Big Mountain Ski Resort

Problem Statement Worksheet (Hypothesis Formation)

What changes can Big Mountain Resort implement to either cut costs without undermining ticket price, or allow for a higher ticket price?

1 Context

Big Mountain Resort usually prices their tickets at a premium above the average ticket price, but the addition of a new chair lift increased their operating cost by $1,540,000 for the season. In order to keep profits, Big Mountain Resort must enact changes that either cut costs without sacrificing quality, or allow for a higher ticket price.

2 Criteria for success

The operating costs of the resort are reduced, or the price of the ticket is increased; either outcome requiring a general increase in profit such that the costs cut or price increase cannot result in too fewer customers

3 Scope of solution space

The focus will be on managing costs, either through reducing operating costs or increasing ticket prices

4 Constraints within solution space

Big Mountain Resort may not be capitalizing on its facilities as much as it could, hampering the investment strategy

5 Stakeholders to provide key insight

Jimmy Blackburn: Director of Operations
Alesha Eisen: Database Manager

6 Key data sources

CSV File from Database Manager

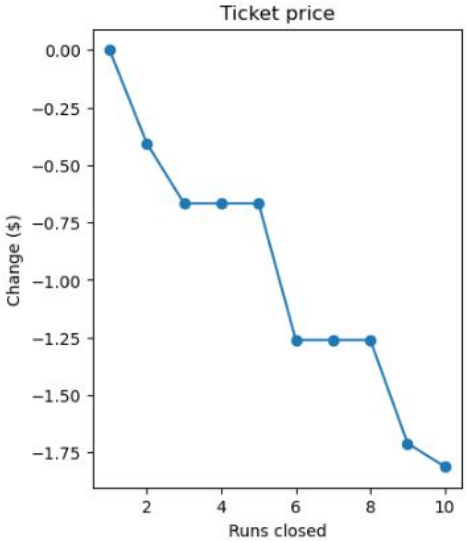
Recommendations and Key Findings

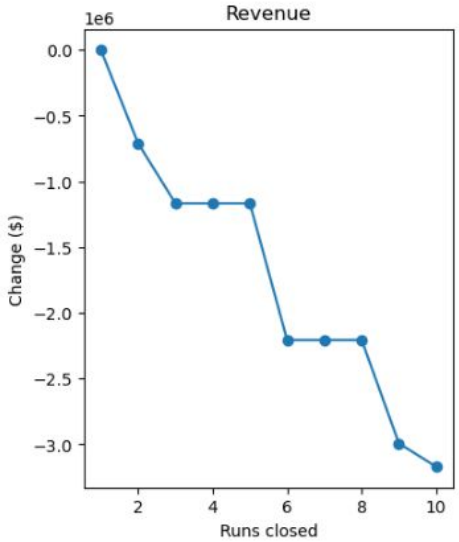
The construction of a chair lift increases operating cost by $1.5M, so an increase in ticket price is necessary to maintain profits

Ticket price can be increased to $92.80 with a margin of error of $10 without too much of a change safely

Alternatively, if you create a new run and increase the vertical drop by $150 feet, tickets can easily be increased by $2 to create a revenue increase of 3M, more than covering the price of the chair lift

Modeling Scenario 1





Scenario 1 is seeing how closing runs impacts revenue and ticket price. Closing one run has no change, while each successive closed run after the first reduces support for ticket price. Notably, there is no difference when closing 3-5 runs, but a large drop when closing a 6th. Closing a single run is viable, but care should be taken when considering closing any further runs

Modeling Scenario 2

Scenario 2 checks the support for ticket price if you add a chair lift, new run, and increase vertical drop by 150 ft. Doing these increases support for ticket price by approx $2, creating a revenue increase of 3M. The chair lift has already been created with an operating cost of 1.5M, so this scenario's viability depends on the operating cost of a new run and vertical drop increase

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Modeling Scenario 3

Scenario 3 is similar to scenario 2, with adding a new run, chair lift, and increasing vertical drop by 150 ft, but additionally increasing snow area by 2 acres. The model states it increases support by approx $2, which is exactly the same as scenario 2 but with the additional cost of snow production

Modeling Scenario 4

Scenario 4 increases the length of the longest run by 0.2mi and 8 acres of guaranteed snow creation. This model did not increase support for ticket prices by any amount, meaning there is no value created from this scenario and it should be avoided.

Summary and Conclusion

After using a random forest regression method and testing various scenarios of potential changes to be made, there are a few potential options

Scenario 1, aka closing some runs, would decrease operating cost while variably decreasing support for ticket prices. Notably, closing one run has no change on support for price, and can be done with no changes

Scenario 2 involves creating a new run and increasing vertical drop by 150 ft, allowing for a guaranteed increase in price by $2, amounting to 3M as a result, although not including new operating cost increases.

Alternatively, no changes need to be made and the price can be increased safely by even one dollar when compared to market prices.