

Optimizing Ticket Prices for Big Mountain Resort

Data-Driven Recommendations for Enhanced Revenue

Identifying the Problem

- **Objective:** Optimize ticket pricing to increase revenue without compromising customer satisfaction
- Current adult weekend ticket price at Big Mountain Resort: \$81.00
- Key variables: Vertical drop, lift infrastructure, number of runs, snowmaking area
- Importance of aligning pricing strategy with market positioning and resort capabilities

Recommendation and Key Findings

- Increase adult weekend ticket price to **\$95.87** based on model predictions
- Implement Scenario: **Increase vertical drop and add additional chairlift to boost ticket prices and revenue**
 - Increase the ticket price by \$1.99 and revenue by \$3,474,638
- Monitor and manage operational costs to ensure profitability

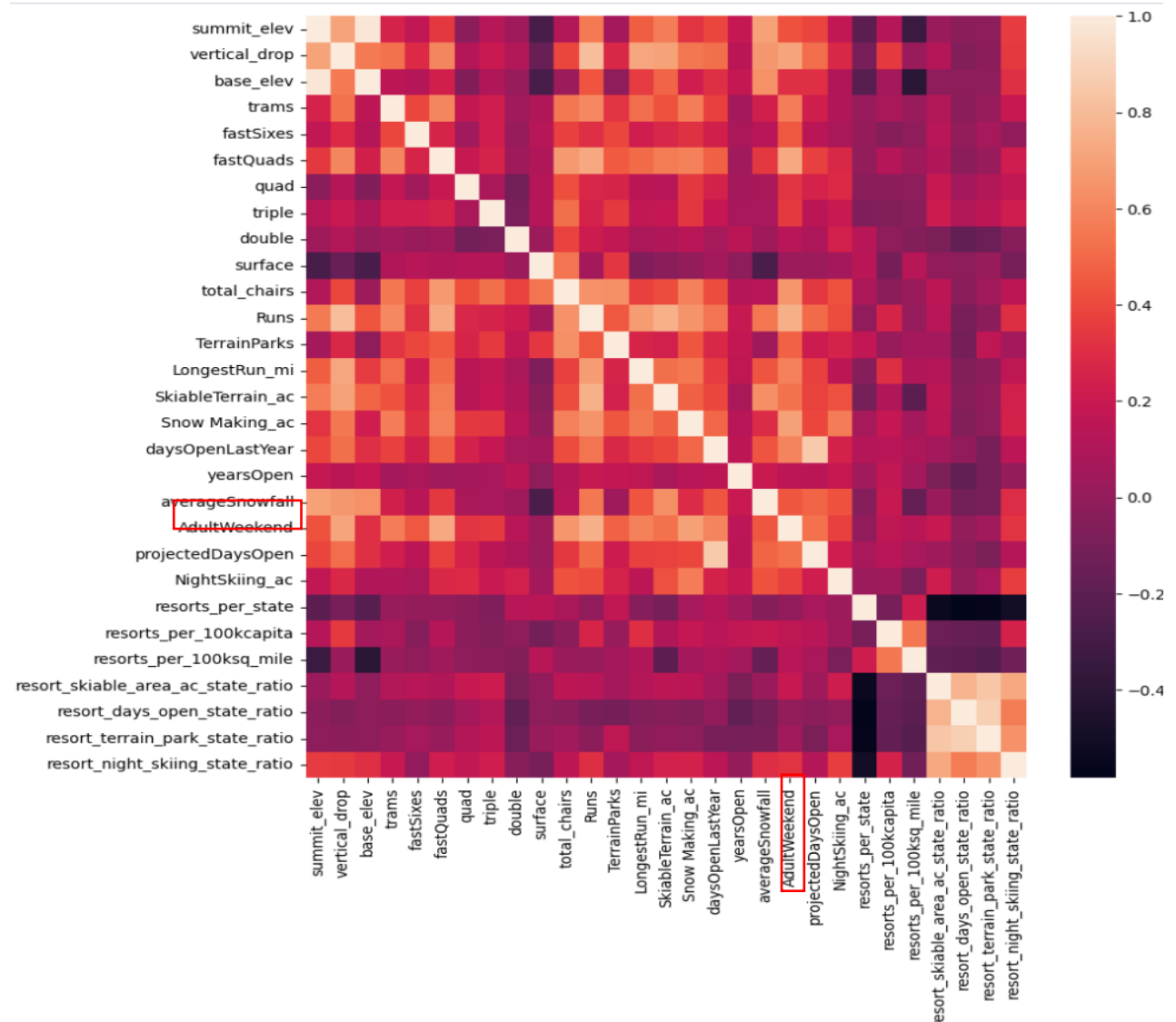
Correlation Analysis using Heat map: Ticket Price vs Features

Significant Positive Correlations:

- Fast Quads
- Runs
- Snow Making Area
- Total Chairs
- Vertical Drop

Noteworthy Findings:

- Night Skiing Capacity



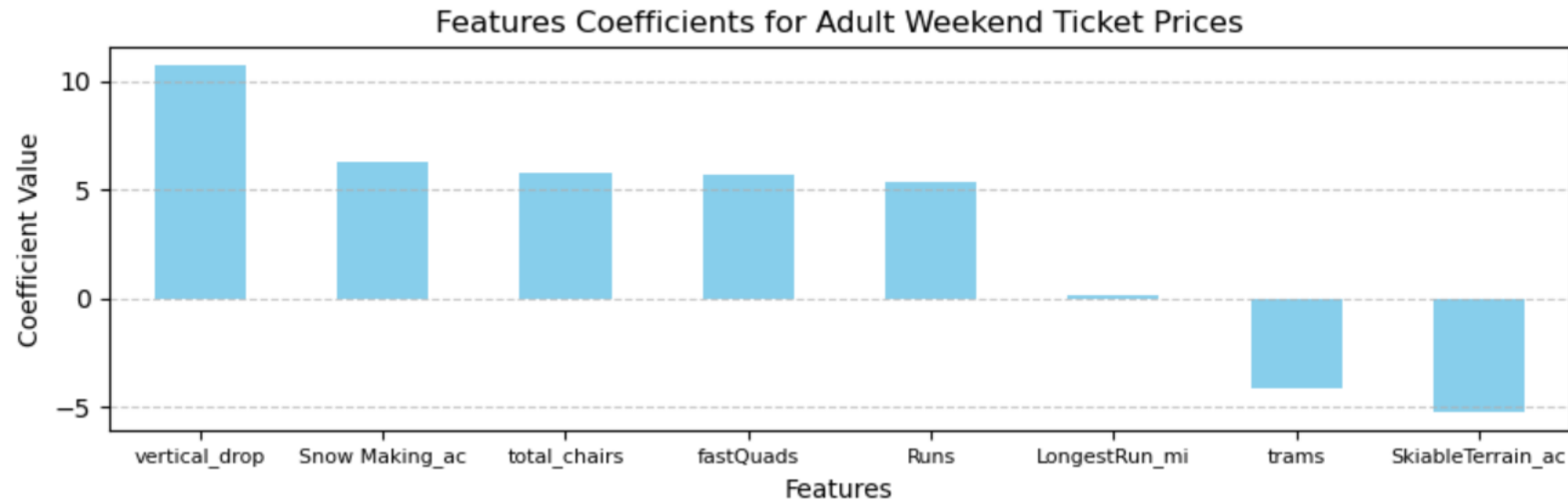
Linear Model Insights

Initial model with all features showed a symptom of overfitting

- Wide gap of R-squared between train and test set: 82% vs 72%

Refined model with 8 features improved performance by selecting key features

- vertical drop is the biggest positive feature, and skiable Terrain is the biggest negative feature



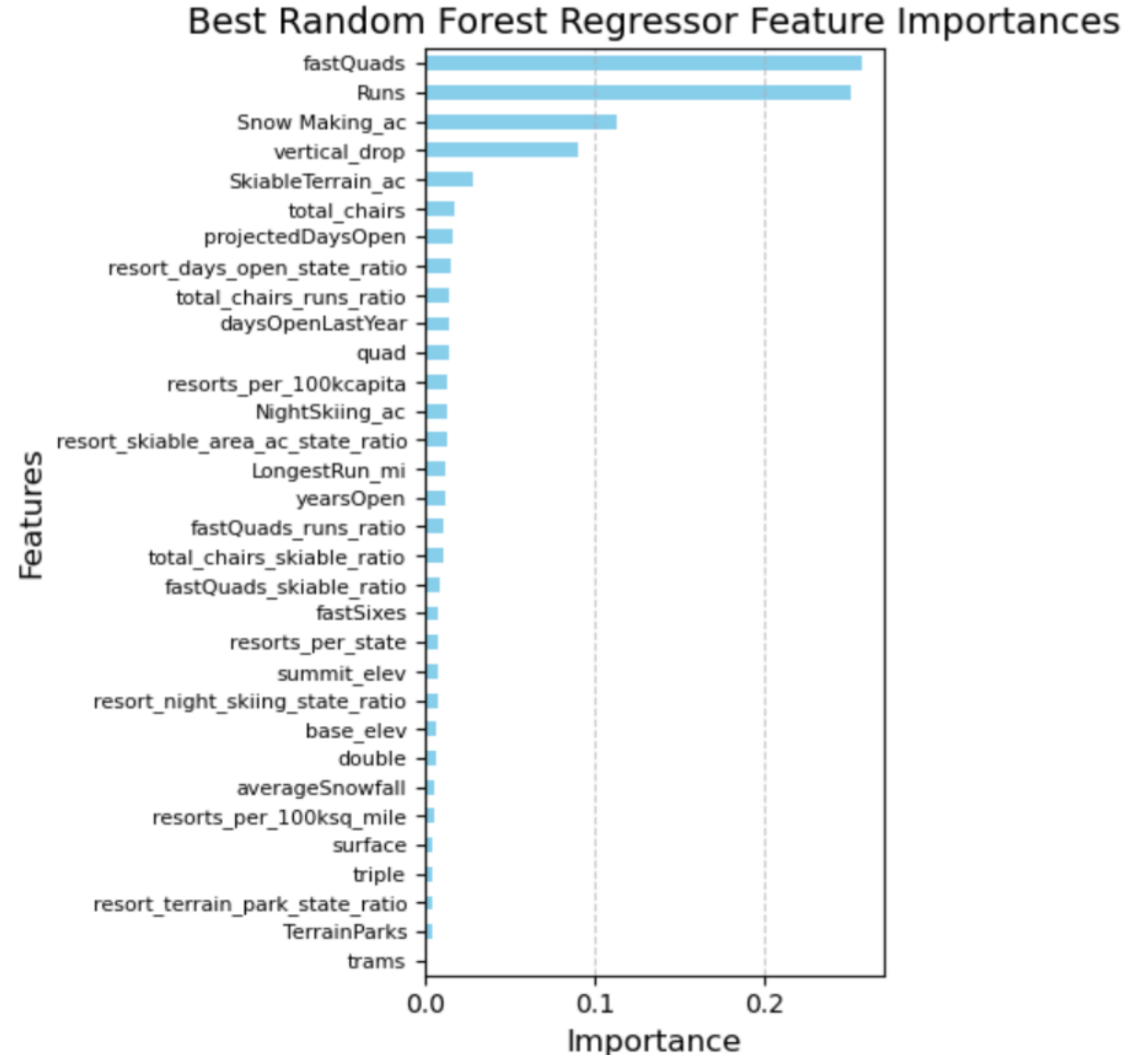
Random Forest Model Insights: Superior Model Performance

Random forest model outperformed linear model (CV score: 0.71)

- Lower Mean Absolute Error (MAE) and smaller standard deviation than linear model
- Important features: Fast quads, number of runs, snowmaking area, vertical drop

Upside room for ticket price by the model

- **Modelled price \$95.87 and actual price \$81.0.**
- Room for an increase even with the expected mean absolute error of \$10.39



Scenario Analysis

Simulations under four scenario options

1. Permanently closing down up to 10 of the least used runs
- 2. Increase the vertical drop by adding a run to a point 150 feet lower down but requiring the installation of an additional chair lift**
3. Same as number 2, but adding 2 acres of snow-making cover
4. Increase the longest run by 0.2 miles to boast 3.5 miles length, requiring an additional snow-making coverage of 4 acres

Best Performance Improvement under Scenario 2:

- **Price Increase: \$1.99**
- **Revenue Increase Over the Season: \$ 3,474,638**

Summary and Strategic Path Forward

- Recommended **price adjustment to \$95.87** according to data-driven methodology
- Prioritize Scenario 2 for revenue growth
 - **Increase the vertical drop requiring the installation of an additional chair lift**
- Monitor costs to maintain profitability
- Next steps: Implement recommendations, continuous performance monitoring, and analysis