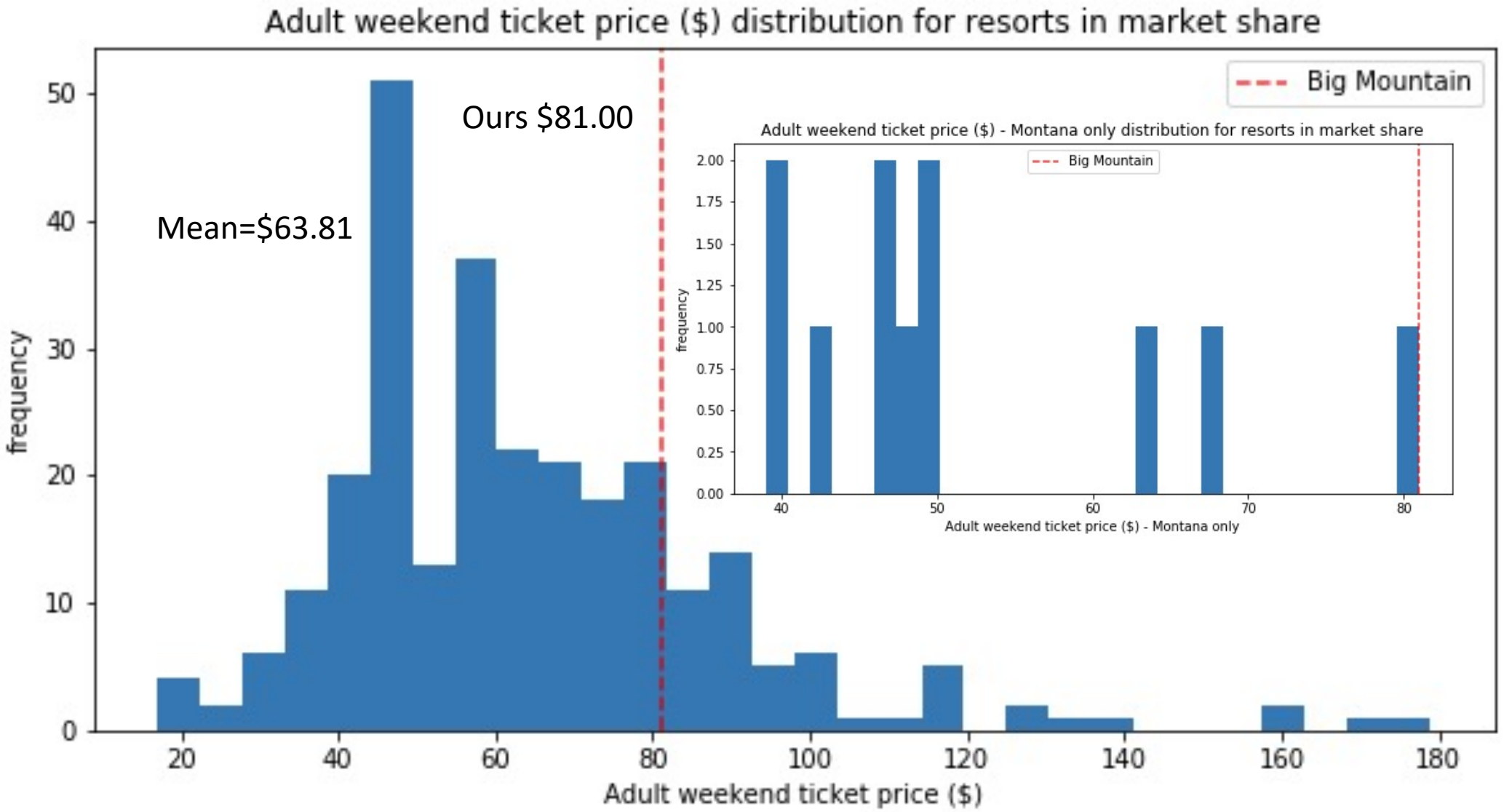
Big Mountain Ski Resort

Ticket Pricing Model

Tasks:

- Suggest a new pricing and future facility investment
- Building a pricing model for ski resort tickets within their market segment.
  - Build a predictive model for ticket price
    - Number of facilities or properties at resorts
- Provide insight into what facilities matter the most
  - Which facilities visitors are most likely to pay for
  - Which Data We need to improve our Model

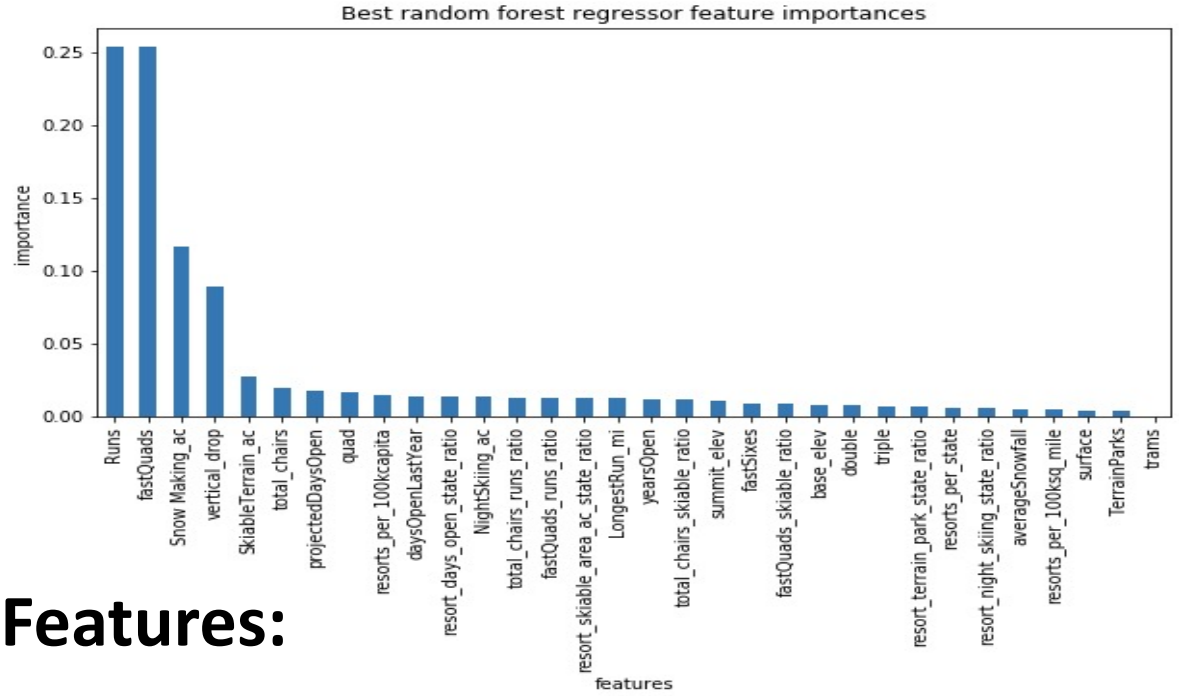
Big Mountain Resort, Current Ticket Price



Feature Importance Across Models

Linear Regression Model vs. Random Forest Regression 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



Models Agree on most important Features:

#Runs (variety)

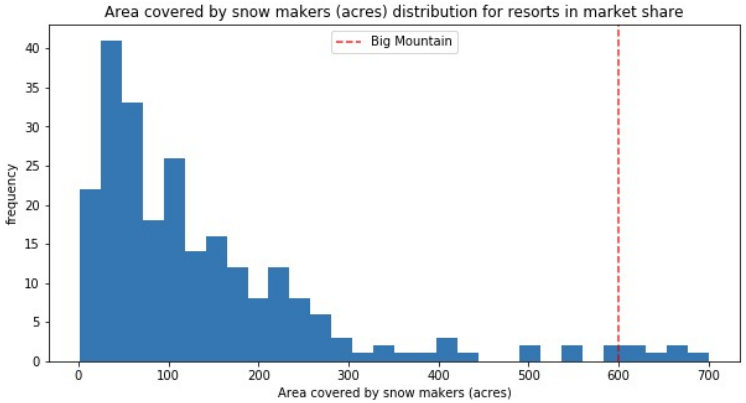
#Fast Quads (convenience)

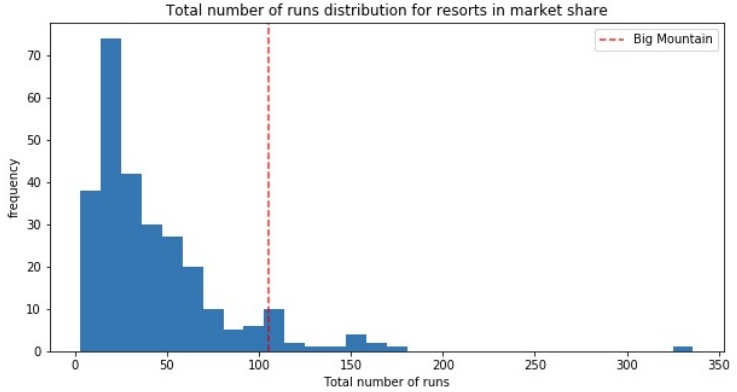
Vertical Drop (entertainment)

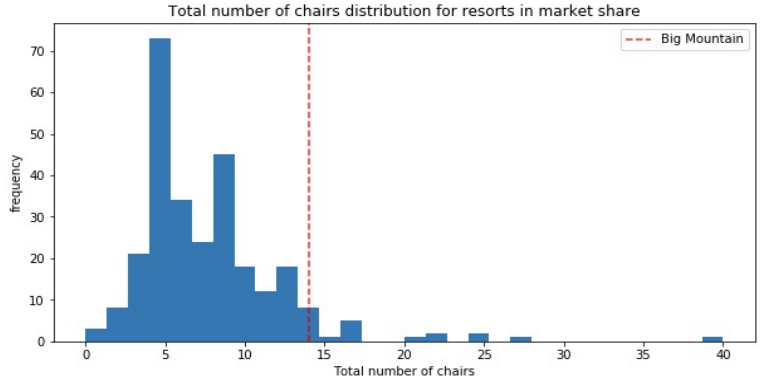
Snow Making Area (Guaranteed skiing)

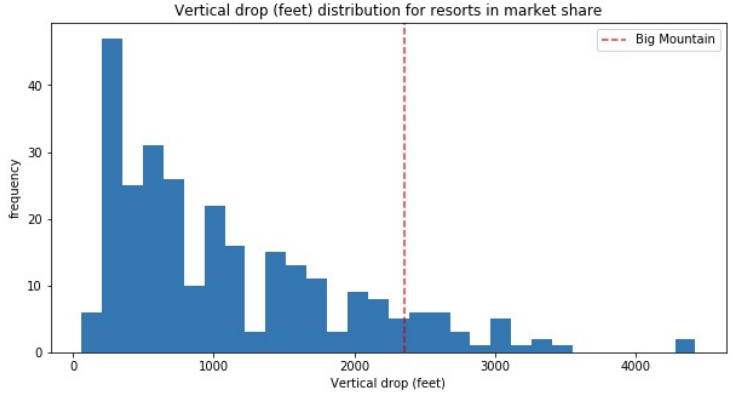
as well as Skiable Terrain ; Total Number of Chairs; and Length of the Longest Run

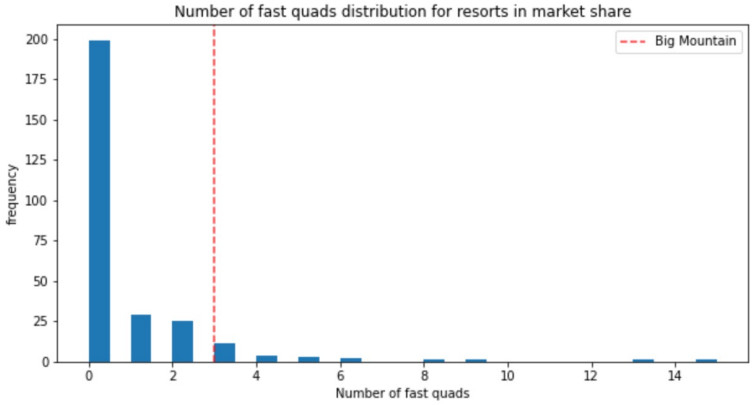
Feature Comparisons

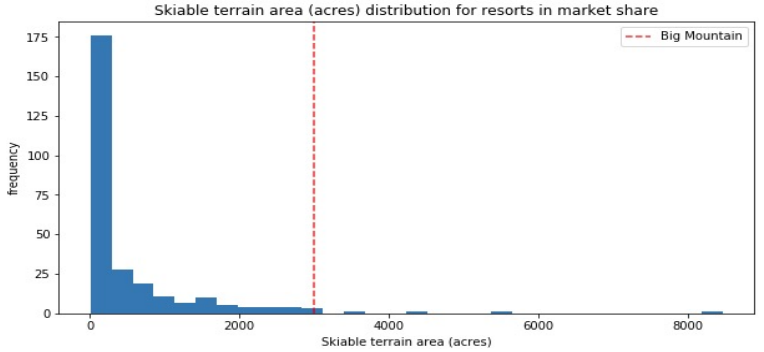


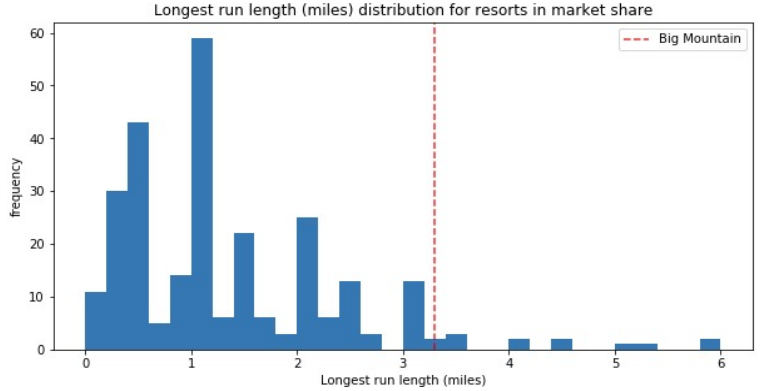












	vertical_drop	Snow Making_ac	total_chairs	fastQuads	Runs	LongestRun_mi	trams	SkiableTerrain_ac
124	2353	600.0	14	3	105.0	3.3	0	3000.0

Comparing Models:

Linear Regression Model vs. Random Forest Regression Model

MAE_test (MAE, std)_train		MAE_test (MAE, std)_train
$11.79 ($10.50, $1.62)	vs.	$9.53 ($9.65, $1.49)

Adequate Resorts Data for Model:

Yet Need Data on:

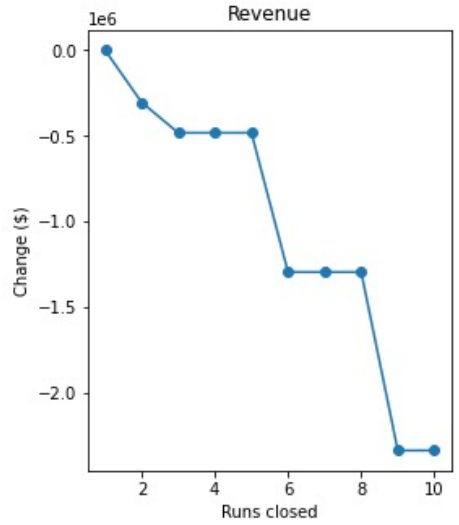
Number of visitors,
Operation Costs

Adjusted Price

- Modelled price is $95.88 (vs. actual price of $81.00)
  - MAE = $10.36 convinces further there is room for an increase
  - With estimated 350000 visitors with 5 day average visits, Total revenue increase of $26M to total annual revenue of ~$168M

- Pricing Assumptions
  - Other resorts set their prices according to the market
  - Big Mountain appears to be charging much less than prediction suggests
    - Is Big Mountain undercharging?
    - Are other resorts overpriced?
  - Is our model lacking some key data
    - Operating Costs
    - Visitors number

Explored Scenarios: (To cut the Cost/increase Revenue)



1. Permanent closure of up to 10 of the least used runs
   - Can close, up to 5 runs results in slight drop in ticket prices and revenue
2. Increase vertical drop by 150ft and addition of a chair lift
   - Justifies ticket price increase of $1.61 and additional revenue of $2.8 million
3. Number 2 plus the addition of 2 acres of snow making
   - No change from number 2
4. Increase the longest run by 0.2 miles (boasting the longest run) and additional snow making of 4 acres
   - Results in no change in ticket price
5. Closing the 6 least popular runs, but add a run as stated in scenario 2, but instead of chair lift adding a fastQuad!
   - Results in $21.85 change in ticket price +$38.2M in Revenue

➢ The Revenues are based on 350,000 visitors this year with an average of 5_days visits

Recommendation

Increase vertical drop by 150ft with the installation of a chair lift, (without additional snow making coverage).

- Justifies ticket price increase of $1.61 and will generate additional revenue of $2.8 million/year

Increase vertical drop by 150ft with the installation of a Fast Quad,

And closing 6 least used Runs

- Justifies ticket price increase of $21.85 and will generate additional revenue of $38.2M /year
- Though as only very few high-priced resorts have more than 3 fast quads we might be biased.
- More data on visitor's number and facility operation and maintenance costs can help improve on these scenarios

Summary

- Big Mountain Currently ranks among the top resorts
  - Skiable terrain
  - Number of Runs
  - Snow making capacity
  - Number of Chairs
- Proposed Scenarios
  - Closure of 6 least used runs
  - Increase vertical drop with and without snowmaking and adding chair lift
  - Increase longest run with snowmaking
- By increasing the vertical drop either with or without snowmaking will provide the opportunity to increase revenues by $15-$18 million, however the increase cost of tickets must be considered.

Thank you

Selecting Target Price: