Big Mountain Ski Resort

Developing a better pricing model

Context

- Currently, Big Mountain Resort is charging admission based on the average ticket price of other resorts in the market.
- Having a better sense of what resort features are most attractive to customers would lead to a more effective ticket pricing strategy.

Goals

- Design an effective model to identify the most influential ski resort features.
- Recommend a better pricing strategy, and increase revenue by:
    a) Raising ticket prices.
    b) Lowering operating costs for less important facilities.

Key Findings

- An increased ticket price is supported by our model.
- Closing one run makes no difference in predicted ticket price/revenue.
- Increasing vertical drop by 150 ft. leads to a predicted increase of $1.99 in ticket price and $3,474,638 in revenue.

Recommendations

1) Closing 1-5 of the least used ski runs
    - The first run can be closed without expecting a drop in revenue.
    - No expected change between closing 3 - 5 runs.

2) Adding a run to a point 150 ft. lower down
    - Increases vertical drop
    - Requires installation of another chair lift

Data

- Ski Resort Data
  - 277 rows (resorts) and 25 columns (features)
- State Summary Data
  - 35 rows (states) and 8 columns (features by state)
  - Ski resort data aggregated by state and supplemented with state population and area information
- **Target Feature: Weekend Ticket Price**

Influential Features

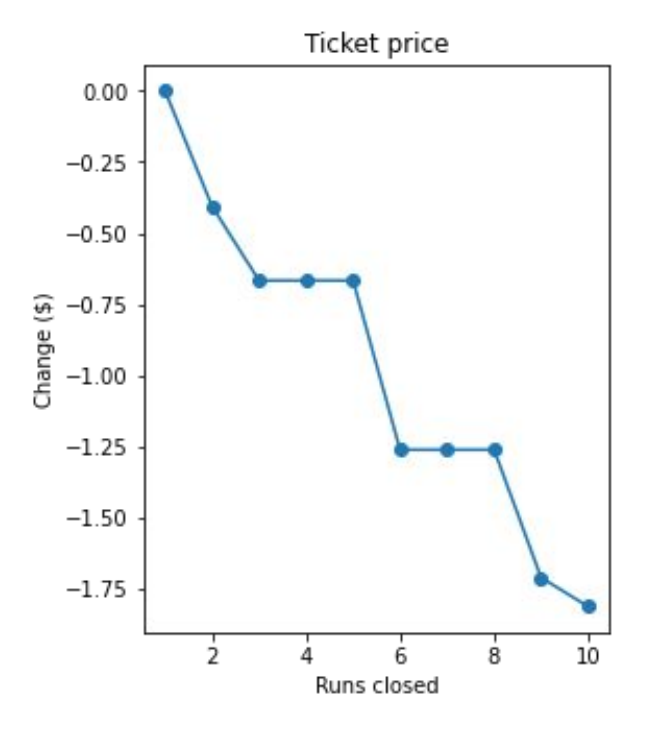
- Runs
- Longest run
- Trams
- Skiable terrain
- Vertical drop
- Snow making equipment
- Total chairs
- Fast quads

** Includes features identified in our pre-processing stage, not just our final model*

Ticket Price

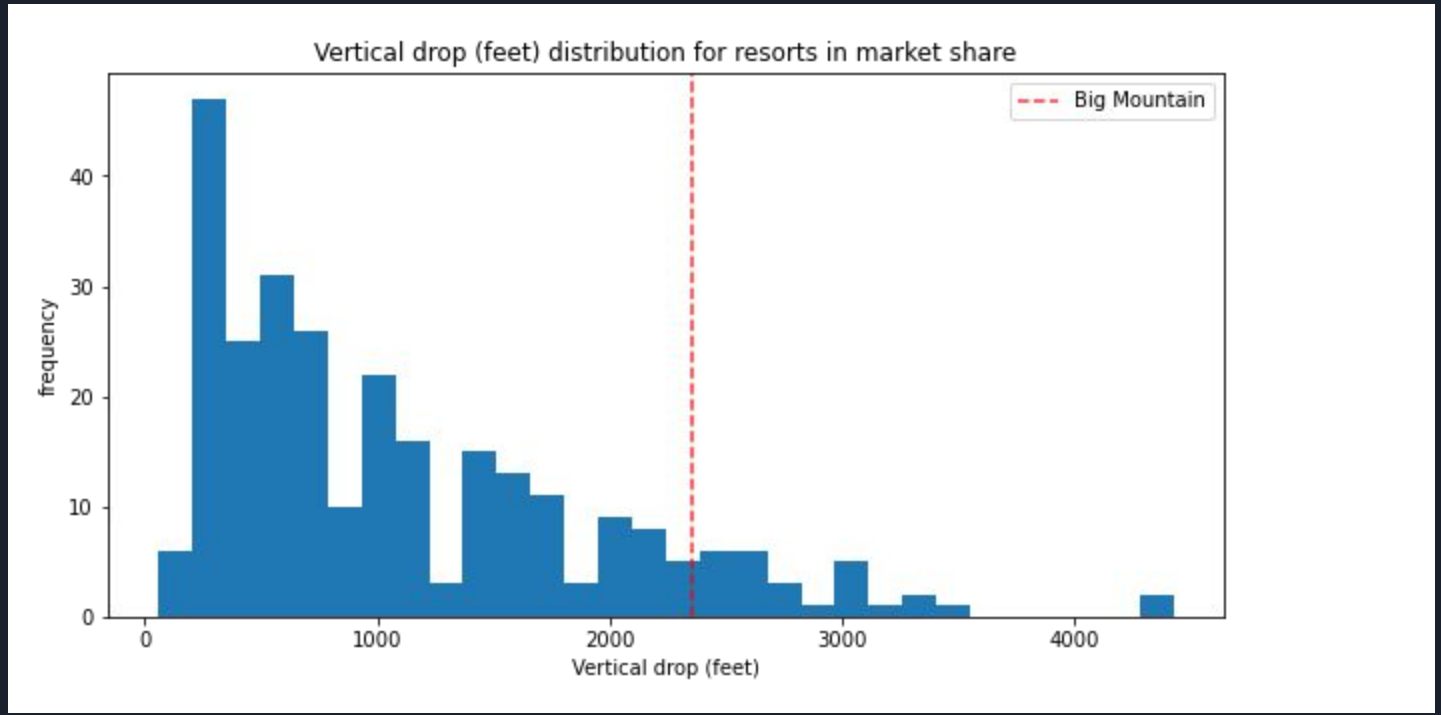
- Predicted ticket value based on our final model was $95.87, much higher than the current $81.
- Even with MAE = $10.39, this suggests a higher ticket price is well within reason.

Scenario 1



- Closing 1 run did not affect predicted ticket price.
- Closing 2-3 runs does lead to a drop in ticket price.
- No difference between closing 3-5 runs.

Scenarios 2 and 3



Scenarios 2 and 3

- In both scenarios, our model predicted an $1.99 increase in ticket price and an $3,474,638 increase in revenue.
- The additional 2 acres of snow making coverage in Scenario 3 did not improve ticket price or revenue.

Scenario 4

- Increasing the longest run by 0.2 miles and adding 4 acres of snow making coverage led to no change in predicted ticket price or revenue.

Summary

- Big Mountain Resort has not yet fully capitalized on its current resort features.
  - A higher ticket price is well within reason.

- Additional changes can be made to increase ticket price and decrease operating costs:
  - Adding a run to increase vertical drop.
  - Closing a few of the less popular runs.

Limitations

- A large proportion of our dataset comes from out of state resorts.
  - Ticket prices for a more populous state like New York might not be generalizable to a Montana resort.

- Additional data that would have been useful:
  - Visitor count data. Larger resorts with more visitors may charge less per visitor.
  - Other price data. Resorts may also earn revenue from lodging, parking, rental equipment, etc.