BIG MOUNTAIN RESORT

PRICING STRATEGY

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Problem Identification

PRICING STRATEGY

Big Mountain wants to determine the optimal ticket price that aligns with its facilities. Currently, the ticket price stands at $81, but there's a suspicion that it could be higher given the offerings of Big Mountain Resort's facilities.

TICKET PRICE AND FACILITIES

The ticket price is directly correlated to revenue. On the other hand, the offered facilities are correlated with operating costs and investments.

DATA DRIVEN SOLUTION

Using a dataset of 330 resorts, we can construct a pricing model to assist in determining the appropriate ticket price based on market conditions. This solution will enable us to model various scenarios and calculate the recommended ticket price accordingly.

Recommendation

The model suggests a price of $95.87 with an average deviation of $10.39. Thus, any price within the range of $85.48 to $106.26 is supported by the current facilities of the resort. With the current price set at $81, there is room for an increase. However, considering that Big Mountain is presently the most expensive resort in Montana, an aggressive hike could result in a loss of market share. Therefore, my recommendation is to initially raise the price to $85.50.

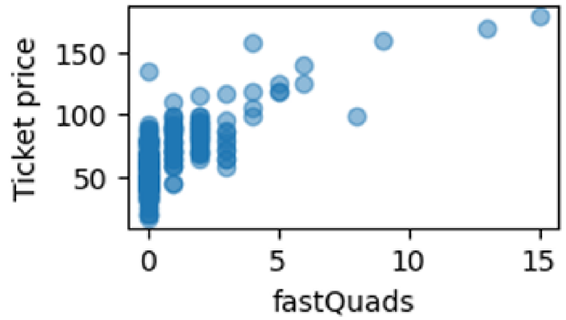
Key Findings

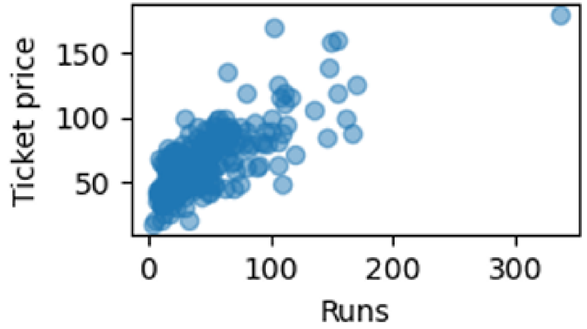
Small changes, such as adding 4 acres of snowmaking or increasing the longest run by 0.2 miles, did not significantly influence support for a price increase.

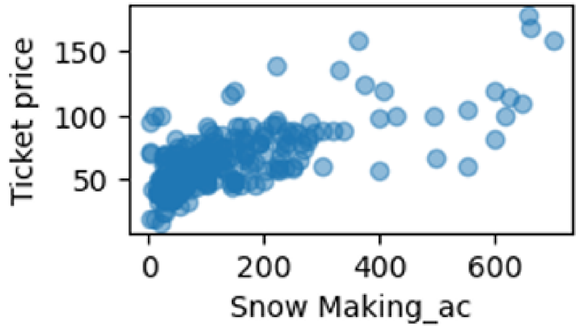
The closure of runs had a discernible effect on ticket price support, with the closure of multiple runs resulting in incremental reductions in support.

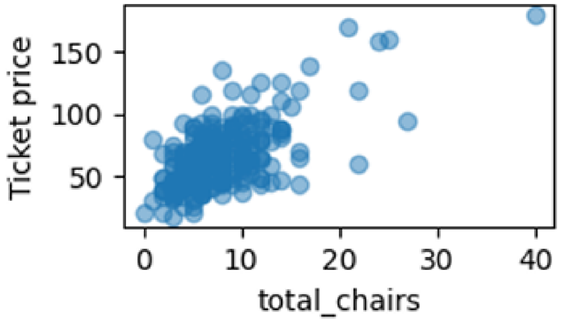
Exploratory Data Analysis

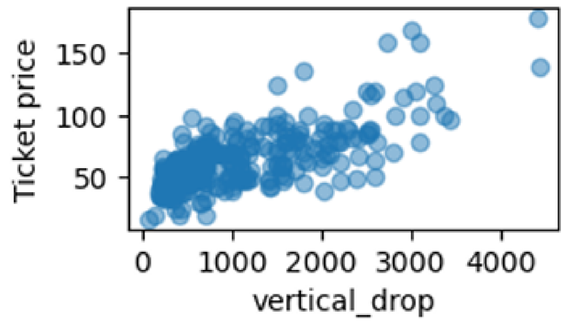
After cleaning the data, incorporating state-related features, and exploring the correlations between our variables, we identified the facilities most correlated with our target (the ticket price): Fast Quads, Runs, Snowmaking Area, Total Chairs, Vertical Drop, and Resort Night Skiing State Ratio.

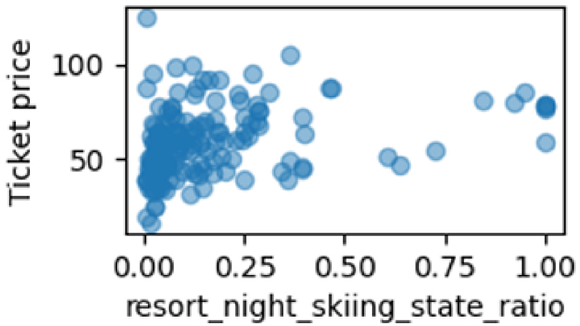








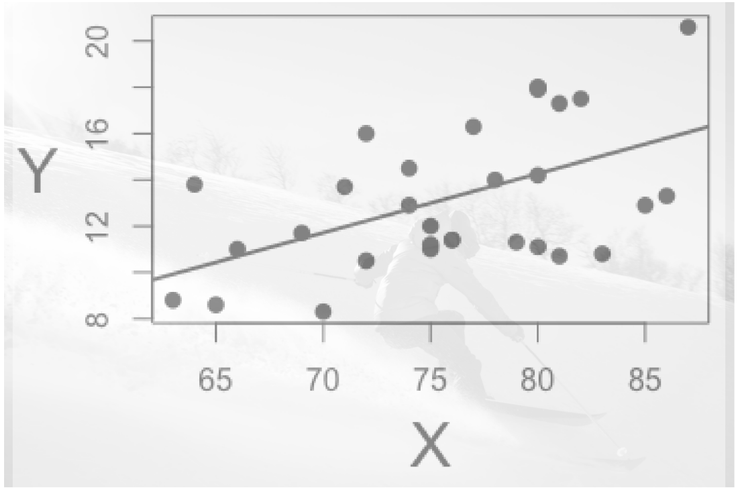




Models

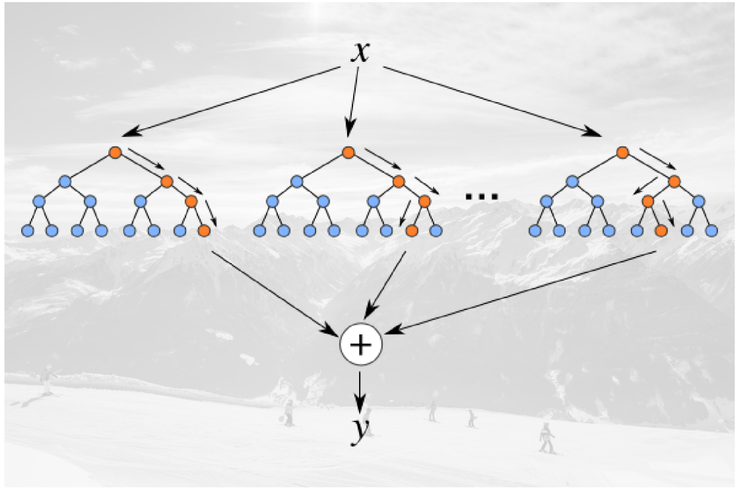
MEAN AS A PREDICTOR

MAE = $19



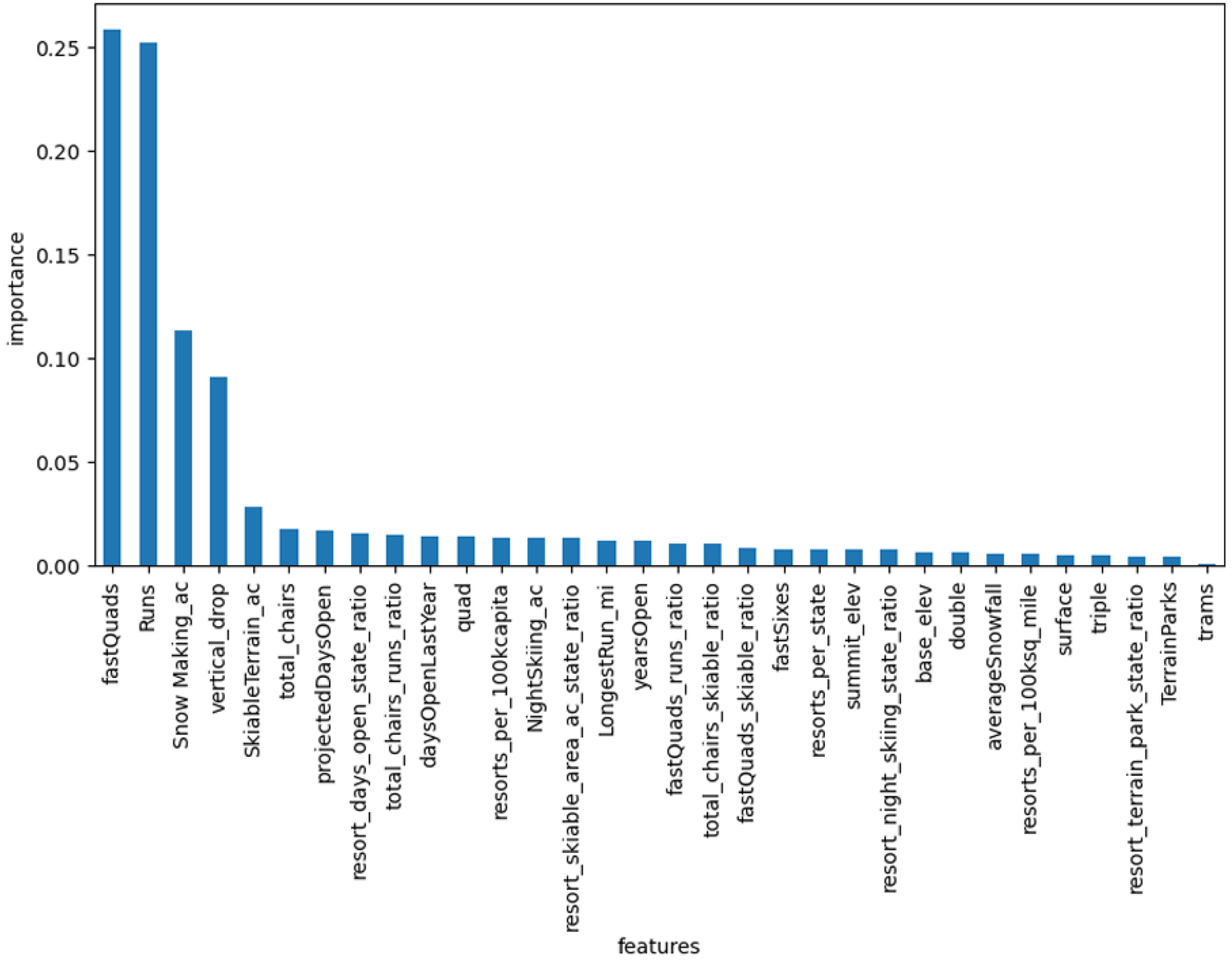
LINEAR REGRESSION

MAE = $11.8



RANDOM FOREST REGRESSOR

MAE = $9.5



Best Feature Importances

Random Forest Regressor

This confirms what we observed during the Exploratory Data Analysis (EDA) step. We can identify key features such as Fast Quads, Runs, Snowmaking Area, Vertical Drop, and Total Chairs as significant predictors.

Final Model

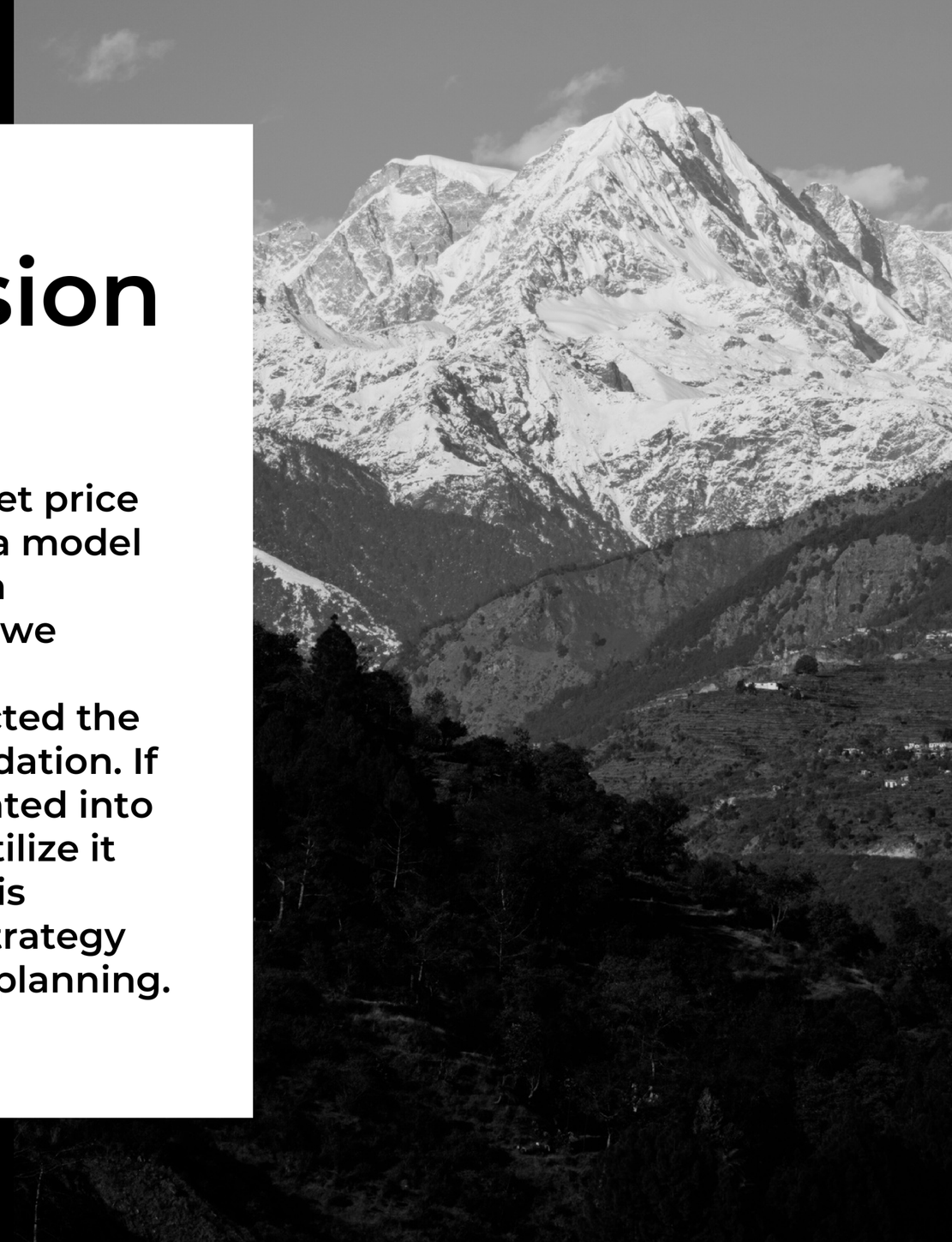
RANDOM FOREST REGRESSOR

We trained our model using all of our data instead of utilizing a train-test split. The resulting model has a Mean Absolute Error (MAE) of $10.39.

Tools and libraries used in this project

Summary and Conclusion

Big Mountain Resort aimed to determine a suitable ticket price backed by its facilities. To achieve this, we constructed a model using data from 330 resorts. Initially, we conducted data wrangling and exploratory data analysis. Subsequently, we experimented with various models and assessed their performance using diverse metrics. Ultimately, we selected the random forest model and generated a price recommendation. If approved by the leadership, this model could be integrated into an application, empowering business stakeholders to utilize it conveniently and explore different pricing scenarios. This comprehensive approach to data analysis and pricing strategy offers valuable insights for decision-making and future planning.




Thank you