Guided Capstone Project Report

Currently, the adult weekend ticket price for Big Mountain Resort is $81.00. However, the revenue from this price will not support the operating costs for the new chair lift of $1,540,000 per season, which was added to spread visitors out more over the different ski runs. My goal was to develop a data-driven model which would allow the resort to determine how to support this new cost. The main focus was to determine if the market would support higher ticket prices and/or reduction in operating costs to increase revenue based on data from resorts in the same market share.

Chart, histogram

Description automatically generatedThe current price for an adult weekend day ticket at Big Mountain Resorts is on the higher side for the cost of this ticket when compared to other resorts in our market share (see Figure 1). Even so,

**Figure 1**. Comparison of prices of adult weekend tickets for resorts in the same market share as Big Mountain.

my model suggests that $100.52 is the price for an adult weekend day ticket that the market can bear. The mean absolute error of this model $10.28. Even if this error is in the direction of a higher price, a $9 price increase is reasonable. Given that we expect $350,000 visitors next season with each visitor staying for 5 days, an increase in ticket price to $90 would increase revenue by $15,750,000, which is an order of magnitude greater than seasonal operating cost of the new chair lift. I suggest a cautious approach, increasing the price by only $4, for next season, which still increases profits to $7 million, more than covering the cost of the chair lift. If this increase provides a corresponding increase in revenue similar to the model's prediction, then I would gradually increase the price in future seasons, perhaps up to $91.

Reducing costs is also a way to increase revenue. Closing one run would have almost no impact on ticket price and would not generate revenue above the cost of the new chair lift. Closing between five and eight runs would only have a very slightly negative effect on ticket prices, approximately $0.50 per ticket, and add only $875,000 per season above the operating costs of the new lift (see Figure 2). To increase market support for a ticket-price increase of $1.45, Big Mountain would need to add a new run, increase the vertical drop by 150 feet, and add a chair lift. This would increase the ticket price by $1.45 for a total revenue increase of $2,545,455 above the operating costs of the new lift.

Chart, line chart

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**Figure 2**. Change in adult weekend ticket price as a function of the number of runs closed and the resulting increase in revenue, which already takes into account the operating costs of the new chair lift.

Since my model shows a much higher increase in revenue by increasing adult weekend prices by $4 as compared to closing of current runs or capital improvements, I recommend that your focus for offsetting the operating costs of the new lift be an increase in ticket prices. If you would like to use this model yourselves to consider other combinations of factors, I would happily create an interface for you.