Big Mountain Resort – Increase in the ticket prices

## Context and Goal

Big Mountain Resort, a ski resort located in beautiful Montana with spectacular views, attracts about 350,000 people every year. We want to increase our ticket prices and reduce operation costs to increase our revenue. We want to utilize our beautiful facilities to justify the increase in ticket prices. Basing our prices on just the market average is not a good investment strategy as market average tends to fluctuate and is based on many unquantifiable features, which is not sustainable in the long run. It is necessary to get a good sense of the importance of some facilities compared to others as it can drive a sustainable business investment strategy. This strategy is market driven and will we want to capitalize on facilities that have high demand.

## Problem Statement

How can Big Mountain resort increase its revenue by 10% over the next year by reducing the operational costs by closing some facilities and increasing the ticket prices by utilizing other facilities?

After modelling the resort’s ticket price based on other resorts, we found that while its current price is $81.00, the modelled price is $96.52. Even if we leave buffer for some error (mean absolute error), there is still a significant room for an increase in prices. Figure B shows that Big Mountain’s ticket price is on the higher end in Montana; however, Figure A shows that the price is lower than a good number of resorts in the county. This confirms our finding that there is some room for increase.

Figure B

Figure A

Chart, bar chart

Description automatically generatedChart, histogram

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## Analysis

We ran two models, a linear regression model and a random forest model. Both models highlighted that the following features of the resorts made the biggest impact on ticket prices:

* ‘Vertical Drop’ – Vertical change in elevation from the summit to the base in feet
* ‘Fast Quads’ – The number of fast four person chairs
* ‘Total Chairs’ – Sum of all the chairlifts at the resort
* ‘Runs’ – Count of the number of runs on the resort
* ‘Snow Making\_ac’ – Total area covered by snow making machines in acres

Chart, scatter chart

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The figures show that all the above-mentioned features are positively correlated with the ticket price. This means that the resort can capitalize on these features to increase its ticket prices!

## Recommendations

1. Chart, line chart

   Description automatically generatedOperation costs can be reduced by closing some runs. Our model shows that closing one run makes no difference to the ticket price. Closing 2 and 3 runs reduces support for ticket price successively leading to a decrease in the revenue. If the executives decide to close 3 runs, they might as well close 4 or 5 as there seems to be no further loss in ticket prices. Closing 6 runs is going to significant reduce the ticket price and thus, the revenue.
2. Adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift would increase the support for ticket price by $1.07, amounting to $1,876,812.
3. Increasing the snow making area by 2 acres will not affect the support for ticket beyond what is mentioned above.
4. Similarly, increasing the longest run by .2 miles and adding 4 acres of snow making capability will not make any difference to the ticket price beyond what is mentioned above.