Big Mountain Resort Pricing Project

Problem Identification

Whitefish Mountain Resort (WMR) has recently installed an additional chair lift to help increase the distribution of visitors across the mountain. This additional chair increases their operating costs by $1,540,000.00 this season. Management needs to know how much they can raise the adult weekday and weekend lift tickets to maintain their profit margin of 9.2% this season.

Problem Identification

How much will Whitefish Mountain Resort need to increase their lift tickets to maintain current profit margins this season, while covering new additional operating costs for the new chair lift?

Finding & Recommendation

Findings

We have found that Whitefish Mountain Resort has a lower price than their competitors plus their features are stronger than most, at a top 10% across the nation. Our model shows that WMR is undervalued and should consider changing their ticket prices between $4 and $9.

Recommendation

We recommend that Whitefish Mountain Resort increase their adult weekend price to $86.00 to grow the shareholder profit margins goals of 10.12%, but to meet this new profit margin with this new price, the resort needs to stay open an extra week as predicted by our models.

Model Results & Analysis

- Our dataset contains 330 Ski Resorts with 26 features such as ticket price, years open, lift chairs, elevation, state etc.
- Our dataset contained missing values which required us to make assumptions while filling those empty values.
- The outliers found in the dataset were left because they were correct observations. They are believed to be outliers because of the missing data.
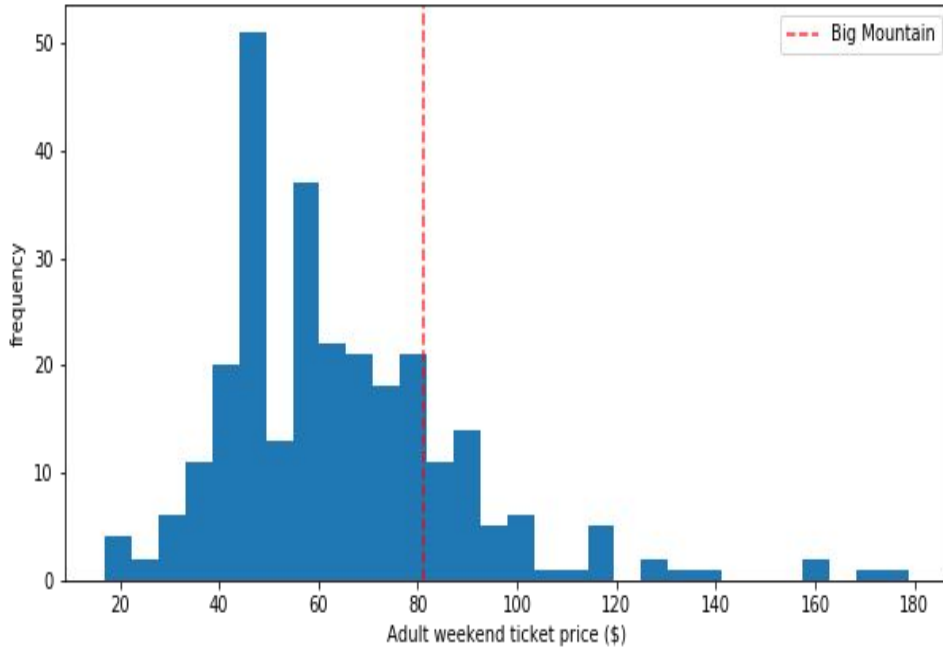
Model Results & Analysis

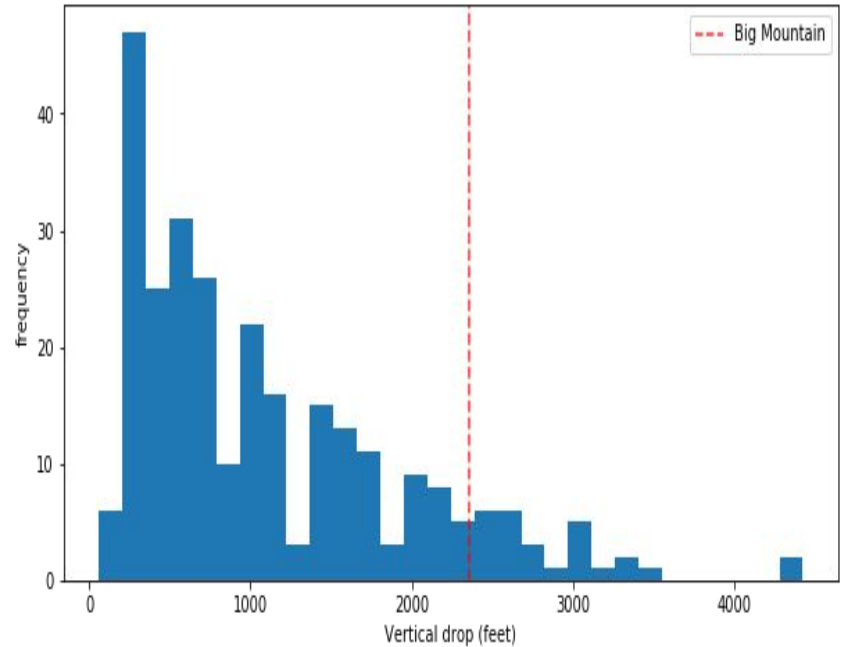Features that came up as important in the modeling

- vertical_drop
- Snow Making_ac
- total_chairs
- fastQuads
- Runs
- LongestRun_mi
- trams
- SkiableTerrain_ac

Big Mountain Resort Position in the Market

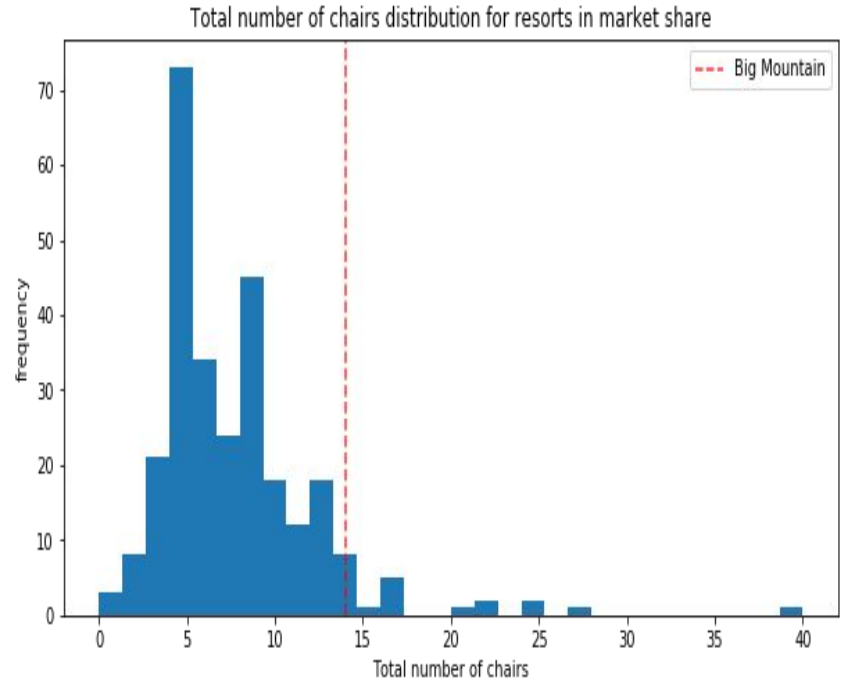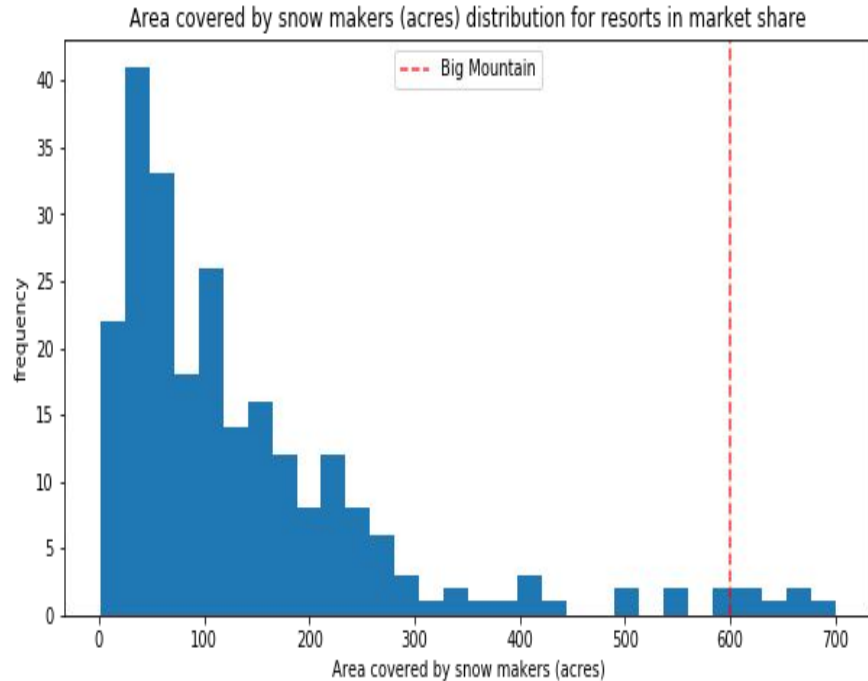

Adult weekend ticket price ($) distribution for resorts in market share

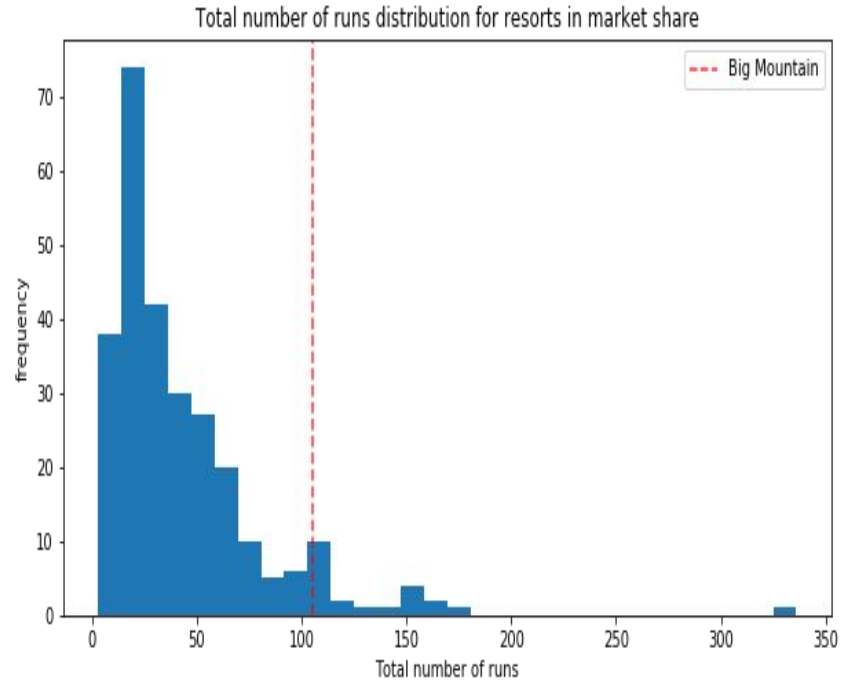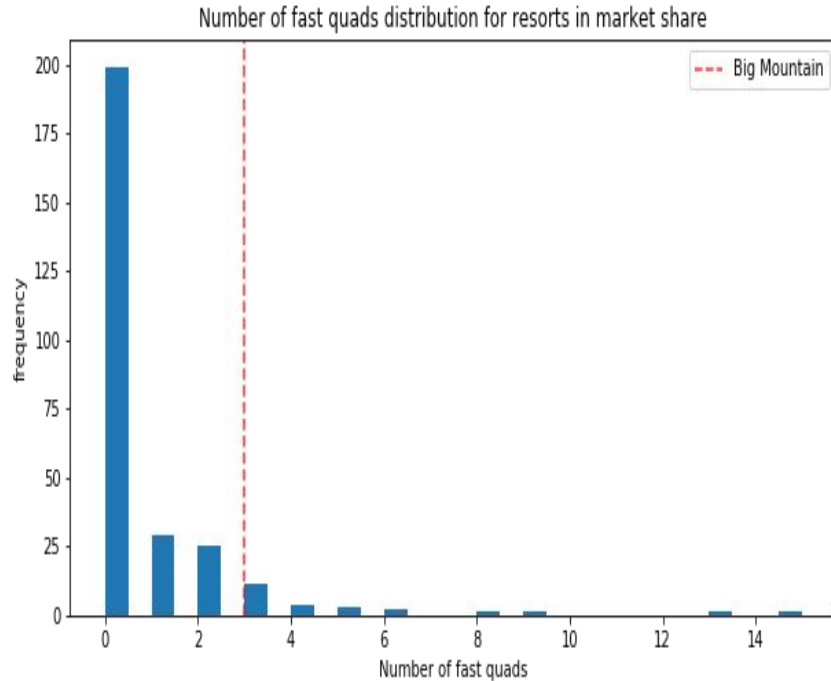Vertical drop (feet) distribution for resorts in market share

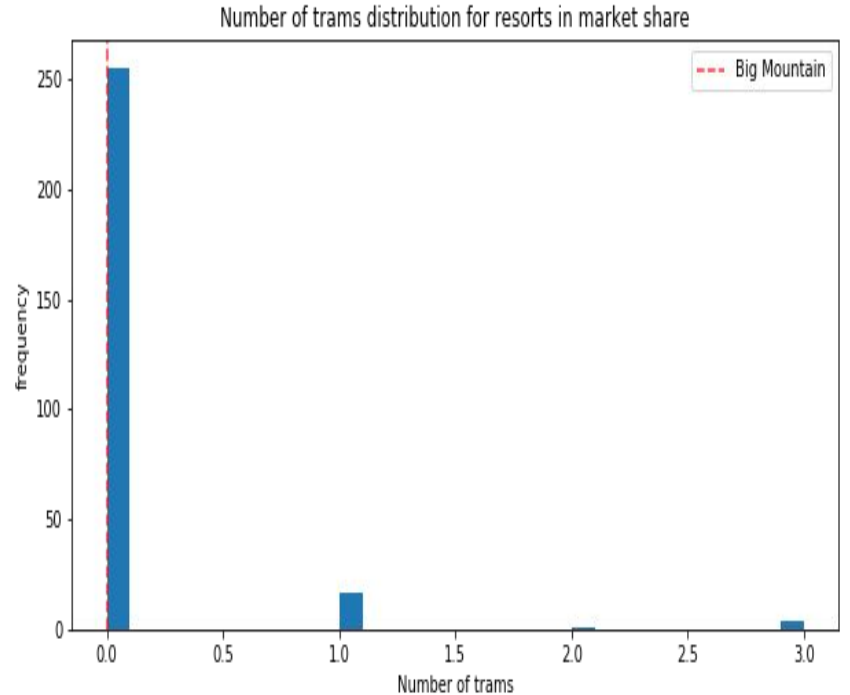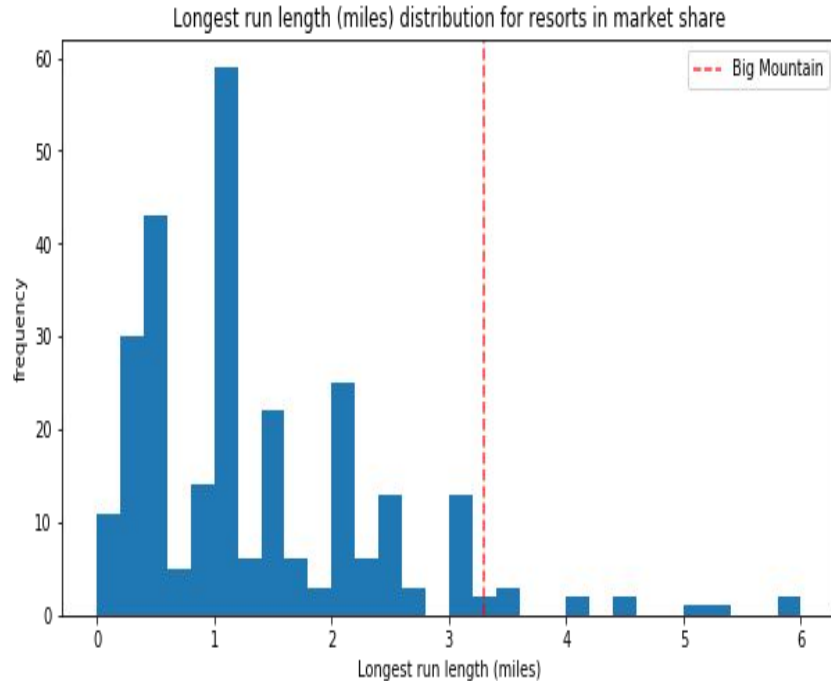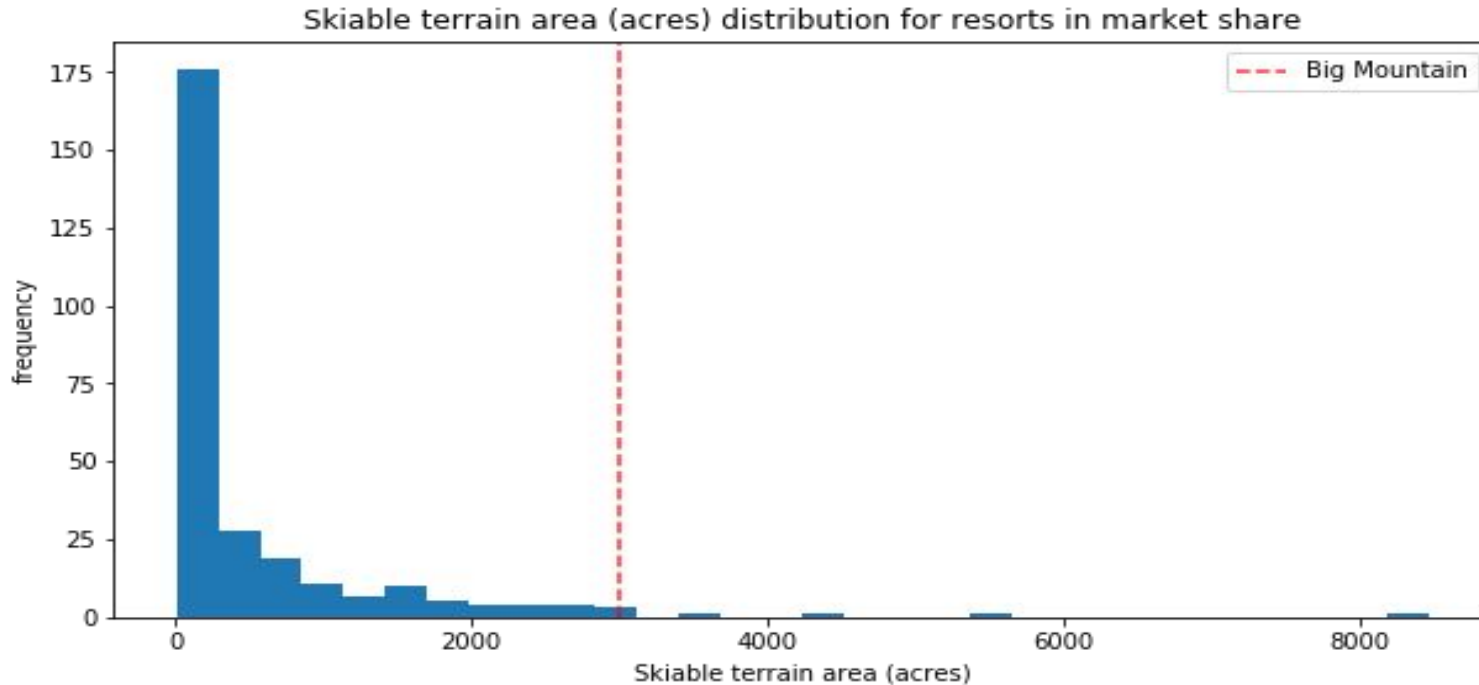# Big Mountain Resort Position in the Market

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Skiable terrain area (acres) distribution for resorts in market share

Modeling Scenarios

Big Mountain Resort has been reviewing potential scenarios for either cutting costs or increasing revenue (from ticket prices). Ticket price is not determined by any set of parameters; the resort is free to set whatever price it likes. However, the resort operates within a market where people pay more for certain facilities, and less for others. Being able to sense how facilities support a given ticket price is valuable business intelligence. This is where the utility of our model comes in.

Modeling Scenarios

Scenario 1: Close up to 10 of the least used runs. The number of runs is the only parameter varying.

Scenario 2: In this scenario, Big Mountain is adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift.

Scenario 3: In this scenario, you are repeating the previous one but adding 2 acres of snow making.

Scenario 4: This scenario calls for increasing the longest run by .2 miles and guaranteeing its snow coverage by adding 4 acres of snow making capability.

Modeling Scenarios

Modelling under Scenario 1: The model says closing one run makes no difference. Closing 2 and 3 successively reduces support for ticket price and so revenue

Modelling under Scenario 2: This scenario increases support for ticket price by $1.61

Modelling under Scenario 3: Same as scenario 2

Modelling under scenario 4: No difference whatsoever. Although the longest run feature was used in the linear model, the random forest model (the one we chose because of its better performance) only has longest run way down in the feature importance list.

Our next steps would be gathering more data to improve models and see what type of curveball COVID-19 might throw.