Big Mountain resort analysis summary

Goal:
Increase profitability

Option 1:
Cut costs

Option 2:
Invest in changes that increase revenue and support higher ticket prices or ticket sales

Big Mountain resort analysis summary

Recommendation:

Acquire a new chair lift at a cost of $1,540,000

Findings:

Model predicts a new chair lift can support a ticket price increase of $1.00 with expected season revenue of $3,888,889

Big Mountain resort analysis summary

Model selection:
We compared performance of the best linear regression model to that of the best Random Forest model

Random Forest Model wins!

The Random Forest model has a lower cross-validation mean absolute error by almost $1. It also exhibited less variability.

Big Mountain resort analysis summary

Market Overview:

Current ticket prices for Big Mountain were not the highest in the nationwide market (figure 1). However, Big Mountain ticket prices were the highest in its home state of Montana (figure 2).

Implications:

Because Big Mountain prices were already the highest in Montana. Options for simply cutting costs without improving features were unfavorable because they would not present viable scenarios for increasing revenue from ticket prices or sales.

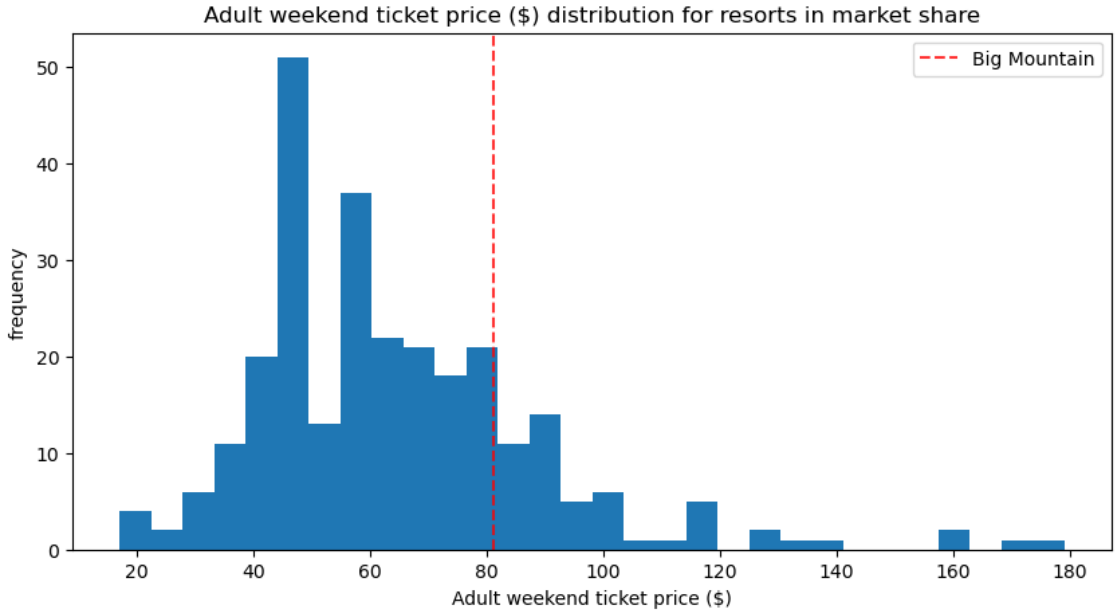

Figure 1:Nationwide ticket prices

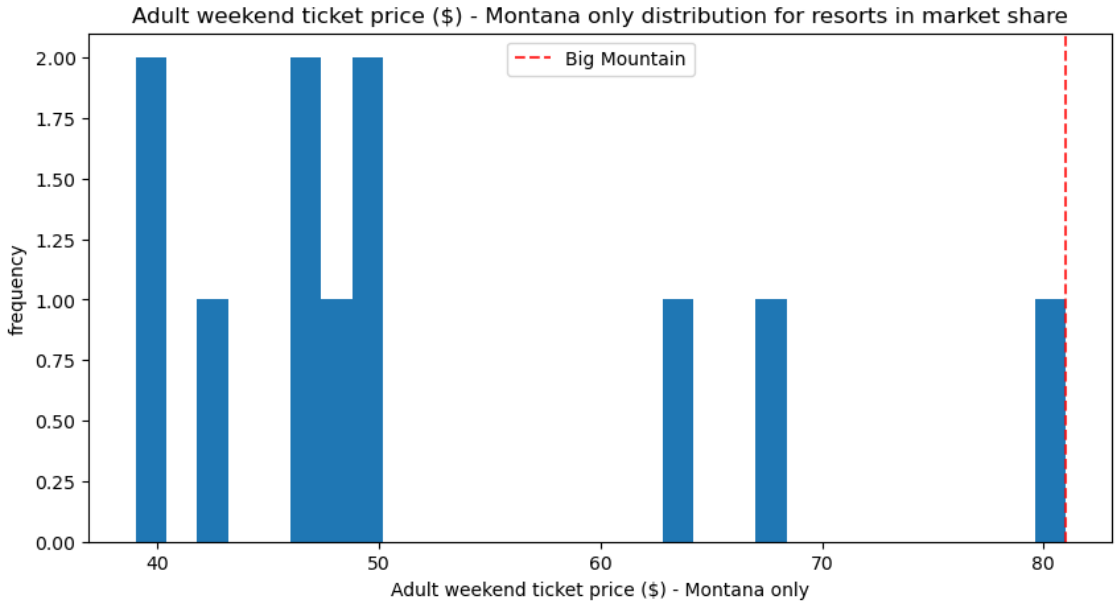

Figure 2: Montana Ticket Prices

Big Mountain resort analysis summary

Model highlights:

The features that showed the most importance for ticket price in the market context were:

- vertical drop distance
- Snow Making acreage
- total chairs
- number of fast Quads
- number of runs
- length of the longest run
- number of trams
- skiable terrain acreage

Both linear regression and Random Forest predictive models were trained by using data from all ski resorts in the United States.

Big Mountain resort analysis summary

Modeling the Chair lift effect:

Simply adding an additional chair lift. i.e., increasing the “total_chairs” from 1 to 2, increased support for ticket prices by $1.00 and showed expected season revenue of $3,888,889.

Combining the chair lift addition with other features of importance supported increase in ticket prices but did not show higher seasonal revenue than the chair lift alone. These features included:

-adding runs,
-increasing the vertical drop
-increasing the longest run
-adding snow cover acreage

Big Mountain resort analysis summary

Conclusion:

Our model indicated that the chair lift alone was more important than changing other features to increase both revenue and ticket prices. Revenue from an additional chair would offset the $1,540,000 cost of the newly acquired chair lift by $2,348,889 in a single season. The model justifies the addition of a chair lift.

Take-Home Message:

Adding a chair lift and increasing the ticket price by $1.00 could increase revenue by $2,348,889 in the first season and $3,888,889 subsequent seasons, compared to current revenue.

The model supports the addition of a chair lift!