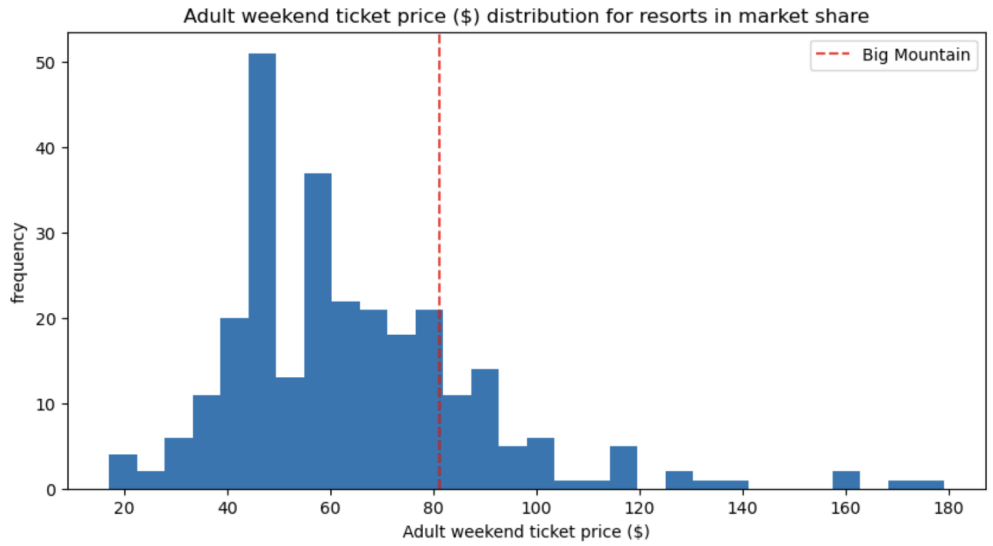
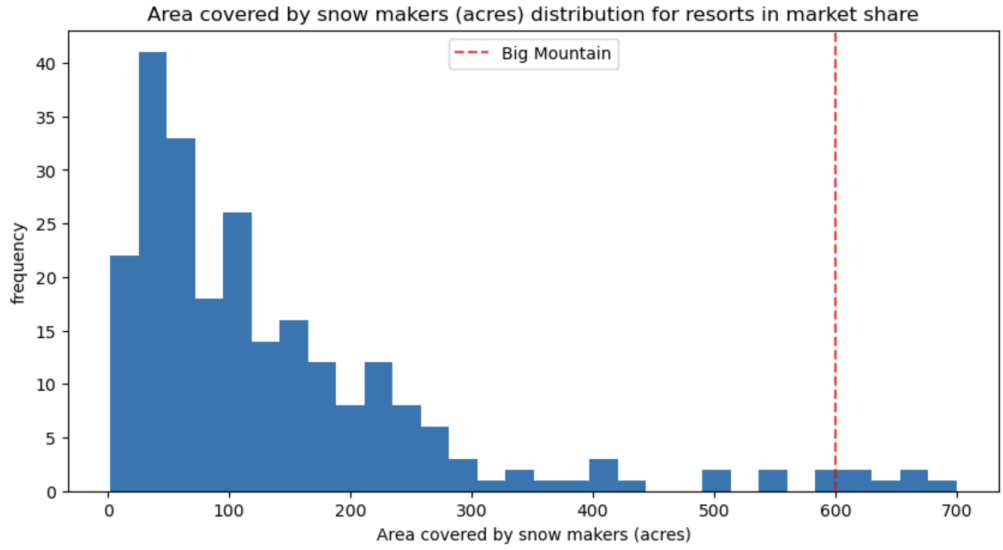
Big Mountain Resort: Optimizing Ticket Pricing Strategy

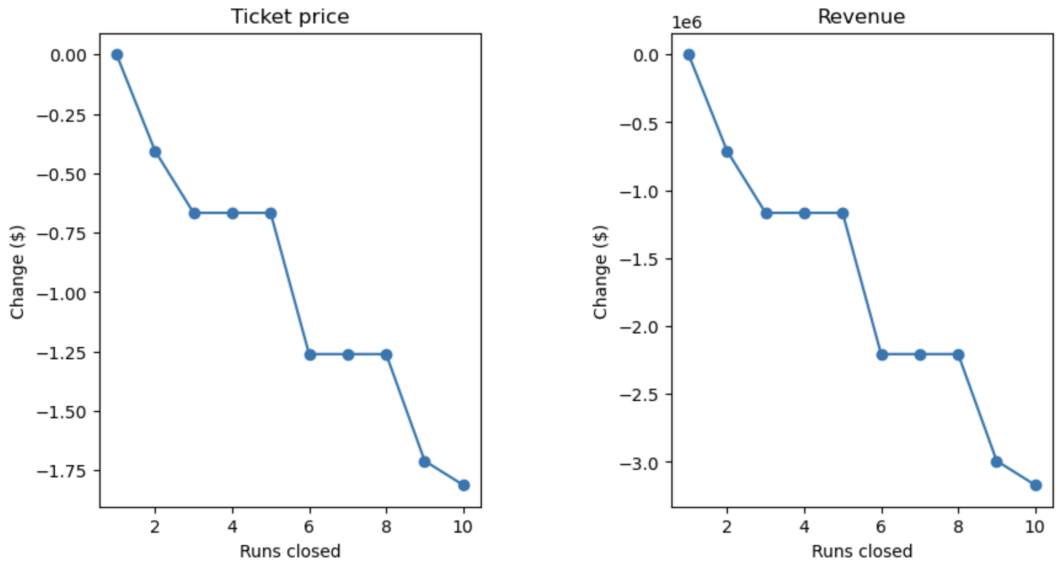
Big Mountain Resort aims to increase revenue by 30% before the upcoming ski season. This report outlines our data-driven approach to optimizing ticket pricing strategy, leveraging modeling techniques. The goal is to identify a pricing strategy that maximizes revenue without compromising competitive positioning and customer satisfaction.

The initial dataset required cleaning and formatting. This involved handling missing values, normalizing data formats, and removing duplicates. EDA revealed significant variables affecting ticket prices, such as vertical drop, snow making area, and the number of runs. Comparative analysis with competitor resorts provided a preliminary understanding of Big Mountain's market position. The analysis reveals that despite Big Mountain Resort's leadership position across several key variables influencing ticket pricing, these advantages are not currently reflected in its ticket pricing structure.





We employed Linear Regression and Random Forest models. The evaluation metrics included R-squared, Mean Absolute Error (MAE), and Root Mean Squared Error (RMSE). Based on the R-squared values it appears that the Random Forest model outperformed others, providing the best balance of accuracy and complexity. We modeled various scenarios, including changes in runs, vertical drops, and snow making capabilities, to assess their impact on ticket pricing.



The business also shortlisted some options. We used the model to predict the price change of these options and calculated the new ticket price and the total that the company would make that season.

The first option was to increase the vertical drop by adding a run that is 150 feet lower but requiring the installation of an additional chair lift to bring skiers back up, without additional snow making coverage. This scenario increases support for ticket price by $8.61. Over the season, this could be expected to amount to $15065471

The second option was to increase the longest run by 0.2 mile to boast 3.5 mile length, requiring an additional 4 acres of snow making coverage. This option saw no change in the ticket price indicating that changing the longest run and adding more snow making coverage made no difference to ticket price.

Based on the model, we recommend a tiered pricing strategy, leveraging Big Mountain's key features. An optimal increase in ticket prices is suggested, aligning with the resort's value proposition. Our analysis indicates a significant opportunity for Big Mountain Resort to optimize ticket prices and achieve its revenue target. The recommended strategy is grounded in a thorough understanding of market dynamics and the resort's competitive advantages.

Further work includes refining the model with real-time data, exploring dynamic pricing strategies, and integrating customer feedback mechanisms.