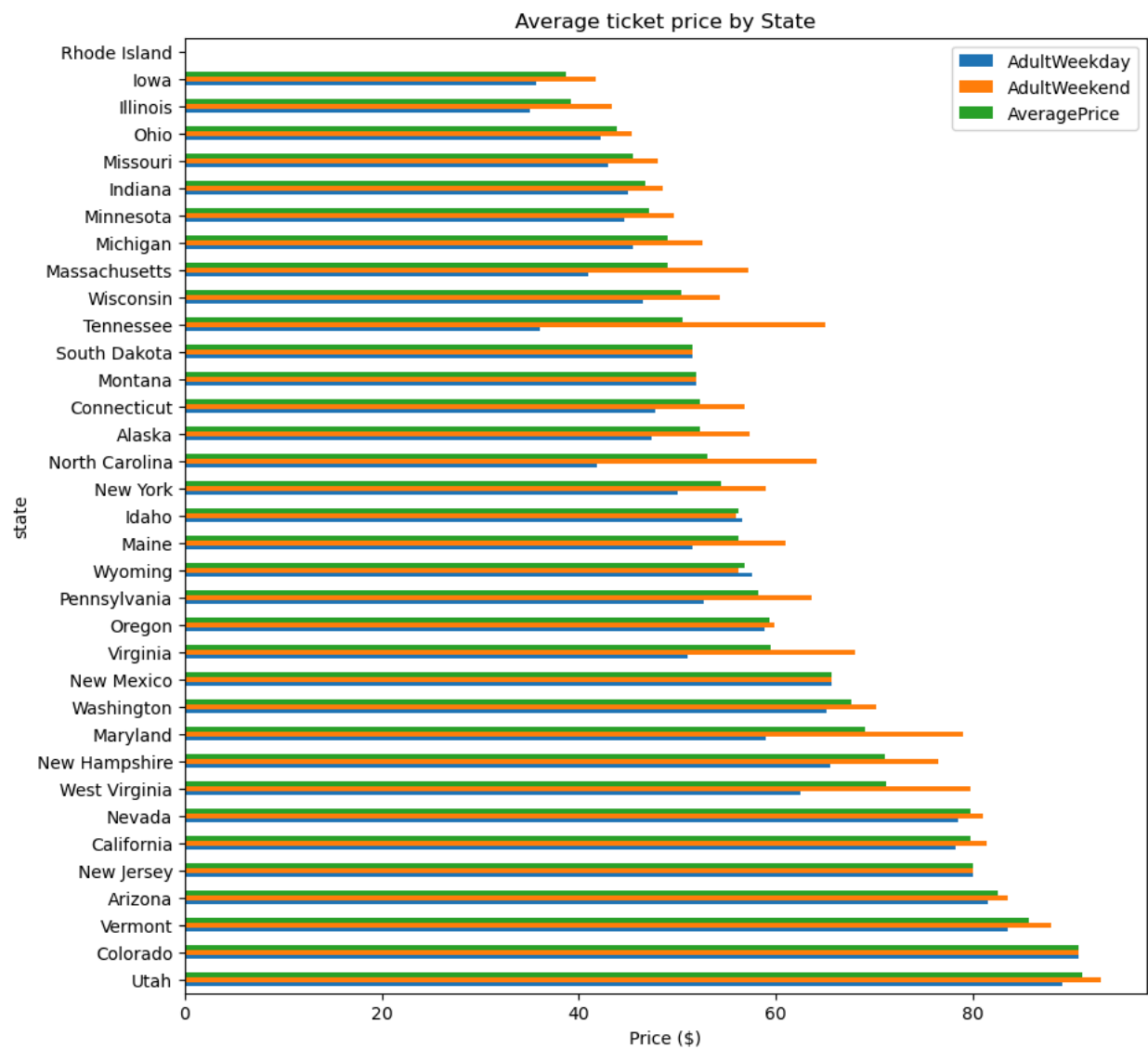


****Big Mountain Resort Price Analysis Report****

****Introduction:****

Big Mountain Resort, located in Whitefish, Montana, is a renowned ski resort offering stunning views of the Flathead National Forest and Glacier National Park. With various ski runs and facilities such as 11 lifts, 2 T-bars, and 1 magic carpet, the resort aims to provide an exceptional experience for visitors. Recently, the installation of a new chair lift has led to an increase in operating costs by \$1.54 million for the season, prompting a review of the resort's pricing strategy.

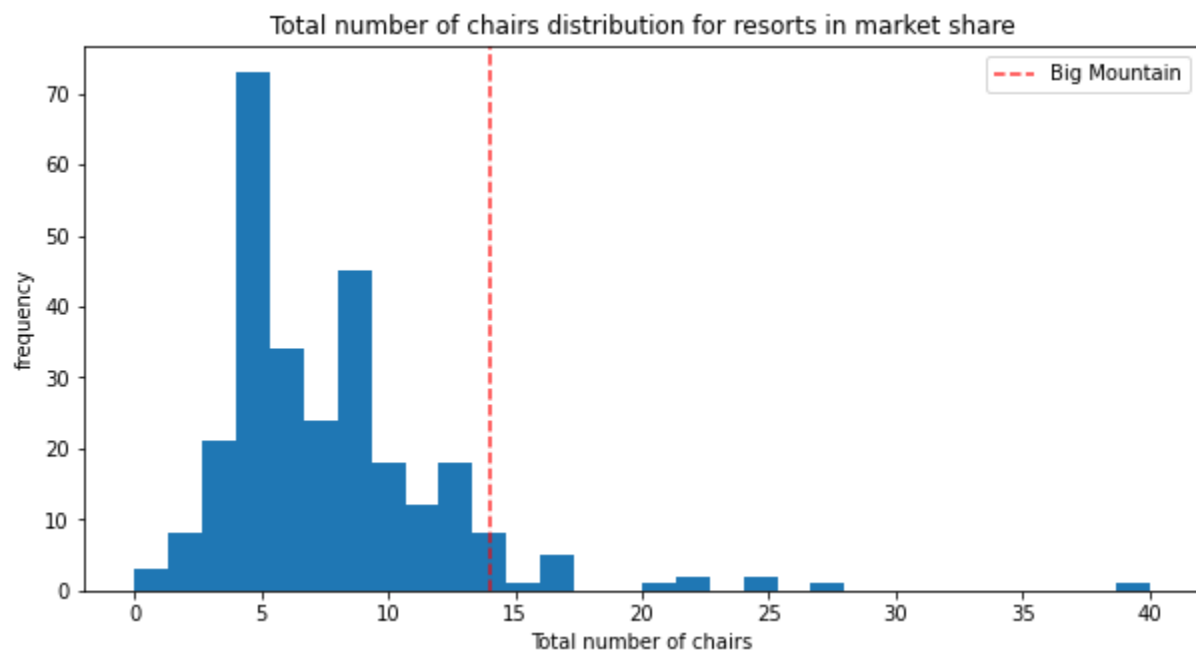
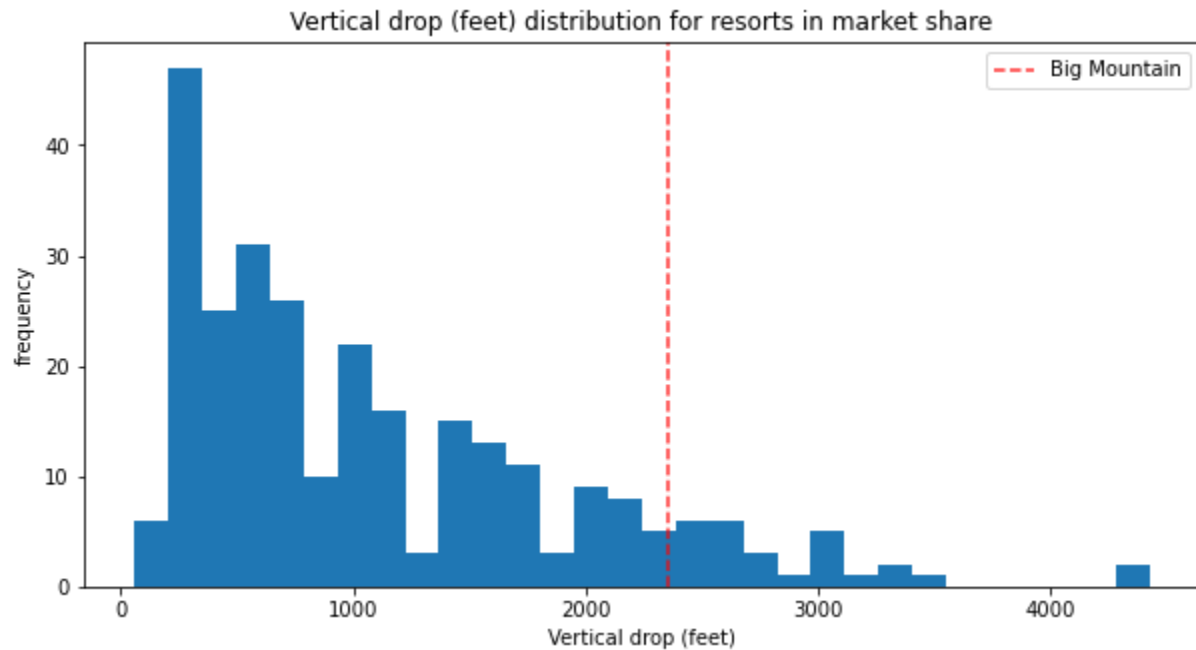


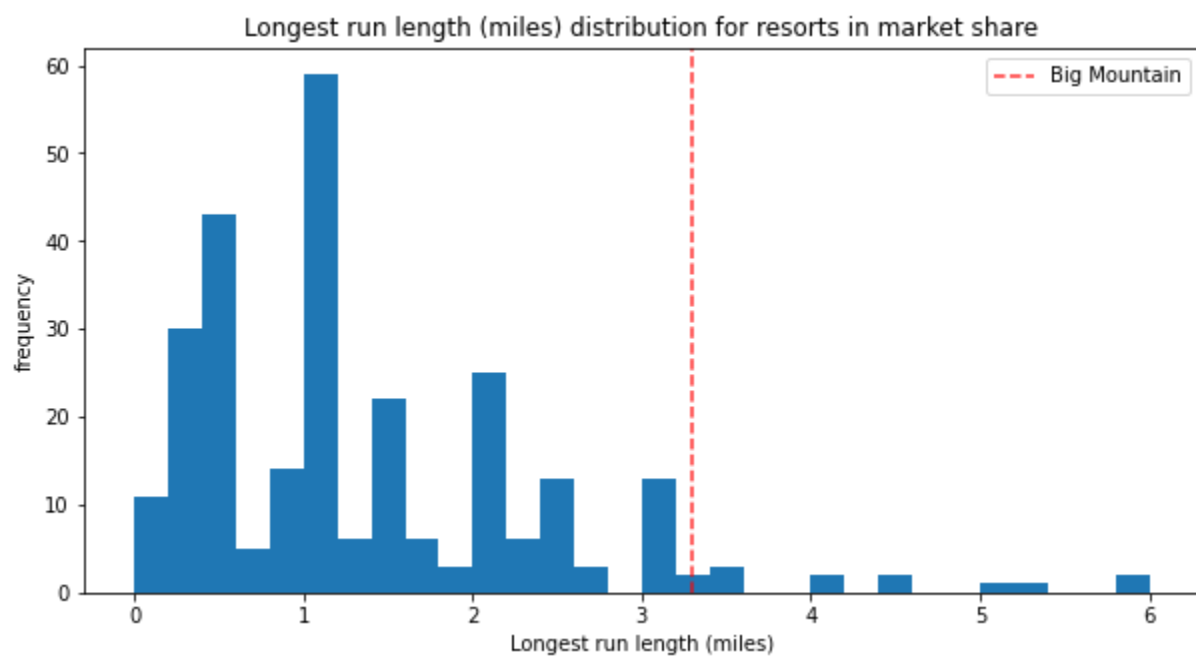
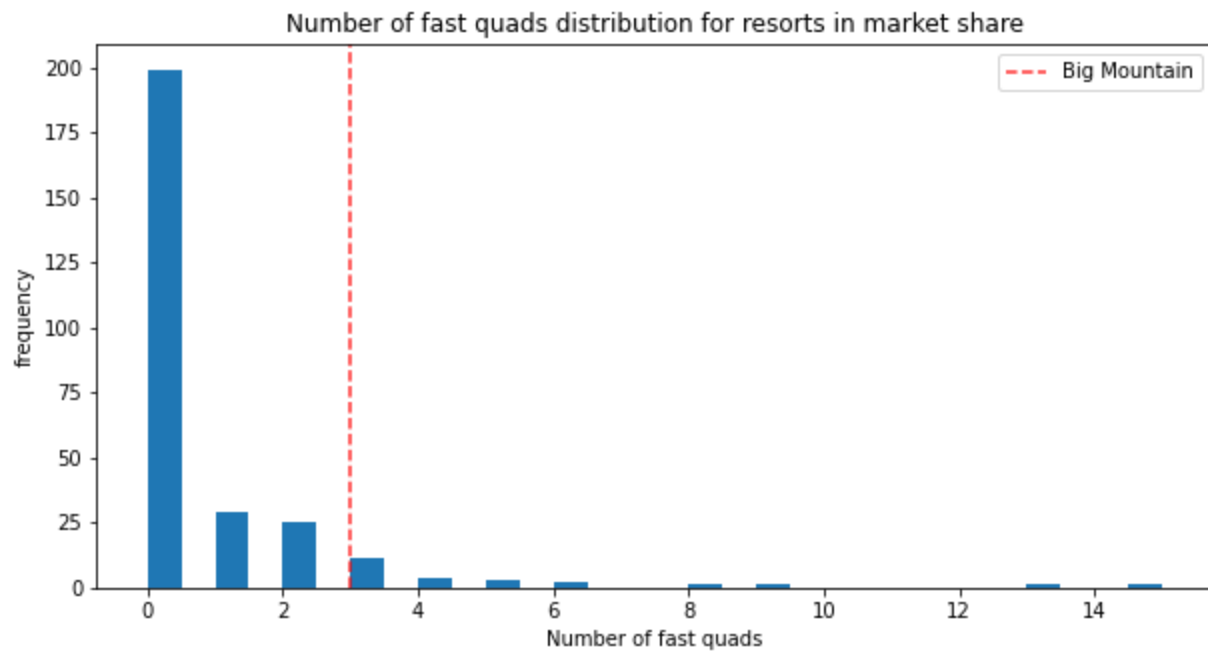
****Problem:****

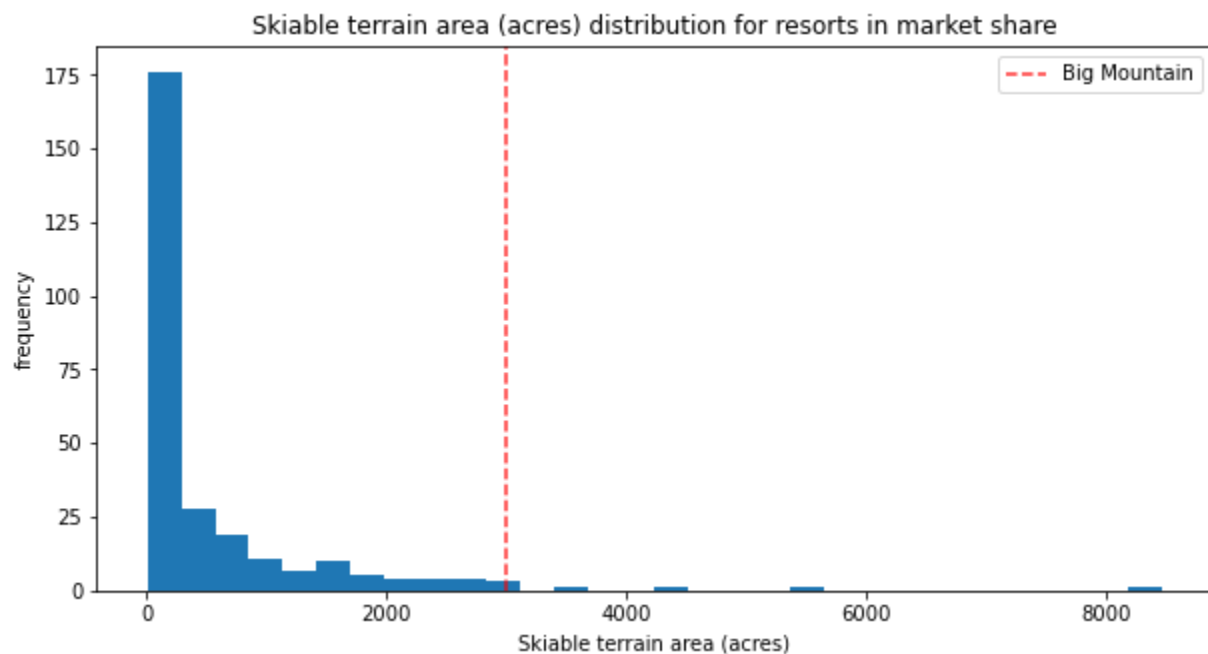
Big Mountain Resort seeks to establish a new pricing strategy based on data analysis from ski resorts across the country. The goal is to determine a competitive price that reflects the significance of Big Mountain Resort's facilities accurately.

****Data Wrangling:****

The dataset includes essential values such as total vertical drop, number of lift chairs, and prices for weekday and weekend tickets. Data cleaning involved removing irrelevant columns and handling missing values, resulting in a refined dataset with 277 rows.

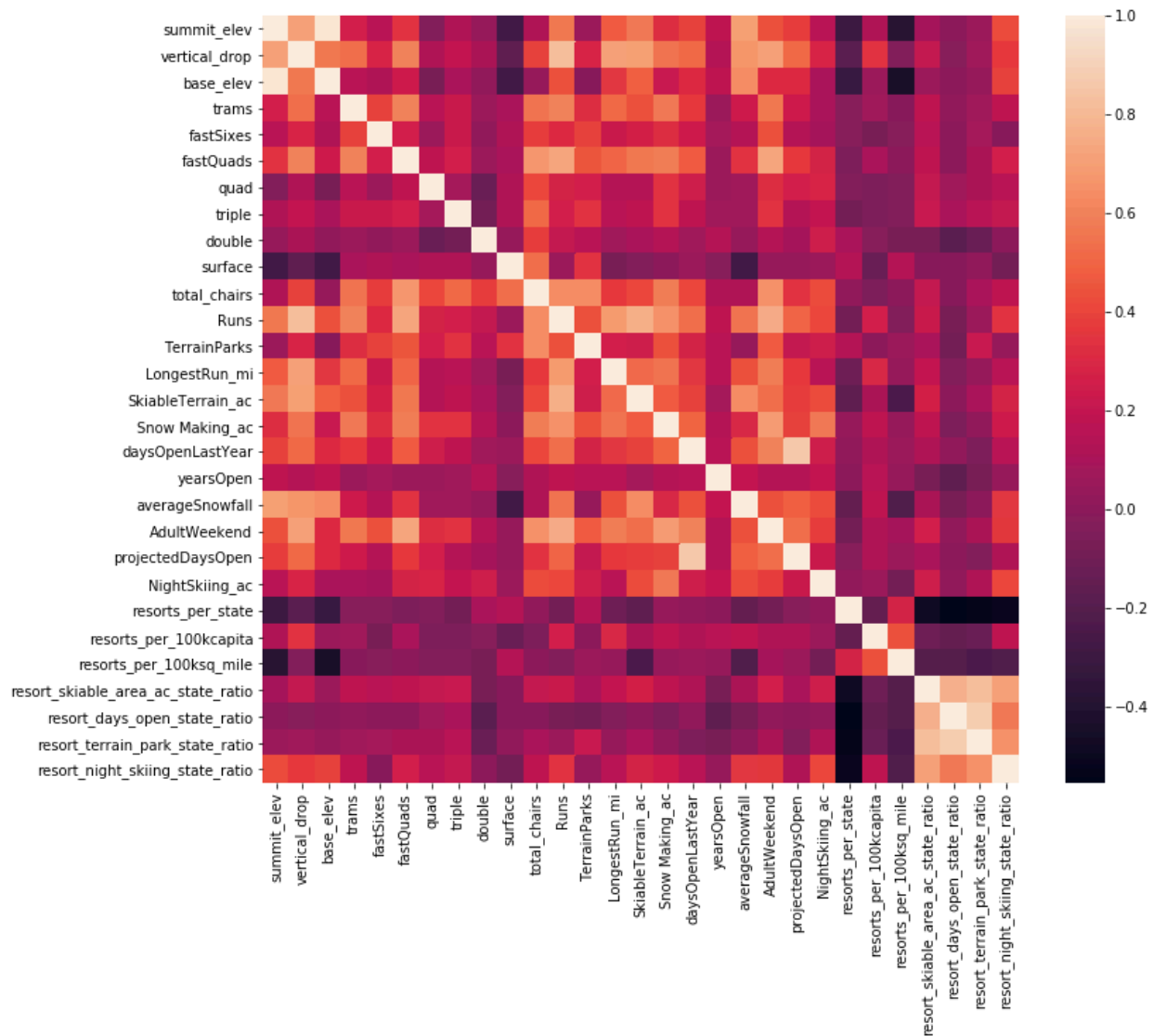






****Exploratory Data Analysis:****

Exploratory data analysis aimed to identify trends and patterns in the data. Initial analysis showed a clear positive correlation between certain resort features (such as fastQuads, Runs, and SnowMaking_Ac) and ticket prices. Principal Component Analysis (PCA) helped identify key components contributing to price variance.

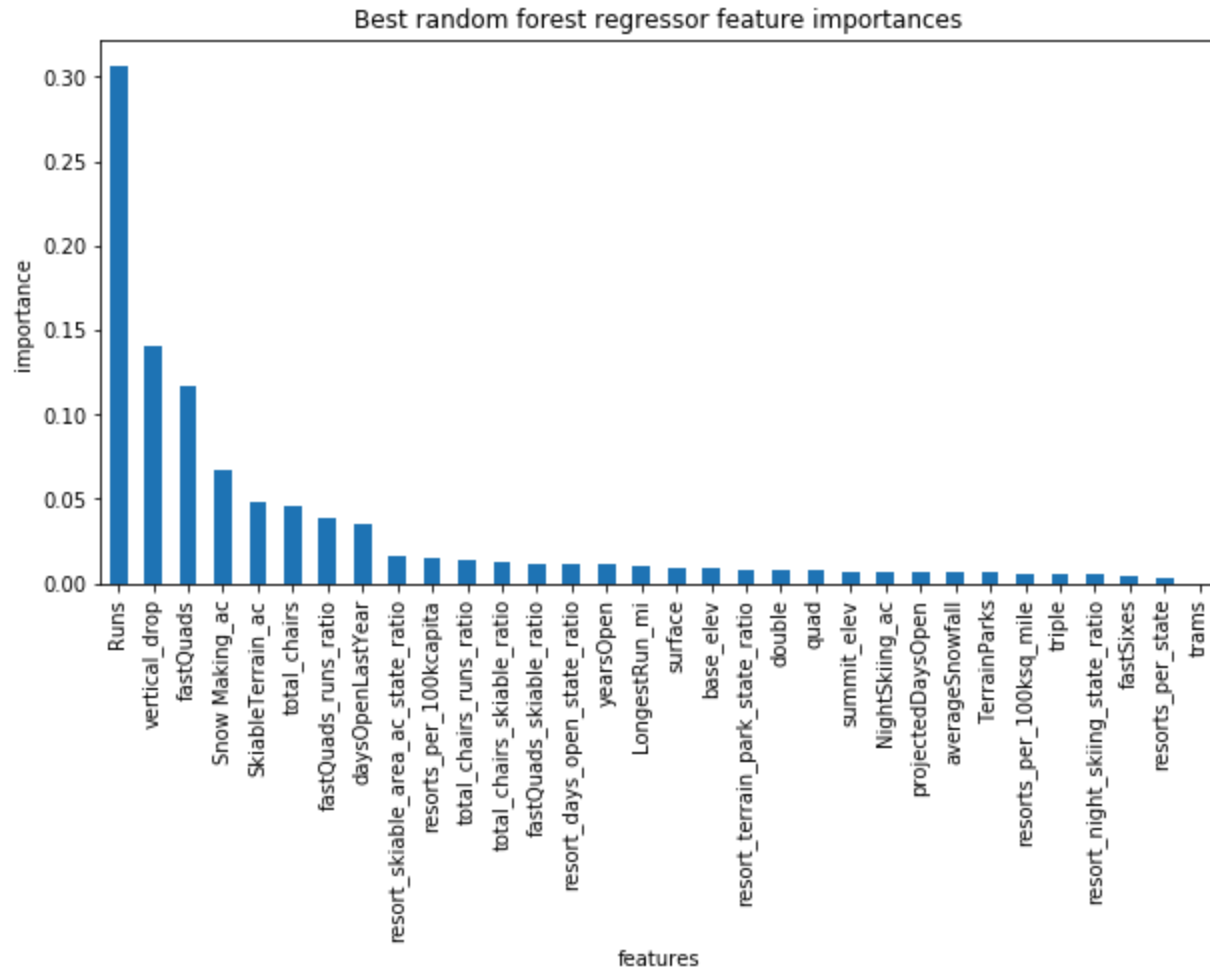


****Pre-Processing and Training Data:****

Median regression was used to establish an initial pricing baseline, followed by a Random Forest Model to refine the model and reduce Mean Absolute Error. The inclusion of additional features such as vertical drop further improved model accuracy.

****Modeling:****

The final model incorporated eight key components to determine a data-based ticket price. Evaluation of Big Mountain Resort's position relative to other resorts in terms of various features suggested that the resort offers exceptional facilities and should reflect this in its pricing. The modelled price of \$96.62 was significantly higher than the current price of \$81.00.

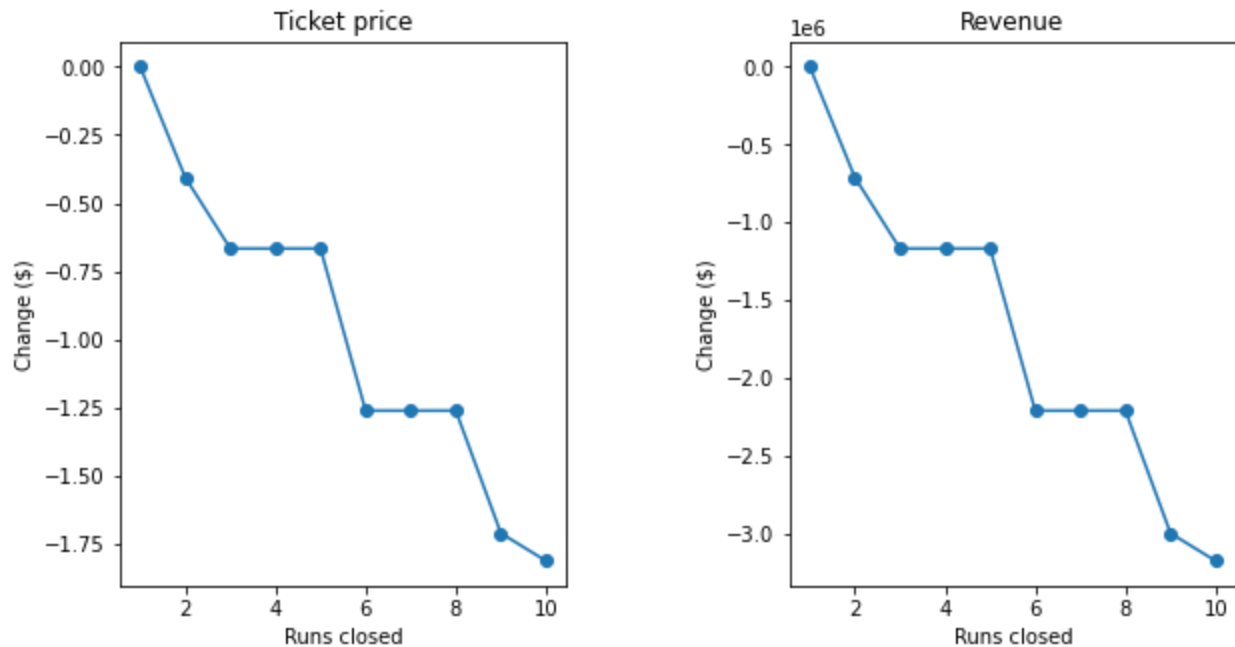


Conclusion:

Based on the analysis, it is recommended that Big Mountain Resort increase its ticket price by at least \$10. Additionally, the resort could optimize revenue by selectively opening runs based on demand. Despite the comprehensive analysis, there is room for improvement, particularly in incorporating data on ancillary revenue and pricing strategies of other resorts. However, the current findings provide a strong foundation for enhancing Big Mountain Resort's pricing strategy and ensuring its continued success in the future.

Data Insights and Model Refinement:

The analysis revealed insightful correlations between resort features and ticket prices, allowing for the development of a robust pricing model. By leveraging machine learning techniques such as Random Forest Regression and Principal Component Analysis, the model could effectively capture the complex relationships between various resort attributes and ticket prices. Additionally, the inclusion of additional features such as vertical drop and total chairs further enhanced the model's predictive accuracy. These insights not only provided a comprehensive understanding of Big Mountain Resort's competitive position but also offered valuable guidance for optimizing pricing strategies in the highly competitive ski resort industry.



****Recommendations for Pricing Strategy:**

Based on the analysis, it is recommended that Big Mountain Resort adopt a more strategic approach to pricing that reflects the value of its exceptional facilities and amenities. The modelled price of \$96.62 suggests that the resort is currently undervaluing its offerings, potentially leaving revenue on the table. By increasing ticket prices by at least \$10, Big Mountain Resort can better align its pricing with the market value of its services and amenities. Furthermore, the analysis highlights the potential for revenue optimization through the selective opening of runs based on demand. By strategically managing run operations, the resort can minimize operating costs while maximizing revenue, ensuring long-term sustainability and profitability.

****Opportunities for Future Improvement:****

While the current analysis provides valuable insights into pricing strategy optimization, there are opportunities for further refinement and enhancement. Incorporating data on ancillary revenue streams, such as food and beverage sales, equipment rentals, and lodging, would offer a more comprehensive view of the resort's overall revenue potential. Additionally, exploring pricing strategies employed by other resorts, particularly those with similar offerings and market positioning, could provide valuable benchmarking insights. Continuous monitoring and analysis of market trends, guest preferences, and competitor actions will be essential for adapting and refining Big Mountain Resort's pricing strategy over time.

****Conclusion:****

In conclusion, the analysis underscores the importance of data-driven decision-making in optimizing pricing strategies for ski resorts. By leveraging advanced analytics and machine learning techniques, Big Mountain Resort can gain valuable insights into its competitive position and revenue potential. By implementing the recommendations outlined in this report, the resort

can enhance its pricing strategy, maximize revenue, and ensure its continued success in the dynamic and competitive ski resort industry. With a focus on strategic pricing and continuous improvement, Big Mountain Resort is well-positioned to thrive in the years to come.