Big Mountain Resort Report

Hung Cong Tran

November 2, 2022

Overview

1. Problem identification
2. Recommendation and key findings
3. Modeling results and analysis
4. Summary and conclusion

Problem identification

Problem: What is the best ticket price for Big Mountain resort to increase the revenue that can compensate for the additional operating costs of $1,540,000 within 6 months and gain at least doubled profit? Are there any opportunities to combine the best ticket price option with the operating cost cut with in 6 months to make the profit at least to be doubled?

Context: Big Mountain Resort is a ski resort located in Montana which serves 350,000 people ski and snowboard at Big Mountain each year. The resort has recently installed an additional chair lift to accommodate more visitors but it made the operating costs increased by $1,540,000. The resort would like to be advised on the best ticket price and combining it with the cost cut to make the profit to be at least doubled within 6 months.

Criteria for success: Get the best ticket price and combining it with the cost cut to gain at least double profit with in 6 months.

Problem identification

Scope of solution space: Analyze the features (location, snow condition, facilities,. . .) and ticket prices of 330 same market share resorts (including Big Mountain Resort) in the US to decide the best ticket price.

Constraints within solution space: Lack information about the financial pictures of other resorts in the same market share. The time to evaluate the effectiveness of the new price and the cost cut may be long.

Stakeholders to provide key insight: CEO, Director of Operations: Jimmy Blackburn, Database Manager: Alesha Eisen.

Key data source: Data provided by the database manager that contains information from 330 same market share resorts (including Big Mountain Resort) in the US.

Recommendation and key findings

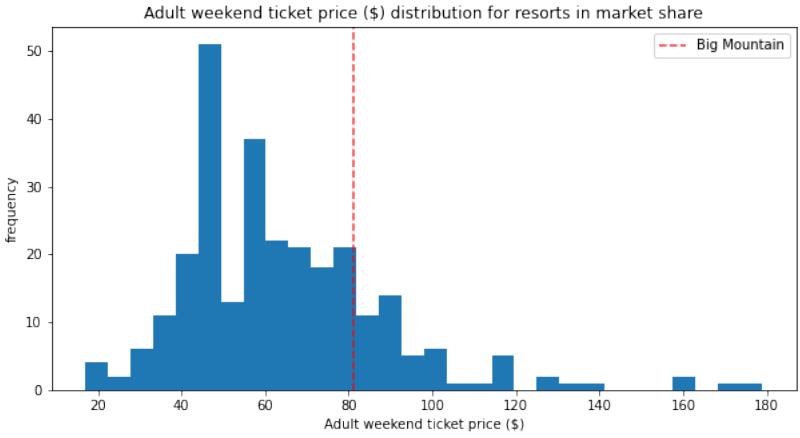
The built model is mainly based on the data of 330 market share resorts including Big Mountain resort with 27 features.

After cleaning data and performing Exploratory Data Analysis, we select 277 resorts with 25 features to build the ticket price model. We picked the weekend ticket price column as the target values for the model.

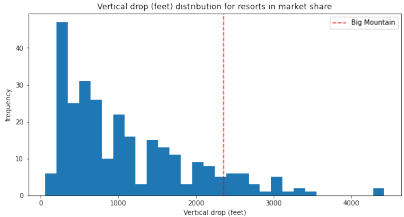
We fit the refined data and figure out eight features that came up as important in the modeling included: vertical_drop, Snow Making_ac, total_chairs, fastQuads, Runs, LongestRun_mi, trams, SkiableTerrain_ac.

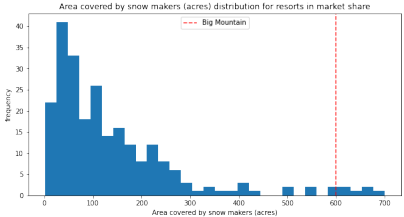
Modeling results and analysis

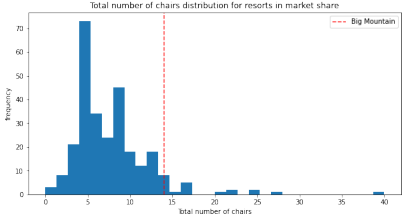
Big Mountain currently charge $81.00 for a weekend ticket and the model suggests the ticket should be increased to $95.87.

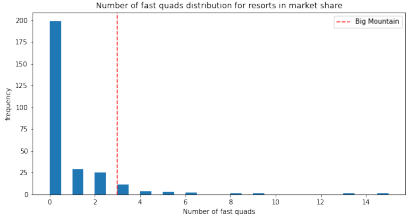


Modeling results and analysis (Key feature among market share resorts)

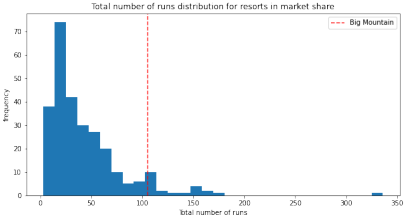


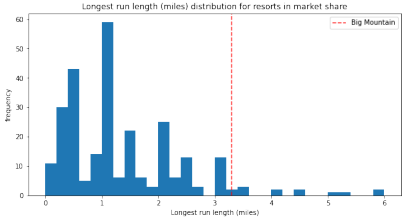


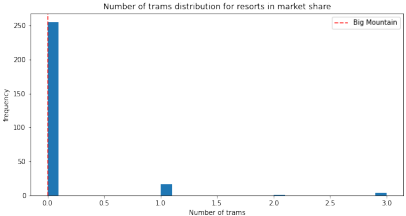


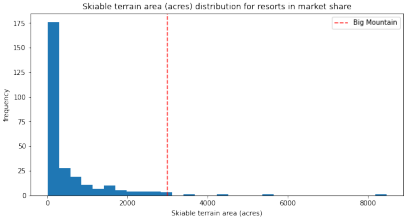


Modeling results and analysis (Key feature among market share resorts)









Modeling results and analysis (ticket price adjustments)

Scenario 1: Permanently closing down up to 10 of the least used runs. 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.

Scenario 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. This scenario increases support for ticket price by $1.99.

Scenario 3: Same as number scenario 2, but adding 2 acres of snow making cover. This scenario increases support for ticket price by $1.99.

Scenario 4: Increase the longest run by 0.2 mile to boast 3.5 miles length, requiring an additional snow making coverage of 4 acres. No difference whatsoever.

Summary and conclusion

Big Mountain currently charge $81.00 for a weekend ticket and the model suggests the ticket should be increased to $95.87. We discuss various scenarious of changing Big Mountain's facilities, use the model to predict ticket price changes, and use the assumptions on potential number of tickets sold to predict the revenue changes.

The data contains information of ticket prices and we can predict the revenue based on the assumption of expected number of tickets sold. However, the number of tickets sold may strongly depends on the change of ticket price as well as the change of facilities. So the potential future model should use additional data on the number of ticket sold and set the revenue as target instead of ticket prices. Moreover, we also need to integrate the model result with the operational cost to have a clearer financial picture.

The End