Based on the results of the analysis, random forest was found to be the best performing model in terms of our performance metrics (R-squared, Mean Absolute Error (MAE), and Mean Squared Error (MSE)). The random forest's variable importance analysis showed that some features are more important than others in ticket pricing (Figure 1). Those features were found to be:

1. The number of fast four-person chairs
2. The number of runs on the resort
3. The total area covered by the snow making machines
4. The vertical change in the elevation from the summit to the base

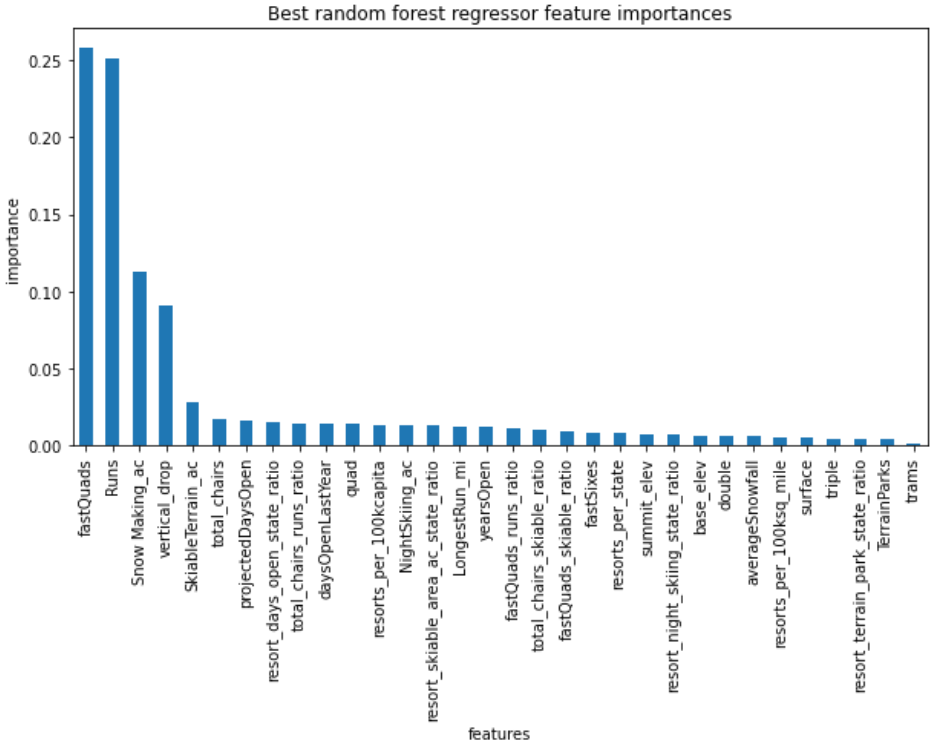

Figure 1. Random Forest Variable Importance Analysis Result

To get a better picture, Big Mountain's ticket price was first compared with other resorts' (Figure 2).

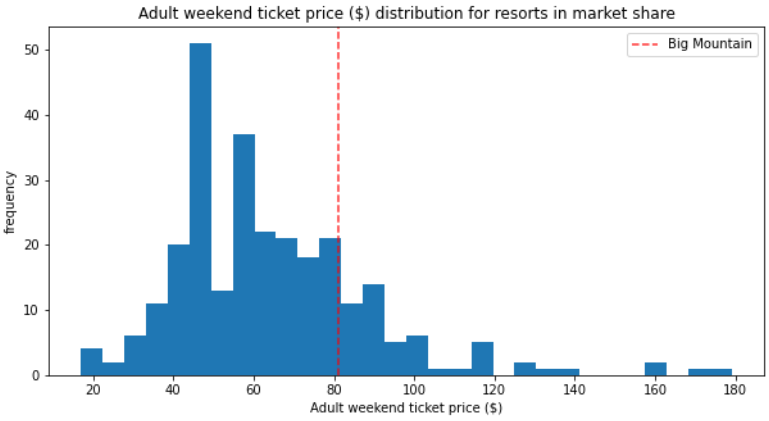

Figure 2. Ticket prices

Next, the place of Big Mountain was assessed in terms of the above facilities among all investigated resorts (Figure 3).

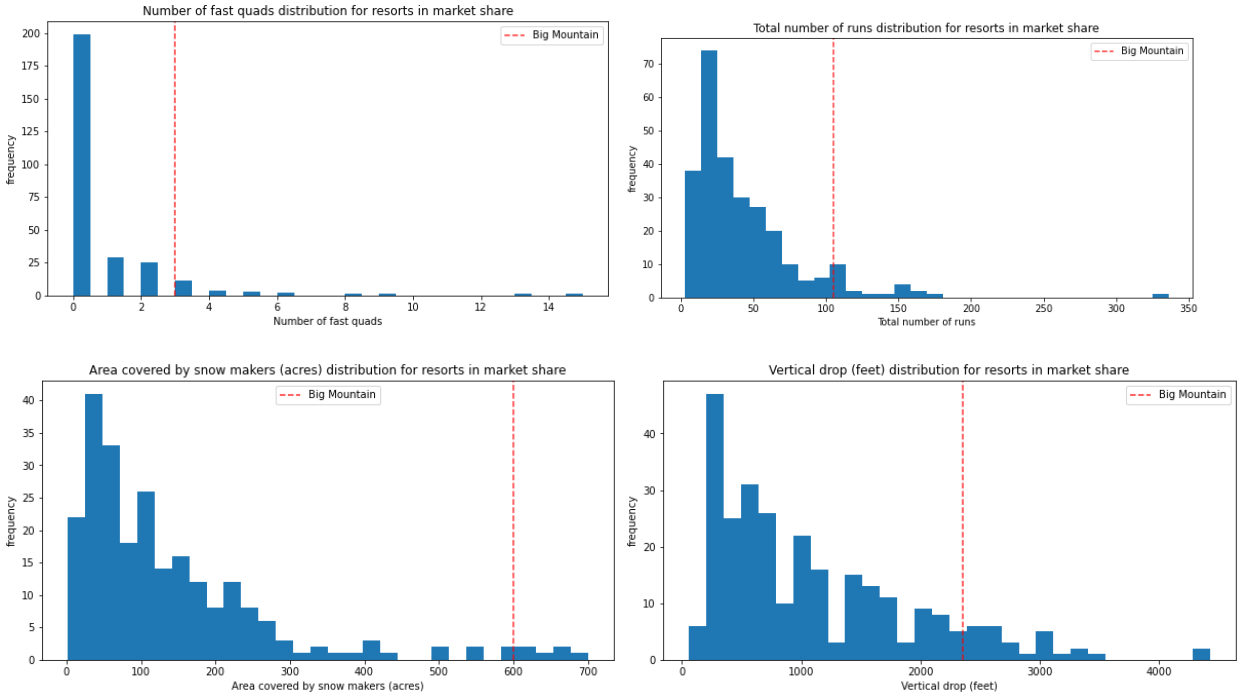

Figure 3. 1) Fast quads 2) Number of runs 3) Area covered by snow makers 4) vertical drop

As can be seen, Big Mountain stands high on all the league charts of facilities offered. Nevertheless, the results of the analysis showed that Big Mountain is undercharging its visitors, where the calculated fair ticket price of $95.87 were already found to be higher than the current ticket price of $81.

Apart from that, four different scenarios were investigated with the goal of reducing the cost and/or increasing the profitability of the resort. The investigated scenarios were as follows:

1. Permanently closing down up to 10 of the least used runs.
2. Increase the vertical drop by adding a run to a point 150 feet lower down but requiring the installation of an additional chair lift to bring skiers back up, without additional snow making coverage
3. Same as number 2, but adding 2 acres of snow making cover
4. Increase the longest run by 0.2 mile to boast 3.5 miles length, requiring an additional snow making coverage of 4 acres

While lack of enough information on the initial cost and the operating cost of these changes made the analysis to be a ballpark figure only, even these rough calculations showed that Big Mountain can increase its profit by reducing the number of chairs and increasing the vertical drop and the snow making coverage.