# Recommendations for Big Mountain Resort: A Pricing Strategy Based on Data-Driven Insights

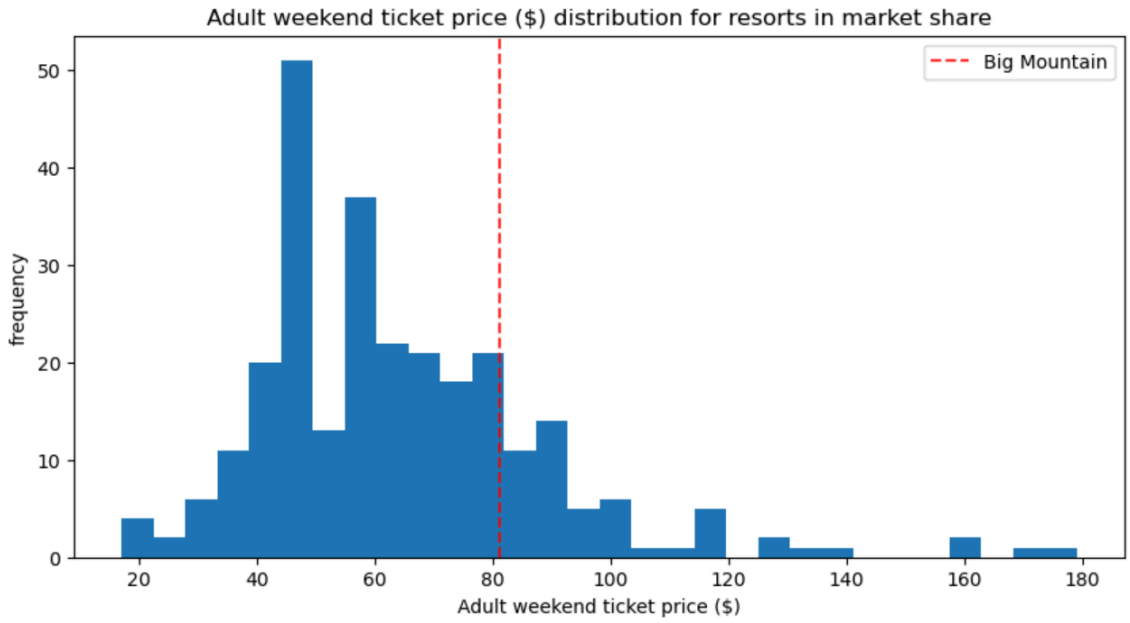
### Introduction and Problem Statement

An adult weekend ticket at Big Mountain Resort went for $81 last season, but market comparisons and resort amenities suggest that price may be lower than it needs to be. We referenced a machine learning model to signal that Big Mountain offers features that are associated with a price hike, given its competitive positioning with respect to other resorts. In this report, we have shared our findings, discussed various modeled scenarios and given recommendations to improve pricing strategy for Big Mountain.

### Data Wrangling and Exploratory Data Analysis

We hand-collected and cleaned data from more than 270 historical ski resorts on features such as vertical drop, total chairs, legal snowmaking coverage, runs, ticket prices. Our workhere is based on a dataset provided by this Having cleaned it and gotten it ready for modeling, we then removed the Big Mountain Resort's price from it so that our model would not inadvertently over-fit based on one price point that may or may not best represents what the market will support given everything else about it.

These include visual and positional information of important features like Vertical Drop, Snowmaking Coverage, Total Chairs; Unit Comparison which compares understood similar metrics of Big Mountain with the rest of market data to get an idea how they are compared others too.



**Model Preprocessing and Evaluation**

Random Forest Regressor model: We used several facility features to predict ticket prices with a random forest model. To test performance and ensure that our model generalized well to unseen data, we used k-fold cross-validation. On average, the most accurate model (Random Forest model) predicted the ticket price within $10.07 of the true price across all resorts.

It is important to emphasize that useful information like vertical drop, snowmaking acres and total chairs would have had a dramatic impact in receiving good predictions of ticket prices. Big Mountain's 2,353 foot vertical, 600 acres of snow making and 14 chair lifts rank with the market, relatively speaking, indicating if anything that we may indeed be to low on price.

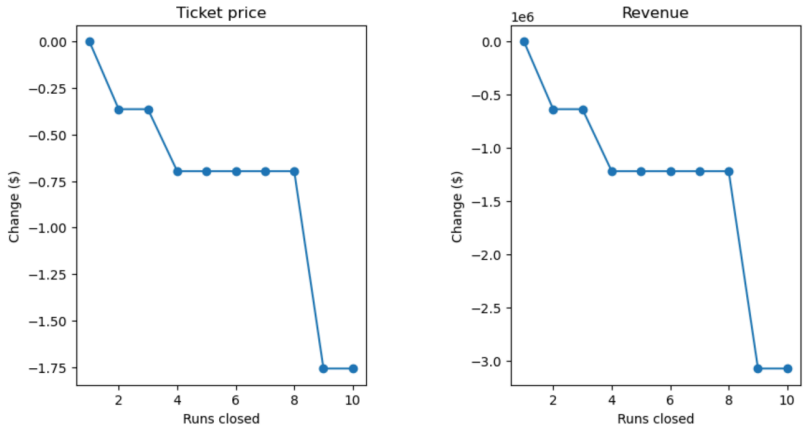
**Pricing Recommendation**

Based on our model we predict that Big Mountain Ski Resort could raise the their Adult Weekend ticket price too $99.88. This is a $19 increase from the price of $88. Even taken into account the MAE. it is still suggested that its is room for a ticket price increase. This price increase reflects big mountain Ski resorts amenities and its current standing in the ski resort market.

**Scenario Modeling**

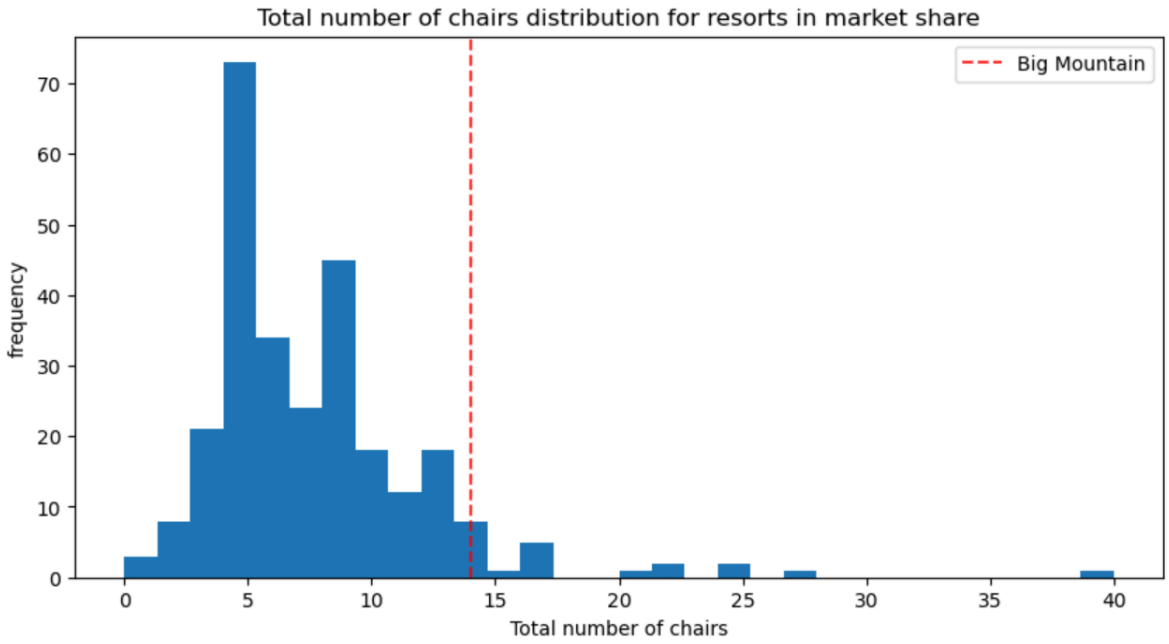
With the resort in sight, we decided to model a few different crudely diverging scenarios around pricing and operational strategies if only to stress test how little revenue could possibly be too low for our predicted ticket price.

1. **Closing Less Used Runs:** We looked at the effect of shutting as many as 10 of the runs with the least usage. The test results showed a 2-3 run close had some sort of "slight negative impact" (around -$0.70 per ticket) on the willingness to pay for admission. But shutting 6 or more runs would decrease the ticket price significantly and could mean huge revenue losses.



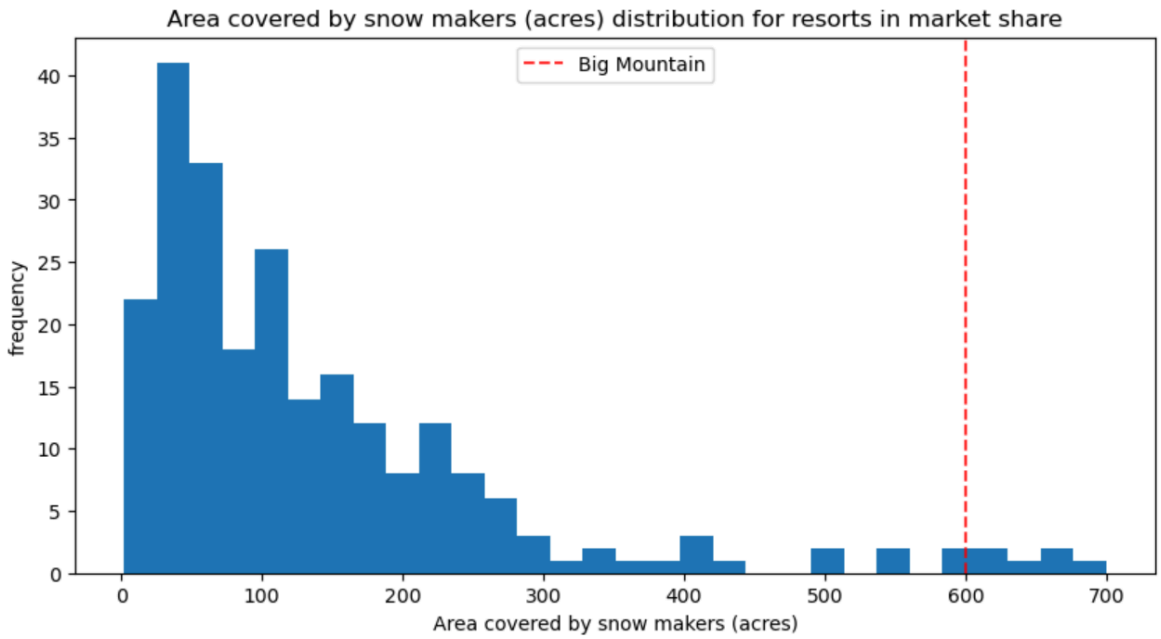
2. **Adding a New Chair and Expanding Vertical Drop**

   Increasing the vertical drop by 150 feet and adding a chair lift would raise the ticket price by approximately $1.99, which translates to an additional $3.47 million in revenue over the season, assuming 350,000 visitors buying an average of 5-day tickets.




3. **Expanding Snow making by 2 Acres**

   Expanding the snow making capacity by two acres as well as increasing vertical drop and adding a new chair.  would not significantly impact ticket price.




4. **Lengthening the longest run by .2 Miles**

   Lengthening the longest run by 0.2 miles similarly had no significant impact on ticket price and would not justify and increase in ticket sales.

**Recommendation**

Big Mountain Resort is losing money on its lift ticket prices. The model suggests the resort could bear an additional $18. That its competitive offerings for key features like vertical drop, snowmaking acreage and number of chairs is behind the change. Moreover, you could thinking about looking into Scenario 2, which is to build a chair lift and increase the vertical drop; this plan only needs an assessment of $1.99 per ticket achievement without help anything significant. These changes might also raise the cost of tickets to account for this new chairlift operation, which should be further deliberated. The business could also decide to trial more limited run closures (example Scenerio 1) where closing up to 3 runs appears to have no material impact on ticket pricing.

**Conclusion**

We suggest that a price increase should be implemented to capture some of Big Mountain's strong market position, as well as targeted spending on vertical drop and chairlifts openings. For future studies, the estimation should be improved with empirical data on running cost, visitation numbers and competitor pricing. Also, if you are an advanced user and use this

model along with Business analysts then automating the model will make sure that scenario testing is ongoing without any manual steps.