Big Mountain Ski Resort in Montana

Ticket Pricing Strategy

Project Overview :
Review ski resorts ticket prices and amenities across the country to see if the data supports an increase in ticket prices for Big Mountain.

Project Summary & Recommendation
The data was cleaned and reviewed using a linear regression and a random forest regression. The random forest regression model proved to be the better match for the data. After training the model and reviewing the data, it was clear that certain features were more relevant to the ticket price. The features that made the most significant impact were:

Vertical Drop	Total Runs
Snow Making Acres	Length of Longest Run
Total Lift Chairs	Number of Trams
Fast Quad Lifts	Skiable Terrain Acres

Current ticket price at Big Mountain is $81. Based on the model, Big Mountain could support a ticket price of $95.87 without making any changes to the current features. The expected mean absolute error is $10.39, but it still suggests there is room for an increase. This assumes the planned chairlift is installed and operations.

Current Ticket Price	**Suggested Price (No Feature Changes)**
$81	$96

Big Mountain lands at the median to upper end of each of the categories with the exception of trams, however most resorts have 0 trams, like Big Mountain. When reviewing the ticket prices for just Montana, Big Mountain is already at the highest end of ticket pricing for the state. This should be taken into account to see if the local market is receptive to higher ticket prices. It is possible that out-of-state guests might opt for other locations if price increases too much.

The new lift in place is estimated to cost an estimated $1,540,000 for the season. Using the given estimate of 350,000 guests each staying for 5 days, ticket prices only need to increase **$0.88** to cover the new lift costs.

Next I reviewed the shortlisted options provided by Big Mountain to see which were viable and what the potential return would be. Again using 350,000 guests in the season with each guest skiing for 5 days.

1. **Permanently close up to 10 of the least used runs.** Closing 1 run does not make a difference in ticket price/revenue. A small drop in ticket price/revenue is noted after closing 2 runs. Closing 3-5 yields the same drop of about **$0.70** in ticket price and **$1.20** in lost revenue. There are bigger drops from 6-10 run closures. Estimated costs for the maintenance and use of each of the runs are needed to compare against the reduced ticket price/revenue.
2. **Increase the vertical drop by adding a run to a point 150 feet lower down, requiring the installation of an additional chair lift to bring skiers back up, without additional snow making coverage.** This scenario increases support for ticket price by **$8.60**. Over the season, this could be expected to amount to **$15,065,471**. This at first glance looks like a great option. Expected expenses to add and maintain the additional drop and lift are required to proceed.
3. **Same as number 2, but adding 2 acres of snow making cover.** This scenario increases support for ticket price by **$9.90**. Over the season, this could be expected to amount to **$17,322,717**. Expected expenses to add and maintain the additional drop and lift are required to proceed along with cost for additional snow making,
4. **Increase the longest run by 0.2 mile to boast 3.5 miles length, requiring an additional snow making coverage of 4 acres.** This does not make a predicted change to ticket prices as the Random Forest Model did not give the longest run feature very much importance. Not justified by the model.

Additional information is required before implementing any of the above proposed feature changes to ensure the overall profit pays off. Additionally, I suggest reviewing data for the surrounding states including Idaho, Wyoming, and Colorado. Because Big Mountain is already the most expensive resort in the Montana, it could be useful to see what resorts in neighboring states are charging to help get a better understanding of the broader market.