

# Big Mountain Resort

## Pricing Model



September 21, 2023

# Project Rationale

Business suspects we can **increase profit by raising our prices** and **discontinuing least valuable runs and services**, but wants to validate the theory using data science.

Our pricing strategy has been to **charge a simple premium over market average**, but we might be **missing out on higher earning potential** without in-depth analysis.

Business is also unsure **which runs and facilities are adding least value** to our customers, and **what would happen to revenue if we closed them** down.

Data Science can shed some light.

# Understanding the problem

## What justifies price?

Facilities, assets, amenities  
(chairs, fastquads, food, etc.)

Terrain, vertical drop, slope  
length, # of runs

Location, climate, etc.

Others

## What data do we have?

Data set of 227 ski resorts in  
the US with information on  
their facility type, quantity,  
terrain, ticket price, service  
metrics

State level demographic and  
geographic data

## Expectation

This is taking a stab at a complex  
question of pricing and profit.

We don't have data on every  
potential factor for price, revenue  
and cost.

Goal is to improve upon current  
pricing strategy through continuous  
future iteration

# What did Machine Learning Uncover?

# Recommendation Summary

## **Increase Price**

Model supports WeekendPrice range of \$85.48 ~ \$106.26 (currently \$81)

## **Close Least Used Runs**

Closing 1 least used run makes 0 impact

## **Add a run to 150 ft lower point**

Model predicts this will add \$8.61 per ticket price

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# Increase Price

Our model tells us that our WeekendPrice should be between **\$85.48 ~ \$106.26** based on our datasets.

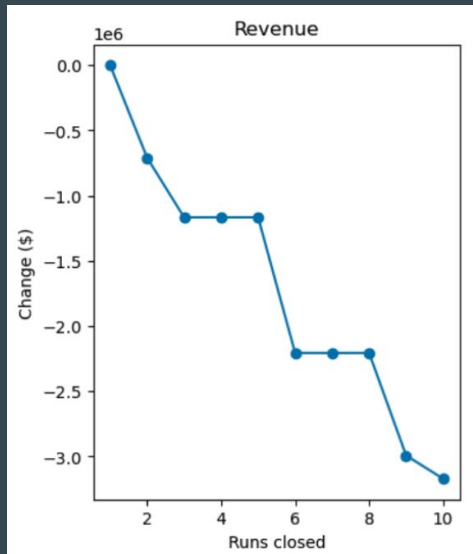
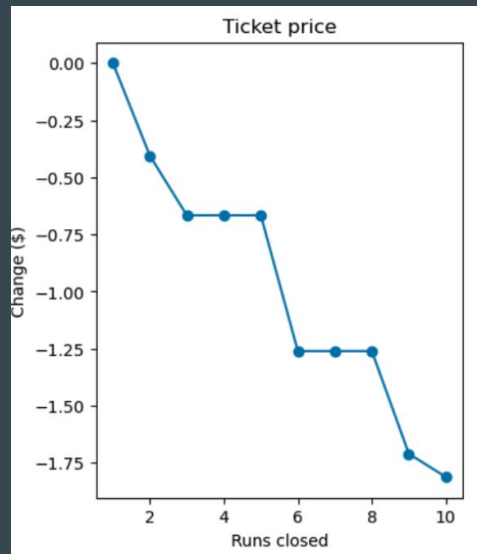
BMR ranks highly nationally in **Key Pricing Factors**

- # of fastQuads
- # of Runs
- Snow Making\_ac
- Vertical\_drop

We recommend raising the price to \$85.48 first and observe the impact to revenue, and gradually raise and observe until the max supported price of \$106.26.

# Close Least Used Runs

Our model tells us that while closing the 1 least used run will make 0 impact to our revenue, closing 2 to 10 least used runs will have various levels of impact.



## Recommendation

Close 1 run first and observe the reduction in operating cost.

Determine if the cost reduction can justify the subsequent closures and revenue losses.

Note closing 3, 4, and 5 runs are expected to have the same result

# Add a run to 150 ft lower point

Our model tells us that this will push the ticket value up by \$8.61

This is likely due to the fact that vertical\_drop is one of the major factors to the ticket price.

Assuming 350,000 visitors with average purchase of 5 day tickets, this additional run can increase revenue by ~\$15,000,000 per season.

We must factor in the cost of adding and operating a new chair lift to support this new run to calculate break even point.



# Conclusion

# Model can't be perfect without perfect data

```
Column
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Name
Region
state
summit_elev
vertical_drop
base_elev
trams
fastSixes
fastQuads
quad
triple
double
surface
total_chairs
Runs
TerrainParks
LongestRun_mi
SkiableTerrain_ac
Snow Making_ac
daysOpenLastYear
yearsOpen
averageSnowfall
AdultWeekend
projectedDaysOpen
NightSkiing_ac
```

Remember we only had the data that we had. There can be other major factors we are missing.

Model and its insights should be judged by domain experts

Future work can be dedicated to **finding and testing more potential relevant datasets**, especially as the real-life performance of the model becomes available once some of the recommendations are adopted in real life.

**TEST and VALIDATE EVERYTHING**