Big Mountain Resort recommendations

Guided capstone project

Vicky P. October 2020

Problem Identification

Big Mountain Resort

Context:

Big Mountain Resort, a ski resort located in Montana which offers spectacular views of Glacier National Park and Flathead National Forest.

Key Characteristics:

- Access to 105 trails
- 350K people attend every year
- 11 lifts, 2 T-bars, 1 magic carpet
- 4.467 ft base elevation, 2.353 ft vertical drop.

Problem Identification

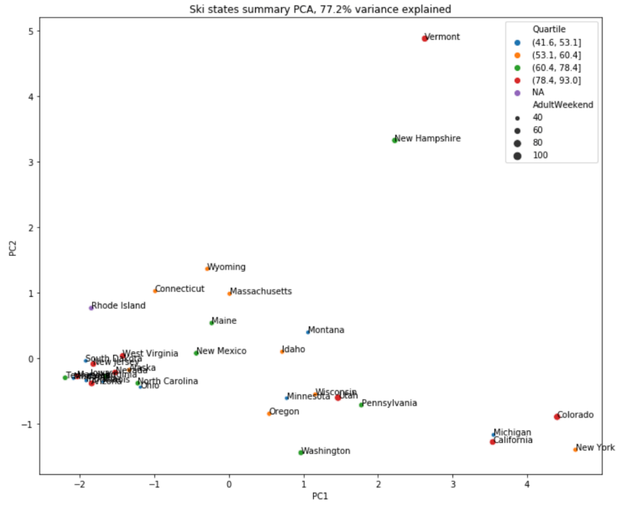
Big Mountain Resort

How a new approach of pricing strategy could improve the financial value of Big Mountain Resort in the next implementation year in the market segment?

- Is Big Mountain capitalizing their facilities?
- How important are some facilities compared to others?
- Is the actual pricing strategy - market average - the right one?
- From business perspective, what is the best projected scenario?
- New additional chair lift.

Recommendation and key findings

Ranking and features

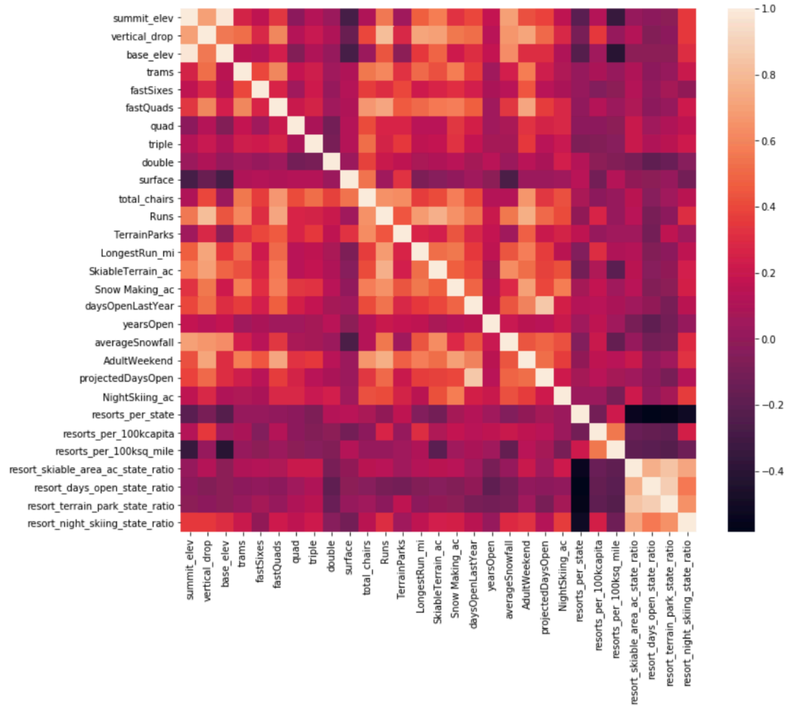


Ranking resorts in USA:

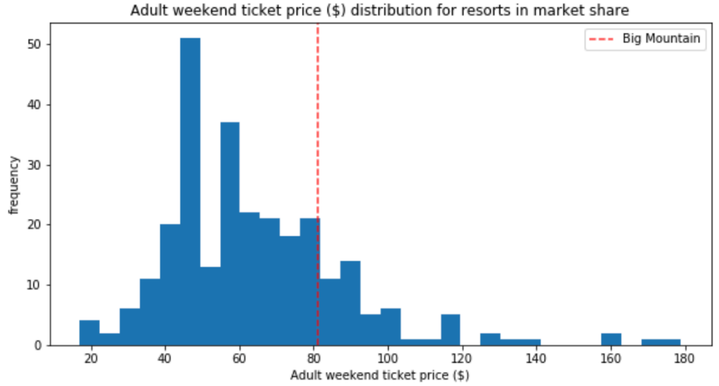
- Total state area: Alaska, California, **Montana**, New Mexico, Arizona
- Total state population: California, New York, Pennsylvania, Illinois, Ohio.
- Resorts per state: New York, Michigan, Colorado, California, Pennsylvania.
- Total skiable area: Colorado, Utah. California, **Montana**, Idaho.
- Total night skiing area: New York, Washington. Michigan, Pennsylvania, Oregon.
- Total days open: Colorado, California, Michigan, New York, New Hampshire.
- Resorts per 100k capita: (2) Vermont, (1) Wyoming, New Hampshire, **Montana**.
- Resorts per 100k mile: New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island.

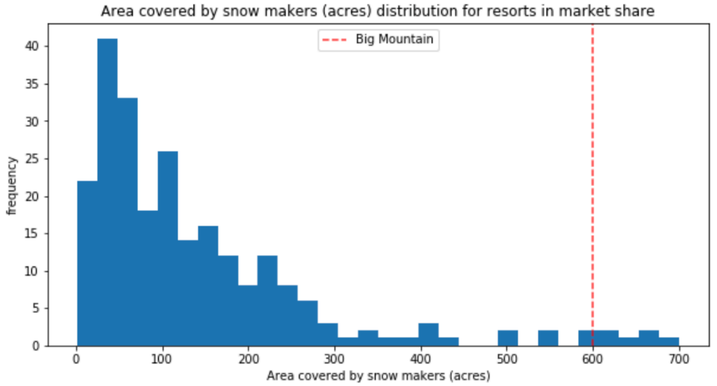
Feature relationship:

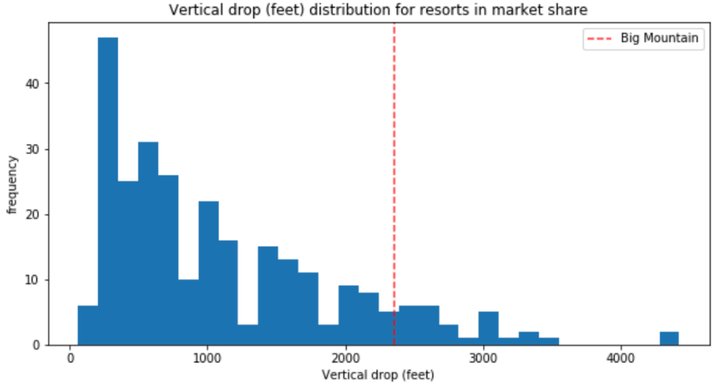
- Summit and base elevation are quite highly correlated
- Ratio features are negatively correlated with the number of resorts in each state.
- The ratio of night skiing area with the number of resorts per capita has a positive correlation.
- AdultWeekend ticket price, is correlated with vertical_drop, fastQuads, Runs and Snow Making_ac.
- Night skiing ratio per state is positive for the price a resort can charge.

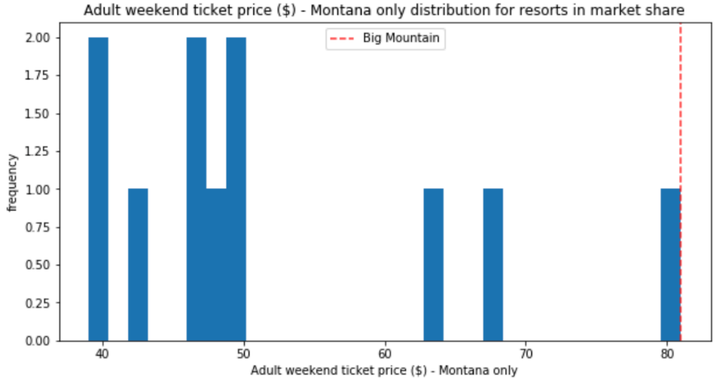


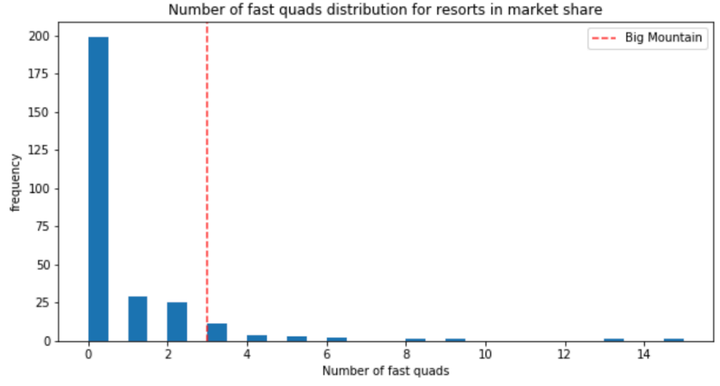
Big Mountain Resort In Market Context

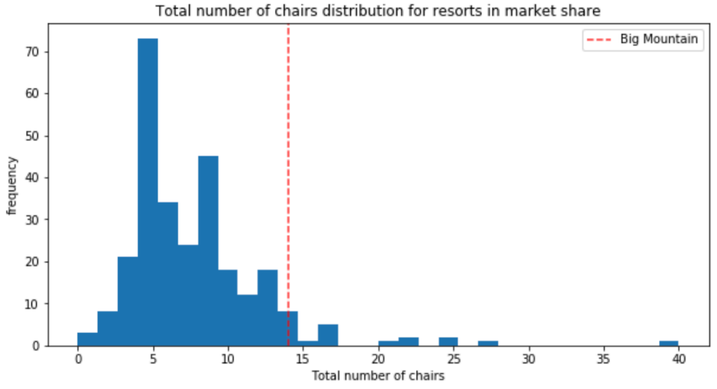


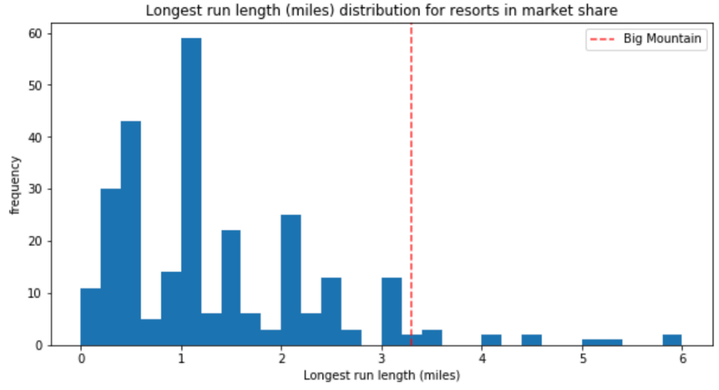


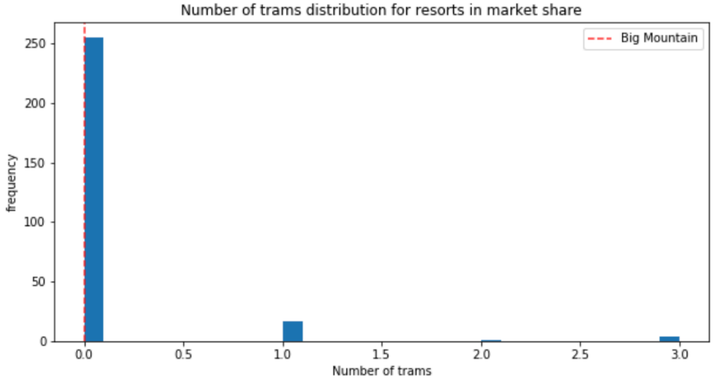


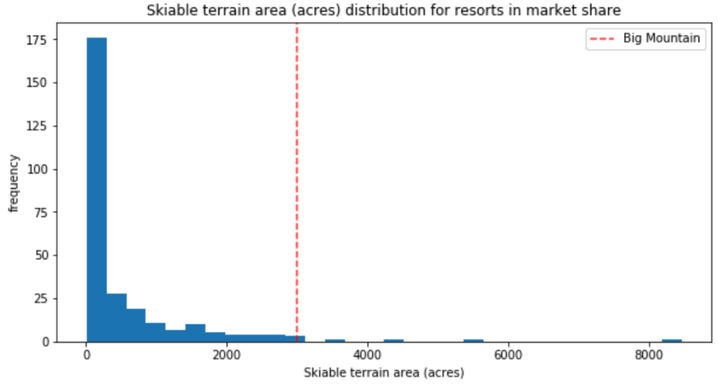






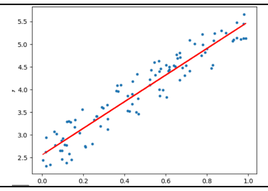
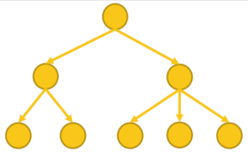




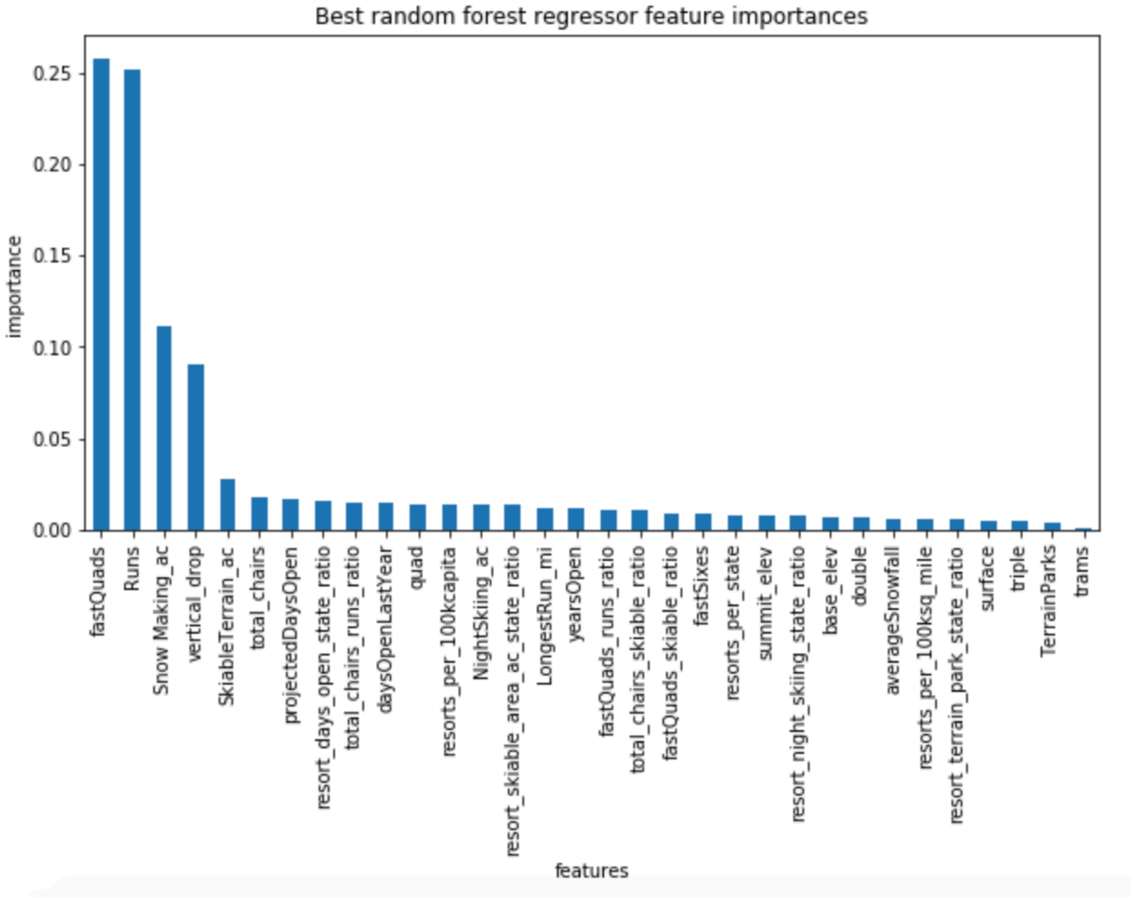


Modeling Result

Using Cross Validation

		
Model	**Linear Regression**	**Random Forest**
Mean Absolute Error	11.79	9.49

The random forest model was selected because had lower cross-validation mean absolute error by almost $1 and less variability.



Summary and conclusion

Ticket price and business scenarios

Big Mountain Resort actual ticket price: $81 us

Annual revenue projected (350K - 5 days per visitor): $ 141.350.000 us.

Big Mountain Resort ticket price projected: **$94 us**

Annual revenue increase: + $23.150.000 per season.

Conclusions for business scenarios:

1. Closing 10 runs could reduce the support for the ticket on $1.75 us each, $3.062.500 us all season.
2. Incrementing one run, one chair and add 150ft to vertical drop will increase in $1.99 us the ticket - $82.99 us and the revenue in $3.474.638 us.
3. Adding 2 acres of snow to the preview scenario will not show any change to the revenue.
4. Increasing the longest run by 0.2 mile to boast 3.5 miles length, will require an 4 more acres of snow making coverage and this will not make a difference in the ticket price/revenue.

The new additional chair will add $1,540,000 operating costs this season, supported with the business scenario 2 the revenue will not be affected.