Ticket Price Modeling

Big Mountain Resort

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Springboard
Data Science

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Problem Identification

1. lack of a strong sense of what facilities matter most to visitors

2. Big Mountain suspects it may not be maximizing its returns, relative to its position in the market

3. In short, need to build a predictive model for ticket price based on a number of facilities

Recommendation and Key findings

- Big Mountain is fairly high on some of the league charts of facilities offered
- According to the price model, Big Mountain Resort price is $95.87
- The model has expected mean absolute error of $10.39, which still support price increase
- From the scenarios given, we found that increasing the vertical drop would be the best options
- Increasing the Vertical drop increase support for ticket price by $1.99 with expected return of around $3.4 million
- The model (RF) shows that closing one run makes no difference though this feature is used in the Linear regression model

Modeling Results and Analysis I

In modeling the price we:

- partitioning the data into training and testing
- The split is 70 train and 30 test split
- Impute Missing values using median/mean
- Scale the features
- train the model
- Calculate model performance (cross-validation)

Modeling Results and Analysis II

Mean as a predictor

- Base line (Not a model)
- The mean predication (around $64) results highest mean absolute error (around $19 off on average

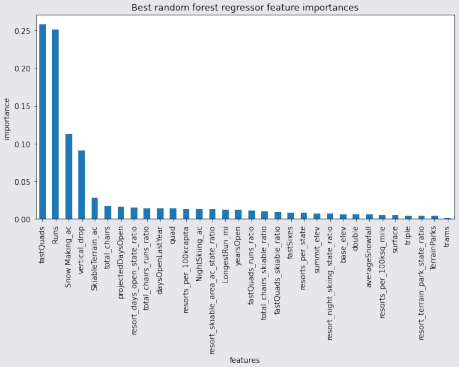
Simple Linear Regression Model

- The result of the model suggest that the following features are more important(top five) than others for the Big mountain Resort pricing
- Vertical-drop,Snow Making-ac, total-chairs, fastquads, and Runs
- Using this model, on average we expect to estimate a ticket price within $9 or so of the real price

Modeling Results and Analysis III

RFM

- Random Forest Model confirm the LM result with slight change. In this model the dominant four features are:



Summary and Conclusion

conclusion

In conclusion, assuming other resorts price modeling is based on the features we studied here, it is in the best interest of Big Mountain Resort to increase the vertical drop given in addition to operating cost of additional new chair other costs are less than the expected gain. Moreover, the model can be utilized or replaceable to test new combination of parameters/features.