

An aerial photograph of a mountain ski resort. The image shows a vast, snow-covered mountain range with numerous ski runs and trails. The foreground and middle ground are filled with dense evergreen forests, while the background features more distant, rugged mountain peaks under a clear sky. A large, white, semi-transparent circle is centered over the image, serving as a backdrop for the text.

Big Mountain Ski Resort

Ticket Pricing

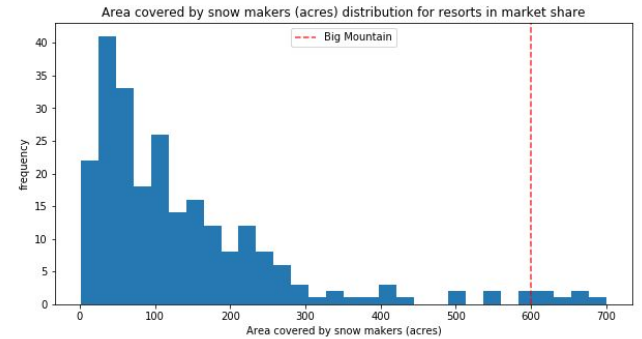
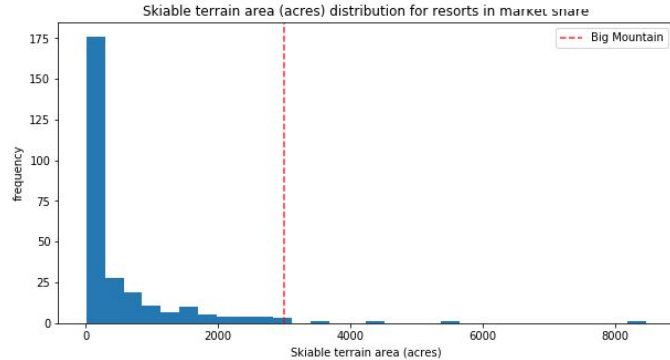
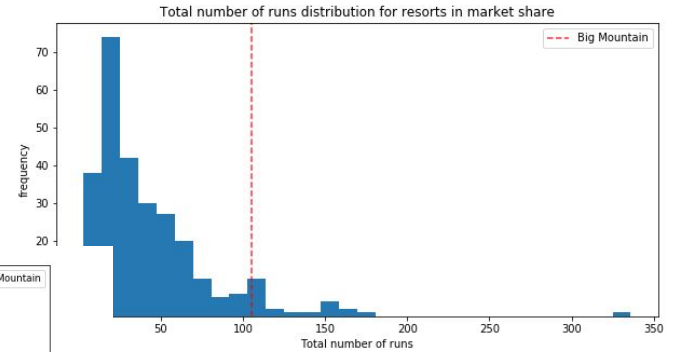
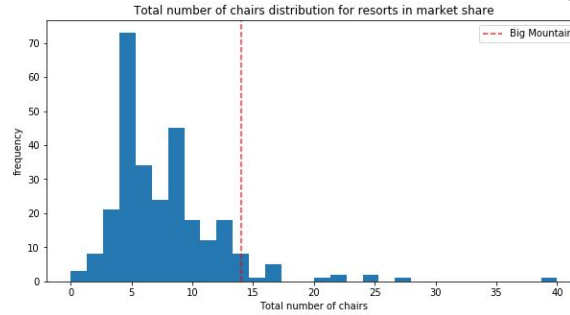
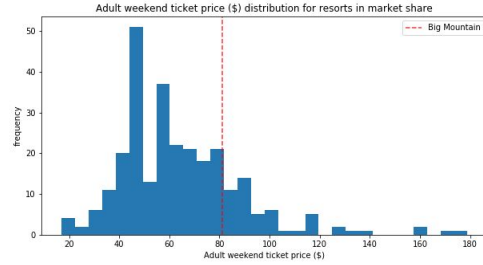
Purpose of this Project

- Provide recommendation to the Big Mountain Ski resort to optimize their operation and maximize the return through
 - Ticket pricing model competitive in their market segment
 - Finding what facilities provide the greatest return in investment

Shortlisted Scenario

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

Exploratory Data Analysis



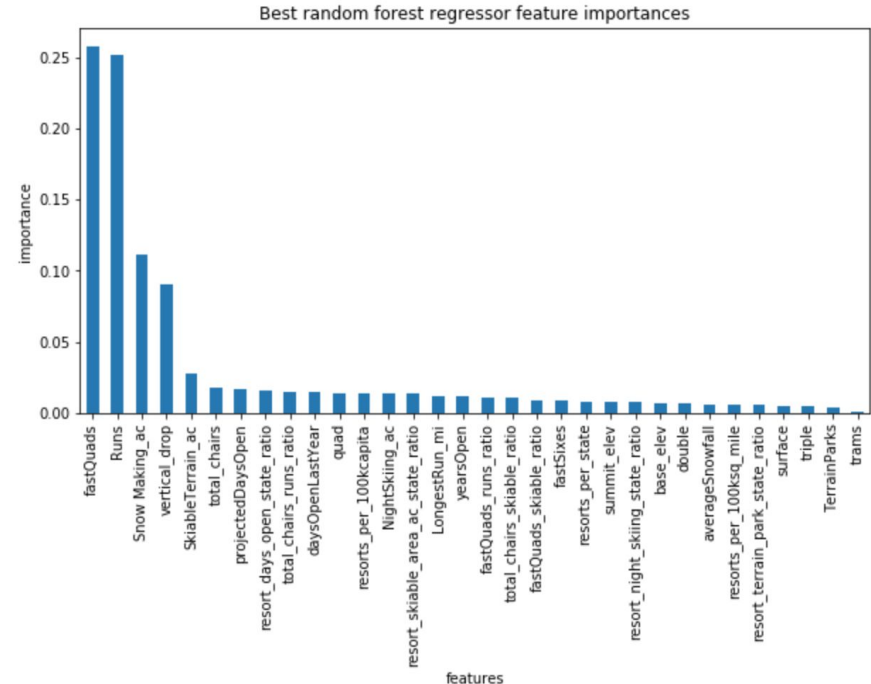
Big Mountain Resort is well-above average in most metric so the model should support the higher price

Model selection (Important Features)

- Linear Model

vertical_drop	10.767857
Snow Making_ac	6.290074
total_chairs	5.794156
fastQuads	5.745626
Runs	5.370555
LongestRun_mi	0.181814
trams	-4.142024
SkiableTerrain_ac	-5.249780

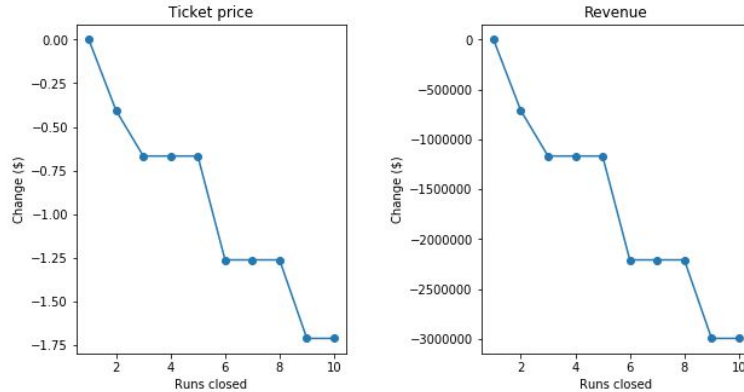
- Random Forest Model



Used RF as the the preferred model

Findings:

Scenario 1:



- Closing 1 lift does not make any difference but if it decides to close 2 or 3 it can safely close up to 5 without any loss in revenue

Scenario 2: Increasing vertical drop by 150 ft and add a chair lift

- For this case, the model supports increase in ticket price by ~ \$2 and will result in additional ~\$3.5 million in revenue

Findings:

Scenario 3: Repeat Scenario 2 with 2 acres of additional snow making

- Model supports price increase by ~\$2 and netting additional ~\$3.5 million but is the same figure as scenario 2 so additional snowmaking does not add any value

Scenario 4: Increase the longest run and add 4 acres of snow making

- This does not increase ticket price nor revenue so no benefit.

Summary and Recommendation

- Big Mountain resort is well above average in its segment.
- Big Mountain resort can increase the revenue significantly by just adding the 150ft of vertical drop and adding a chairlift.