Data-Driven Pricing Strategy for Big Mountain Ski Resort

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Benefits of Data-Driven Pricing

- **Current Strategy:** Charge premium over average price in market segment.
  - Above-average facilities justify above-average prices.
- **Goal:** Pricing model based on specific facilities customers value most.
  - Maximize profits by adjusting price to match market.
  - Predict impact of cost-saving strategies on ticket price.
  - Identify strategic improvements to support higher prices.

Recommendations

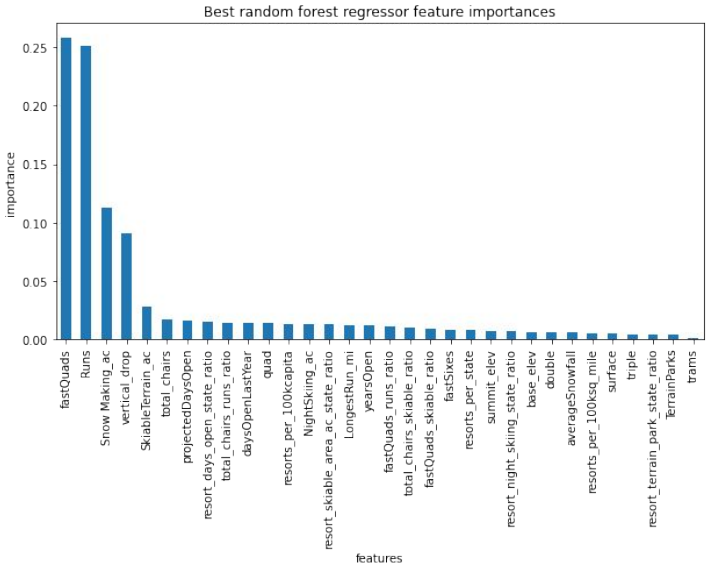
- Raise prices to at least $85 per ticket.
  - Current ticket price: $81. Predicted price: $95.87.
- Consider closing under-used runs.
  - Closing five runs reduces predicted price by only $0.66.
- Consider adding new run, lift to increase vertical drop.
  - Predicted price increase $1.99 per ticket.
  - Predicted revenue increase is over $3.47 million.

Modeling Strategy

- Random Forest Model
  - More consistent, accurate predictions than linear regression.
  - Trained on data from 276 resorts.
  - Used 21 numeric features.
  - Average prediction error: $10.39.

- Key Features:
  - fastQuads,
  - Total runs
  - Snow making coverage
  - Vertical drop.

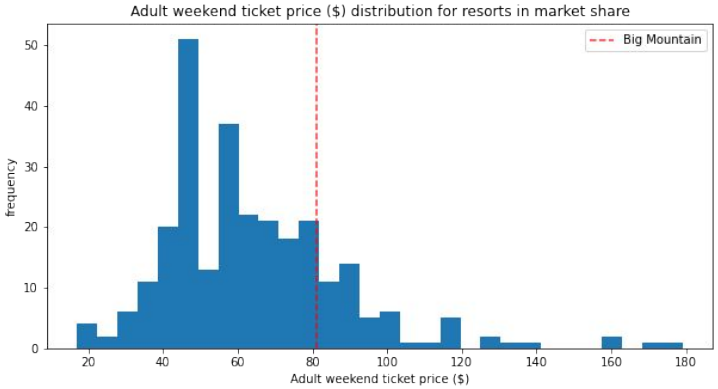
Figure: Relative Importance of Features



Revenue Forecast: Raising Prices

- Based on Big Mountain's facilities, model predicts price of $95.87.
- Taking into account average error of $10.39, suggest raising prices to $85.
- Expected revenue increase: $7 million
    - Assume 350,000 visitors per year, average of 5 day tickets per visitor

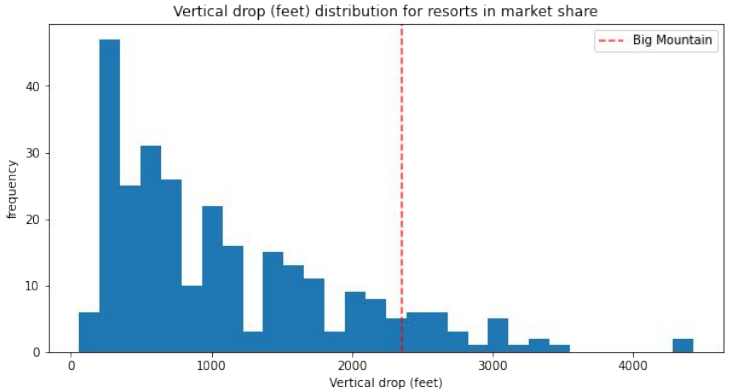
Figure: the recommended price of $85 per ticket is within the distribution of resort prices in the U.S.



Revenue Forecast: Increasing Vertical Drop

- Proposal: new run increases vertical drop by 150 feet. Requires new lift
- Predicted ticket price increase: $1.99
- Predicted revenue increase: $3.47 million.
    - Assumes 350,000 visitors, 5 days each.
- Cost to run new lift: $1.54 million
- Profit increase: $1.92 million

Figure: Many resorts have larger vertical drop than Big Mountain. This is a possible area for improvement.



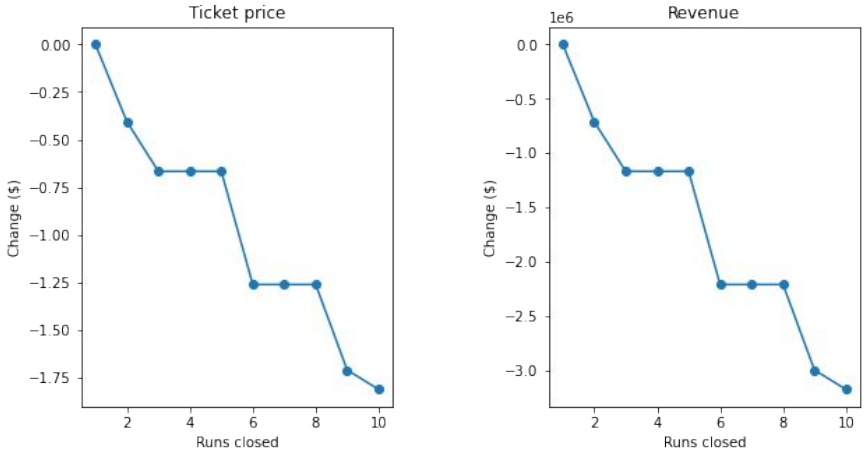
Revenue Forecast: Closing Underused Runs

Closing underused runs is worthwhile if cost savings outweigh forecasted losses.

- Close one run: no decrease in revenue.
- Close two runs: 700,000 decrease.
- Close 3-5 runs: $1.12 million decrease.
- If planning to close at least 3 runs, should close five.

Consider close first one, then two, then five runs, evaluating impact on profits.

Figure: Impact of closing runs on ticket price and revenue



Summary

- Big Mountain’s tickets are underpriced.
  - Assuming most resorts set prices by the market, model should predict profit-maximizing price for Big Mountain.
- Recommend raising ticket prices to $85, consider further increases in future.
- Identified four key features associated with higher prices.
  - Big Mountain has room to improve in vertical drop.
- Adding a new run to improve vertical drop increases predicted ticket price.
  - Additional revenue makes up for cost of running new lift.
- Closing underused runs has modest impact on market price.