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# **Business Report**

*On*

## **Upfront Pricing Analysis**

**Prepared By:**

**Aditya Kumar Pandey**

**MTech (AI & Data Science)**

**Computer Science and Engineering**

**Indian Institute of Information Technology, Bhagalpur**

# Upfront Pricing Analysis Report

## Executive Summary

This report evaluates the accuracy of upfront pricing in ride-hailing services. Key factors, including GPS confidence and destination changes, are identified as critical influences of pricing deviations. With a 31.62% rate of deviations exceeding 20%, this analysis highlights specific areas for improvement. Recommendations such as enhanced GPS tracking, real-time pricing adjustments, and machine learning-based prediction optimizations are proposed to improve accuracy and customer satisfaction.

## Introduction to the Report

Upfront pricing allows riders to know the estimated cost of a ride before booking. However, variations in actual ride metrics (distance, time, or route changes) can lead to significant deviations. This report investigates these discrepancies using provided ride data, identifies underlying causes, and suggests some improvements to minimize price mismatches and enhance transparency for both customers and service providers.

## Key Insights:

- 1. GPS Confidence:** Low GPS confidence significantly impacts pricing accuracy, with deviations increasing from 26% (high confidence) to 33% (low confidence).

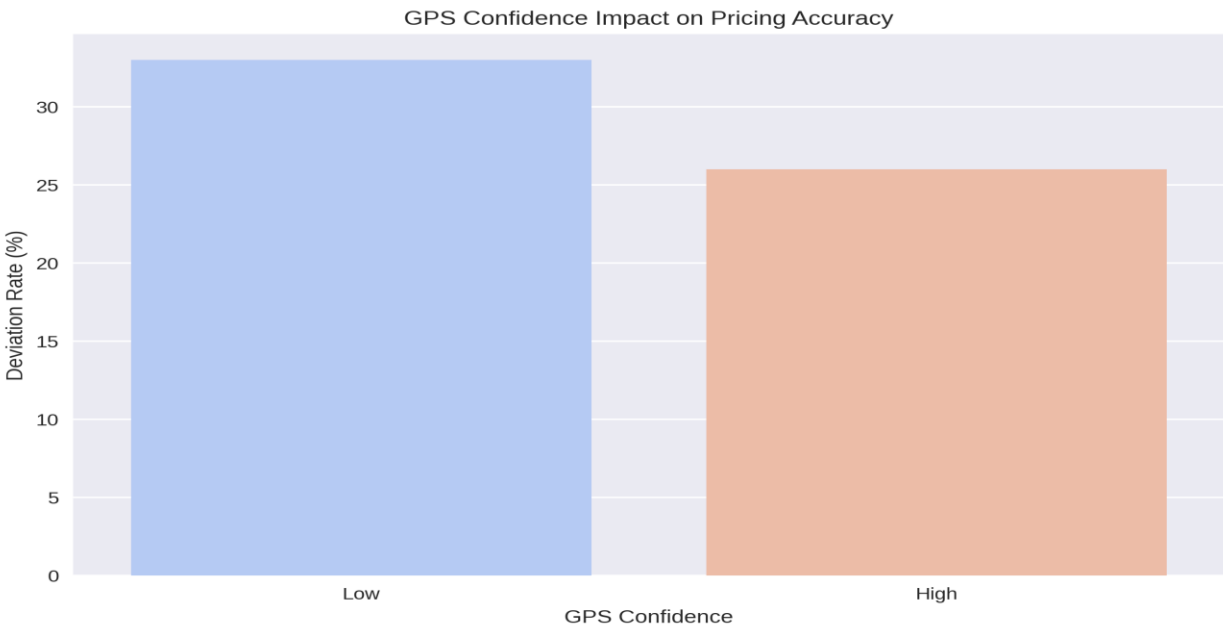


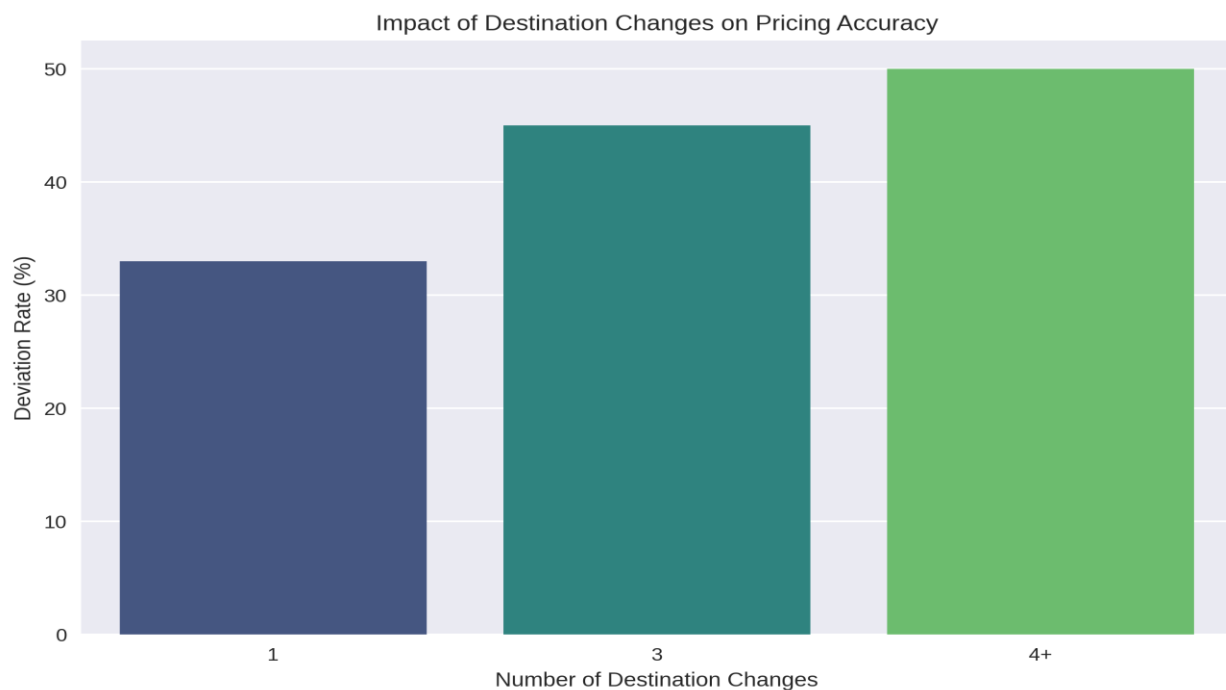
Figure 1: Relationship Between GPS Confidence and Pricing Accuracy

**Description:** The chart illustrates the impact of GPS confidence on pricing accuracy. Rides with low GPS confidence exhibit a significantly higher deviation rate (33%) compared to rides with

high GPS confidence (26%). This highlights the need for improved GPS tracking and error correction algorithms.

## 2. Destination Changes:

- (a) More destination changes correspond to higher deviations.
- (b) One change: 33% deviation
- (c) Three changes: 45% deviation
- (d) Four or more changes: 50%+ deviation
- (e) Overall Pricing Deviation: Over 31.62% of rides deviate beyond the acceptable 20% threshold.
- (f) Impact of GPS Confidence: Poor GPS connectivity inflates pricing deviations, likely due to route miscalculation and tracking errors.



**Figure 2:** Impact of Destination Changes on Pricing Accuracy

**Description:** This chart shows the effect of destination changes on pricing accuracy. As the number of destination changes increases, the deviation rate also increases, reaching over 50% for rides with four or more changes. This shows the importance of developing a real-time pricing adjustment system for handling multiple destination changes.

## 3. Pricing Deviation Rates:

- (a) The Pricing Deviation Distribution figure shows how reliable the pricing model is. While it performs well for most rides (centered around 0% deviation).
- (b) The presence of outliers and variations indicates opportunities to refine the model further. This may include improving GPS tracking, destination change handling, or any other algorithmic improvements.

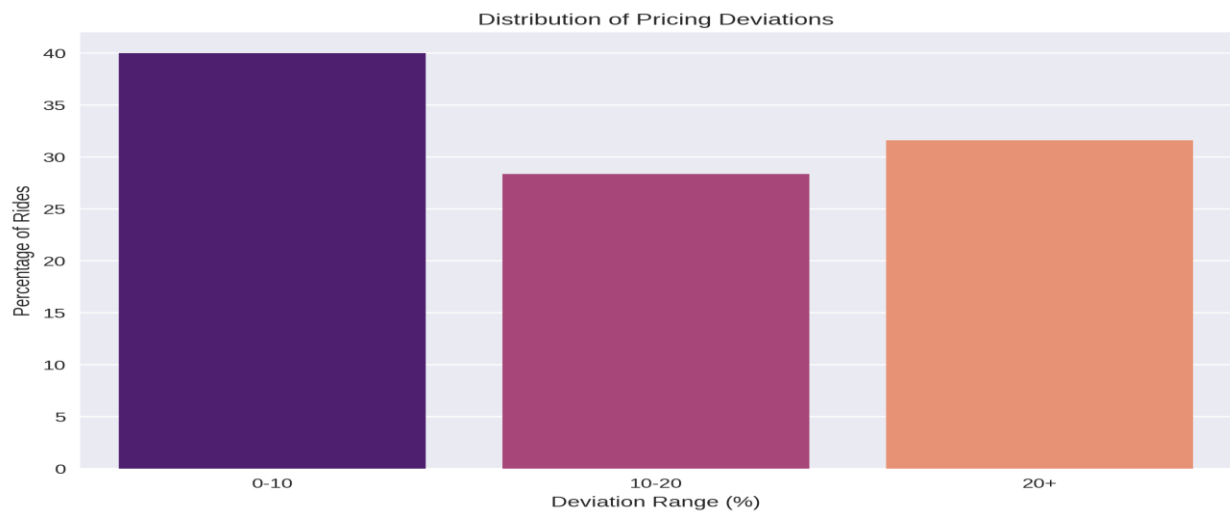


Figure 3: Distribution of Pricing Deviation

**Description:** The chart shows the distribution of pricing deviations. Approximately 31.62% of rides exhibit a deviation of over 20% which indicates a significant opportunity for improvement in pricing accuracy.

4. Correlation Matrix Analysis

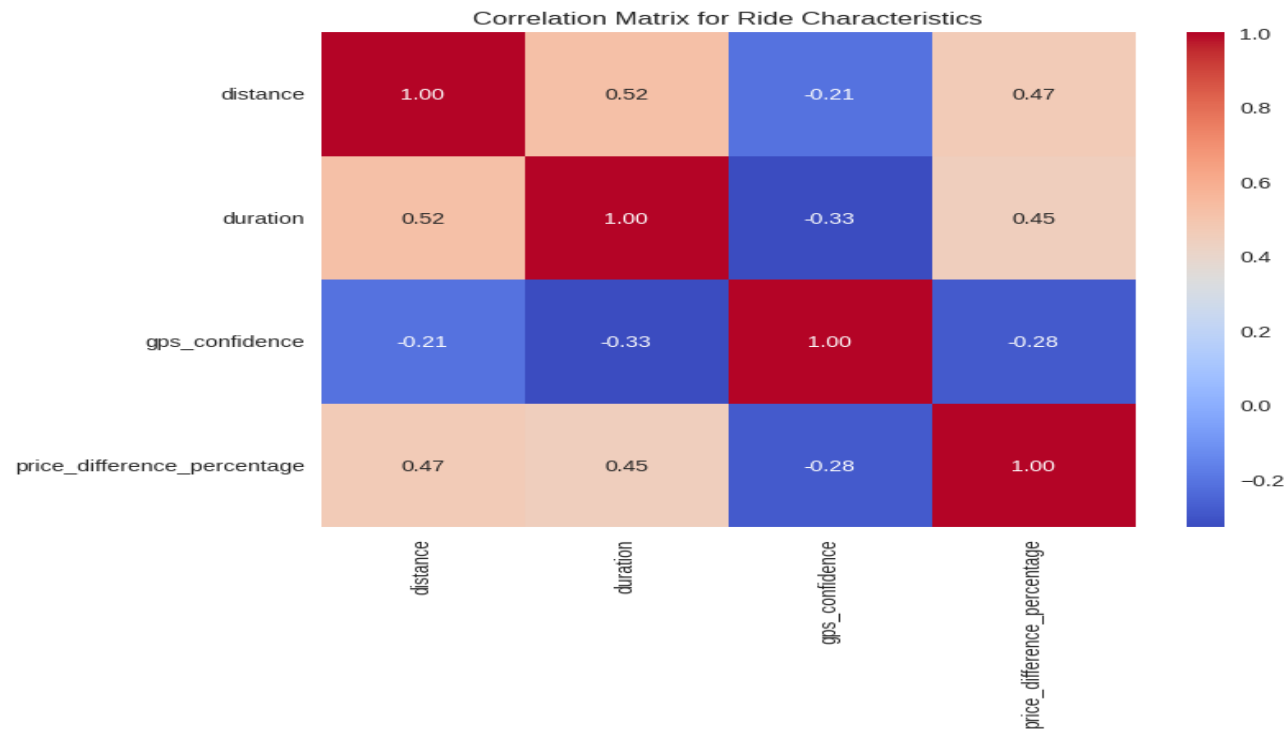


Figure 4: Correlation Matrix of Ride Characteristics

### **Key Correlations:**

1. Distance and Price Difference (0.47)
  - (a) Strong positive correlation.
  - (b) Longer distances lead to higher price deviations due to route complexity.
2. Duration and Price Difference (0.45)
  - (a) Moderate positive correlation.
  - (b) Increased trip duration often correlates with greater deviations, impacted by delays or traffic.
3. GPS Confidence and Price Difference (-0.28)
  - (a) Negative correlation.
  - (b) Better GPS accuracy reduces pricing deviations, highlighting the importance of robust GPS data.

### **Recommendations:**

1. Enhance GPS Accuracy: Here we can introduce advanced GPS tracking with real-time error correction.
2. Destination Change Management: Here we can develop dynamic pricing algorithms to handle multiple destination adjustments in real-time.

### **Implementation Plan:**

1. Short-term Actions
  - (a) We can implement GPS confidence threshold alerts.
  - (b) We can develop a destination change pricing algorithm by creating a customer communication framework.
2. Long-term Actions
  - (a) Deploy an enhanced GPS tracking system.
  - (b) We can implement machine learning prediction models by establishing a continuous monitoring system.

### **Conclusion**

The analysis identifies low GPS accuracy, frequent destination changes, and prediction model limitations as primary drivers of pricing inaccuracy. Addressing these problems will enhance customer trust and pricing precision.