

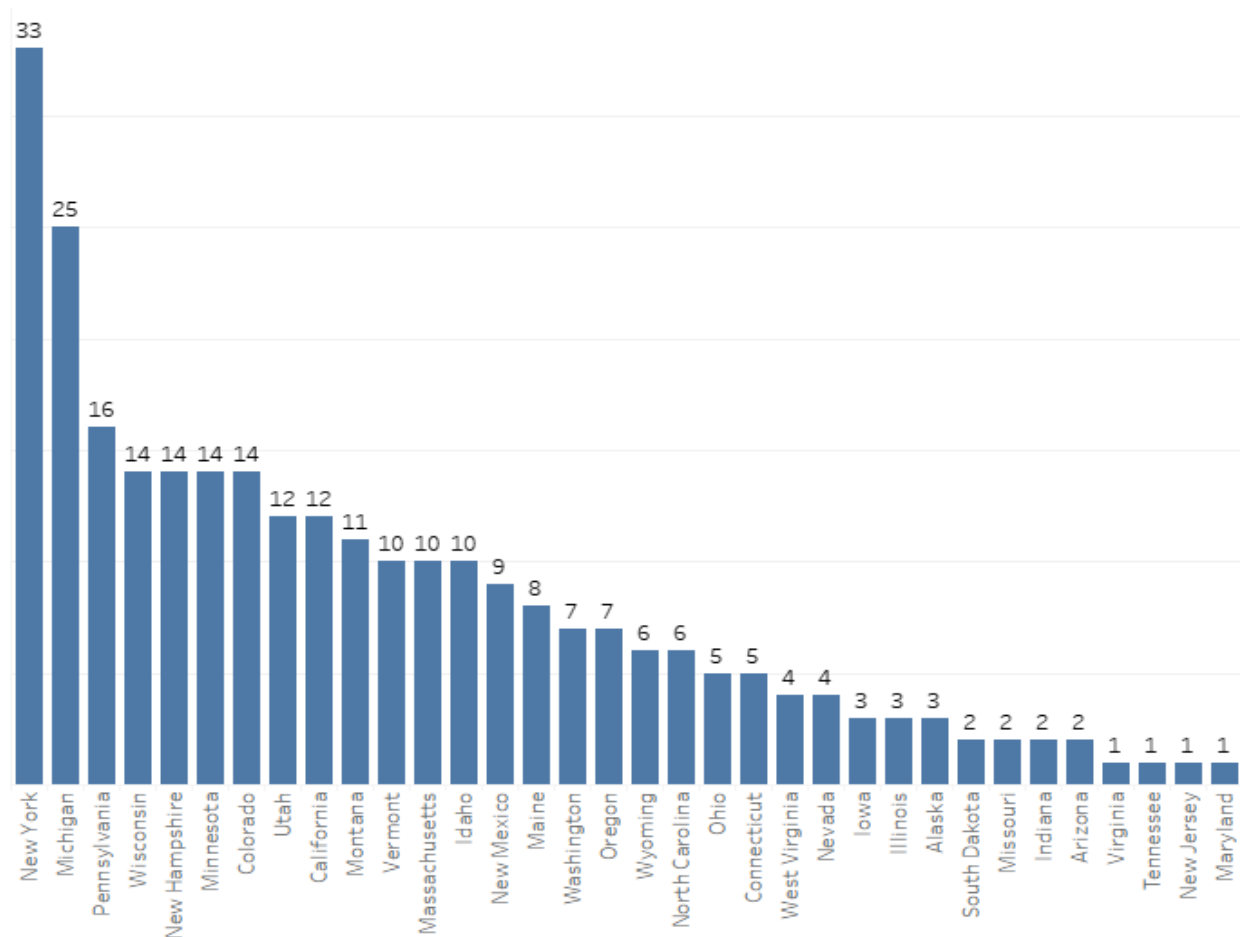
Big Mountain Resort - Summary

Big Mountain Resort is a ski resort located in Montana with approximately 350,000 visitors annually. They have recently invested in an additional chair lift which will increase their operation costs by \$1.54M this season. Business leaders suspect that Big Mountain is not capitalizing on its facilities as much as it could, since the resort's pricing strategy has been to charge a premium above the average price of resorts in its market segment.

Our main objective is to build a price prediction model to simulate different scenarios business leaders have identified as possible strategies to increase revenue.

The data used to build our prediction model contains information on 330 ski resorts in the same market segment across 35 states in the US, including Big Mountain.

Distribution of Ski Resorts by State



An exploratory data analysis was performed on the data to better understand how the facilities offered can influence price. The analysis shows that the following facilities influence the price the most: vertical drop, area covered by snow makers, total number of chairs, number of fast Quads, number of runs, number of trams and skiable terrain area. In a comparison with all the resorts in the analysis, Big Mountain is on the high spectrum of most of the above listed facilities.

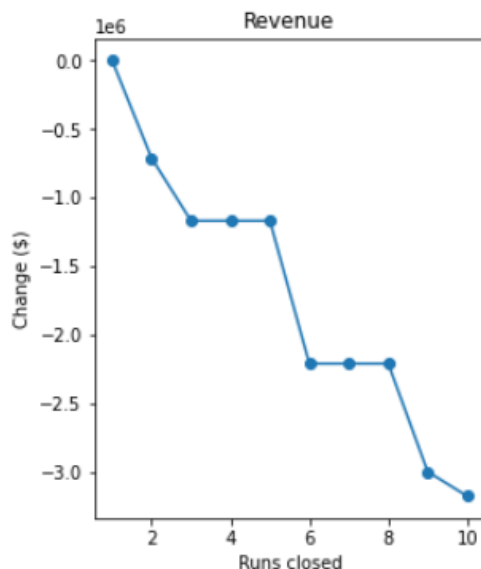
Several price prediction models were built using different features and metrics obtained for better accuracy. Our final price prediction model has a margin of error of +/- \$10.39.

Big Mountain Resort has been reviewing potential scenarios for either cutting costs or increasing revenue (from ticket prices). The business has shortlisted some options:

1. Permanently closing down up to 10 of the least used runs. This doesn't impact any other resort statistics.
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

Price prediction model was used to run through these scenarios using historical data on the expected number of visitors (350,000) and the average of visitors skying for 5 days. These are the results of each scenario:

1. Closing 1 run doesn't have an impact on price/revenue. Closing 2 runs could have an impact of revenue reduction of \$710k. Closing 3 to 5 runs has an impact of revenue reduction of \$1.1M. As more runs are closed the revenue impact is higher as it can be seen on the graph below. An additional analysis should be completed to understand if the operating costs of those runs can offset the loss in revenue.



2. The price prediction model increases the ticket price by \$1.99. Over the season this could be expected to amount to \$3.47M in revenue. Additional analysis needs to be completed to account for costs in adding the drop point. Costs of installing an additional lift based on the recent acquisition are approximately \$1.54M.
3. Same results as Scenario #2.
4. The price prediction model didn't predict any changes on price/revenue, but there could be costs associated in increasing the length of the longest run and additional snow making.

Recommendation to the business is to implement Scenario #1 gradually. Closing 1 run or a few runs shouldn't have much impact on revenue, can be implemented fast and can be reversed if the strategy doesn't work.

Other scenarios require investing upfront in facilities, it would take time to realize revenue and are not easily reversed if they don't work.