**Big Mountain Resort: Ticket Price Analysis**

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Big Mountain Ski Resort in Montana currently has their ticket price set to $81. We used a Random Forest to build a model to estimate what Big Mountain’s ticket prices should be, it estimates the ticket price to be around $94.22. There is about a $10 error for this number, however it does suggest we should increase the ticket prices.

**Figure 1:**

Chart, histogram

Description automatically generated

This model also allowed us to note some important features of our resort, as Figure 1 (above) shows, the number of fast quads, runs, snow making, and vertical drops, are some of our top features. Additionally, in some of our other analysis, we noted total number of chairs, longest run, and skiable terrain were features influencing the price as well. Big Mountain is already one of the most expensive resorts in Montana, to justify this price increase we suggest marketing promote these features as we excel in them.

In the 5th Notebook we tested different scenarios to see what changes we could make to the resort to best support our price increase. We saw that increasing the vertical drop by adding a run to a point 150 feet lower down, installing an additional chair lift to bring skiers back up, and adding 2 acres of snow making cover, could allow for us to increase ticket prices by $9.75, which will result in a revenue for the season of about $17,068,841. If there are similar scenarios that we want to test, we can change the parameters of the current code to see if there are more or less beneficial than the ones we conducted. If we wish to save money by closing some of the runs, I would suggest just closing one run, as we will see no need to change our prices (as shown in Figure 2 below), however we do start to see sharp decreases in revenue as we close more runs.

**Figure 2:**

Chart, line chart

Description automatically generated