Big Mountain Resort: Executive Presentation

Optimizing Ticket Pricing for Growth and Profitability

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Problem Identification

Current ticket price: **$81**

Market analysis suggests this price may be too low

Need to optimize on ticket pricing to maximize revenue while maintaining guest satisfaction

Considerations: Resort quality, competitor pricing, operational costs

Key Business Questions

What is the ideal ticket price that reflects Big Mountain Resort's value?

How will operational changes, like adding a chairlift, impact pricing and revenue?

What pricing strategy will ensure long-term profits while enhancing guest experience?

Recommendations & Key Findings

Propose a ticket price of **$94**.

This aligns with the resort's standards and competitors' pricing strategies.

Scenario analysis indicates potential revenue growth, even with rising operational costs.

A data-driven strategy supports future viability.

Data Analysis for Accuracy

01

Compiled data on resort stats, pricing, and operations.

02

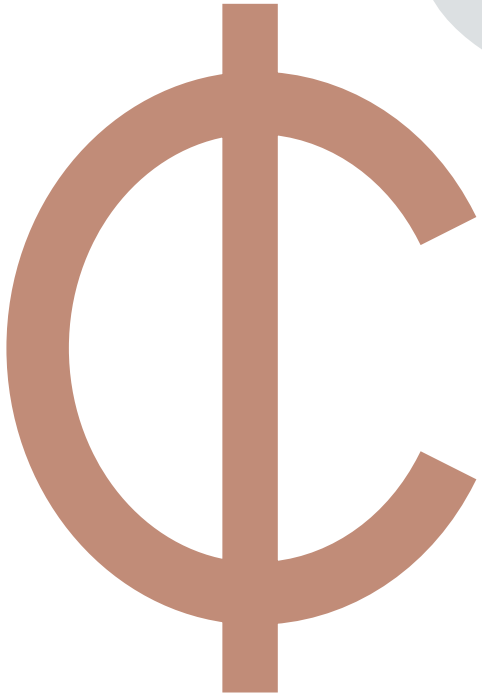
Studied trends in pricing, guest preferences, and resort features.

03

Assessed pricing models using machine learning to find ideal price points.

04

Confirmed results through scenario analysis, considering future improvements and expenses.



Modeling Approach

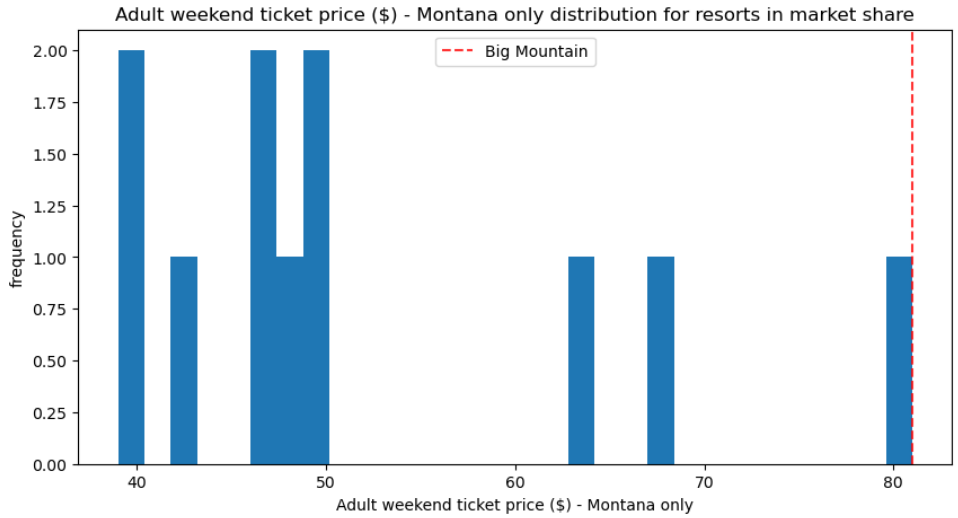
To find the optimal price, I assessed different models:

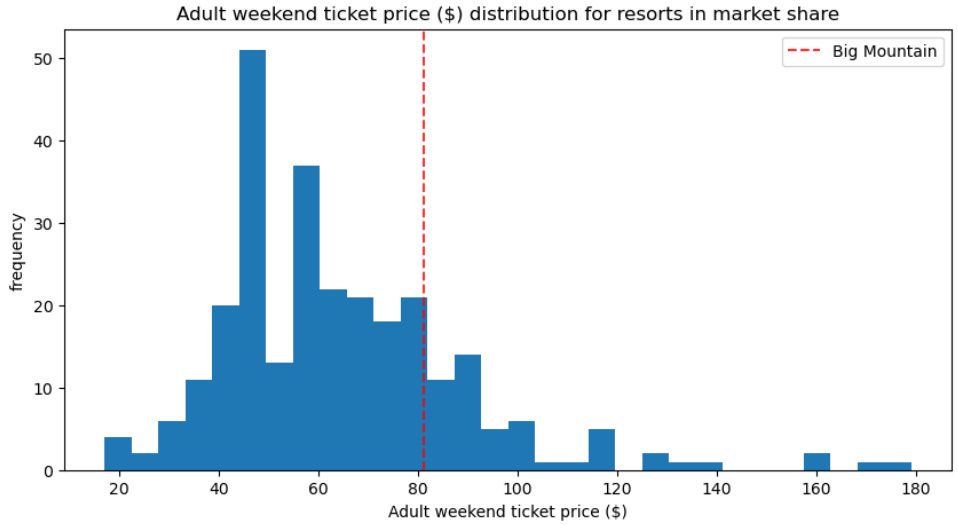
- Baseline Model: used average ticket price as a reference.
- Linear Regression: provided simple predictions but struggled with complex patterns.
- Random Forest Regressor: was effective in handling non-linear data.

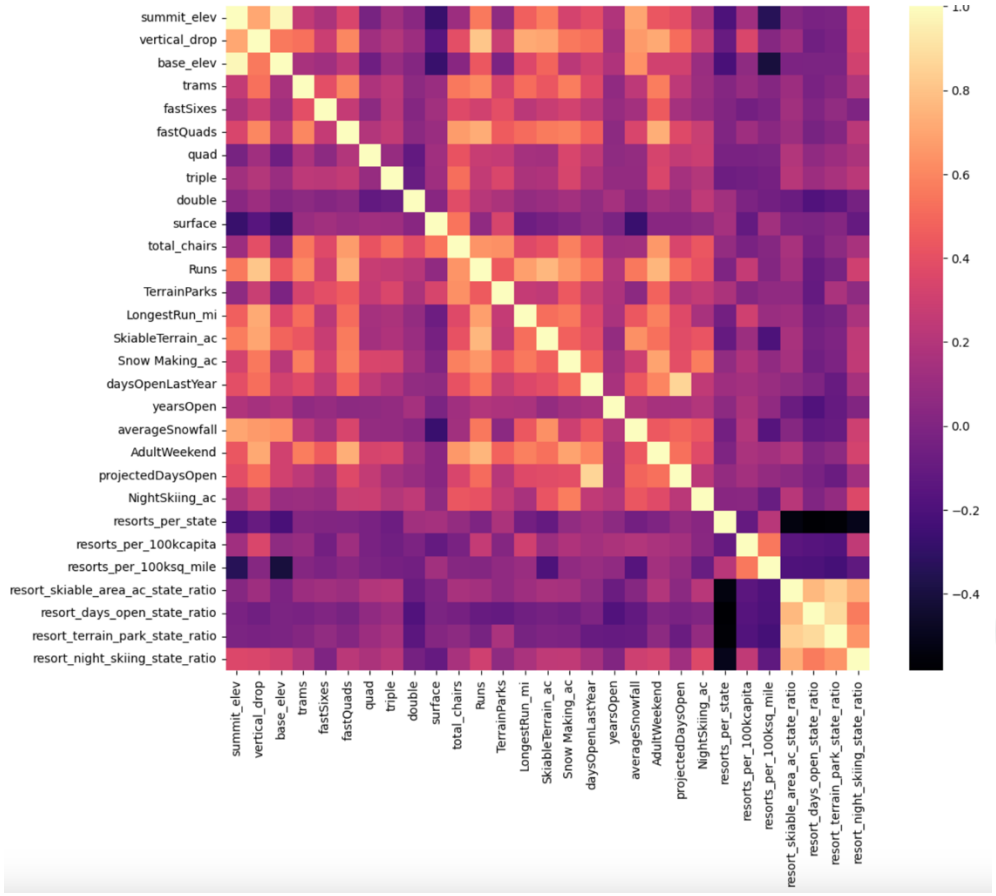
The **Random Forest model** emerged as the most accurate, exhibiting the lowest error rate and highest predictive success.

Modeling Results & Analysis

Current price of $81 per ticket is relatively expensive in the country as well as Montana







Modeling Results & Analysis

Summit & base elevation – highly correlated

Multicollinearity – new features negatively correlated with number of resorts in each state

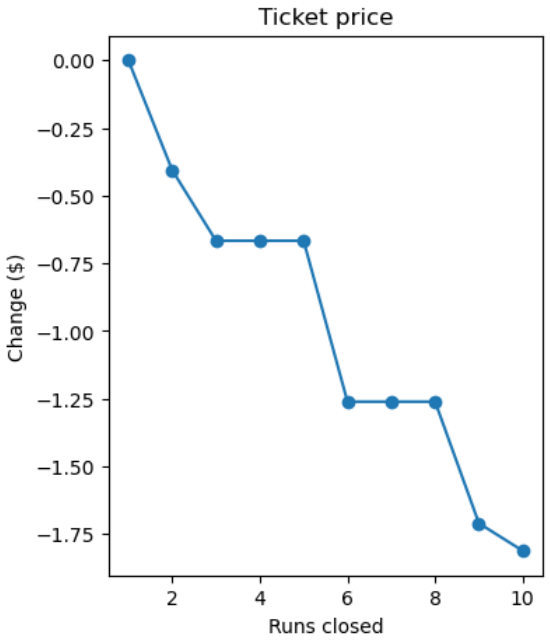
Some positive correlation between ratio of night skiing area with number of resorts per capita

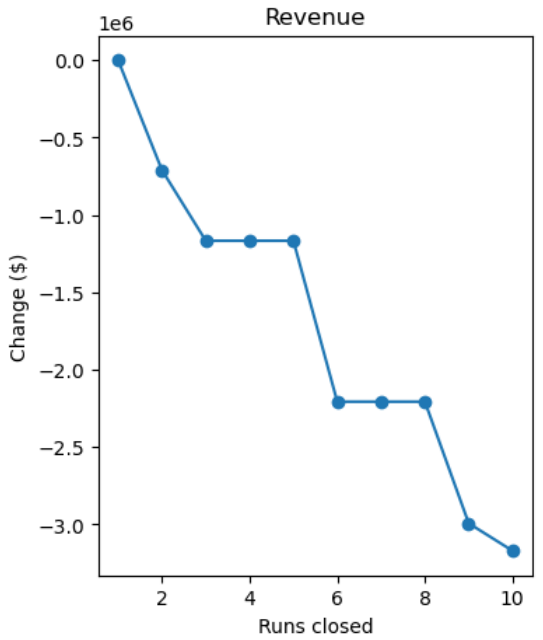
Of all the features, resort_night_skiing_state_ratio seems most correlated with ticket price

Runs & total_chairs also correlated with ticket price – more runs there are, more chairs are needed

Vertical drop also a selling point that raises ticket prices

Modeling Results & Analysis





Big Mountain Resort can close up to 6 runs each day without a notable loss in revenue.

Modeling Results & Analysis

R-squared – explains **87% of the variation** in ticket compared to **81% for Baseline Model** & **72% for Linear Regression**

Mean Absolute Error (MAE) - lower is better; for Random Forest the price prediction was off by **$4.90**, while **Baseline had $5.30** and **Linear Regression had $6.50**

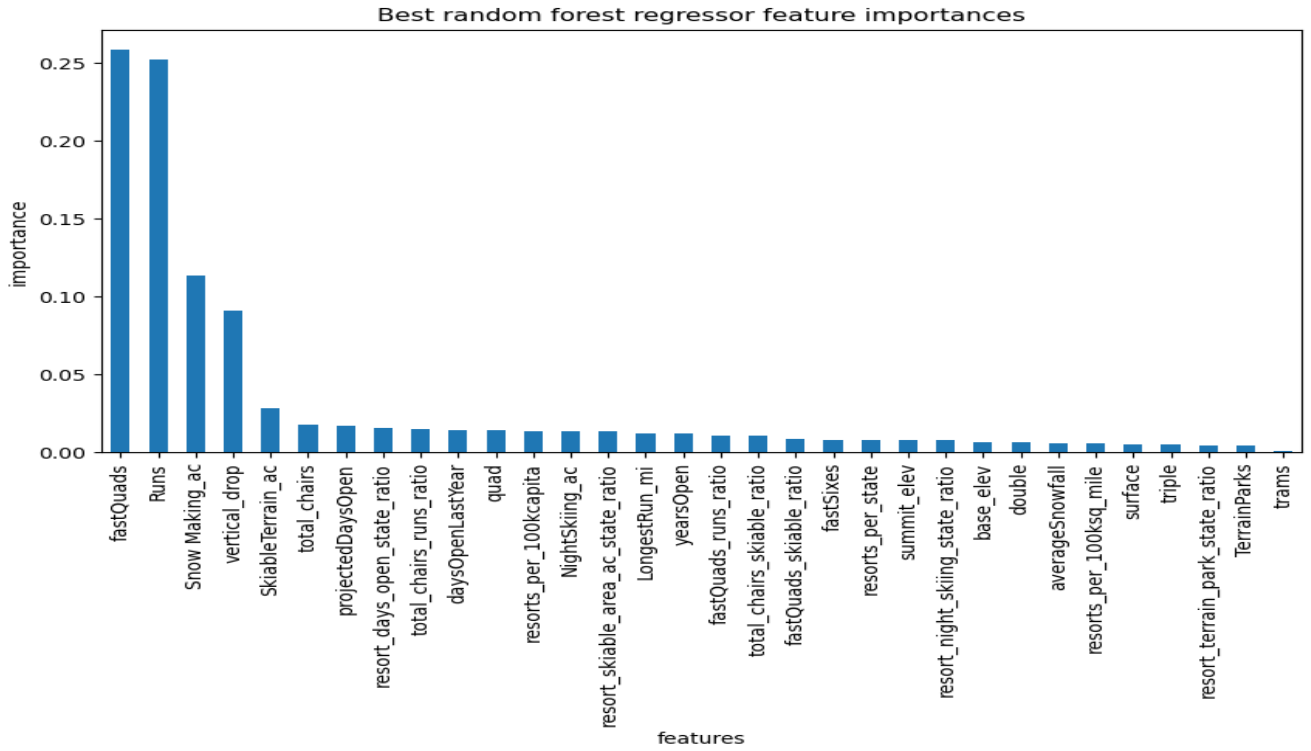
Mean Squared Error (MSE) – lower is better; at MAE of **38.5**, Random Forest had fewer extreme pricing errors compared to **43.7** and **56.2**, for Baseline and Linear Regression, respectively

Model	R-Squared	MAE	MSE
Linear Regression	0.72	6.5	56.2
Baseline Model	0.81	5.3	43.7
Random Forest (Winning Model)	**0.87**	**4.9**	**38.5**

Most Important Features

Dominant top 4 features are:

- fastQuads
- Runs
- Snow Making_ac
- Vertical_drop



Modeling Results & Analysis

Modeled different pricing strategies to assess revenue impact

Introducing a new chairlift increases operational costs (~$2 per ticket)

Expanding snowmaking capacity & vertical drop justifies higher pricing

Sensitivity analysis shows strong demand retention at $94 price point

Why $94?

Maximizes revenue while keeping Big Mountain Resort competitive

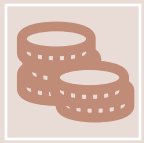
Aligns with market demand, as guests are willing to pay more

Covers future investments such as new lifts, ensuring sustainable growth

Summary & Conclusion

Key Takeaways

Big Mountain Resort tickets cost $81.



A suggested price of **$94** aims to enhance revenue and customer satisfaction.

This change considers the resort's value, growth potential, and operational needs.

Suggestions

Implement a new pricing strategy and monitor market responses.

Analyze customer segments for customized pricing.

Develop an interactive tool for ongoing pricing improvement.

Questions?

Thank you!