Big Mountain Resort Montana

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Springboard

This project report will focus on :

Which pricing strategy should Big Mountain Resort apply in the upcoming season to increase its Revenues and return its investment of $1.54 Million?

GUIDED CAPSTONE PROJECT REPORT

Problem identification

Our data science team was brought in to implement a data-driven business strategy that would help to guide and hopefully answer the following business questions.

Recently resort invested in a chair-lift, which has increased their operating costs by $1.54M this season. Considering this new addition, to maximize its returns relative to its position in the market, we investigated **What price should Big Mountain Resort charge for their ticket?** Resort's currently pricing strategy has been to charge a premium above the average cost of alternatives in its market segment. This report will present answers to whether it can increase the price even higher and, if so, in how much, so visitors will still be willing to pay the price.

There's a suspicion that Big Mountain is not capitalizing on its facilities as much as it could. We will be helping to determine **How to capitalize on its facilities in the best possible way**. Resort's management has presented us with four changes that they are considering. Our model tested these propositions and predicted how each scenario would influence current customers' willingness to pay for a ticket. I will present **Which of the considered changes will cut costs without undermining the ticket price and which change will support an even higher ticket price**.

Finally, based on the data we have gathered on the existing list of facilities on 330 resorts belonging to the same market share (See appendix B- assumptions section), we will provide a user-friendly model that would support future business decisions regarding the influence of future change to resort's facilities on ticket value, As well as, **How to adjust their ticket price based on those changes**.

Recommendation and key findings

Since each visitor on average buying 5-day tickets and each year there are about 350,000 visitors at the resort, Our modeling suggests that charging $94.22 per ticket could be fairly supported in the marketplace by Big Mountain's facilities. Solely to cover the resort's recent investment, it should raise ticket price by $0.88 per ticket.

Features that came up as highly valued by customers (see Appendix A) include:

- Number of Fast Quads
- Number of Runs
- Snow Making area
- Vertical drop
- Skiable terrain area
- Total number of chairs

After seeing where Big mountain resort stands amongst those areas, we feel confident that existing resorts' facilities can support the higher ticket price.

For further improvements, we would recommend the following:

1. First, to permanently close the one least used run, as shown from the model that it is not reducing ticket value.
2. Then, our model shows that increase the vertical drop by 150 feet by adding a lower run supports a $1.99 increase in the ticket price, which over the season could be expected to amount to revenue of $3.475 M. Implementation of this scenario requires the installation of an additional chair-lift to bring skiers back up. Resort's previous experience shows that the price should be raised to $0.88 per ticket to cover additional chair-lift yearly operation costs.

   Hence, It is an **extra profit of more than $2M** (not include the additional chair-lift installation cost).

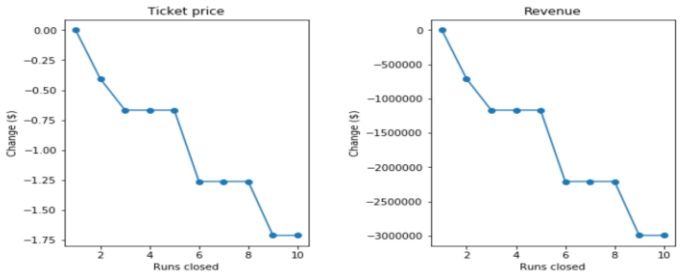
   Note that only after knowing the additional chair-lifts yearly operational costs could we calculate the profit.

It is also worth mentioning that adding 2 acres of snowmaking coverage makes no difference in ticket value. Therefore, it is not worth the investment.

3. Lastly, the resort should look up at its runs' operational costs and make a decision when should it permanently close its least used runs according to this decision table:

Condition: Yearly operational costs of..	**Decision**: Permanently close down..
2 runs > $675K	2 least used runs
5 runs > $ 1.225 M	5 least used runs
8 runs > $ 2.2 M	8 least used runs

As we can see in the graph below, If Big Mountain closes down three runs, it seems they may as well close down 4 or 5 as there's no further loss in the ticket. So as 6,7 and 8.



Summary and conclusion

Currently, Big Mountain charges $81, and although state-wise, Big Mountain's ticket price is the highest, and so it sits high amongst all resorts, there are still resorts with a higher price and up to double the price. Note that this relies on the implicit assumption that all other resorts are primarily setting prices based on how much people value certain facilities. Essentially this assumes a free market sets prices.

As we saw, the ticket price is not determined by any set of parameters. The resort is free to set whatever price it likes. However, the resort operates within a market where people pay more for some facilities and less for others. Being able to sense how facilities support a given ticket price is valuable business intelligence. Thus, the utility of our model comes in.

For future queries and new scenarios examinations, management can use our model to obtain the predicted increase of ticket prices from each unique scenario. all that is needed is to insert a list of all the features/facilities that will be affected by the new plan and their corresponding deltas, to the function that we supplied ("predict_increase") to receive the predicted increase in $ (or decrease for negative results).

Appendix A

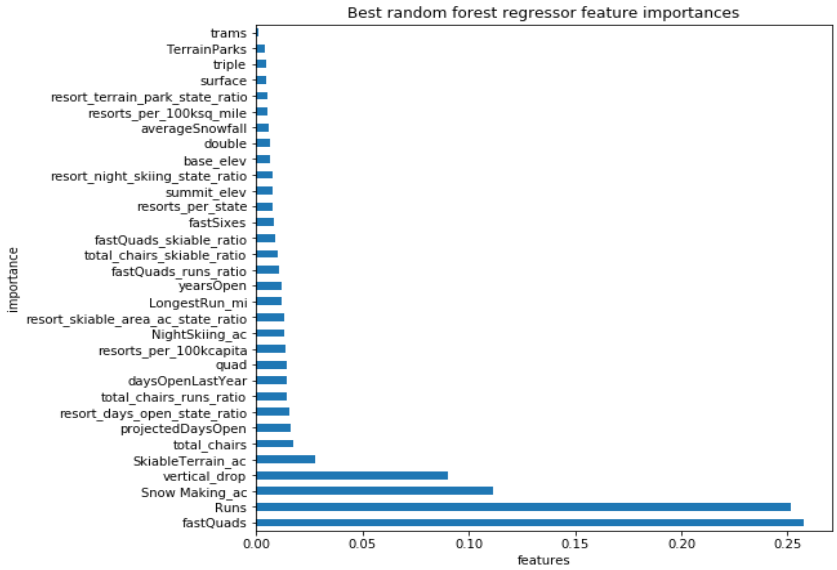
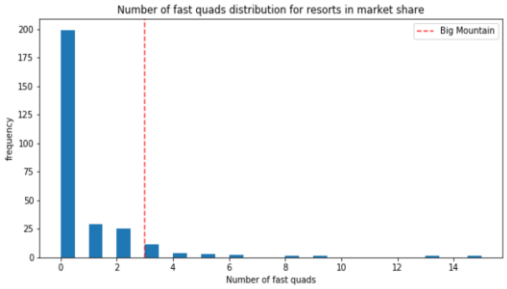
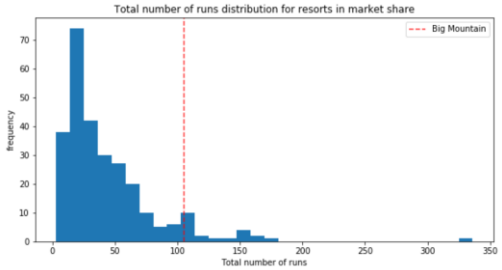


Figure 1. Features that came up as highly valued by customers in our best modeling

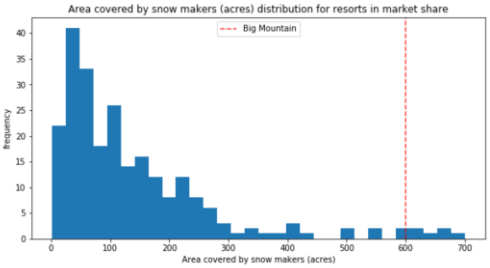
1. The number of Fast Quads - Most resorts have no fast quads. Big Mountain has 3.



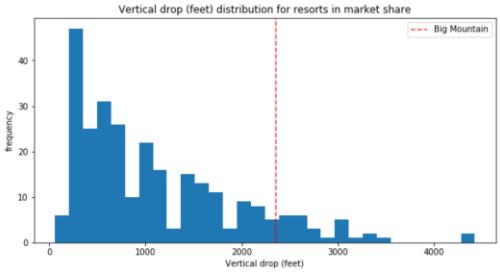
2. Runs - Big Mountain compares well for the number of runs



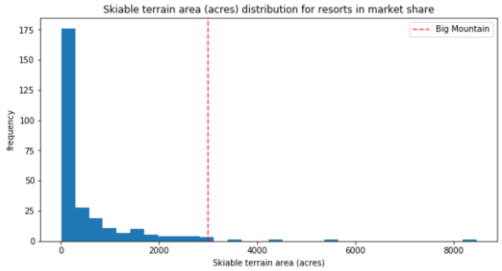
3. Snow Making area – Big Mountain resort is very high up the league table of snowmaking areas.



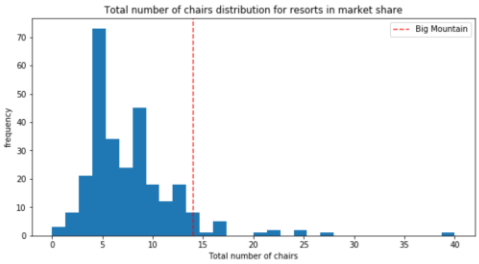
4. Vertical drop - Resort is doing well, and there are only several others with a more significant drop



5. Skiable terrain area - Big Mountain is amongst the resorts with an enormous amount of skiable terrain.



6. Total number of chairs - Big Mountain has amongst the highest total number of chairs



Appendix B

Assumptions

Data quality and "data correction" steps

Data quantity assessment

Ski Resort Features we worked on included:

Models' description