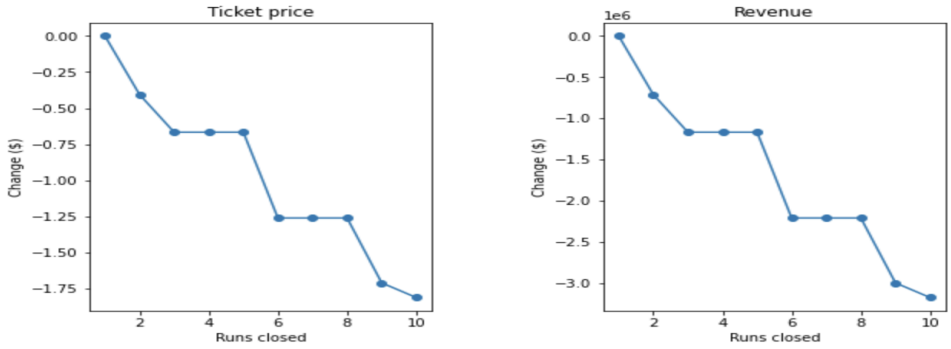
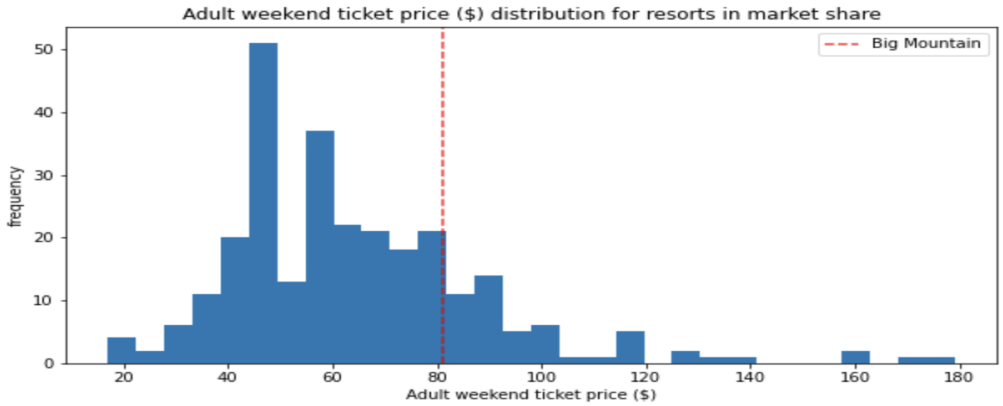
Based on the modeling, the recommendation for Big Mountain Resort is that the ticket price be increased to $95.87 compared to the $81 Big Mountain Resort is currently charging. In regards to adding the new chair lift that costs $1,540,000 dollars per season, to cover the cost of this given there are about 350,000 visitors buying 5 day tickets, the price would need to increase by 88 cents. We've built several modeling scenarios to show Big Mountain Resort what this model can do, and how you can perform your own tests and see the recommended ticket price based on the change in variables of the resort. There are 4 modeling scenarios that are presented as follows.

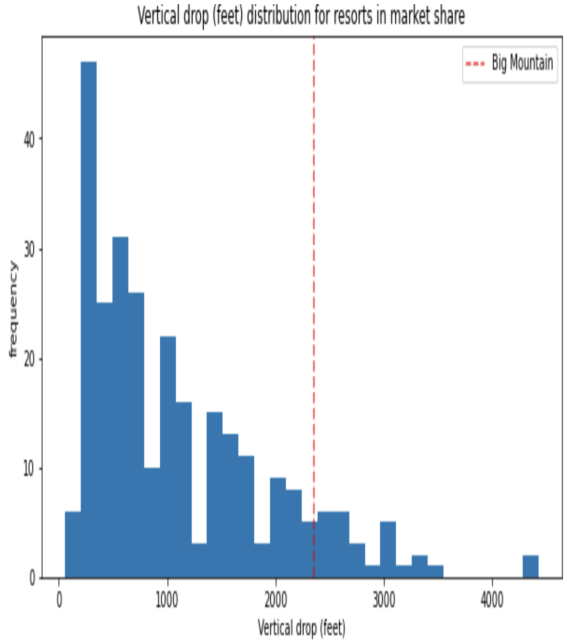
1. Permanently closing down up to 10 of the least used runs. This doesn't impact any other resort statistics.
    a. For this scenario, the model says closing one run makes no difference. Closing 2 and 3 successively reduces support for ticket price and so revenue. If Big Mountain closes down 3 runs, it seems they may as well close down 4 or 5 as there's no further loss in ticket price. Increasing the closures down to 6 or more leads to a large drop. The result would be a change from $81 to $77.50. See the plots below.
    b. 

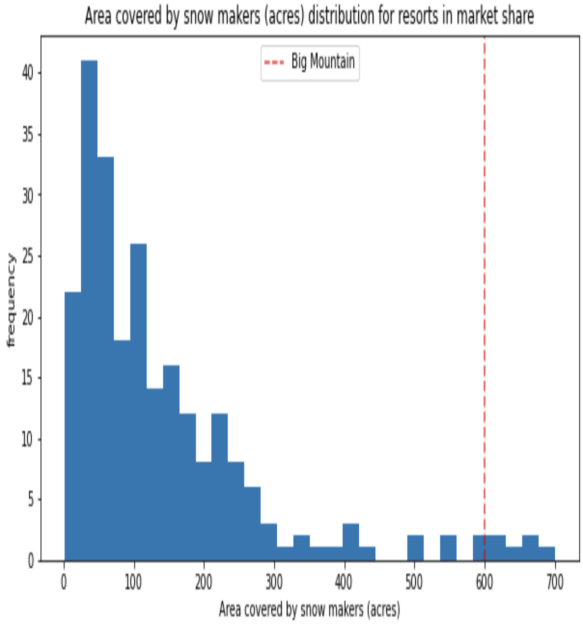
2. Increase the vertical drop by adding a run to a point 150 feet lower down but requiring the installation of an additional chair lift to bring skiers back up, without additional snow making coverage.
    a. This scenario increases support for ticket price by $1.99 so the price would increase from $81 to $82.99. Over the season, this could be expected to amount to $3474638.
3. Same as number 2, but adding 2 acres of snow making cover.
    a. This scenario has the same result as scenario 2 on ticket price.
4. Increase the longest run by 0.2 mile to boast 3.5 miles length, requiring an additional snow making coverage of 4 acres.
    a. This scenario results in no increase in ticket price.

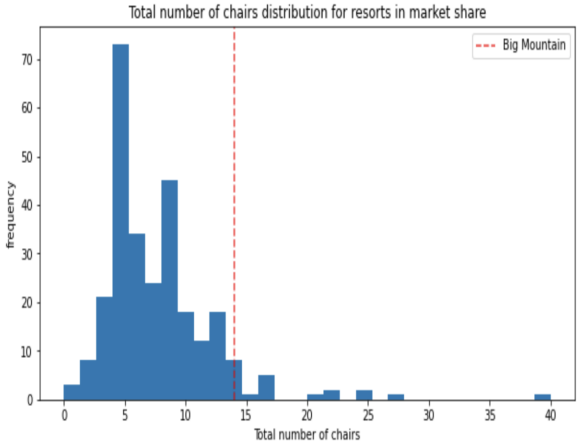
I'd recommend model 1 to the business for future consideration as 'runs' is an important feature and closing it might result in tangible lowering of quality to customers as more people would be packed into fewer runs. I would also recommend model 2 as the 'vertical drop' feature is a very important consideration for people when determining the quality of a ski resort. Big Mountain's modeled price might have been higher than its current price because the resort is undervaluing the quality of the service it provides with its facilities, in comparison to other resorts and as a result is underpricing their tickets. The mismatch might come as a surprise to business executives since they might see that by already charging above average ticket prices they were being competitive with their business, but instead the model suggests they were underpricing. Take a look at the histogram below at the vertical red line where you can see Big Mountain's 'AdultWeekend' ticket price.

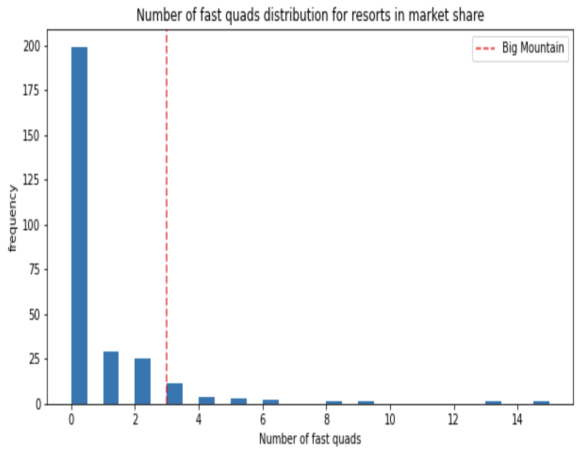


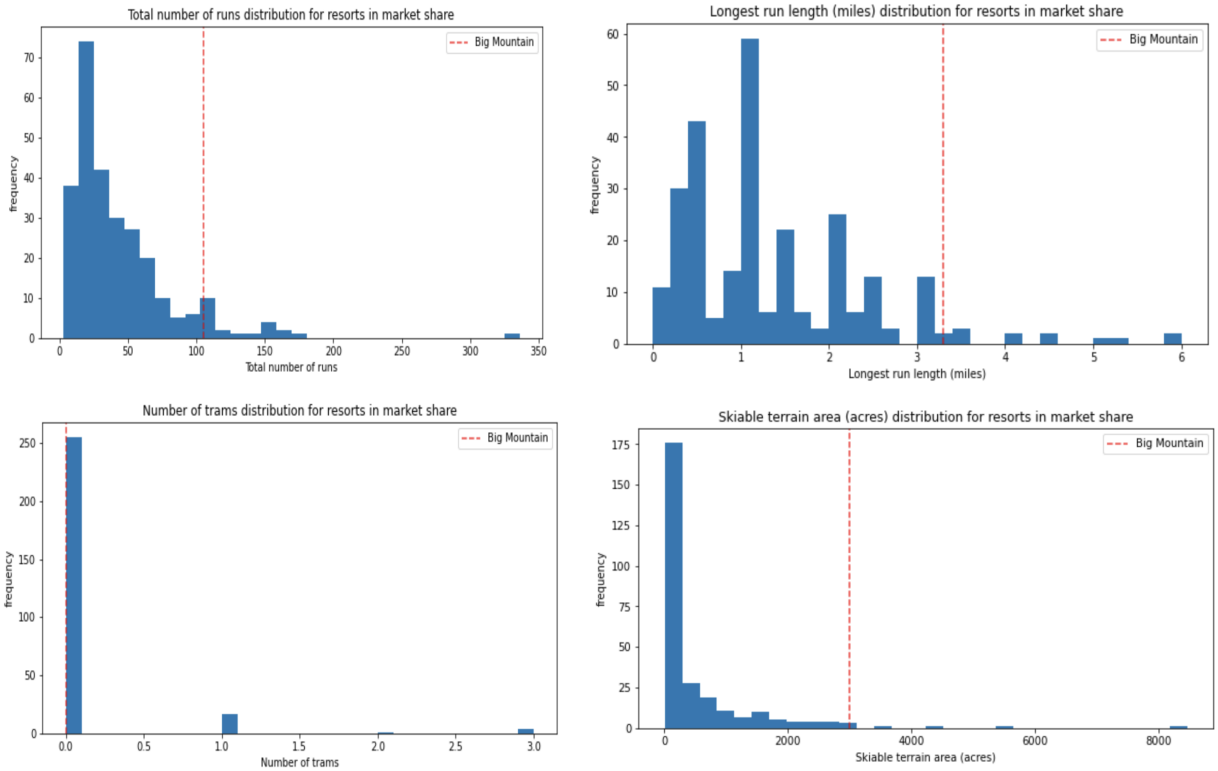
You can see that its price is slightly above average in the general distribution excluding the outliers. Even then you can see that there are still several resorts which charge a higher price than Big Mountain so it doesn't seem unreasonable to use the increased ticket price and be competitive with the other resorts. Take a look below at several histograms that indicate Big Mountain's features position relative to other resorts.











These histograms repeatedly indicate the quality of the Big Mountain resort's different features relative to other resorts features and further support the notion suggested by the model that increasing the ticket price is reasonable, recommended, and good for business.