



BIG MOUNTAIN RESORT

(and its ticket prices \$\$)



Presenter: Esra Saydam

Challenge:

- BMR's current ticket price (for both weekend and week) is **\$81.0**.
- But BMR's newly installed chairlift has an operational cost of **\$1,540,000** per year.
- How much higher should BMR make their ticket price for next year to recoup the new costs and keep the profit margin of **10%**.



A LOOK AT THE DATA SETS

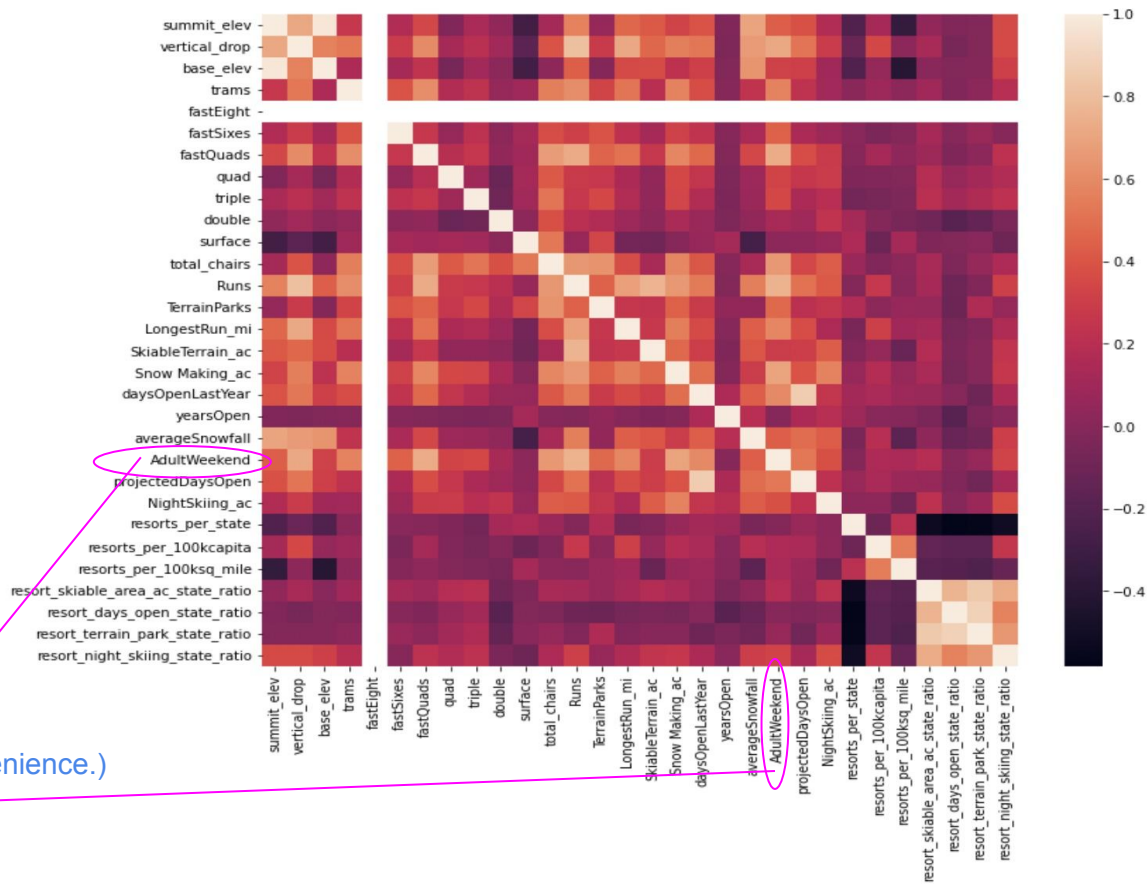
- You provided a data set (ski_data) on tens of ski resorts in the country and their features.

| | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 |
|---------------|----------------|-----------------------------|--------------|--------------------|--------------|-------------------------|-------------------|------------------|--------------------|------------------|-----------------------|---------------------|
| Name | Big Sky Resort | Blacktail Mountain Ski Area | Bridger Bowl | Discovery Ski Area | Great Divide | Lost Trail - Powder Mtn | Maverick Mountain | Montana Snowbowl | Red Lodge Mountain | Showdown Montana | Teton Pass Ski Resort | Big Mountain Resort |
| Region | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana |
| state | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana | Montana |
| summit_elev | 11166 | 6676 | 8700 | 8150 | 7330 | 8200 | 8520 | 7600 | 9416 | 8200 | 7200 | 6817 |
| vertical_drop | 4350 | 1440 | 2600 | 2380 | 1580 | 1800 | 2020 | 2600 | 2400 | 1400 | 1010 | 2353 |
| base_elev | 7500 | 5236 | 6100 | 5770 | 5750 | 6400 | 6500 | 5000 | 7016 | 6800 | 6190 | 4464 |
| trams | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

- We also combined this with state-based data (ie population, total areas) to see if it makes sense to create an estimate comparing only state-based data or nationwide data. (we went with nationwide data at the end).

CORRELATIONS IN SKI DATA

Let's get warm with the
HEAT MAP!



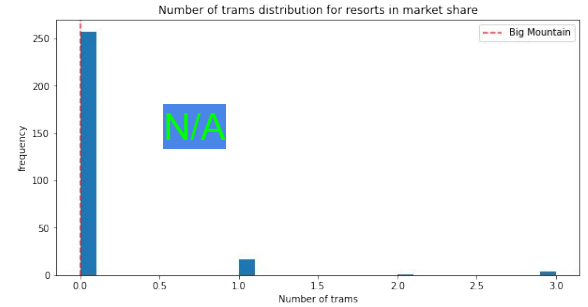
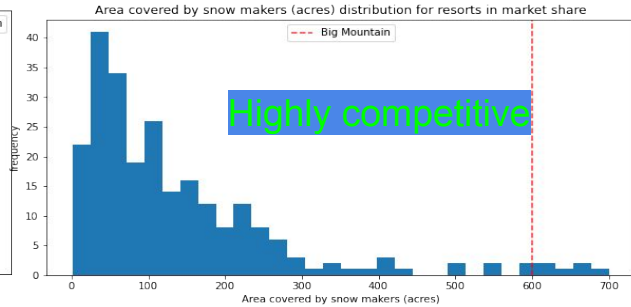
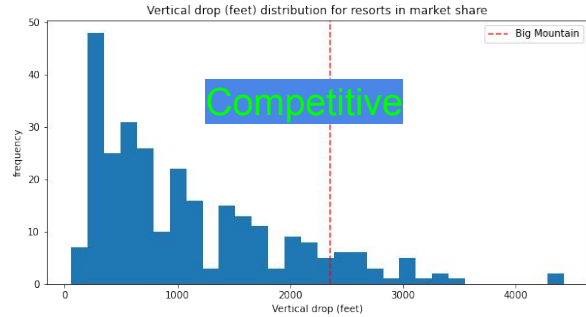
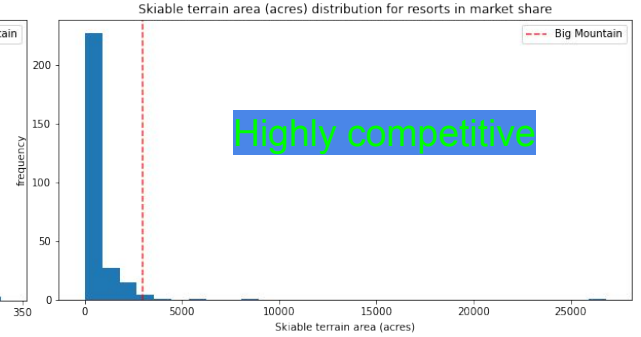
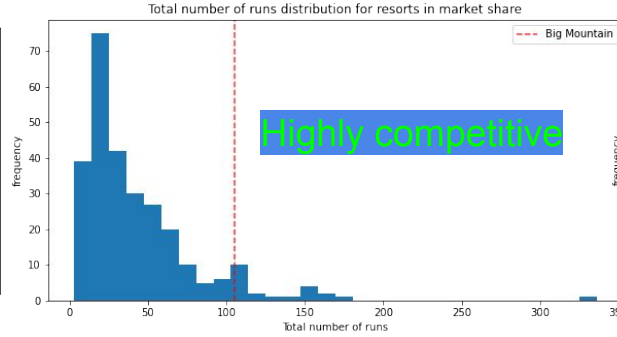
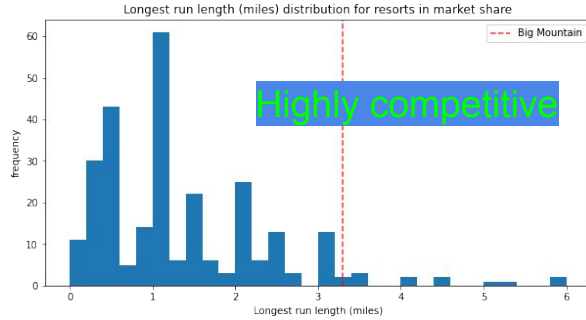
MODELING

Features that mattered were:

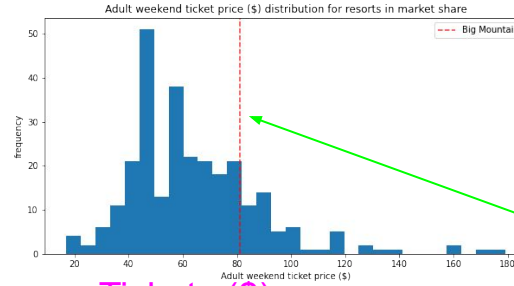
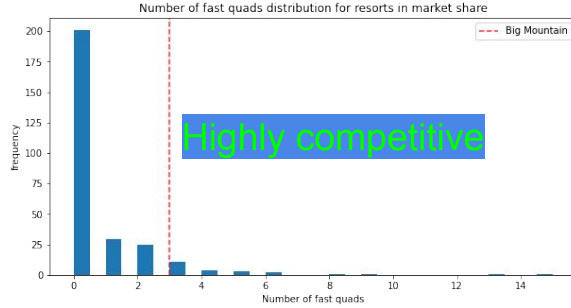
- Vertical Drop
- Snow Making Areas
- Total number of Chairs
- Fast Quads
- Runs
- Longest Runs
- Trams
- Skiable Terrain Areas



BMS' STANDING

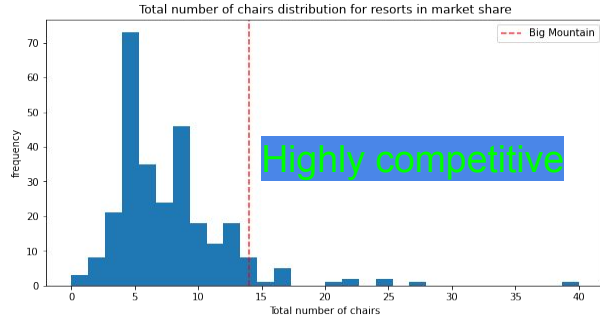


BMS' STANDINGS



Tickets (\$)

Why so low then?



Tickets (\$) - Montana only

NEW SUGGESTED TICKET PRICE

Using our regression model, we estimated the new ticket price to be **\$93.54**. Even with a margin for error of \$10.35 you still have room for a price increase.

So based on this estimate, and the plots we shared with you in the previous slides you asked us to investigate **4 SCENARIOS**.

We created a function called **'predict_increase'** to try them all.

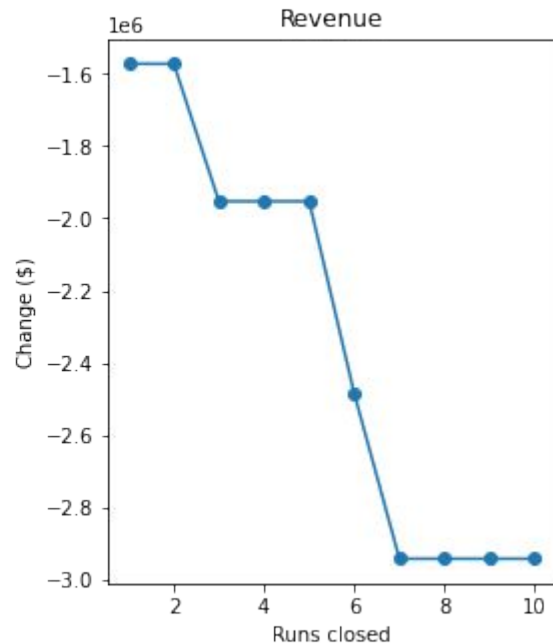
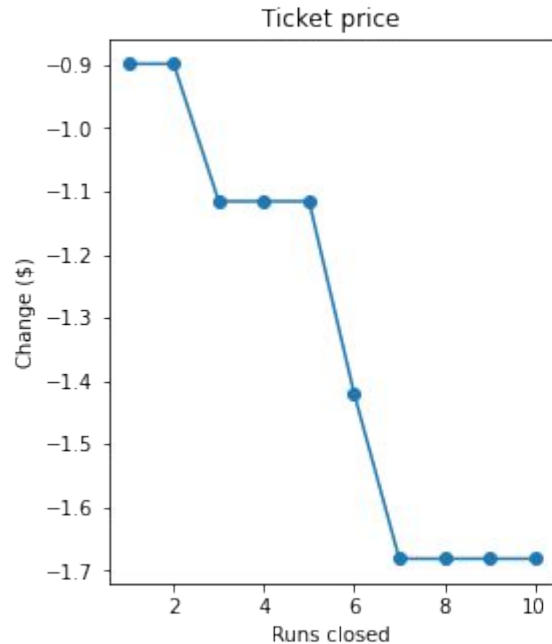
```
Ex: ticket2_increase = predict_increase(['Runs', 'vertical_drop', 'total_chairs'], [1, 150, 1])
```

```
revenue2_increase = 5 * expected_visitors * ticket2_increase
```


SCENARIO # 1

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

Result:



SCENARIOS # 2 & # 3

#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: #2 plus 2 acres of snow making cover

Scenario #2:

Result:

Ticket Price increase by \$13.25

Revenue increase by \$23181159

Scenario #3 :

Result: adding 0.2 acres of snow making didn't really create any increase based on this this function)

SCENARIO #4


Increase **the longest run** by 0.2 mile to boast **3.5 miles length**, requiring an additional snow making coverage of **4 acres**.

The result with 'predict_increase' was 0.0.

So...

SUMMARY

- Definitely increase your price which can be up to \$93.54 - you've got great facilities!
- The 'vertical drop' scenario(#2) sounds great if you have possibility of more investment.
- If you would like to avoid more investment, we suggest to apply scenario #1 but **not** up to 10 runs. The revenues would go much lower after closing 5 runs. Closing only 2 runs is also an option since it would allow the ticket prices to be lower almost by \$1.
- Our estimates could improve if we had a data set also on operational costs of crucial features like snow making machines, chair lifts based on their types, etc.



Thank you!

AND LET'S GO!!!!