Guided Capstone Project Report

Recommendations for Big Mountain Ski Resort

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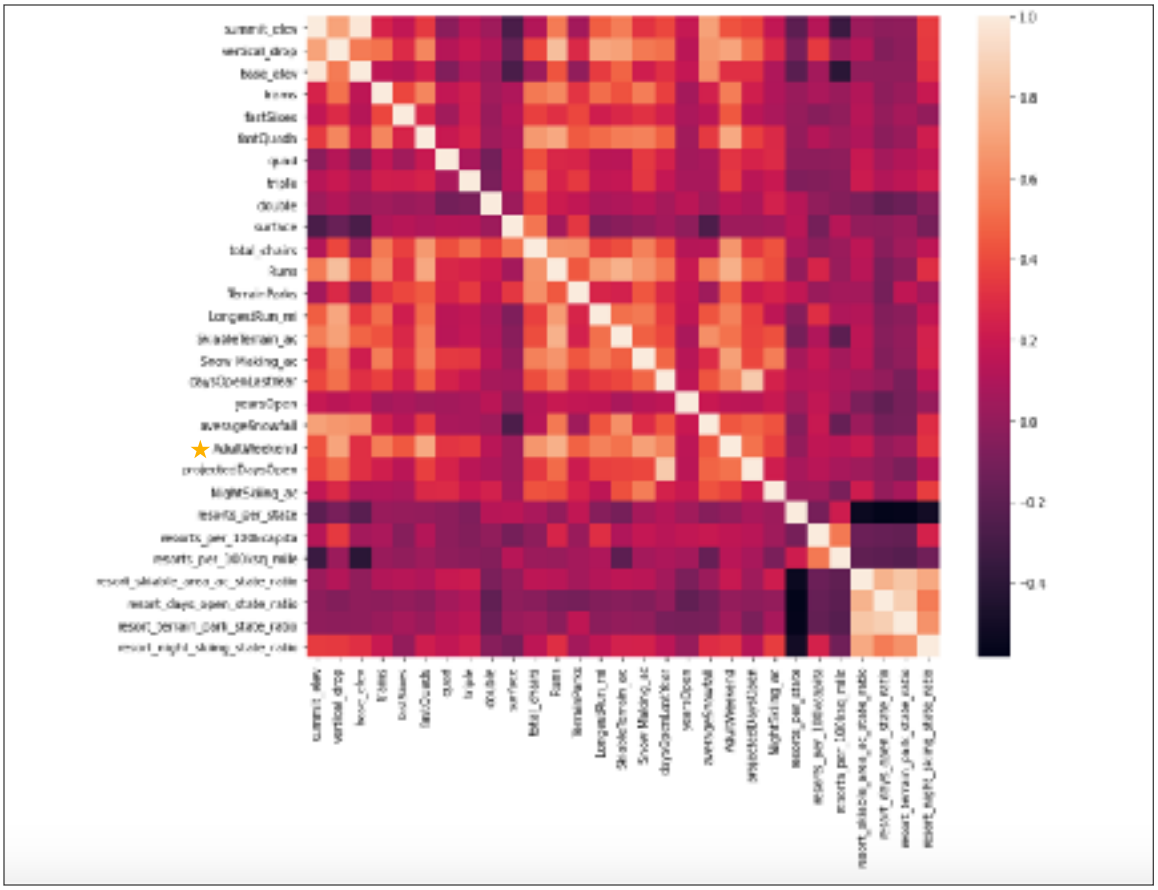
Big Mountain's Big Value

Uncovering the Full Revenue Potential for Big Mountain Ski Resort

Introduction

Pricing is tough. Set it too high, and you miss out on visitors. Set it too low, and you leave value on the table. With such a careful balance to pricing, it's wise to keep tabs on the market and periodically assess your value among the competition. The following analysis does just that for the Big Mountain Ski Resort in Montana. With the goal optimizing the resort's ski revenue and maximizing the return on new investment dollars, 276 competing resorts were analyzed for their ticket price against 27 known pieces of information about their value.

Resort Feature Correlation



Initial analysis of these resort features showed some clear correlations against ticket price (indicated in the row with the yellow star). At first glance, a resort's number of runs, snow making coverage, and fast quad chair lifts all play a large role in a resort's ticket price.

Deeper Understanding

The main question with this type of analysis, is how accurately can we predict the price? To establish a baseline, the average ticket price among the competition (~$63) was used. This figure predicts the price within about $20 of the actual price. A linear model closed this gap to about $12 and a random forest regressor brought this down to about $10 with even greater accuracy. For that reason, this random forrest regressor was selected as the most appropriate way to asses ticket price among the competition. Meaning an accuracy of about $10 is the closest we are going to get with our prediction for Big Mountain's ideal ticket price.

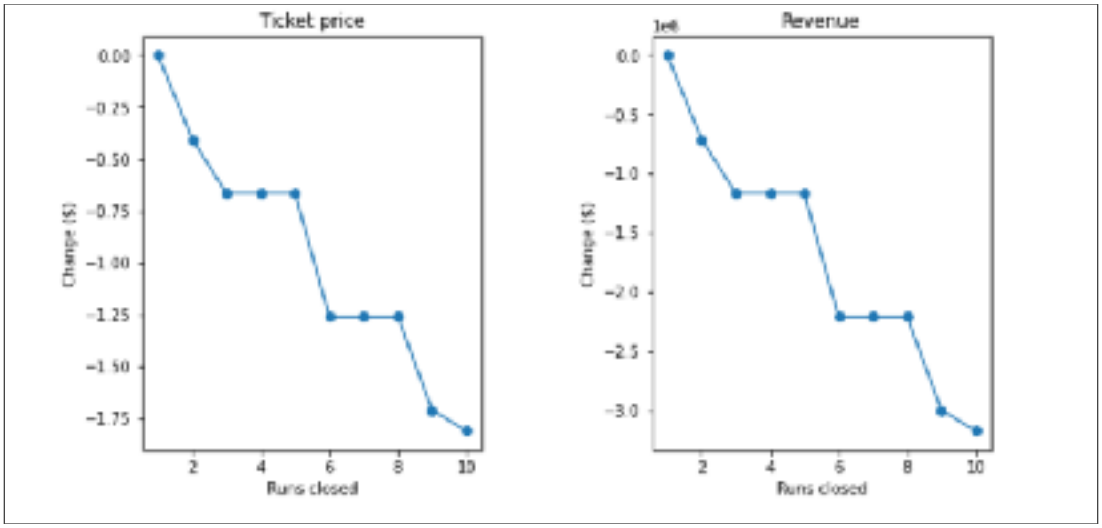
Recommendations: There's Value on The Table

In its current state—today, with no changes to the resort's facilities—Big Mountain's expected price from the model is $95.87. Comparing this to the current price of $81 leaves a ~$15 delta. While this model, and the information that fueled it, are by no means perfect—it would be ideal to understand the revenue and number of visitors for each resort to get a complete view—we can make some educated leaps. Knowing our model's error of ~$10, conservatively, we could expect a low-end price for Big Mountain Resort at about $85 (~$95 predicted price - ~$10 error). Suggesting **there's room for a $4.00 increase in ticket price with no facility changes.** When factored over the resort's 350K expected annual visitors and 5-day average stay, that **equates to an expected $7 Million increase in annual revenue.**

Investment Scenario Analysis

Big Mountain leadership is also curious to understand the expected revenue impact of a few new investments in the resort:

1. Extending the resort's longest run and guaranteeing snow coverage is not recommended, as the model predicted no increase in ticket value with these changes.
2. Management should consider closing the resort's least trafficked run. The model predicted no pricing changes on the closure of one run. While the operational impact (cost savings) is unknown, it makes sense to divert these resources into more lucrative investments.



3. With those resources diverted, it makes sense to explore management's proposed 'Scenario 2' and 'Scenario 3' investments. Without the known impact on operating costs, it is hard to make a firm recommendation however, the model did predict an expected ticket price increase of ~$8.50 and ~$10 respectfully. Which could generate annual revenue upwards of $17 Million.