

Big Mountain Resort

Pricing Optimization Project

Overview

Welcome to the Big Mountain Resort Pricing Optimization Project repository. This project aims to enhance the ticket pricing strategy of Big Mountain Resort, a ski resort located in Montana. With the recent addition of a chair lift, the resort is looking to offset the increased operating costs by adopting a more data-driven pricing approach. The project also explores potential operational changes, such as adding more runs, expanding ski-able areas, or additional chairlifts, to maximize revenue.

Problem Statement

Big Mountain Resort faces the challenge of optimizing its ticket pricing strategy to cover the additional operating costs incurred by the installation of a new chair lift. The current approach, charging a premium based on the market segment's average price, limits the resort's revenue potential. In addition to the pricing strategy, the resort is considering various operational changes. The objective is to find a balanced approach that maximizes profitability while considering both pricing and operational adjustments.

Data Sources

- **Original Ski Data:** The primary dataset used for this project includes information on 330 resorts with 27 columns/features. The dataset covers various aspects of ski resorts, including ticket prices, features, and geographical distribution.
- **State Population and Size:** Additional information on state population and size was gathered from Wikipedia to provide context for the state-level analysis.

Usage

The project's code can be used to replicate the analysis or adapt it for similar scenarios. The main scripts are located in the *data_wrangling*, *eda*, *modeling*, and *business_scenarios* directories. To replicate the analysis and explore the code, follow these steps:

- Clone this repository to your local machine.
`git clone https://github.com/hyang78227/Capstone_Project_one.git`
- Navigate to the project directory.
`cd Capstone_Project_one`
- Install the required dependencies.
`pip install -r requirements.txt`
- Explore the project's scripts and documentation in the respective directories.

Project Structure

```
|-- data/
|   |-- raw_data/
|   |-- cleaned_data/
|-- notebooks/
|   |-- 02_data_wrangling.ipynb
|   |-- 03_exploratory_data_analysis.ipynb
|   |-- 04_preprocessing_and_training.ipynb
|   |-- 05_modeling.ipynb
|-- Proposal/
|-- Presentation/
|-- Documentation/
|-- Images/
|-- requirements.txt
|-- README.md
```

Current Questions

This project addresses several key questions:

- How well can a pricing model optimize ticket prices for Big Mountain Resort?
- What operational changes will have the most significant impact on revenue?
- How do different pricing strategies affect customer behavior and overall satisfaction?
- What are the potential risks and challenges associated with implementing new pricing and operational strategies?

Who Cares and Why

Understanding and optimizing the pricing strategy of Big Mountain Resort has significant implications:

- **Business Sustainability:** A well-optimized pricing strategy ensures the financial sustainability of the resort, allowing for continued growth and improvements.
- **Customer Experience:** By aligning prices with customer expectations, the resort can enhance the overall experience, leading to higher customer satisfaction and loyalty.
- **Competitive Advantage:** A strategic pricing approach can give Big Mountain Resort a competitive edge in the ski resort industry, attracting more visitors and standing out from competitors.
- **Industry Insights:** Findings from this project can contribute valuable insights to the broader ski resort industry, helping other resorts optimize their pricing strategies for success.