Revenue Optimization

Big Mountain Resort

Problem Discussion

- Big Mountain Resort is a ski resort in Montana with 350,000 skiers and snowboarders a year.
- Management wants to improve ticket pricing and revenue by capitalizing on its facilities.
- Prior pricing strategies did not involve assessing the value of resort facilities.

Questions for Analysis

- How does Big Mountain Resort compare with other resorts in its market segment?
- Which facilities have the greatest effect on ticket price?
- Which facilities can Big Mountain Resort invest in to support a ticket price increase?
- Are there any features to divest from to lower operating cost without harming resort value?

Recommendation and key findings

Big Mountain Resort's modeled ticket price is $95.87, and the actual price is $81.00. Even with the mean absolute error of $10.39, this suggests there is room for an increase.

Recommended actions:

- Increase vertical drop by 150 feet - must add a run and chair lift to service the extra height
- Increase both weekday and weekend ticket prices by $1.99
  - Seasonal ticket revenue increase of $3,474,638 before accounting for new operating cost
- Close one run to lower operating costs
  - Repurpose chair lift, if possible, to save on $1,540,000 seasonal operating cost
- Maintain fast quads, but don't add more - they are important to maintain ticket value
- Complete more market share research to determine if other resorts are underpricing or overpricing; use results to decide if it's reasonable to increase ticket price closer to modeled price of $95.87

Modeling results and analysis:

- Variability analysis used state totals and resort density ratios
- With 77.2% of variability explained, there is no obvious pattern of resort ticket prices by state
- Variability in ticket price between resorts is not explained by state, so used all states included in market share for analysis

```
resorts_per_state
state_total_skiable_area_ac
state_total_days_open
state_total_nightskiing_ac
state_total_terrain_parks
resorts_per_100kcapita
resorts_per_100ksq_mile
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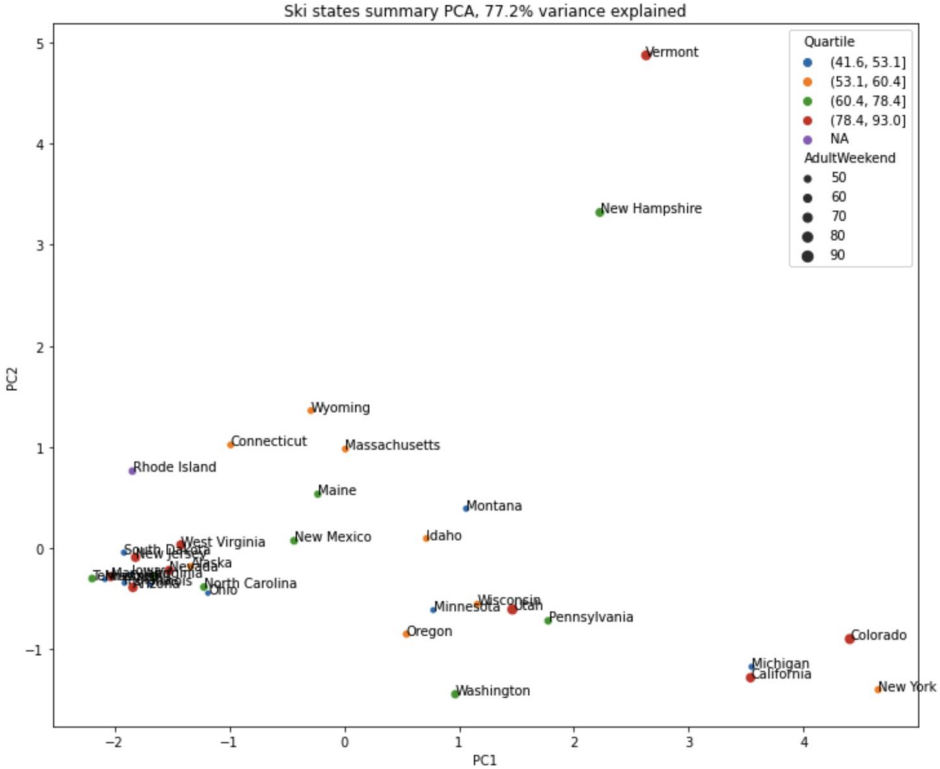
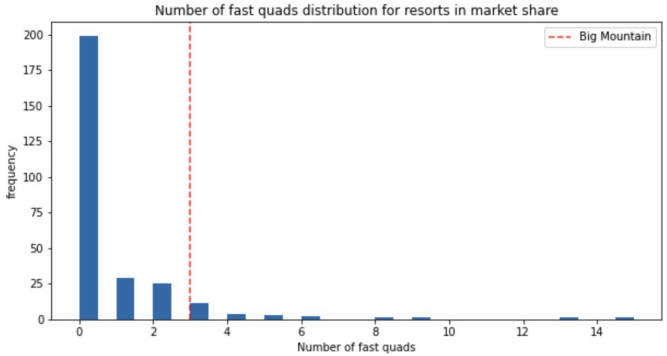
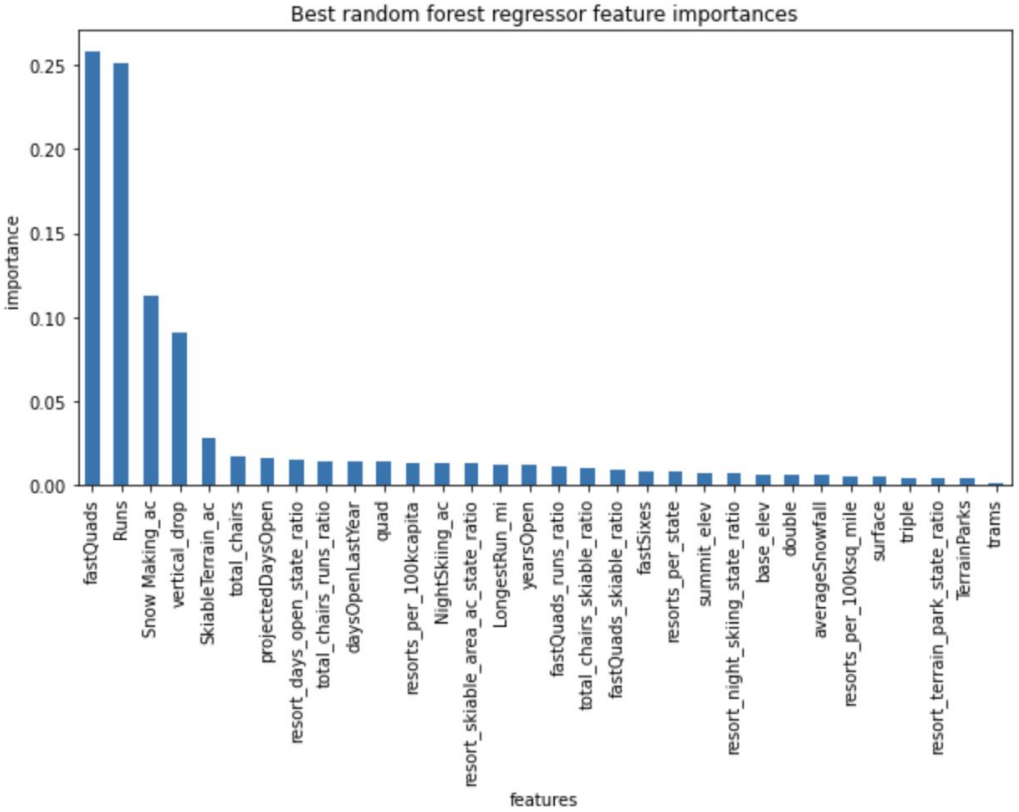


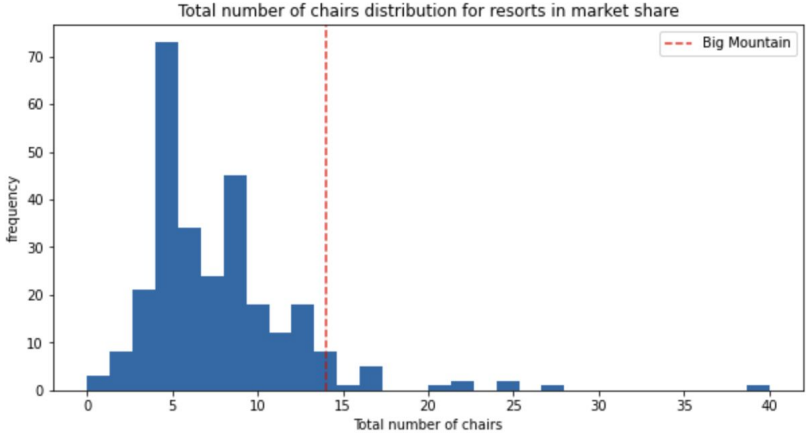
Modeling results and analysis: important features

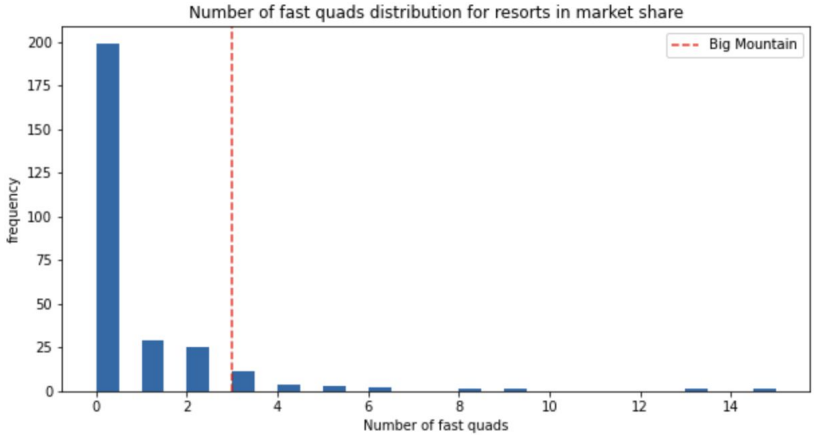
- Most impactful features:
  - Fast quads
  - Runs
  - Snow making area
  - Vertical drop
- Other important features:
  - Total chairs, longest run, skiable terrain area, trams
- Big Mountain is in the top range for most of the important features

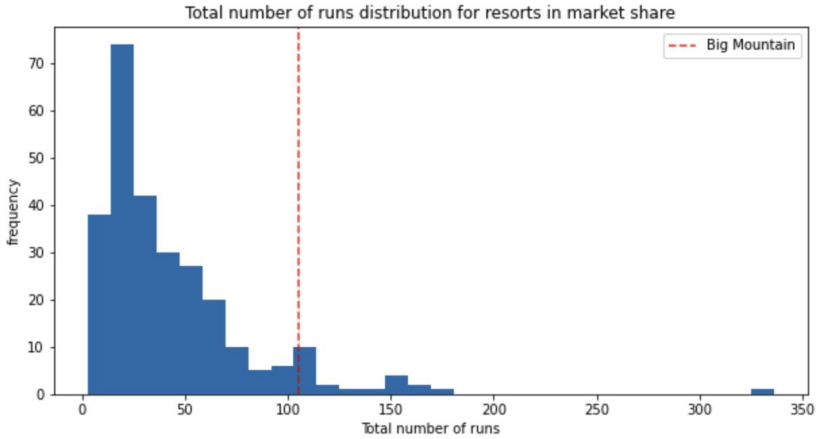


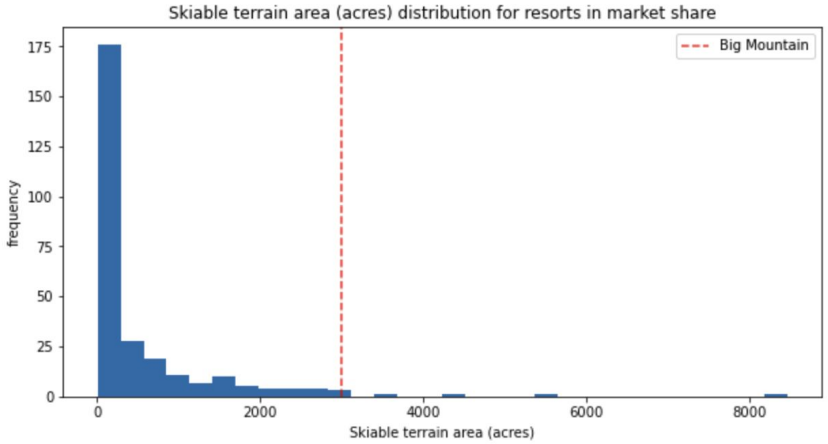


Market share feature comparisons to Big Mountain Resort



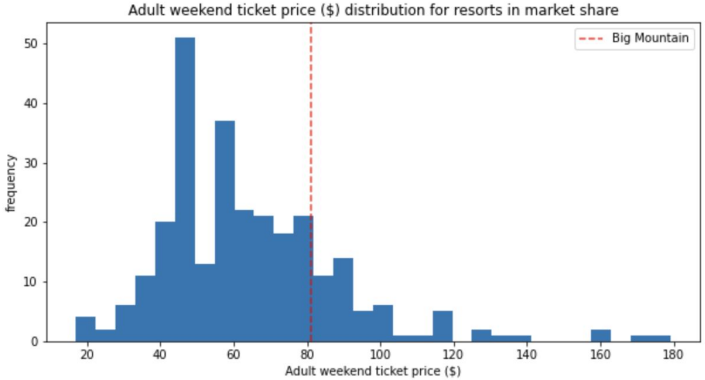




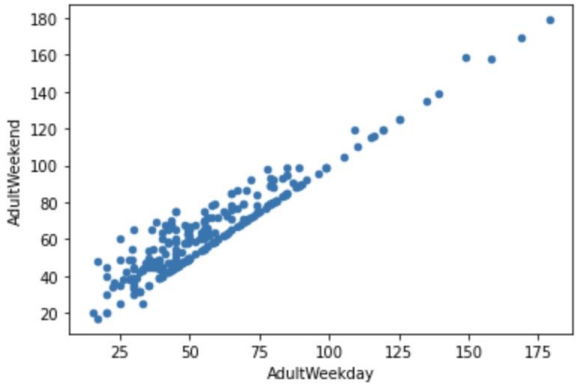


Modeling results and analysis: market share ticket price

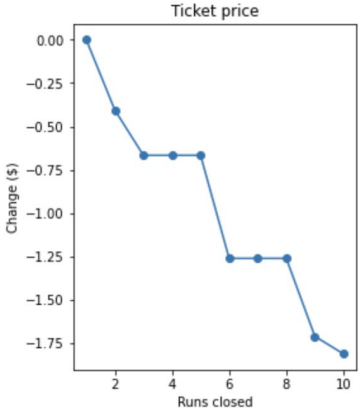
- Big Mountain Resort is the highest priced resort in Montana but middle price in total market share
  - Could indicate missing variable
- Many resorts under $100 have different weekday and weekend prices. Montana resorts are all under $100 and have one ticket price.

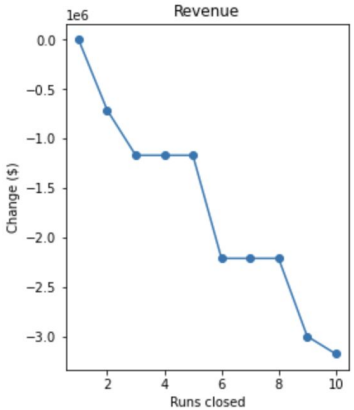


Big Mountain Resort could enact higher weekend ticket price.



Modeling results and analysis: Big Mountain ticket price





Modeled ticket price: $95.87. Actual ticket price: $81.00

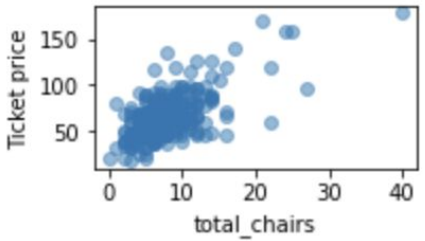
Even with the mean absolute error of $10.39, this suggests there is room for an increase.

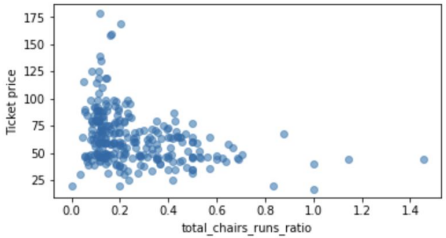
Scenarios tested and results:

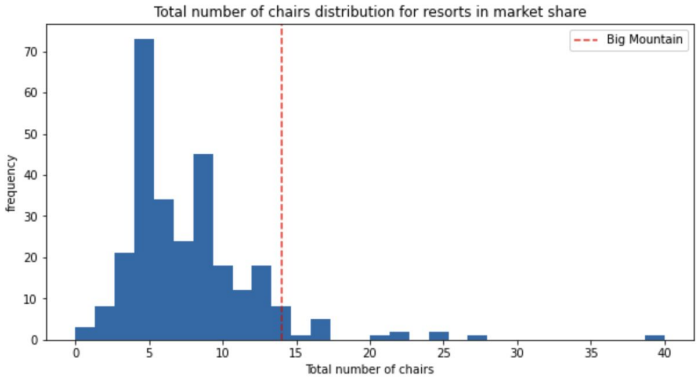
- Closing one run had no effect on ticket price
- Increasing snow making area by 2-4 acres and increasing longest run to 3.5 miles had no effect ticket price
- Increase vertical drop by 150 feet, and adding a run and chair lift
  - **Supports $1.99 increase in ticket price**

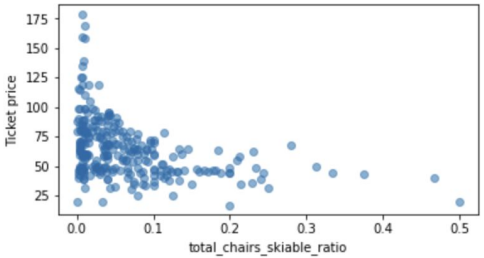
Modeling results and analysis: Future

- Data limitations: model assumes other resorts are properly priced
- Warrants further investigation:
  - ratio of chair lifts to runs
    - Other resorts have lower chairs to runs ratios and still charge a premium; further analysis requires market share number of visitors data









Summary and conclusion

- The model suggests Big Mountain Resort is underpriced, but is missing some data that would help confirm by how much.
- Regardless, the data supports a ticket price increase of $1.99 with a 150 ft increase in vertical drop and addition of a run and a chairlift.
- Modeling other resort prices needed to determine underpricing or overpricing trends to decide on further increasing ticket price closer to modeled price
    - Big Mountain Resort could test higher increase in their weekend ticket price only