**Guided Capstone Project Report**

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**Are Big Mountain Ticket Prices Too Low?**

Big Mountain is a premium ski resort with a ticket price of $81. This price was chosen by adding about $18 to the $63 mean ticket price of comparable resorts.

We have provided a better model for the ticket price and use it to determine how the ticket price responds as features are added or removed.

Our model market price, based on comparable resorts, is 95.87 +/- 10.39, about $15 more than what Big Market is charging and about $33 more than the mean of all resorts. As Figure 1 shows, a price in the $95 to $100 range places Big Mountain with its premium peers.

Chart, histogram

Description automatically generated

It makes sense that Big Mountain’s ticket price should be high as it is in the top tier of resorts with regards to features customers are willing to pay higher ticket prices for. Examples shown are Vertical Drop and Area Covered by Snow Makers.

Chart, histogram

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In order to pay for the additional $1,540,000 operating cost of the new chair lift, the 350,000 skiers a year buying 5 day tickets each, would have to pay an additional $0.88 per ticket. This is still well below market price of our model prediction.

One should be cautious about raising the price too high however, since Big Mountain’s price is the highest in Montana.

Chart, bar chart

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**Feature Improvements Impact on Ticket Price**

For future improvements, we have determined how the average market price changes as features are added or removed. Below, we show how the ticket price and revenue (assuming 350,000 people buying 5 tickets each) change as runs are removed.

Chart, line chart

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A single run can be removed without any change in price. Removing 10 runs reduces the market price of a single ticket by 1.80, which is still well below the market price difference. If we had data on the number of tickets sold for each resort we could model how the removal of runs will alter the number of attendees. Without that number we cannot give an accurate estimate for how the removal of runs will impact revenue while holding the ticket price constant.

Our model predicts that adding length to the longest run does not alter the ticket price, nor does adding a few acres of snow. However, increasing the vertical drop by 150 feet increases the ticket price by $1.99 roughly the same value increase that is lost by cutting ten runs. Over the season, this could be expected to amount to an additional $3,474,638 dollars even if the number of attendees does not change. In general, we have found that increasing the vertical drop adds the most value to the resort.

**Future Work**

It would be useful to know how the existing price was determined as there might be information that went into that calculation that we could incorporate into our model. It would be useful to have operating costs so we could model changes that will optimize profits. It would also be useful to have attendance data for the other resorts so we could model how changing features, such as the vertical drop can influence number of tickets sold. A user interface could be added to the model so that managers or others could use it to make predictions concerning how feature changes impact ticket market value.