

Project Report

Introduction

The purpose of the project is to explore options to select a better value for the ticket price of Big Mountain Resort located in the state of Montana to cover up the extra operating cost of installing an additional chair lift to help increase the distribution of visitors across the mountain. Apart from that, the resort is also concentrating on effective management strategies for the resort's facility.

Exploration

The project applied the case-study approach using prior ski resorts data and population data from all across the United States. Data obtained from around 300 ski resorts was cleaned to create the base dataframe for analysis. The data was analyzed to remove missing values and non-essential data. Then, in the data exploratory stage, the ski resort data was compared against the state population data, state area, resorts per state and more. Finally, it scaled the data state wise for all the features.

Linear Regression model and Random Forest Regressor model were used to analyze the data and the performance was compared on the basis of Mean Absolute Error, Mean Standard Error, Coefficient of Determination to select the best model fit for the resorts pricing strategy. The Random Forest Regression model was selected as it gave a better result and stayed within the large dataset range.

Model Findings and recommendations

1. Big Mountain Resort can close one run without impacting the overall revenue. If it chooses to close 3 runs, it can very well close 4 or 5 runs with no further loss in the ticket price.
2. Closure of more than 6 runs will have severe impact to the revenue.
3. Adding one more run with additional 2 acres of snow making snow making support ticket price increase of \$0.07 which brings \$119565 over the season.
4. Big Mountain Resort can also increase their longest run by 2 miles with additional 4 acres of snow making without any impact to the overall cost.

Pricing Strategy: Big Mountain Resort modelled price is **\$93.42** with actual price being \$81.

Hence, Big Mountain Resort can increase its weekend ticket price upto **\$10** to improve their revenue.

