Shakuntala Mitra
12/8/2020

Guided Capstone Project Report

Each year, about 350,000 visitors grace the snowy slopes of Big Mountain Resort's 105 trails to ski or snowboard. This year, Big Mountain Resort added a new chair lift to the park, which increases their operating costs by $1,540,000 this season. To accommodate these additional costs and improve investment strategy, Big Mountain Resort is looking for data-driven solutions to increase the ticket pricing.
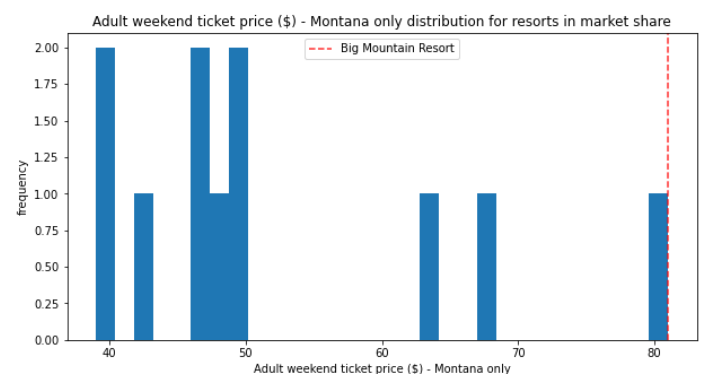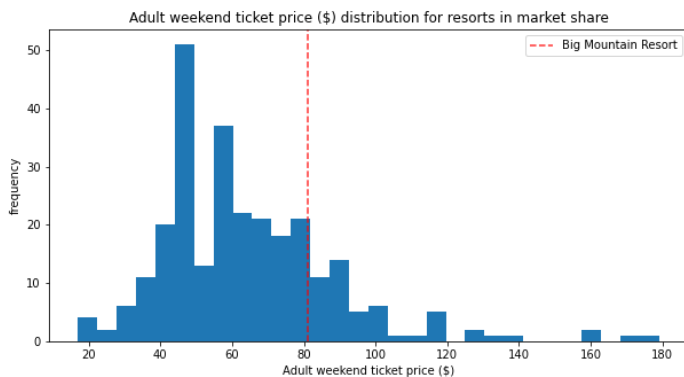

Following the current business strategy of charging a ticket premium above the market average, Big Mountain Resort currently charges $81.00 for each adult ticket. This is very high for Montana, but in the overall market, Big Mountain Resort's price is just above average. We also know that each visitor, on average, buys five day tickets. Taking all of this into consideration, Big Mountain Resort's modelled price is $95.87. Even with the expected mean absolute error of $10.39, this suggests there is room to increase the ticket price. With additional details of the operating and maintenance costs, we could calculate whether or not this increase in ticket price would offset the additional operating cost of the new chair lift and still turn a profit for the park. What we do know is that the park has many valuable, desirable assets that could justify the increased ticket price without losing visitors.

The most impactful features of Big Mountain Resort for ticket price and revenue are the vertical drop, total chairs, fast quad lifts, number of runs, longest run length. Of these areas, Big Mountain Resort stands to improve the most by increasing the vertical drop, as there are many resorts in the market with a much higher vertical drop.
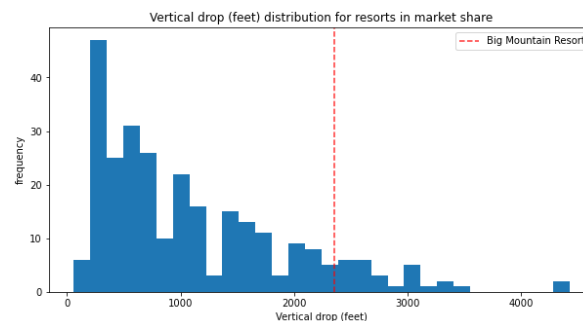
For future improvements, we have a couple of interesting options to consider. The first, and most profitable option according to the model, would be to increase the vertical drop by adding a run to a point

150 feet lower down, but requiring the installation of an additional chair lift to bring skiers back up, without additional snow making coverage. This scenario, which already accounts for the additional chair lift this season, increases support for ticket price by $1.99. Over the season, this could be expected to amount to $3,474,638. This increase in revenue would be enough to support the operation costs of two more added chair lifts!
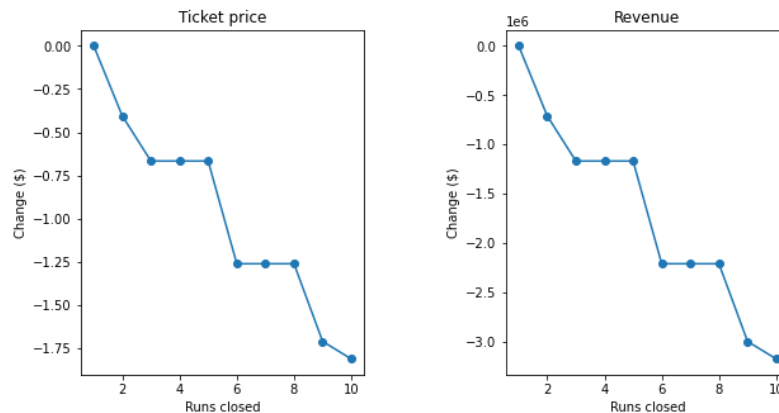
The second is shutting down up to five of the ten least used runs. According to our model, closing one run does not affect ticket price or revenue, but closing runs two and three successively reduces support for ticket price and, consequently, revenue. If Big Mountain Resort can afford to close down three runs, they may as well close down four and five as well, as there's no further loss in ticket price. This may be a viable option depending on if the money saved on yearly operating and maintenance costs for these runs would be greater than the yearly revenue generated by keeping them open. Increasing the closures down to six or more runs would lead to a large and much more alarming drop in revenue. A potential strategy for testing and progressing with run closures could be to gradually close the least used runs one to three, reassess the effects on the park's profits after each closure to see if the revenue decrease of closing another run would be worth it, and then close down runs four and five and do a final assessment of effects on revenue. These changes are best made slowly so as not to alarm or disappoint visitors. An important note to make is that the lifts that serve these runs would have to be reassessed for value, since they may not be necessary anymore, and the park could save money on unnecessary or unused chair lifts. We must also make sure that the chair lifts do not overlap with serving the highest lift-served point in the park, as this is a majorly impactful feature on ticket price. The other shortlisted options are not predicted to have any effect on supporting increasing ticket price or revenue.