A
PROJECT IN DATA SCIENCE

Guided Capstone Project

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Objective:

- To provide some guidance to the Big Mountain Resort on how to select a better value for ticket price based on its facilities so that the resort can increase its revenue.

Problem Background

- Ski resort located in Montana and offering spectacular views of Glacier National Park and Flathead National Forest with access to 105 trails.

- Every year about 350,000 people ski or snowboard at Big Mountain.

- The Resort has been charged a premium above the average price of resorts in its market segment.

Current Situation:

- The Big Mountain Resort is currently charging $ 81 per ticket which is very high price in comparison with with US average price of $ 64 and Montana average price of $ 52

Adult weekend ticket price ($) distribution for resorts in market share
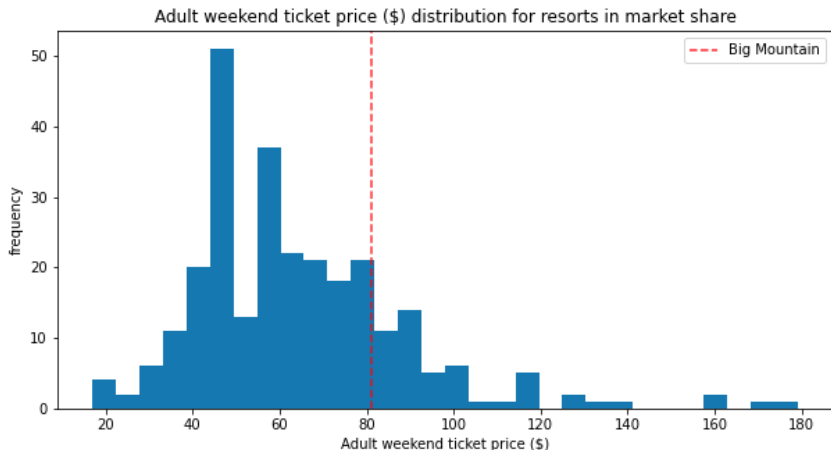
Model:

- Used the RandomForestRegressor of sklearn inside the pipeline.
- Used cross-validation method to pick the best number k of features and found k = 17.

Best random forest regressor feature importances
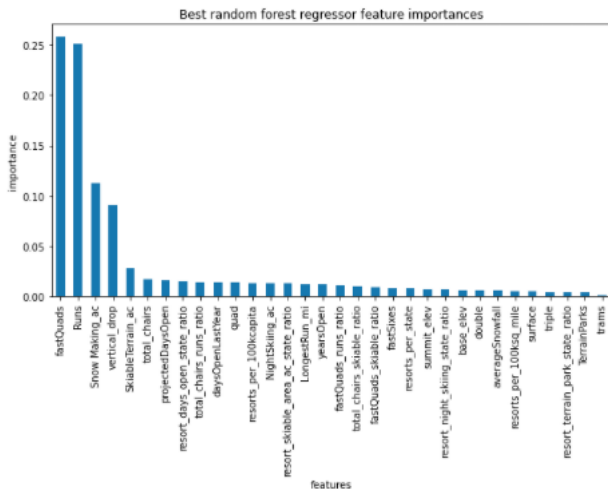
Findings and Recomendations:

- The Big Mountain Resort is currently charging $ 81 per ticket.

- According to the model, the modeled ticket price at the Big Mountain Resort should be $ 95.87.

Findings and Recomemndations:

- **Scenario 1:** In the first scenario, if Big Mountain is adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift then the revenue can be expected to increase by the amount $ 3474638 with the increase of ticket price by $ 1.99.

- **Scenario 2:** In the second scenario, if Big Mountain is repeating the same previous fa- cilities with the addition of 2 acres of snow making then the revenue can be expected to increase again by the amount $ 3474638 with the increase of ticket price by $ 1.99.

Findings and Recommendations:

- 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 theres no further loss in ticket price.
- Increasing the closures down to 6 or more leads to a large drop.

Findings and Recommendations:
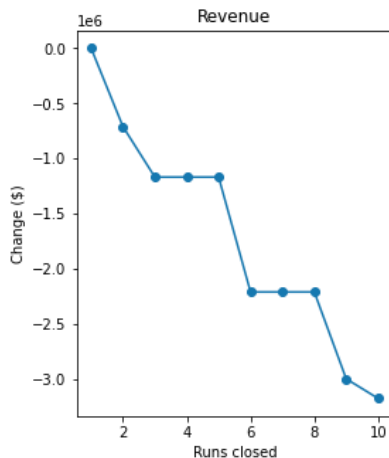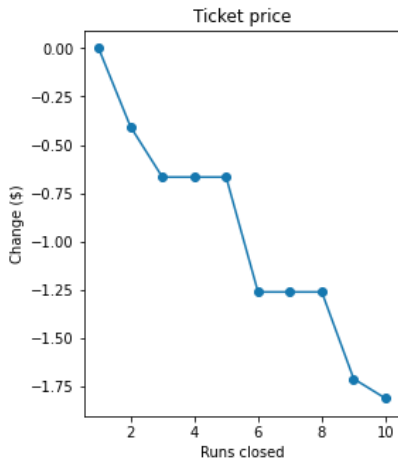
Conclusion:

- The validity of the model lies in the assumption that other resorts accurately set their prices.
- The level of data profiling should be checked.
- One should check if there are some features which can be added to the data to make the data rich and more reasonable to predict the price.