

Maximizing Revenue Through Optimized Ticket Pricing

Problem Identification

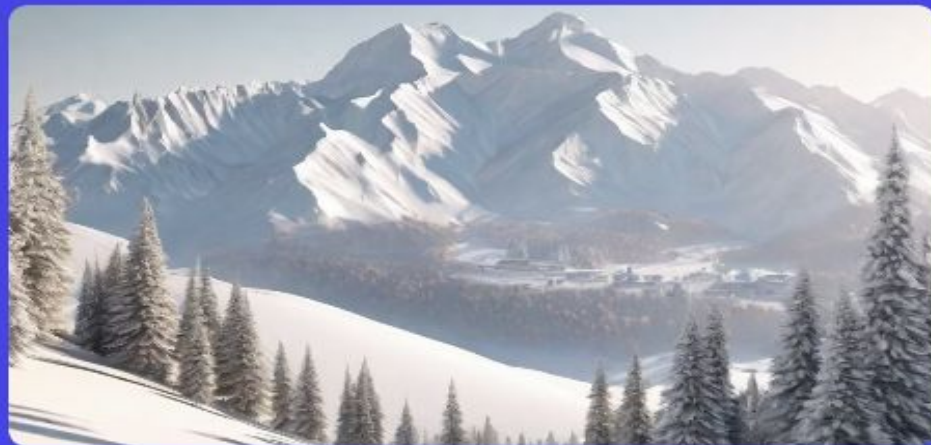
Objective

The objective is to utilize data science techniques to inform pricing decisions for the ski resort based on various resort attributes.

Problem

The ski resort is seeking to optimize ticket prices to maximize revenue while aligning with the value of resort facilities.

Recommendation and Key Findings



Recommendation: Adjust Ticket Prices

To maximize revenue potential, it is recommended to adjust ticket prices to better align with the value of resort facilities.



Key Findings

- Strong correlations were identified between ticket prices and resort attributes such as vertical drop, fastQuads, runs, and total chairs.
- The random forest regression model outperformed linear regression, providing superior predictive accuracy.
- Scenario modeling indicated the potential revenue impact of resort modifications.

Modeling Results and Analysis



Linear Regression Insights

- Linear regression provided insights into significant features driving ticket prices but exhibited lower predictive accuracy.

Feature Engineering

- Engineered new features to better capture relationships between resort attributes and ticket prices.



Random Forest Regression

- Random forest regression emerged as the winning model, demonstrating superior performance.

Scenario Modeling

- Evaluated impact of potential resort modifications on ticket prices and revenue.

Model Evaluation

Mean Absolute Error (MAE)

We utilized mean absolute error to assess the performance of our ticket pricing model. The MAE measures the average absolute difference between the predicted ticket prices and the actual ticket prices. A lower MAE indicates better model performance.

Feature Importance

Through feature selection and analysis, we identified key resort attributes that significantly influence ticket prices. These attributes include factors such as location, ski lift capacity, snow quality, resort amenities, and proximity to other attractions. By understanding the importance of these attributes, we can make informed pricing decisions.

Business Impact

Our analysis of the model's feature importance has highlighted the potential for revenue increase through optimized ticket pricing strategies. By leveraging the insights gained from the model, we can develop pricing strategies that maximize revenue while still providing value to our customers. These strategies may include dynamic pricing based on demand, targeted promotions, and package deals.

Summary

- Successfully utilized data science techniques to inform pricing decisions for ski resort.
- Leveraged predictive modeling and scenario analysis to optimize ticket prices and maximize revenue.

Conclusion

- Random forest regression model identified as preferred choice for predictive accuracy and reliability.
- Future work includes refining the model, integrating additional cost information, and developing user-friendly interface for decision-making processes.

