Big Mountain Resort

Business Strategy

October 6, 2022

Problem Statement

What new pricing strategy can Big Mountain Resort implement to offset their recent additional operating cost of $1,540,000 this season?

Context

Big Mountain Resort is a ski resort in Montana with about 350,000 visitors. They have recently installed an additional chair lift to help increase the distribution of visitors, increasing their operating costs by $1,540,000 this season. The pricing strategy has been to charge a premium above the average price of resorts in its market segment. The business wants some guidance on how to select a better value for their ticket price. They are considering cutting costs without undermining the ticket price or supporting an even higher ticket price.

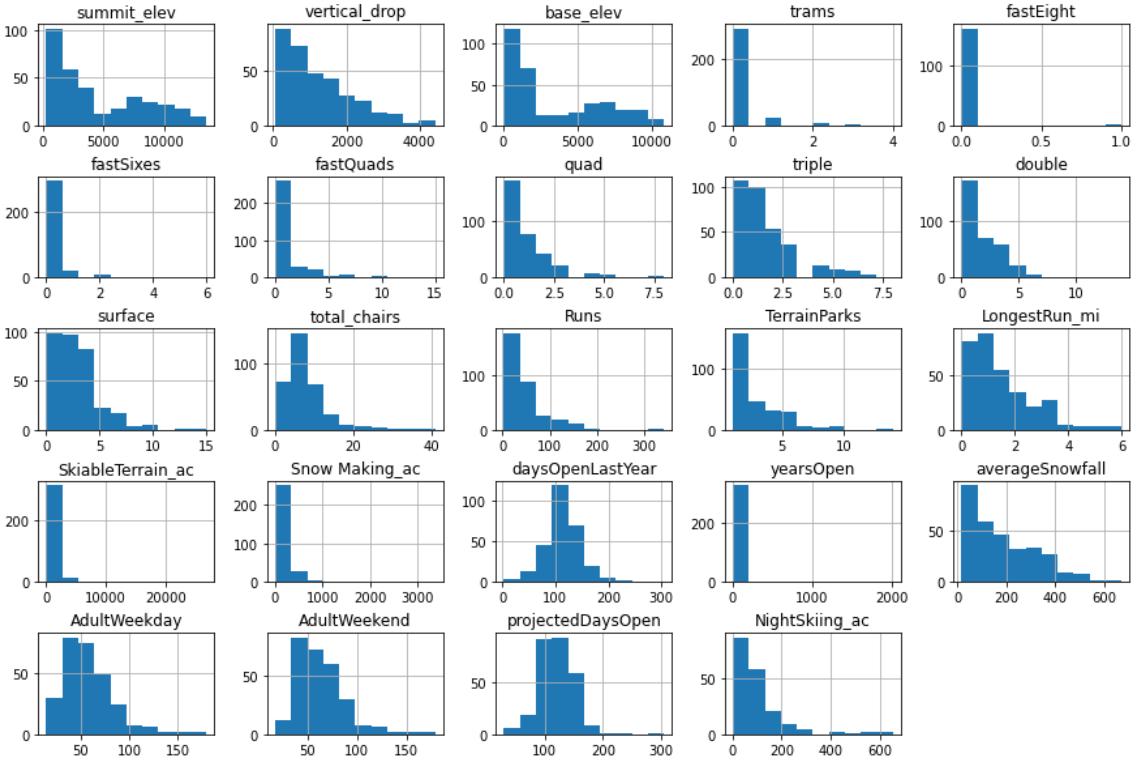
Recommendations

Two possibilities:

1) Close one run to lower operating costs and keep ticket prices the same.
2) Add a run, increase the vertical drop by 150 feet, install an additional chair lift and increase ticket price by $1.99.

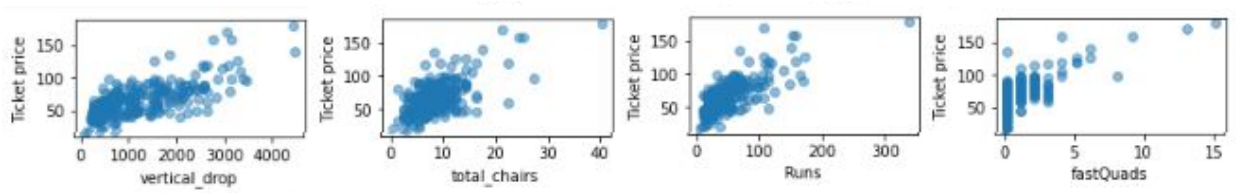
Data Wrangling

Original data provided had 330 observations and 27 columns. After cleaning it up, we ended up with 277 observations and 25 columns. We made some basic observations and took note of certain patterns of common features among the resorts.



Exploratory Data Analysis

Explored the correlation between the above features and ticket price. We noticed that there were correlations between ticket prices and vertical_drop, fastQuads, Runs, and total_chairs.



Model Preprocessing with feature engineering

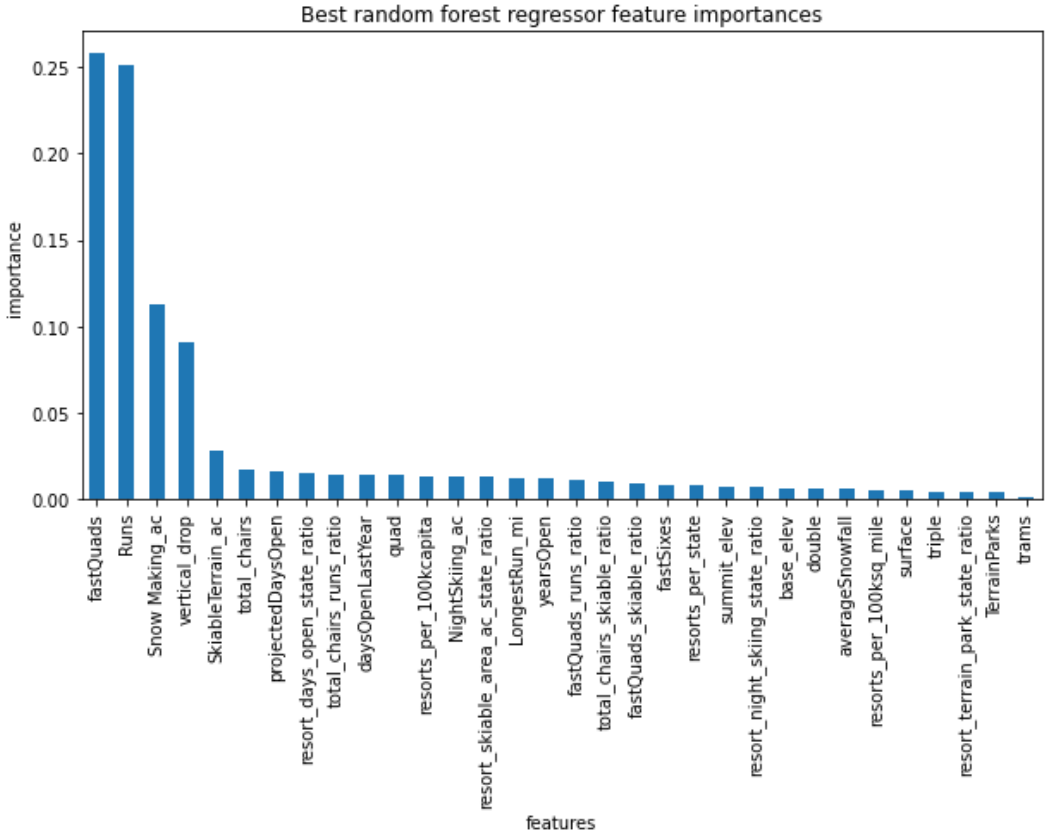
Gained a baseline idea of performance by simply taking the average price as a predictor.

Algorithms used to build the model with evaluation metric

Partitioned data into a 70/30 Train/Test split to predict how our model might perform in the future.

Winning model and scenario modeling

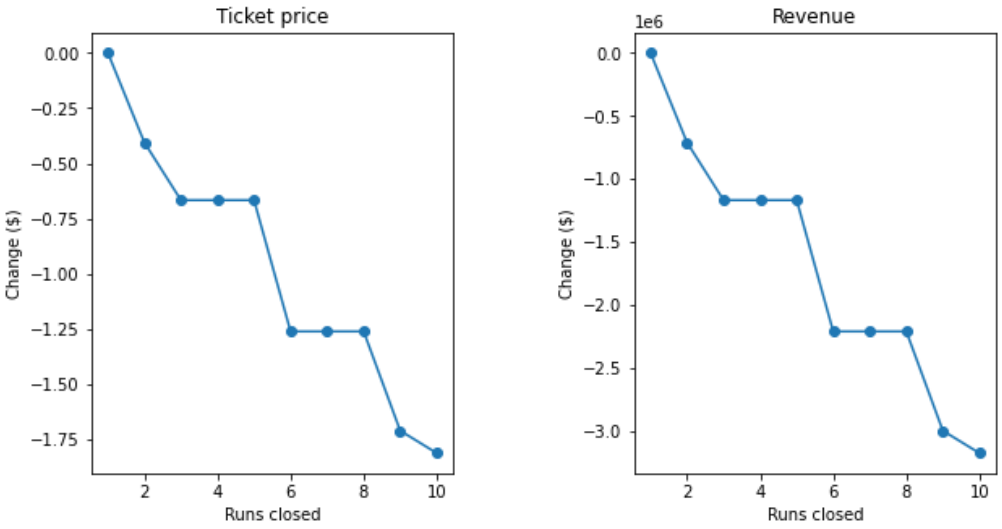
Built machine learning models. Random forest regressor had lowest cross-validation mean absolute error and exhibited the least variability. The model advised that the following features were important: fastQuads, Runs, Snow Making_ac, Vertical_drop.



Took model for ski resort ticket price and leveraged it to gain some insights into what price Big Mountain's facilities might actually support as well as explore the sensitivity of changes to various resort parameters.

Pricing recommendation

1) Closing one run makes no difference. Closing 2 and 3 successively reduces support for ticket price and so revenue. Closing 3 to 5 makes no further loss in ticket price. Closing more than 6 leads to a large drop.



2) Add a run, increase the vertical drop by 150 feet, install an additional chair lift and increase ticket price by $1.99. Over the season, this could be expected to amount to $3474638

Conclusion

Big Mountain Resort currently charges $81 for an adult ticket. By adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift, the data supports raising the ticket price by $1.99 to $82.99. On the basis of each visitor on average buying 5 day tickets, over the season, this increase in price could be expected to amount to $3,474,638. Assuming the additional chair lift would increase the operating cost by the same amount, $1.54 million, the profits seem to outweigh the cost.

Future scope of work

Look further into overall operating cost for the resorts. A more accurate prediction model could be achieved. For now, Big Mountain Resort executives have access to a user-friendly website that could be updated as the competition and numbers change.