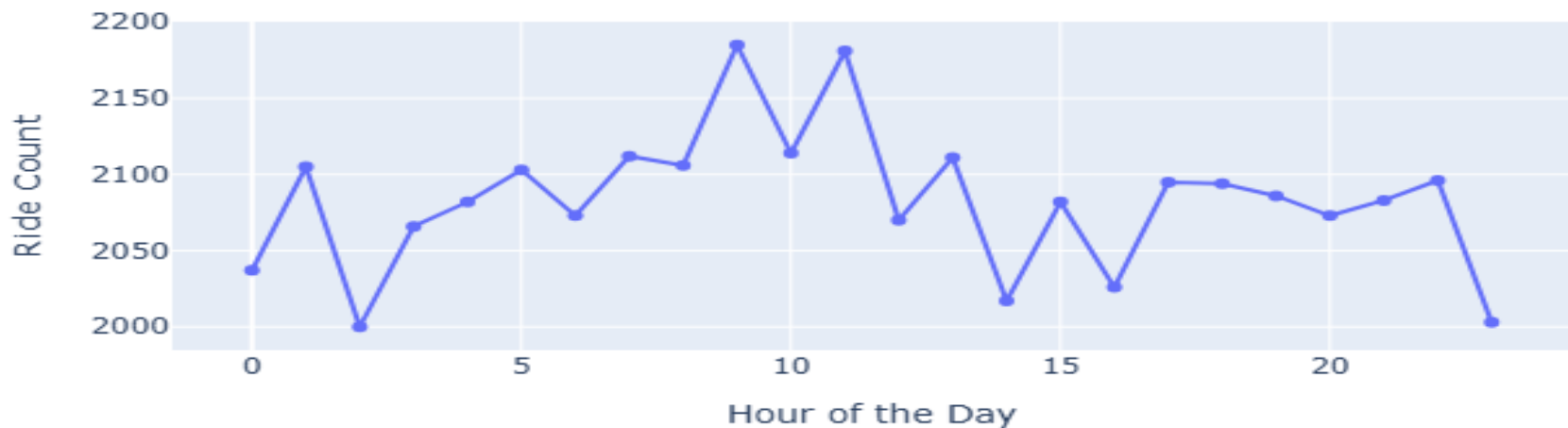


Ride Over Time



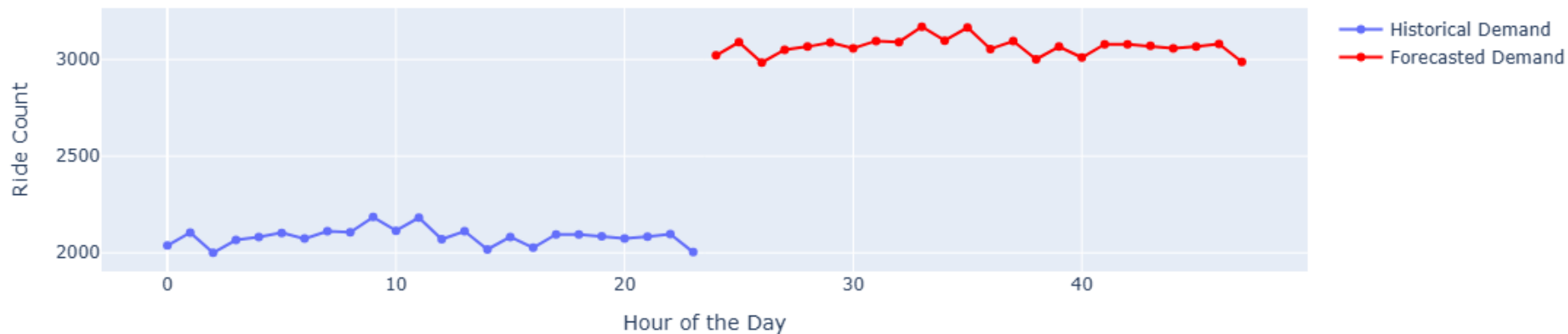
Demand by Hour

Demand by Hour



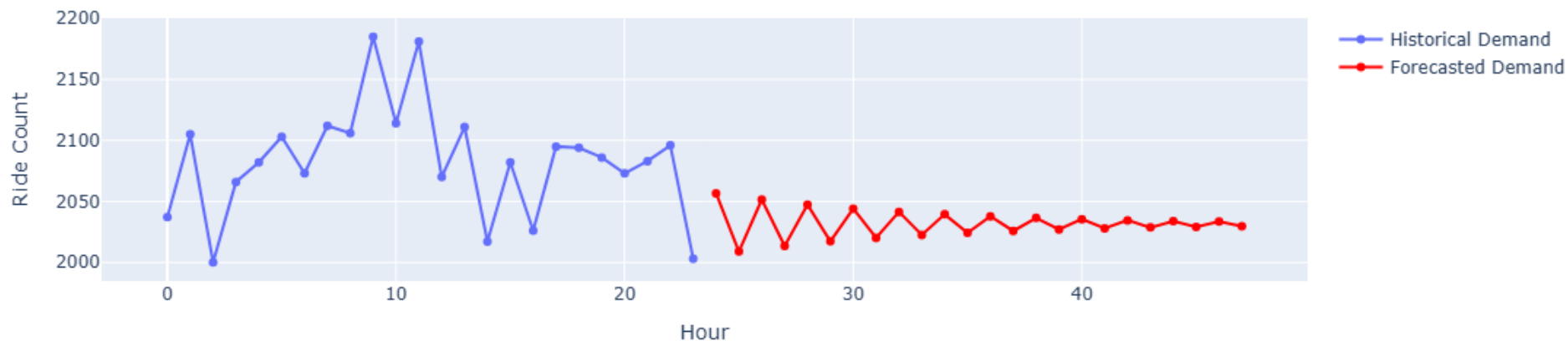
SARIMAX Forecast for Ride Demand

SARIMAX Forecast for Ride Demand



ARIMA forecast for Ride Demand

ARIMA Forecast for Ride Demand



□ Conclusions

- *High demand for bike services during early mornings, auto and cab demand peaks in the afternoon and evening.*
- *Ride counts fluctuate over time, with consistent peaks during specific periods.*
- *Paytm and GPay are the most popular payment methods, possibly influenced by promotions.*
- *Bike services are the most preferred, offering consistent ride durations, while auto and cab services show more variability.*
- *ARIMA and SARIMAX models suggest growing demand with daily fluctuations.*

❑ Recommendation

- *Increase bike availability during morning hours and prioritize auto/cab services in the evening.*
- *Promote bike services as a cost-effective, quick option for short-distance travel..*
- *For auto and cab services, focus on improving ride consistency by reducing variability in ride durations (e.g., through better route optimization or partnerships with local authorities to reduce traffic bottlenecks).*
- *Capitalize on Paytm and GPay's popularity by offering time-limited discounts to further drive engagement.*
- *Promote premium cab services during evenings for social outings or corporate travel to attract higher-paying customers.*

Thank You