Recommendations for Big Mountain Resort

The purpose of this project was to explore what opportunities exist for Big Mountain Ski Resort to increase revenue by $1.54M over one season in order to offset the increased operational costs of the newly installed chair lift.

Big Mountain Resort has been considering potential scenarios for cutting operational costs and/or increasing revenue from ticket prices.  Management shortlisted four potential options: (1) permanently closing up to 10 of the least used ski runs; (2) increasing vertical drop by 150 feet by adding a run to a lower point, requiring the installation of an additional chair lift, without additional snow making coverage; (3) the previous scenario but with the addition of 2 acres of snow making coverage; and (4) increasing the longest run by 0.2 miles to boast a 3.5 mile run, requiring additional snow making coverage of 4 acres.

Using the model I designed and trained, I evaluated each of the proposed scenarios and found the following. In Scenario 1, there is no change in ticket price for closing 1 run. Closing 2 runs decreases ticket prices by approximately $0.40; closing 3 to 5 runs decreases ticket prices by approximately $0.65; and closing 6 or more runs decreases prices significantly. I would recommend closing 1 (the least-used) run immediately to save on any operating costs while not undermining ticket prices. Additional runs could be closed but the loss in revenue would need to be evaluated against the savings in operational costs of each run (unknown to me at this time). If the cost savings outweigh the loss in revenue, I would recommend that Big Mountain close 2 or 5 of the least-used runs. As the impact on ticket price between closing 3, 4, or 5 runs is the same, if Big Mountain were to pursue this route, closing 5 would maximize savings on operational costs. I do not recommend closing 6 or more runs permanently.

In Scenario 2, the increase in vertical drop by 150 feet and required installation of a new chair lift yields a $1.99 increase in ticket price, which increases revenue by $3,474,638 over the season. I would recommend this, assuming that the total cost of both new chairlifts (that is, the new chairlift that has already been installed and the new chairlift that would have to be installed) is less than approximately $3.47M.  In Scenario 3,  there is no additional change in ticket price from Scenario 2. I would not recommend incurring the cost of additional snow coverage. In Scenario 4,  there is no change in ticket price. I would not recommend increasing the length of the longest ski run given the increased costs would not yield an increase in revenue.

To conclude, I would recommend that Big Mountain Ski Resort (1) increase vertical drop by 150 feet by adding a run to a lower point, requiring the installation of an additional chair lift, without additional snow making coverage, and (2) close 1, 2, or 5 of the least-used runs.  These recommendations are made contingent upon increase in revenue outweighing the changes in the (unknown) operational costs of closing runs and/or theadditional new ski lift.

Big Mountain Ski Resort Currently charges $81.00 for an adult weekend ticket. The modeled price is $95.87. Even with the expected mean absolute error of $10.39, this suggests there is room for an increase, with the resort’s features as-is. I recommend that Big Mountain increase ticket prices to or closer to $95.87, adjusting to (A) add $1.99 to this price if the vertical drop project outlined above in Scenario 2 is completed, and (B) subtract $0.40 or $0.65 as outlined in Scenario 1 above if more than 1 run is permanently closed.