

BIG MOUNTAIN RESORT REVENUE INCREASE RECOMMENDATION

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PROBLEM STATEMENT OVERVIEW

- ▶ Big Mountain Resort has recently installed a new chair lift, contributing to an additional \$1.54M in operation costs
- ▶ Investors would like profit margins to stay at 9.2%
- ▶ How can Big Mountain Resort increase its revenue by \$1.54M in order to make up for operating costs of the new chair lift?



RECOMMENDATION & KEY FINDINGS

- ▶ Increasing lift ticket prices most viable option to increase revenue
- ▶ Most important factors determining adult weekend lift ticket prices are the adult weekday prices, state, and summit elevation
- ▶ Current adult weekend lift ticket rate is undervalued
- ▶ Recommendation: Adult weekend lift tickets should be valued at \$90, \$9 higher than the current price



DATA PROCESSING

► Data

- CSV file of 330 US ski resorts and their attributes
- 27 attributes: location, elevation, number of chair lifts, runs, days open, terrain parks, etc.

► Approach

- Use the market data to build a model to predict the adult weekend chair lift ticket price based on the attributes of the ski resort
- Use model to determine price of the adult weekend lift ticket for Big Mountain Resort



DATA PROCESSING

► Cleaning

- 4 outlier rows dropped
- Null values imputed with mean or 0
- 3 Non numeric features dropped (Name, State, Region) as well as base elevation and summit elevation
- 'cluster' feature added by grouping ski resorts into 3 different clusters with KNN



MODELING RESULTS & ANALYSIS

► Model

- Linear regression model
- Features scaled using z-score standardization
- 75% of data used to train model, 25% of data set aside for testing model
- Target variable: adult weekend ticket price



MODELING RESULTS & ANALYSIS

► Results

- Explained variance score: .91
- Mean absolute error: 5.00

► Analysis

- Model reliably predicts the adult weekend chair lift ticket price
- Big Mountain Resort lift tickets are undervalued by \$9



SUMMARY & CONCLUSION

- ▶ Big Mountain Resort needs to increase lift ticket prices in order to make up for increased chair lift operation costs
- ▶ Using market data to train a linear regression model, we can reliably predict lift ticket prices
- ▶ Based on the model, Adult weekend lift tickets should be increased from \$81 to \$90
- ▶ With recommended lift ticket price increase, Big Mountain Resort would need to sell 171,111 adult weekend lift tickets next season to maintain a 9.2% profit margin



CITATIONS

- ▶ <https://www.kissclipart.com/ski-lift-icon-png-clipart-ski-lift-chairlift-clip-ky4sz1/>
- ▶ <https://www.kissclipart.com/cartoon-skier-with-no-background-clipart-alpine-sk-qe9bpc/>
- ▶ <https://www.pngguru.com/free-transparent-background-png-clipart-bpeih/download>
- ▶ <https://www.cleanpng.com/png-evolution-snowboarding-winter-sport-skiing-1854071/download-png.html>
- ▶ <https://www.breckenridge.com/plan-your-trip/lift-access/tickets.aspx>