Big Mountain Resort Price Analysis

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Jan. 2021

Table of Contents

01 Problem Identification

- Big Mountain Resort would like to adopt a *data-driven business strategy* to select a better value for their ticket price based on the importance of their facilities.

- How can Big Mountain Resort *increase profits* to offset costs by *$1.54m* this season through *modeling ticket prices based on key features?*

- *Current Ticket Price = $81*

02

Working with our Data

1

Data Wrangling

Cleaning and transforming our data

2

Exploratory Data Analysis

Feature Correlation Heatmap

3

Pre-Processing and Training Data

Building Models

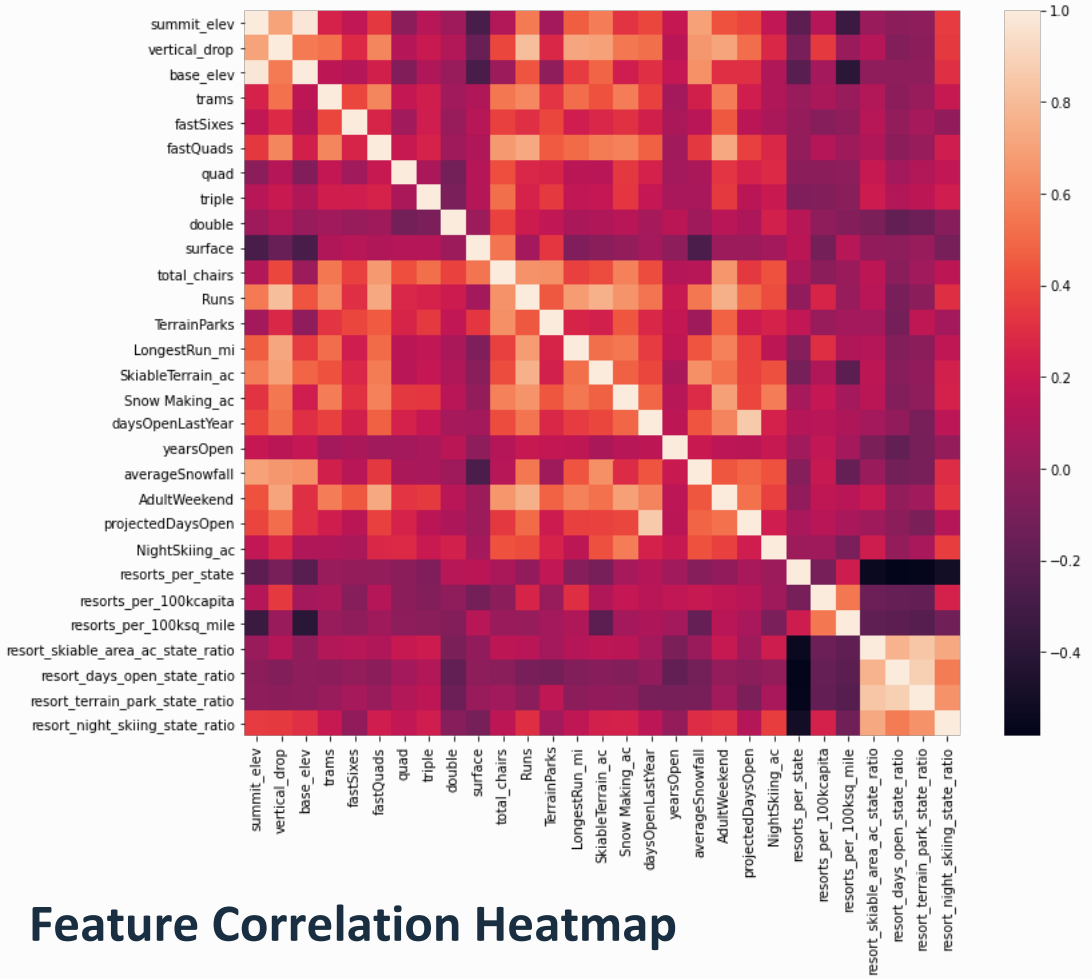
Data Wrangling

- Performed house-keeping issues with the data.
- This involved identifying missing, incomplete or inaccurate data and either completely removing them from our data set or correcting them if a viable or alternative solution existed.

Exploratory Data Analysis

Positive Correlations with AdultWeekend:

- fastQuads
- Runs
- Snow Making_ac
- total_chair
- vertical_drop
- resort_night_skiing_state_ratio



Feature Correlation Heatmap

Pre-Processing and Training Data

Mean as a predictor

Using the mean, we might expect to be off by around $19, on average.

Linear model using median values

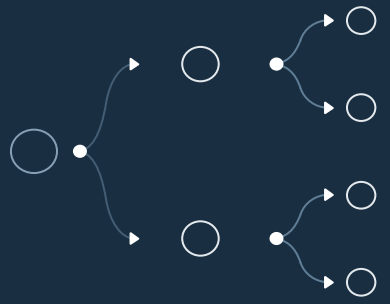
Using a linear model with imputed median values, we'd expect to be off by around $10, on average.

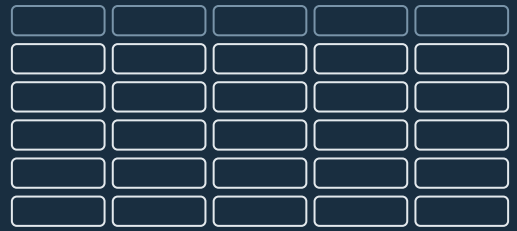
Random forest model

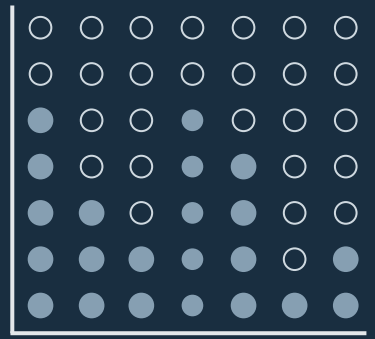
Using the random forest model, our estimated price may be off around $9, on average.

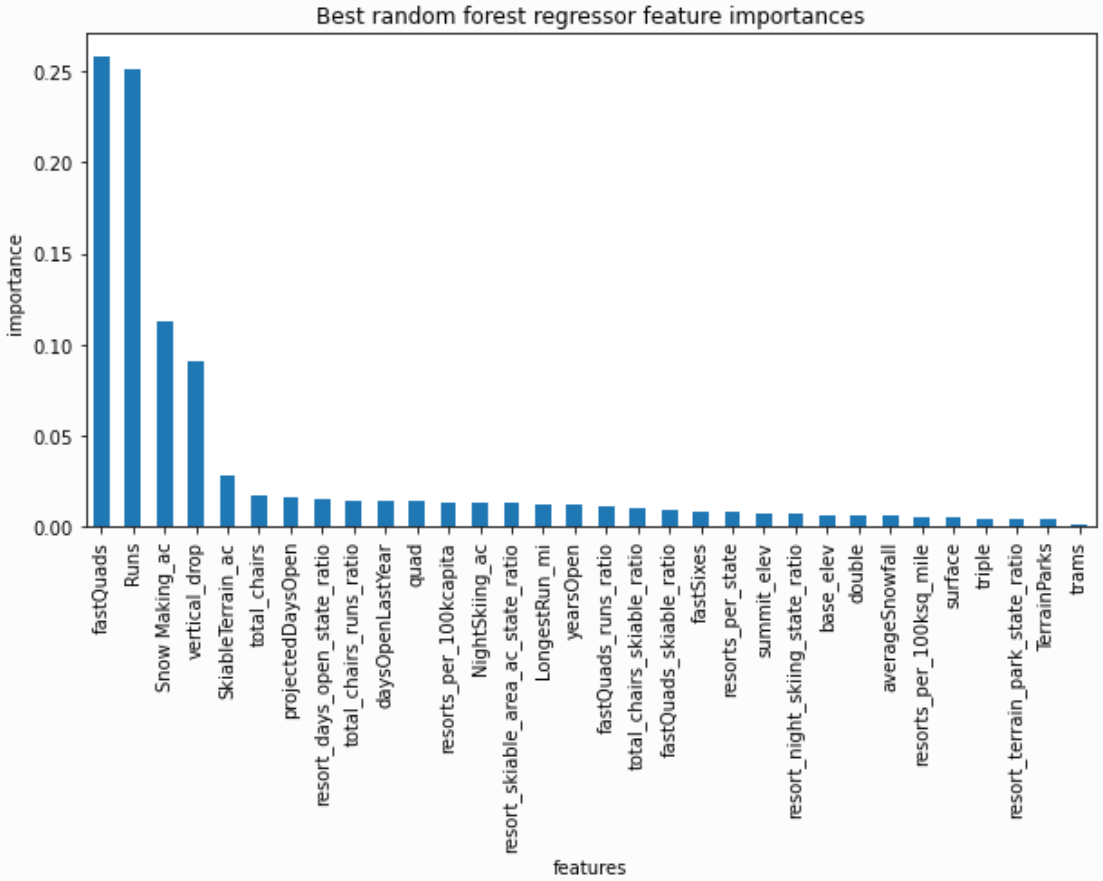
03

Modeling and Analysis





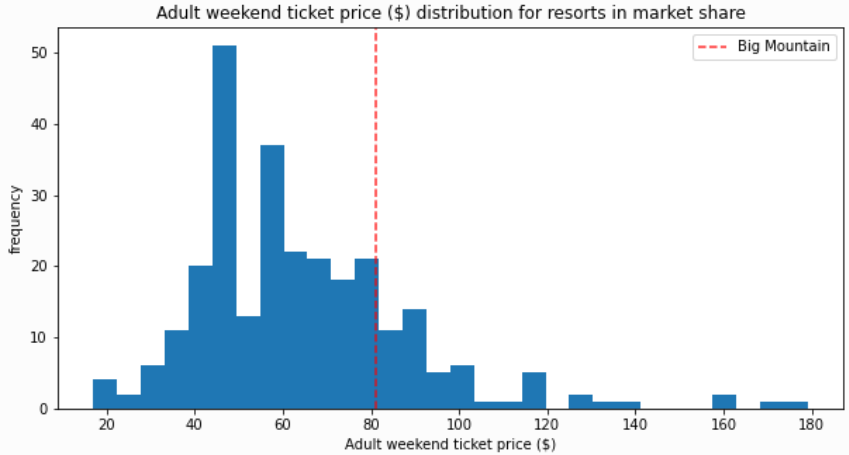




Random Forest Model

Top 4 Dominant Features:

- fastQuads
- Runs
- Snow Making_ac
- vertical_drop



BMR's Expected Ticket Price

- BMR's current price = $81
- BMR's modeled ticket price = $95.87

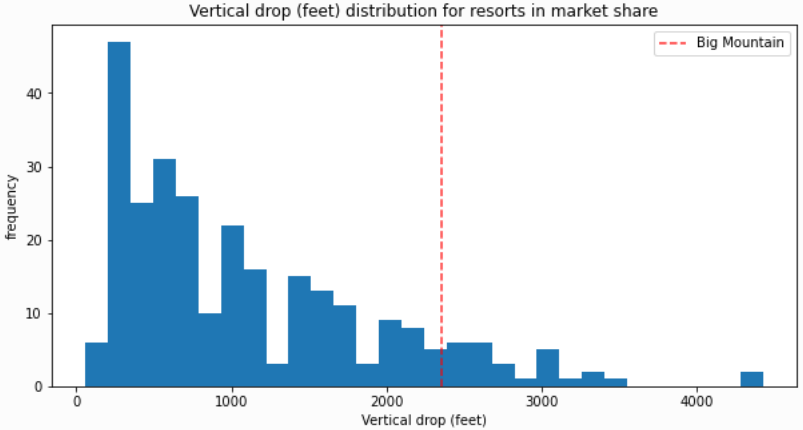
04

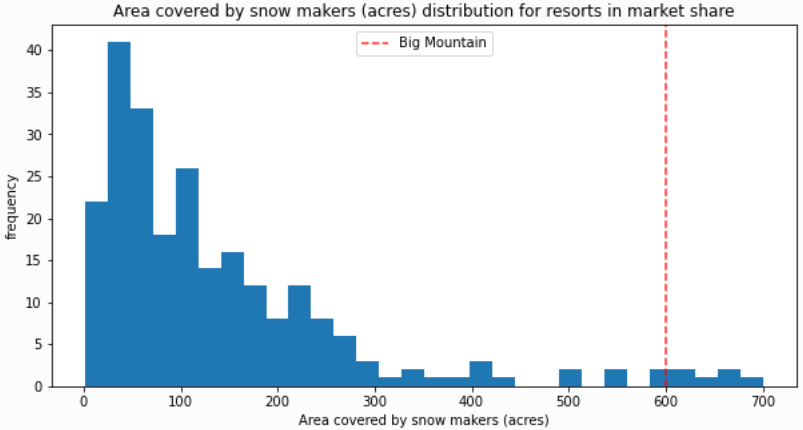
Key Findings

Important features in the modeling…

- vertical_drop
- snow Making_ac
- total_chairs
- fastQuads
- Runs
- LongestRun_mi,
- trams
- SkiableTerrain_ac

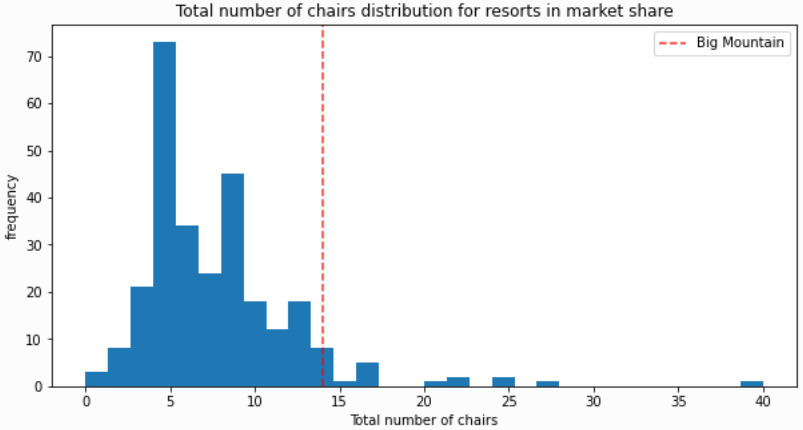
- Big Mountain Resort competes very well among all resorts and ranks high in all key features that determines price– with the exception of trams where majority of resorts, like BMR, does not offer any trams.

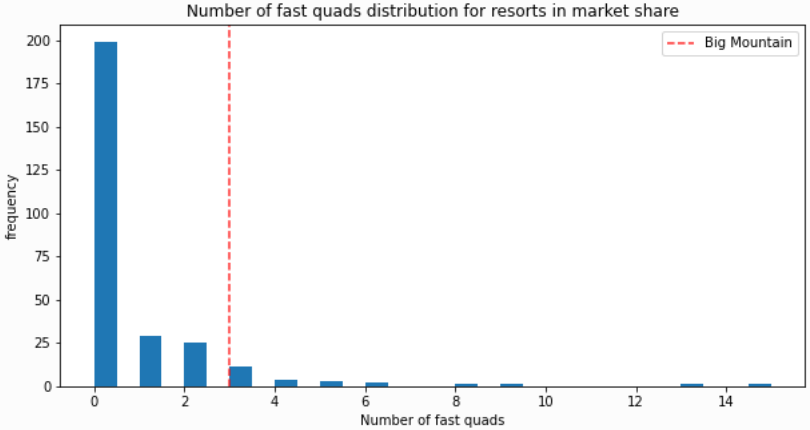




vertical_drop: vertical change in elevation of the summit mountain at the resort

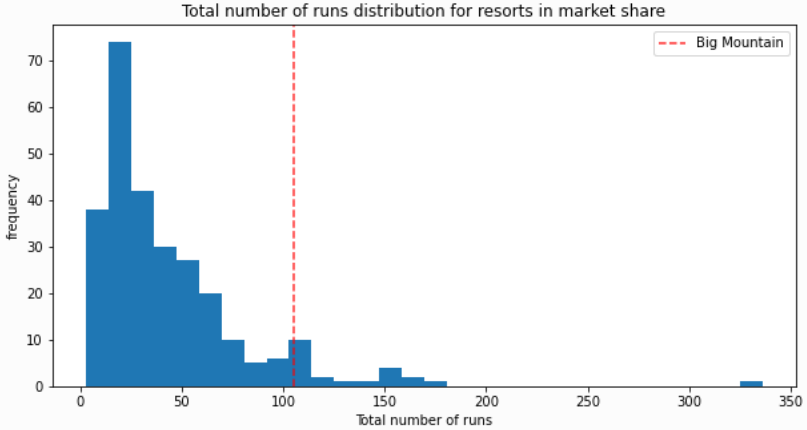
Snow Making_ac: total area covered by snow smaking machines in acres

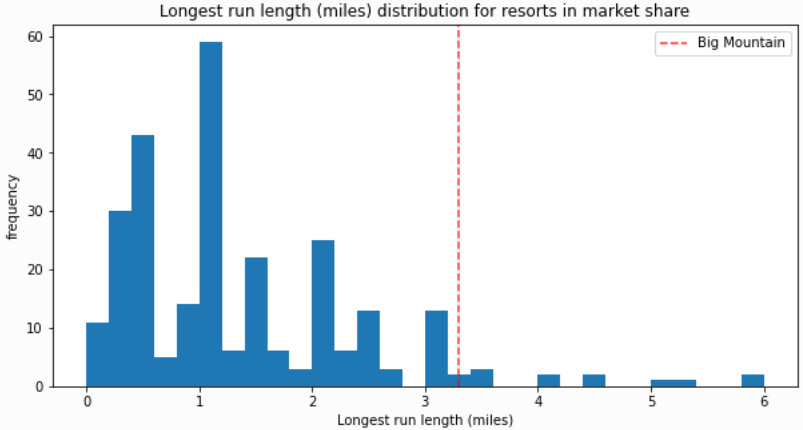




total_chairs: sum of all the chairlifts at the resort

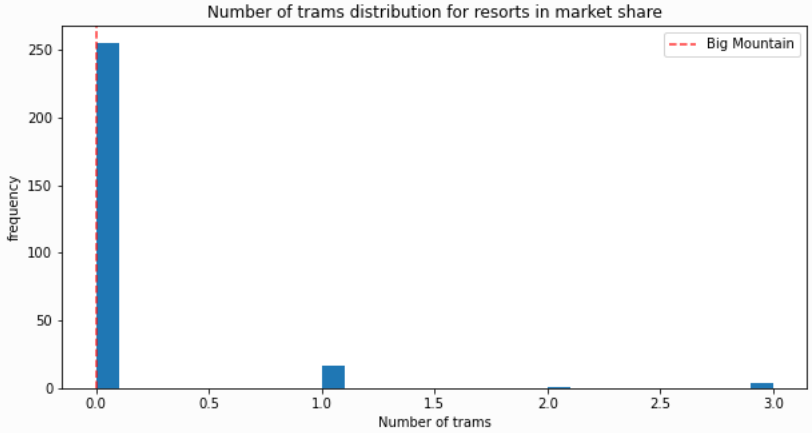
fastQuads: the number of fast four person chairlifts

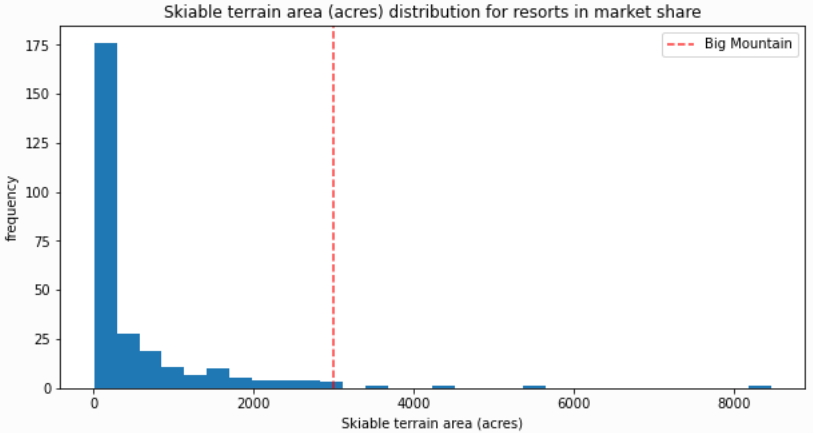




Runs: count of the number of runs on the resort

LonestRun_mi: Length of the longest run in the resort in miles





trams: number of trams

SkiableTerrain_ac: Total skiable area in square acres

05

Recommendations

How can Big Mountain Resort *increase profits* to offset costs by *$1.54m* this season?

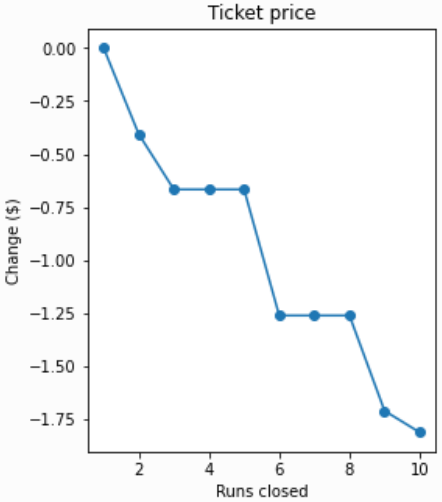
Assuming that the expected number of visitors over the season is 350,000…

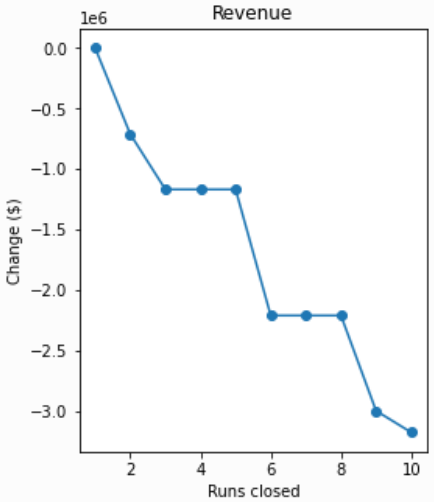
Solution 1: Implement our modeled ticket price: $95.87

Increases profits by $5,204,500, which leaves BMR with $3,664,500 in excess earnings after taking into account the cost of the new chairlift

Possible Scenario 2: Increase the vertical drop by 150ft and adding an extra run, but requiring the installation of an additional chair lift.

Increases support for ticket price by $1.99, which amounts to $3,474,638 in increased revenue per season. This possible solution would take into adding an addition chair lift on top of the one BMR recently added. The revenue generated from increasing ticket price by $1.99 would be more than enough to cover the cost of 2 chair lifts with an excess profit of $394,638.





Close down a run … save on operating cost?

BMR could also consider closing down a single run since it has no effect on price. However, closing down more than 1 run has a downward pressure on ticket price.

Thank you

Do you have any questions?
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