

Big Mountain Resort Pricing Analysis Report

Presented to the Big Mountain C-Suite

Executive Summary

In this comprehensive report, we have analyzed extensive data to determine the optimal pricing strategy for Big Mountain Resort. Our primary objective is to recommend a pricing increase for adult weekend tickets, taking into account various factors such as resort features, state-specific metrics, and competitor pricing. We have used advanced statistical models to derive meaningful insights and make data-driven recommendations. After thorough analysis, we recommend increasing the adult weekend ticket price from the current \$81 to \$95.87, with an expected mean absolute error of \$10.39.

Data Overview

Our data analysis began with a dataset containing 330 rows and 27 columns. We addressed missing values, particularly in the 'fastEight' and 'ticket price' columns. Categorical features include resort name, region, and state, while numerical features encompass resort elevations, lift types, terrain information, and ticket prices. We made critical decisions, including dropping the 'fastEight' column due to extensive missing data and retaining only rows with weekend ticket prices, resulting in a final dataset of 277 rows and 25 columns.

State-Based Analysis

We initially explored resort distribution by state, examining mean adult weekend and weekday prices. We found that while some states exhibited higher prices, no distinct groupings emerged to justify excluding any states from our sample data. However, we identified positive indicators such as resorts per capita and negative correlations such as total state skiable area and night skiing.

Feature Engineering

To leverage state-specific metrics, we merged state-based data with resort-specific data and created ratios for relevant features, enabling us to drop the 'state' column. We caution against overreliance on correlations between target and non-target features, emphasizing the importance of thorough data exploration.

Modeling and Recommendations

Our target feature is adult weekend ticket prices, and we evaluated various regression models. The random forest regressor, with imputation using the median and no feature scaling, outperformed other models with an estimated mean absolute error of approximately \$9.64. This model suggests that Big Mountain Resort is currently undercharging for its amenities and facilities.

Pricing Recommendation

We recommend increasing the adult weekend ticket price from \$81 to \$95.87, based on the modeling results. This aligns with Big Mountain's impressive amenities and facilities, placing it within the upper echelon of resort pricing. The potential revenue increase from this price adjustment, especially considering the addition of a new chairlift, could significantly benefit the resort.

Run Closures

Regarding run closures, our data indicates that closing one run should not correspond to a decrease in ticket pricing. However, further closures would negatively impact pricing. We advise an incremental approach to run closures, carefully considering the operational cost savings and their impact on pricing.

Limitations and Future Directions

While our analysis provides valuable insights, it has limitations, such as not accounting for other resorts' financial health and potential state taxes. Future analyses could explore additional operating expenses and factors like lodging and internal activities. Access to this data through GitHub will facilitate ongoing analysis and decision-making.

Conclusion

Our data-driven approach has enabled us to recommend a price increase that aligns with Big Mountain Resort's impressive facilities and amenities. We urge the C-suite to consider this recommendation seriously, as it offers significant revenue potential while maintaining the resort's competitive edge in the industry. Additionally, we emphasize the importance of ongoing data analysis to ensure continued success and profitability.