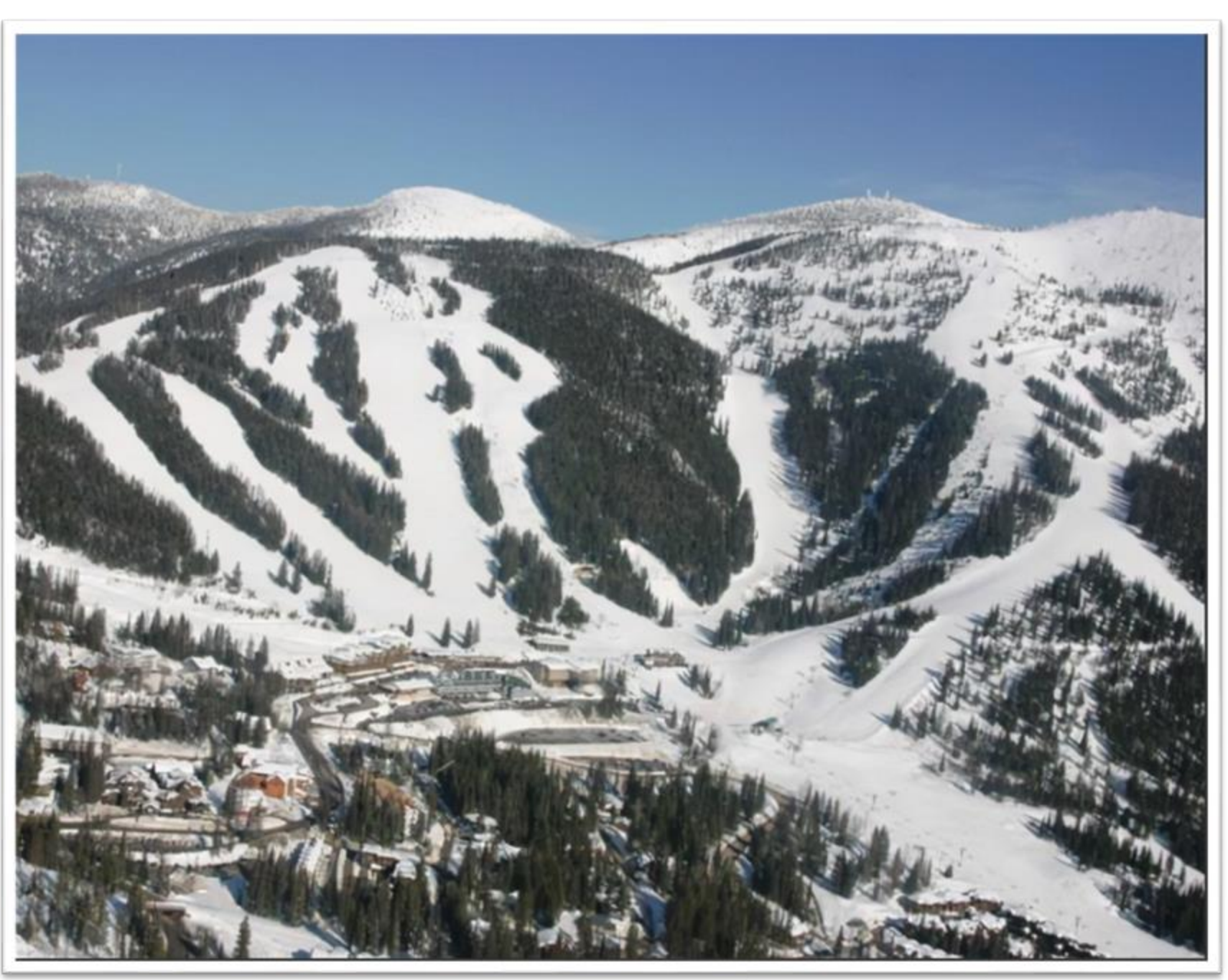


Big Mountain Ski Resort Price Prediction

by: Uranbaigal Purevsuren

Problem Identification

- How much increase in ticket price or operational cost cut needs Big Mountain Ski Resort to maintain a profit margin of 9.2% for upcoming season while covering additional cost of $1,540,000 for newly installed chair-lift?

- Big Mountain Resort has recently updated their service by installing an additional chair lift. So, their operational cost increased by $1.54million.
- On average, about 350,000 people visit at the resort to ski or snowboard annually. This business profit margin is 9.2% and the investors would like to keep it there.
- They need a guidance on business strategy either cut operating cost or change the ticket price higher.

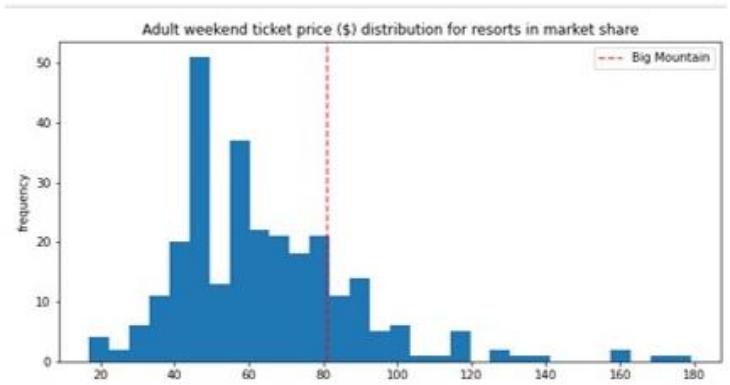
Recommendation and key findings

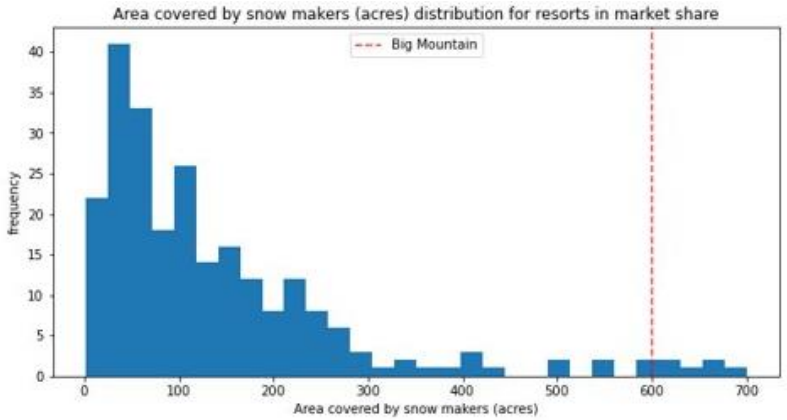
The revenue calculations were in assumption of 350,000 visitors buying the ticket for 5 days. Afterward, made different approaches and business scenarios either cutting costs or increasing revenue from the model can be used to show the changes:

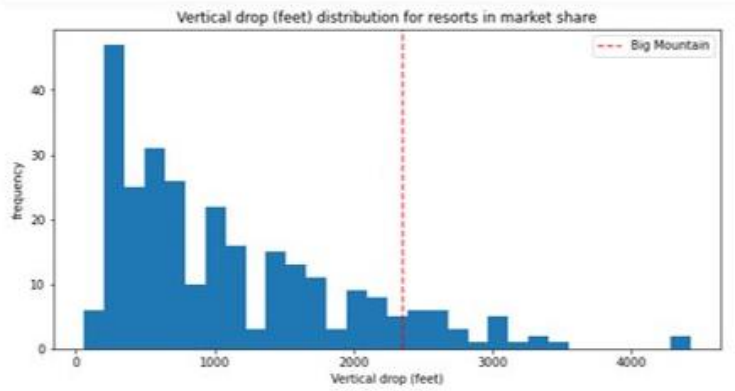
- Closing up to 10 least used runs. There is no difference, if 1 run is closed. There will be no difference, if 2-3 runs are closed then it reduces support for ticket price, which affects revenue. There is no difference 3 or 4-5 runs are closed. If 6 or more runs are closed, then the ticket price and revenue increasingly drop overall.
- Adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift to bring skiers back up without additional snow making coverage.
- The same as the second scenario, but adding 2 acres of snow making. Second and third scenarios both have the similar result that support a higher ticket price by $1.99 and produce an expected revenue of $3,474,638.
- Increasing the longest run by 0.2 miles and guaranteeing its snow coverage by adding 4 acres of snow making capability. The result shows no difference on the ticket price and the revenue as well.

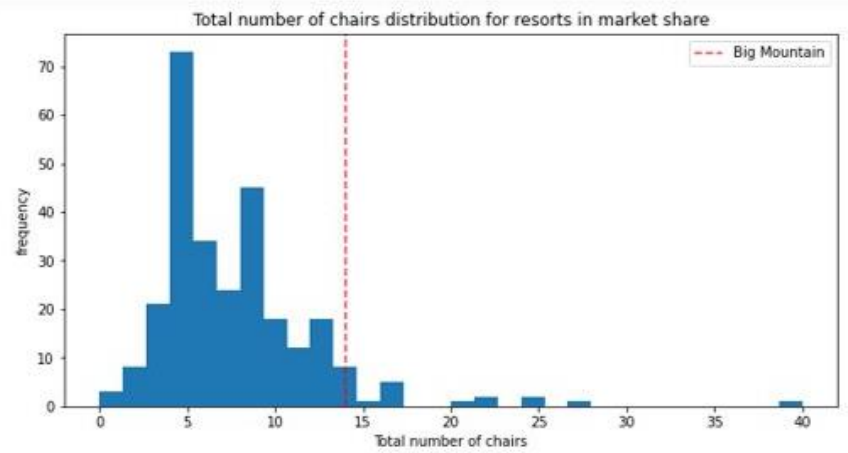
Modeling results and analysis

Big Mountain ticket price, vertical drop, snow makers and number of chairs vs all other ski resorts shown below.

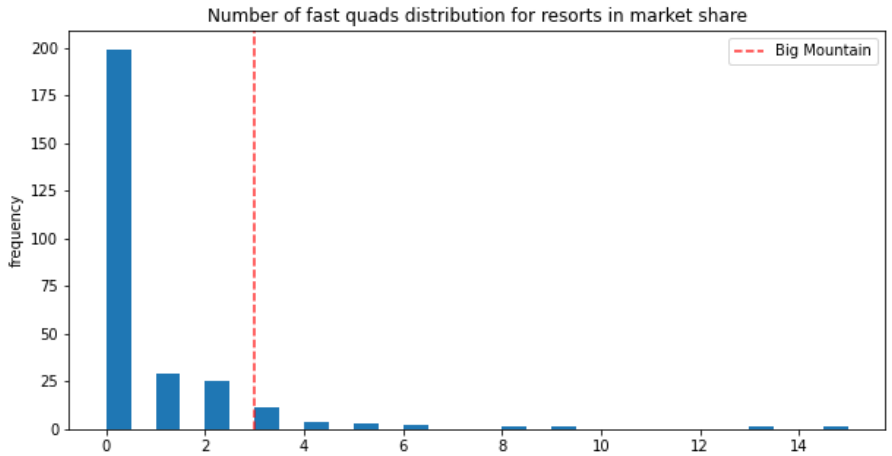


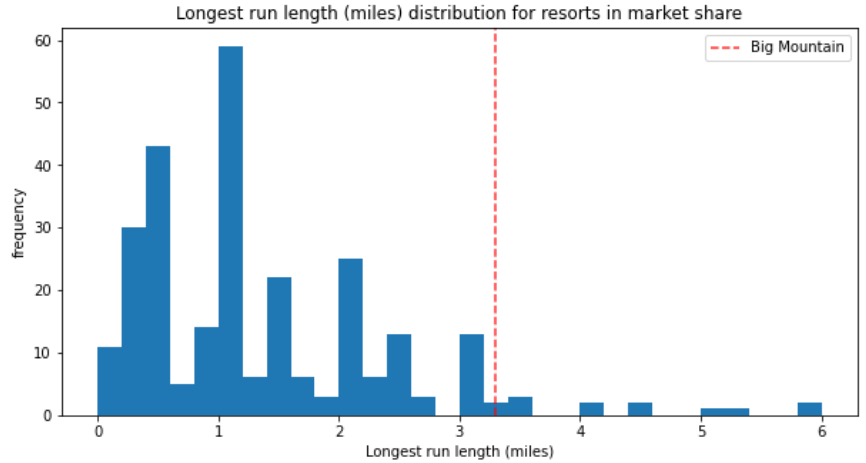


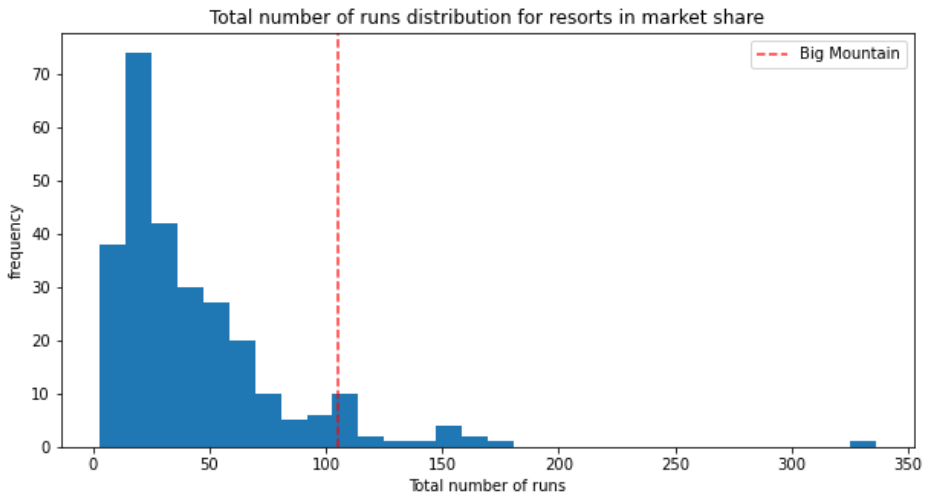


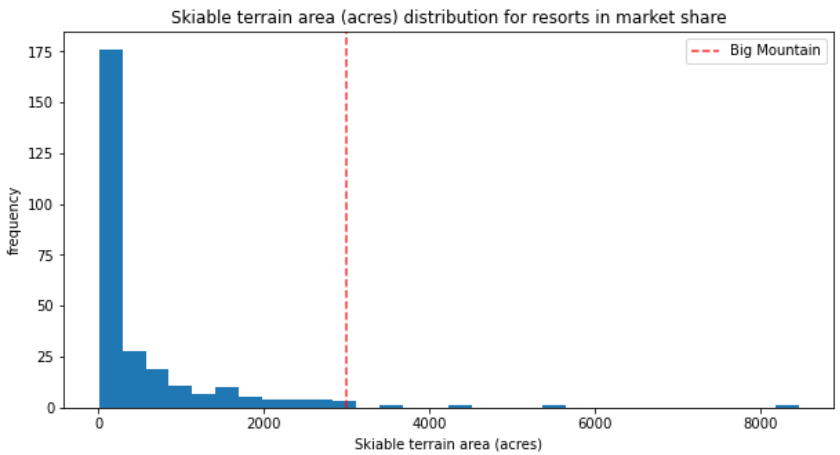


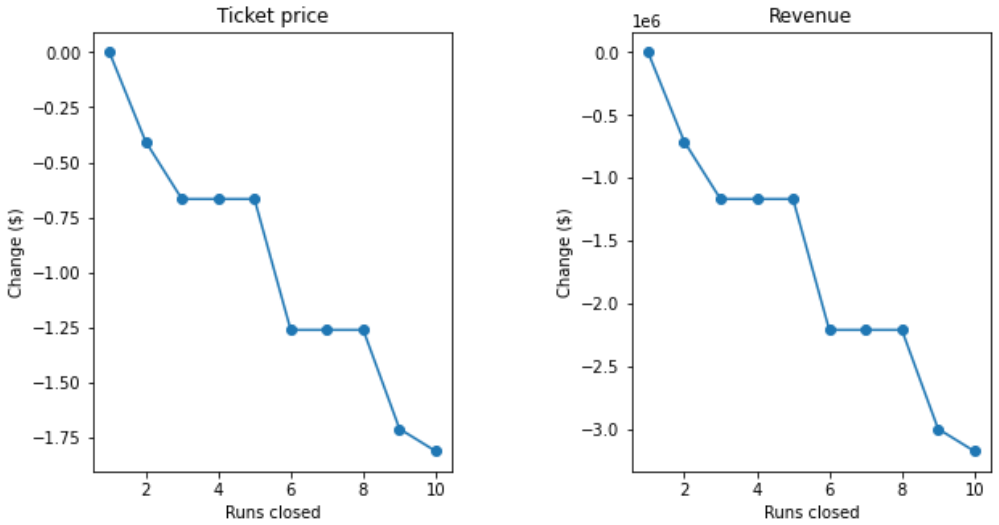
Big Mountain fast squads, runs, run length, skiable terrain area vs all other ski resorts shown below.

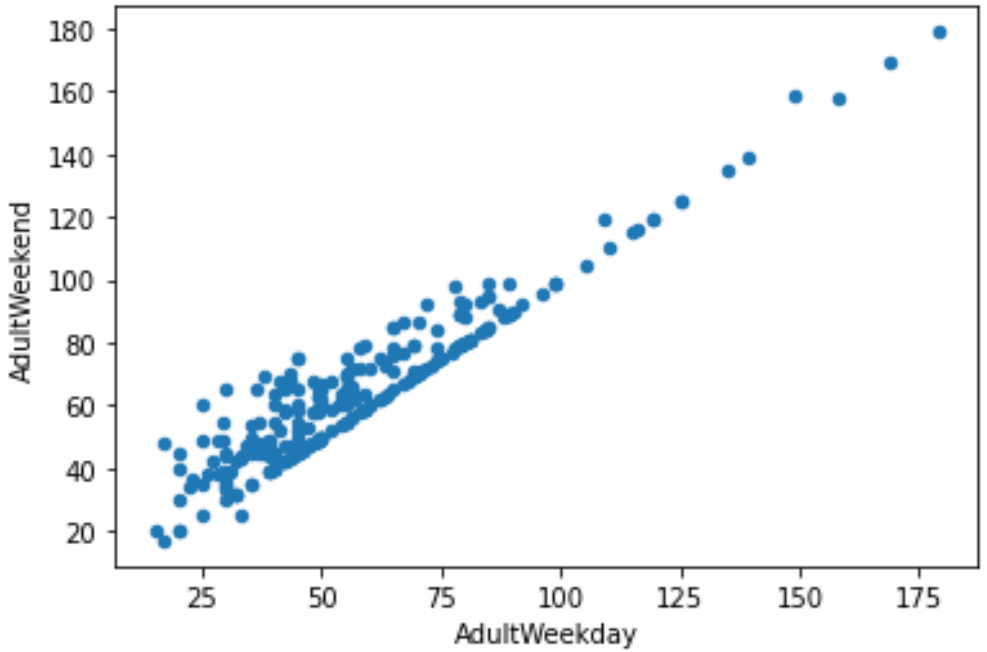












If we know the operating cost per used run, we can determine how much cost saving will be offset the loss in revenue after closing more than one run.

The left side of the figure shows that most of the resorts follows the dynamic pricing. Weekend prices being higher than weekday prices looks restricted to sub $100 resorts.

Summary and conclusion

- The final model suggests we can increase ticket price by $1.99 or up to about $83.
- Random Forest Regressor performs well.
- Current model only considered adult weekend ticket price. Adult weekday ticket price is equally important. Also, if there are information/data about kids ticket price could make model better. Some operational cost information including for Runs, snow makers and chair lifting would make business scenarios better and helpful to make reasonable business decision. Additionally, if there are other information/data about revenue making factors such as sales of food and beverages, merchandise sales and equipment rentals would be helpful.