Big Mountain Resort

Recommendations for maximizing profit

Problem Identification

Big Mountain Resort seeks better value for their ticket price. They suspect that they can charge more but want data to prove this suspicion. Big Mountain is also considering a number of changes that they hope will either cut costs without undermining the ticket price or will support an even higher ticket price.

Recommendations

Big Mountain Resort can raise their prices. Currently the resort charges $81, but even without deep comparative analysis of other resorts, the modeled price is $95.87. Even with the expected mean absolute error of $10.39, there is room for a price increase. And in comparison to other resorts, Big Mountain tends to be underpriced.

The model and data analysis shows that Big Mountain can also add a run, increase the vertical drop by 150 feet, and install an additional chair lift and raise prices modestly while still making more of a profit. This scenario increases support for ticket price by $8.61 to a total of $89.61 per ticket, and over the season this could be expected to amount to $15,065,471 dollars.

Modeling and Analysis

The most important features associated with ticket price are: amount of fast-quads, runs, snow-making, and vertical drop:

Best random forest regressor feature importances
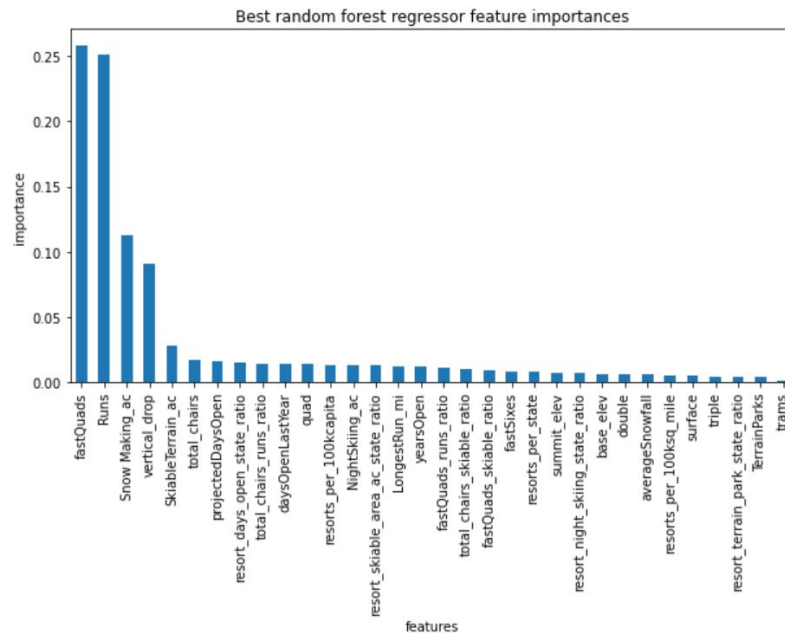
Modeling and Analysis

The most efficient and most applicable model ended up being a random forest regression informed by a first-pass linear regression. Histograms of the random forest regression as follows show that Big Mountain has many more high quality and desirable features in comparison to other resorts: large snow-making area, fast quads, high total number of chairs, number of runs. It also has one of the longest runs.

Area covered by snow makers (acres) distribution for resorts in market share
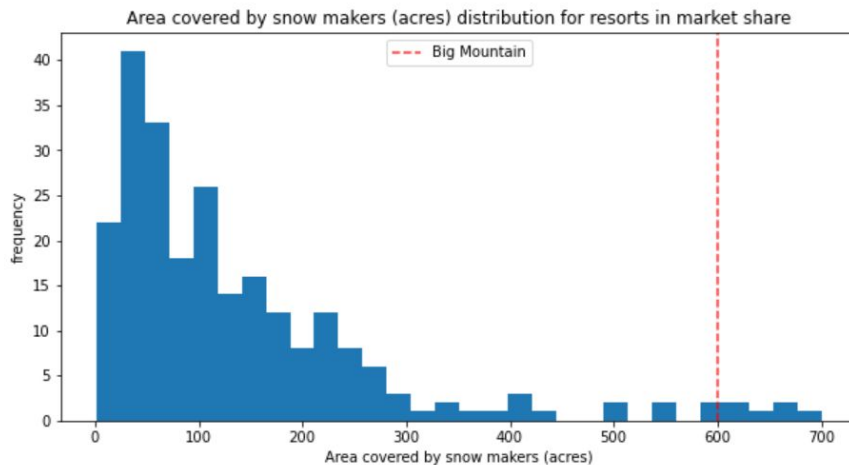
Big Mountain is very high up the league table of snow making area.

Summary

In comparison to other ski resorts in the United States, Big Mountain already offers many more high quality and desirable features than others in the same market: large snow-making area, fast quads, high total number of chairs, number of runs. It also has one of the longest runs.

Big Mountain can better capitalize on the existing quality features by raising ticket prices - the data shows they have the leeway to do this. They can raise prices even more with some minor additions and improvements - add a run, increase the vertical drop by 150 feet, and install an additional chair lift.