Big Mountain Resort

Guided Capstone Presentation Slides

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Problem Identification

Big Mountain Resort is a ski resort that offers spectacular views and access to 105 trails. Each year, they service roughly 350,000 people for skiing and snowboarding of all skill levels and abilities. With the recent installment of an additional chair lift, operation costs have increased by $1,540,000 this season.

Our goal was to price the tickets at an appropriate price point for the resort and increase revenue. In our analysis, we observed resort data across the country and created a model for predicting ticket prices and revenue by adjusting resort features and facilities in different scenarios.

Recommendation and Key Findings

Currently, Big Mountain charges $81 per ticket. The modeled price is $94.22, with an error of $10.39, suggesting that there is room for an increase.

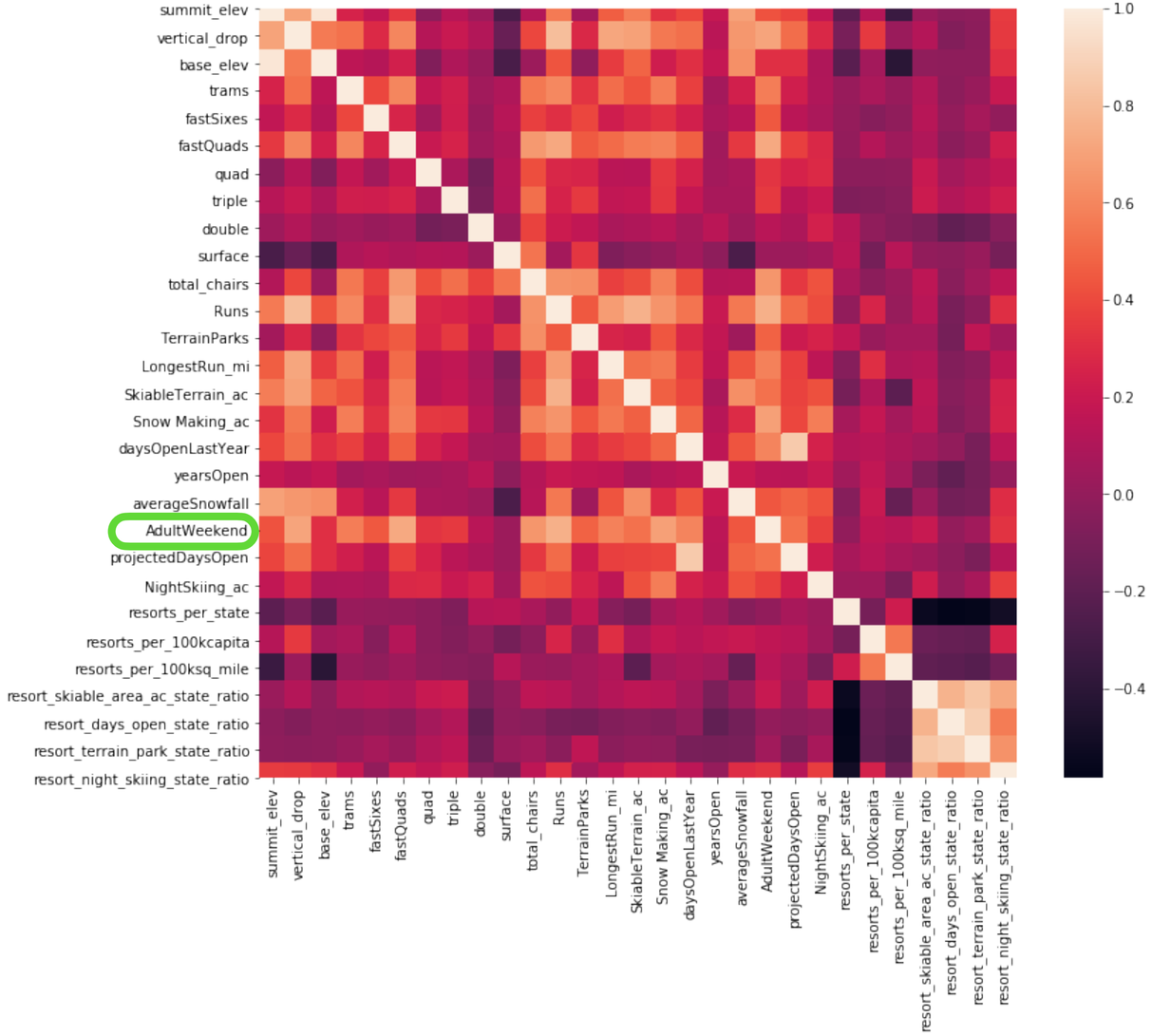
Based on our model, we recommend adding a run, increasing a vertical drop by 150ft, and installing an additional chair lift. This supports for an increase in ticket price by $1.99, with a revenue increase of $3,474,638.

We also see that closing one run won't make a difference, while closing 2 and 3 reduces support for ticket price and revenue. However, if Big Mountain chooses to close down 3 runs, they might as well close 4 or 5, as there is no further loss in ticket price.

Modeling Results and Analysis

During preliminary assessments of our resort data and exploring patterns with state summary data, we've determined that predicting the adult weekend ticket price was going to be our focus.

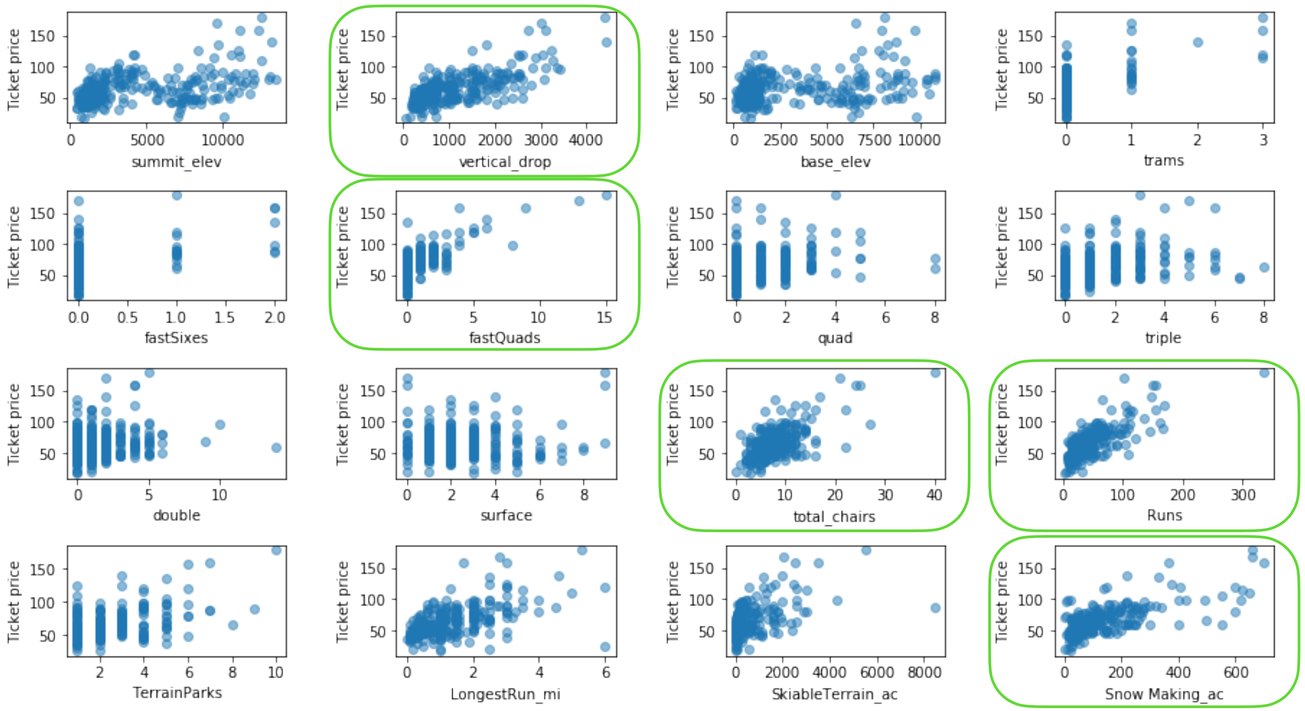
After merging our two data sets together, we plotted a feature correlation heat map in order to see if there are any strong correlations with AdultWeekend ticket price.



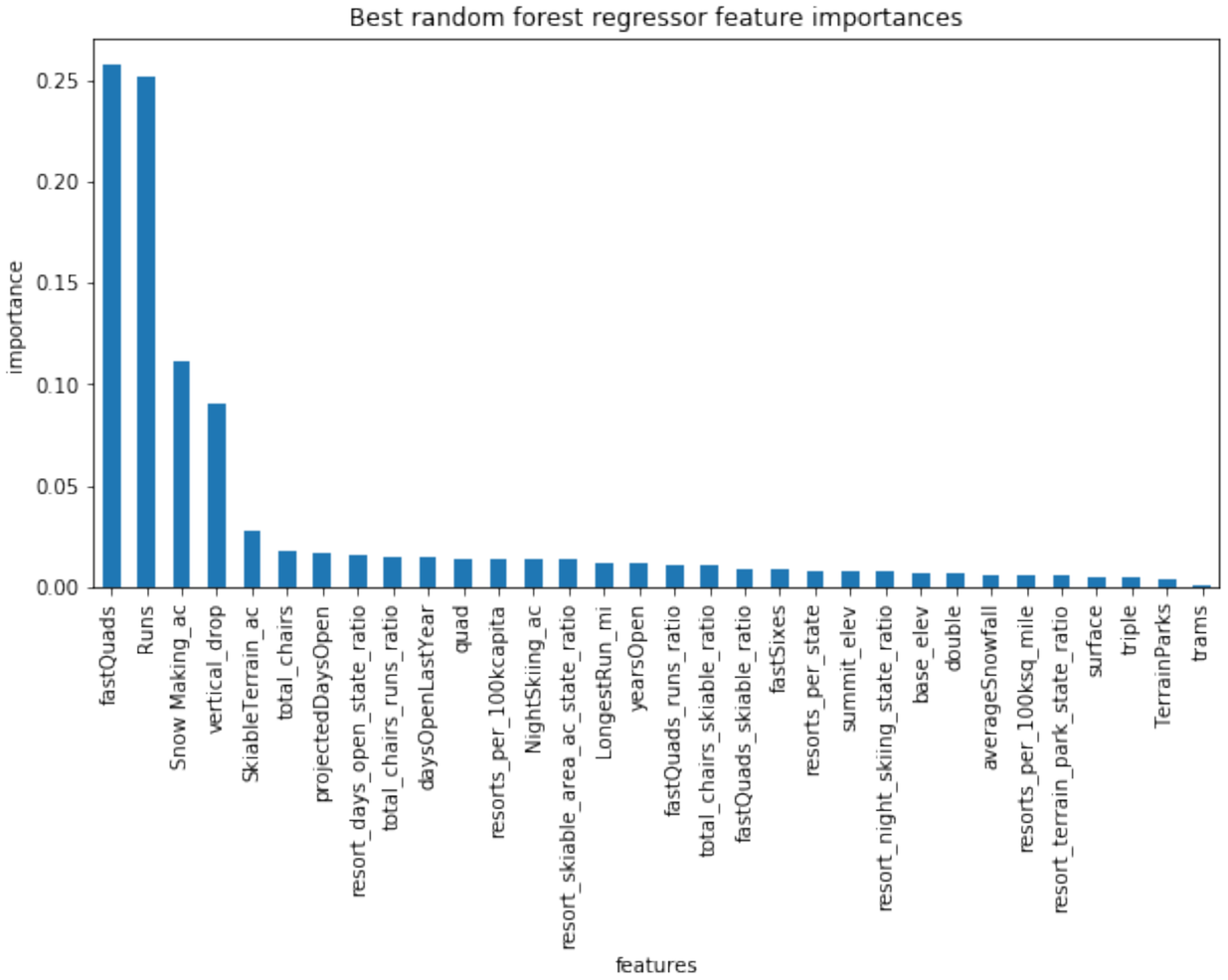
Modeling Results and Analysis

With AdultWeekend ticket price as our target feature, here we can see a few reasonable correlations with other features such as, fastQuads, total_chairs, Runs, Snow Making_ac, and vertical_drop.

This is supported by the previous heat map, as well as scatterplots of ticket prices against these features, with a strong positive correlation.



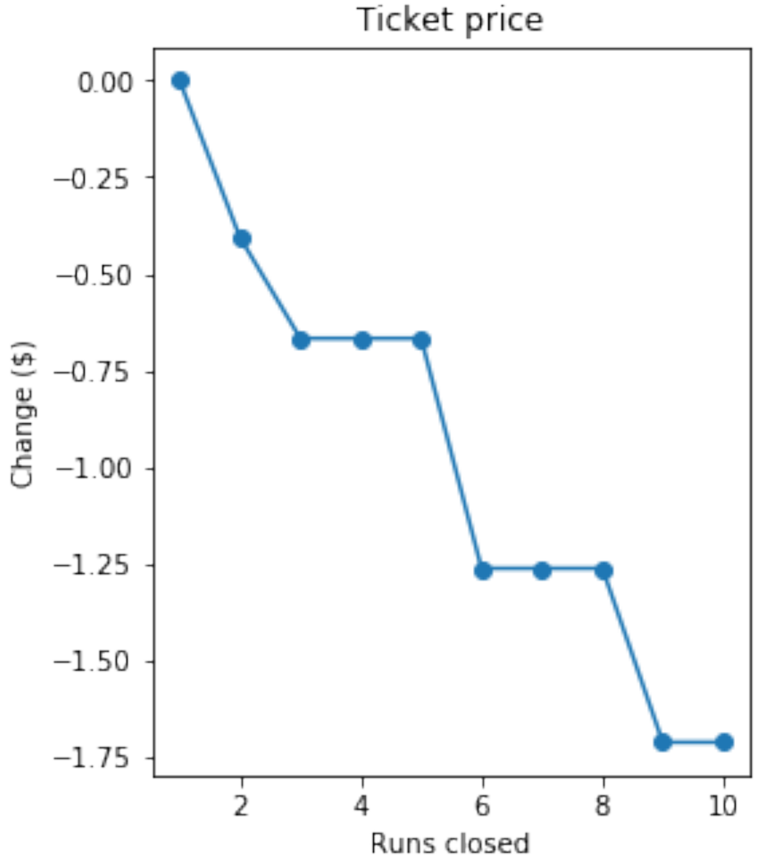
Modeling Results and Analysis

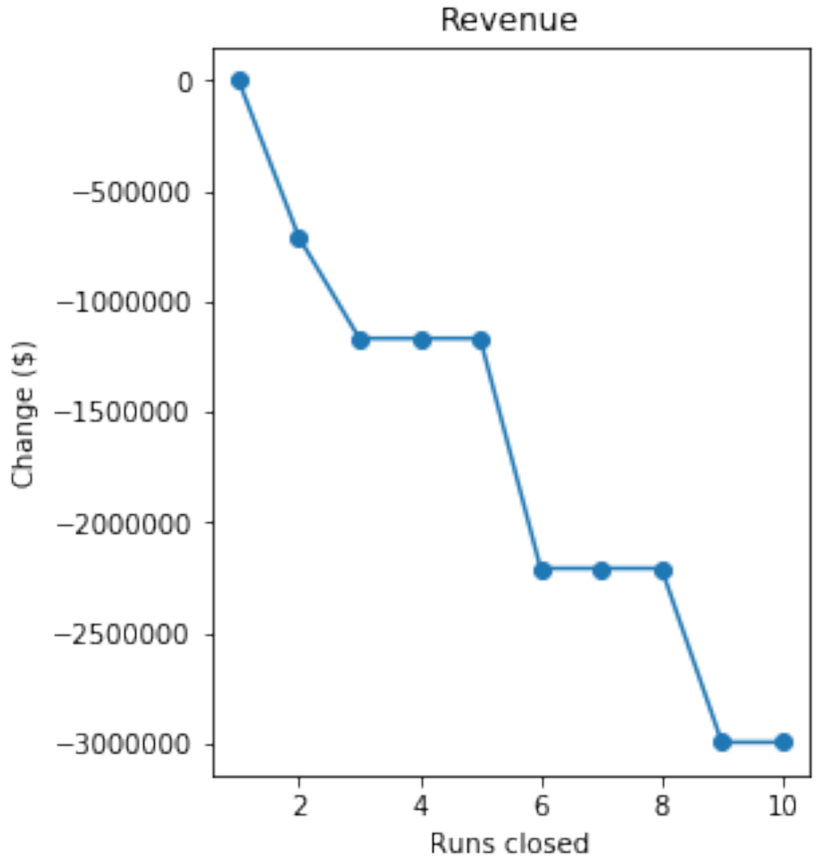


We were also able to see those same dominant features that are in common with our linear model when using features of Random Forest Regression.

Modeling Results and Analysis

As mentioned previously, here we can see the affected ticket price and revenue based on the number of runs the resort closes.





Summary and Conclusion

While Big Mountain was already fairly high on some of the league charts of facilities offered, the reason why the modeled price came out to be much higher than the current price could be because our model assumes that other resorts also accurately set their prices according to the market. So this suggest Big Mountain may be undercharging. It's possible other resorts are overpriced or underpriced as well.