Guided Capstone Project Report

Big Mountain Ski resort has just installed a new chairlift that increases operational costs by $1,540,000 this season. The current pricing situation with Big Mountain is that they charge a premium above the market average of equivalent resorts. They currently charge $81 dollars for both Adult Weekday and Weekend tickets. The total market average for Adult Weekend prices is $64.27 for equivalent resorts in the market. In Montana the average ticket price is $51.1.

From making a scatter plot comparison of the two types of ticket price and found that often a resort has a Weekend Price that is higher than the Weekday Price. This mostly occurs when ticket prices are below $100. However it's important to note that this is not the case for the state of Montana in which Big Mountain resides, where Weekend and Weekday prices are equal for any given resort.

Potential recommendations for Big Mountain Ski Resort

1. Add the run that increases the vertical drop by 150 feet which requires the installation of a new chairlift but no additional snow making equipment. The model shows that will allow us to increase ticket price by $1.99 and total revenue by $3474638. Note that vertical drop is most positively associated with ticket price.
2. The chair that was recently constructed increases operational costs by $1,540,000 this season. Our model shows that just the introduction of the previously installed chair supports an increase in ticket price of $0.29 which in total revenue amounts to $507246.
3. Closing one run. We found from the model that closing one run will have zero decrease in predicted price. We may ask in terms of operational costs how much they will save from this and which run to close. I would advise closing a run whose chairlift serves multiple runs. Furthermore a run which is least appealing and least used by visitors. We may ask whether closing more runs would be beneficial. To do this we would need to know the reduction in operational costs from closing a run and compare them to the predicted decreases in total revenue. The model predicts a decrease of $710,144 for two closed runs. When we close three, four or five runs the decrease in total revenue is identical - it would be $1,166,666. Closures of six runs is $2,206,521 which would be a large loss. Note that the more runs you close the greater the decrease in operational cost but the more crowded the other runs become.
4. Is Big Mountain currently charging too little for tickets? The model predicts a ticket price for Big Mountain of $95.87 and we know the current price is $81. The Mean Absolute Error tells us how much error on average we can expect from the prediction. For our model it is 10.39 which implies that we could increase the ticket price by $4.48. Equally we should note the model is based on Weekend prices which in some resorts are higher than Weekday prices. The differences in the means between Weekday and Weekend prices is $6.23. Therefore we should be wary of increasing Weekday ticket prices without justification for it.
5. Should we raise weekend prices? Currently Big Mountain charges $81 for both Weekend and Weekday ticket prices. The model suggests that we could increase Weekend ticket

price by $4.48 however in the state of Montana all resorts have Weekend prices that are equal to weekday prices. If Big Mountain increased weekend prices by $4.48 other nearby resorts would be more appealing to skiers. I'd therefore recommend only a minimal increase in Weekend ticket price without justification.

Full recommendation

Add the new run and the chair - this supports an increase both Weekday and Weekend ticket prices by $1.99. The new chair added in the previous season allows you to increase by $0.29. So increase both ticket prices by $2.28. So the ticket price would now be $83.28. This would be the minimum recommended increase.

Costs vs profit:

Operational costs are $1,540,000 for the new chair and the same for the one previously installed. Revenue increase for a ticket price at $83.28 is $507246 + $3474638 = $3981884 minus the operational costs of the two new chairs would increase total revenue by $901,884.

Increase in Weekend Price

The convention in the price of tickets is that they are integers. It would be rather odd to market a ticket price of $83.28. Here is where we can take advantage of the predicted increase in Weekend ticket price. I would recommend increasing ticket prices for both Weekend and Weekday to $84. This price change is largely supported by the above recommended improvements to the resort and by our predictive price model.