

Big Mountain Resort Pricing Strategy Analysis Report

1. Problem Statement

The analysis aims to refine Big Mountain Resort's pricing strategy to optimize profitability while maintaining its competitive edge. By assessing its amenities, market positioning, and operational costs, the goal is to recommend a ticket pricing that maximizes revenue without sacrificing customer satisfaction and market share.

2. Data Wrangling

The initial dataset comprised multiple sources, including resort operational data, pricing, and geographical information. The data cleaning process involved identifying and handling missing values, particularly in the snow making area and days open last year. Removing duplicates and correcting data entry errors, such as mislabeled resorts or inconsistent units. Integrating state-wide economic and population data to contextualize resort performance within broader market trends.

3. Exploratory Data Analysis

Detailed exploratory data analysis was conducted to identify trends and anomalies. Analysis of ticket price variations across different states and resorts to identify pricing patterns and anomalies. Correlation studies between facilities like lifts, runs, and ticket prices to gauge influential factors. Benchmarking Big Mountain's facilities against competitors to pinpoint strengths and weaknesses relative to market averages.

4. Model Preprocessing and Feature Engineering

To prepare the data for modeling, several preprocessing steps were implemented. Normalization of skewed data distributions to improve model accuracy. Engineering of new features that could influence ticket pricing, such as the ratio of total chairs to runs and enhanced categorical variables to capture unique characteristics of resorts. Selection of relevant features based on correlation with the target variable (Adult Weekend Ticket Price) and removal of redundant variables.

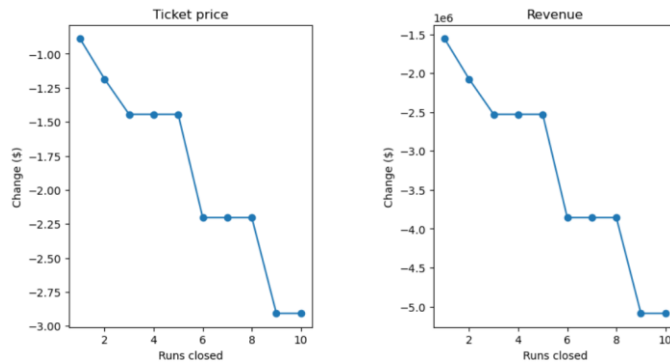
5. Algorithms and Model Evaluation

The Random Forest Regressor was chosen for its ability to handle complex datasets with high-dimensional spaces and mixed data types. Model parameters were tuned using grid search to find the optimal settings for tree depth, number of estimators, and minimum samples per leaf. Model performance was validated through cross-validation techniques, focusing on mean absolute error to quantify prediction accuracy. Sensitivity analysis was performed to understand the impact of different features on the predicted ticket price.

6. Winning Model and Scenario Modelling

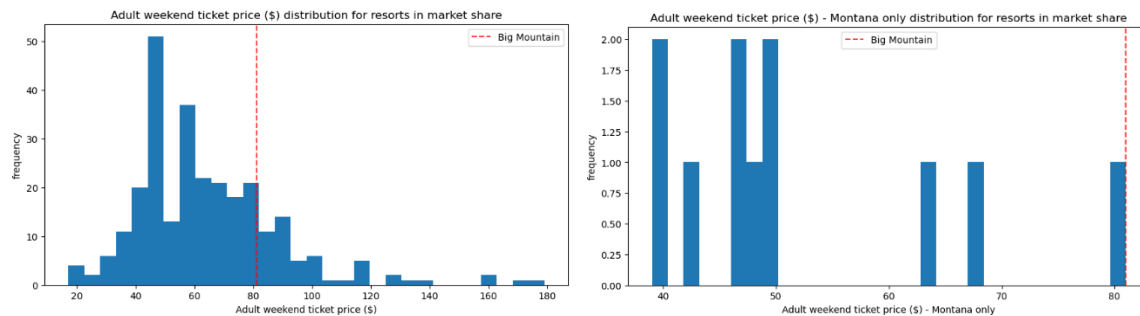
Using the trained model, several business scenarios were modeled to predict their impact on ticket pricing. Scenario analysis included potential outcomes of increasing the vertical drop, adding runs, and expanding snow making capabilities. Each scenario's effect on the ticket price

was quantified to guide strategic decisions. The model suggested that enhancing the vertical drop and adding snow making coverage could justify a ticket price increase of approximately \$3 to \$5.



7. Pricing Recommendation

Based on the model's output, a strategic increase in ticket prices is recommended. The proposed new price of \$97.96 represents a premium justified by the resort's amenities and market positioning. A phased pricing strategy is advised, where incremental increases allow for market feedback and adjustment. Special promotions and discounts could be used strategically during the transition period to maintain customer loyalty and volume.



8. Conclusion

The comprehensive analysis confirms the opportunity for Big Mountain Resort to increase its ticket prices. This approach aligns with the added value from its amenities and superior offerings compared to competitors. The recommendation supports a strategic shift that leverages both current market conditions and the resort's unique attributes.

9. Future Scope of Work

Future analyses should include Regular updates to the pricing model to incorporate new data and reflect changing market dynamics. Exploration of price elasticity of demand in different market segments to fine-tune pricing strategies. Investigation into the impact of external economic factors such as tourism trends and economic downturns on pricing strategies.