

Recommendations: Based on the regression model analysis, here are some data-driven recommendations for the ride-sharing company:

- 1. Dynamic Pricing Strategies:** Implement dynamic pricing based on distance tiers. As the model suggests, very short distances significantly reduce fares, while moderate distances have a smaller impact. Consider adjusting fares dynamically to encourage shorter trips during peak hours or in congested areas. Use temporal factors (pickup years) to adjust pricing. If fares were higher in certain years, consider reintroducing similar pricing during high-demand periods.
- 2. Driver Incentives:** Incentivize drivers to take longer trips. Since moderate distances have a less negative impact on fares, encourage drivers to accept longer rides by offering bonuses or higher commissions for such trips. Tie incentives to positive customer feedback. If certain geographic areas consistently yield higher fares (based on latitude and longitude coefficients), reward drivers who serve those areas well.
- 3. Service Improvements:** Optimize pickup and drop-off locations. Use geographic insights to identify areas with higher fares. Ensure better coverage in these regions and improve service quality. Enhance customer experience for very short trips. Although these trips reduce fares, they contribute to overall business volume. Consider loyalty programs or discounts for frequent short-distance riders.
- 4. Market Segmentation:** Segment customers based on their preferences. Some riders may prioritize affordability (short trips), while others value convenience (longer trips). Tailor marketing and pricing strategies accordingly.
- 5. Promotions and Seasonal Adjustments:** Leverage temporal factors to offer promotions. For example, during historically high-fare years (2013, 2014), introduce limited-time discounts or special offers. Adjust fares during holidays or events. If pickup years 2013 and 2014 coincide with festive seasons, consider premium pricing during similar periods.