

Python Springboard Data Science Bootcamp

Data Science Guided Capstone

“Big Mountain” ski resort ticket price strategy and optimization regarding the existing facilities – presentation & storytelling.

PROBLEM IDENTIFICATION

Which facilities changes to consider to cut cost and to sustain or to increase revenue at the Big Mountain Resort?

- ☐ Potential **undercapitalization** of the existing **facilities** due to the actual ticket price strategy.
- ☐ **Success** = ability to recommend a ticket price which is justified and optimized based on the existing the facilities.
- ☐ **Key data sources** = dataset over 330 US-based ski resort.

RECOMMENDATION & KEY FINDINGS

- (**+**) **Closing runs:**

- Closing 1 run has no impact on ticket price; closing more than 1 reduces revenue.
- Consider closing 1 run with associated lift and snowmaking to cut costs while maintaining price.

- (**+**) **Increase vertical drop (+150m) + 1 chair lift:**

- Supports a \$1.99 ticket price increase (~\$3.47M seasonal revenue gain).
- Ensure lift cost is justified by revenue increase.

- (**-**) **Increase vertical drop + lift + snowmaking:**

- **No** measurable effect on ticket price or revenue.

- (**-**) **Extend longest run (+0.2 miles) + snowmaking:**

- **No** measurable effect on ticket price or revenue.

- **Future work:**

- Recommend collecting **missing data** (e.g., customer numbers, costs, depreciation).
- Develop a **user-friendly tool** and graphical interface for scenario analysis and **visual reporting**.

MODELING RESULTS & ANALYSIS

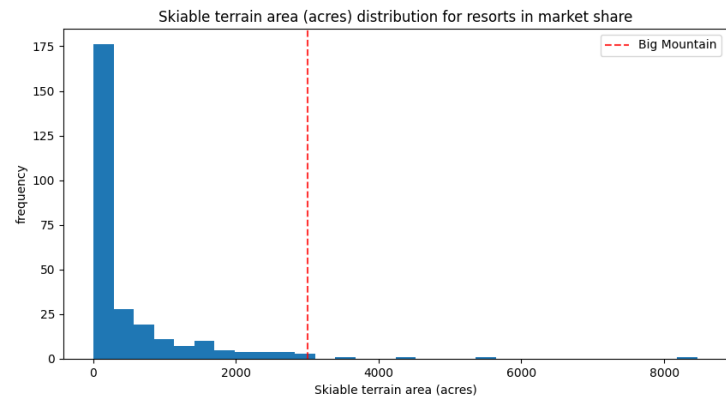
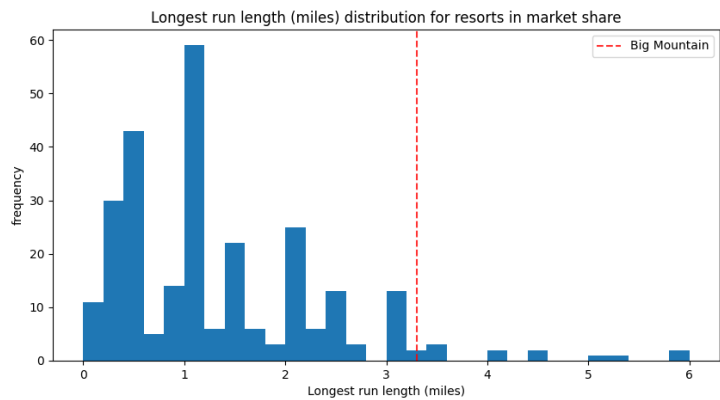
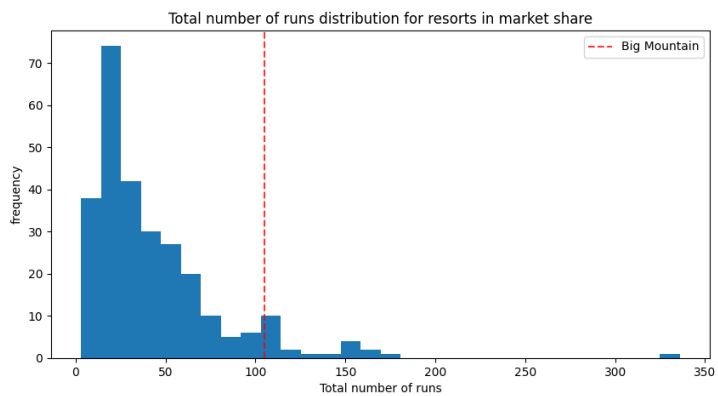
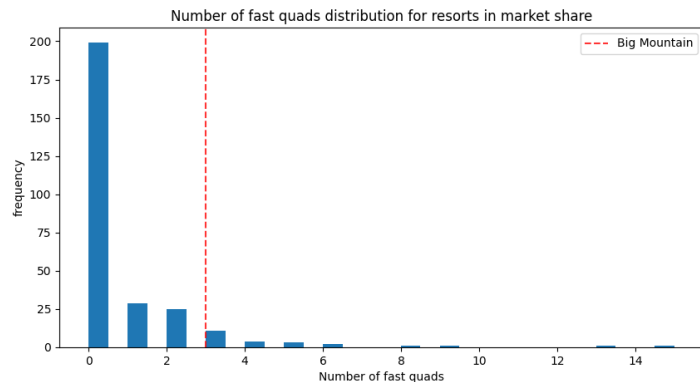
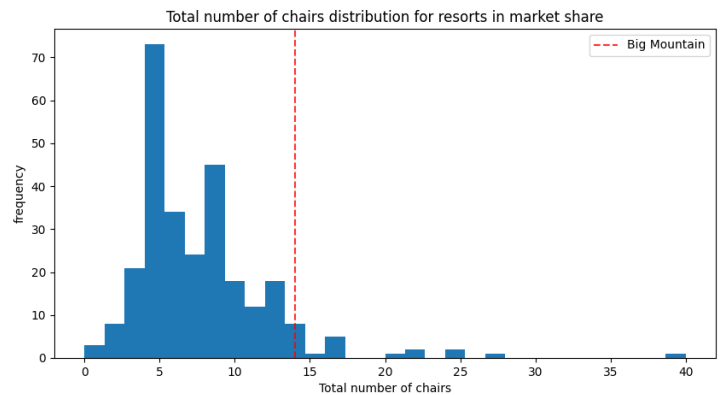
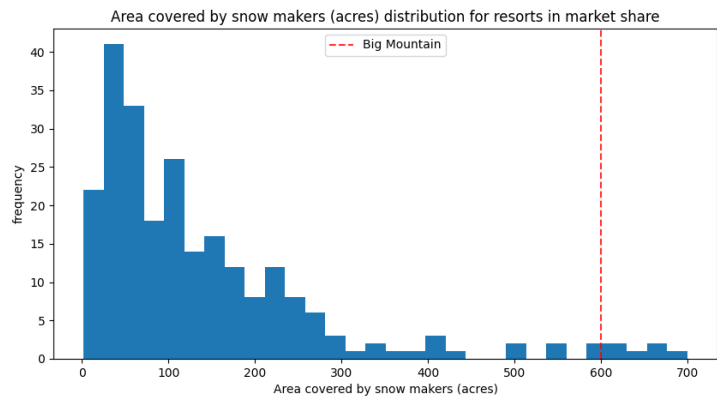
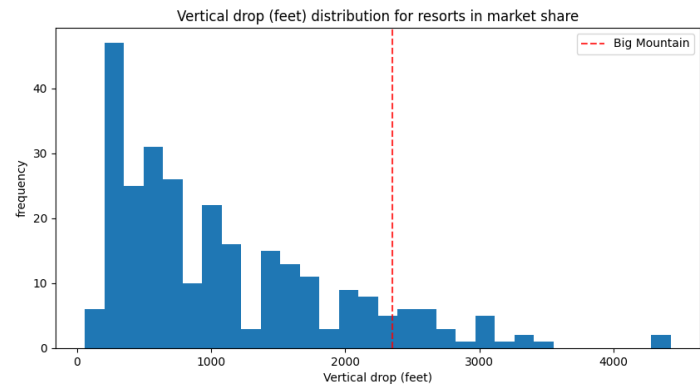
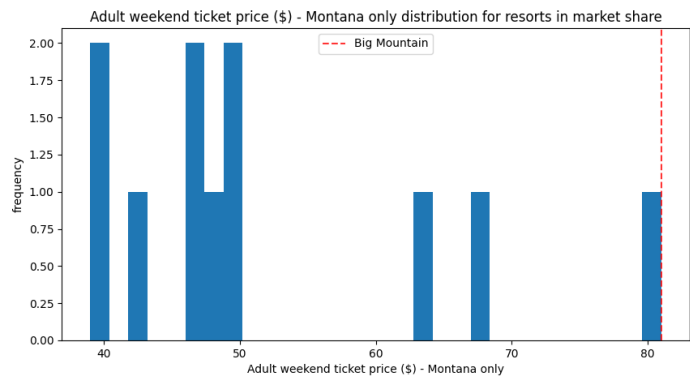
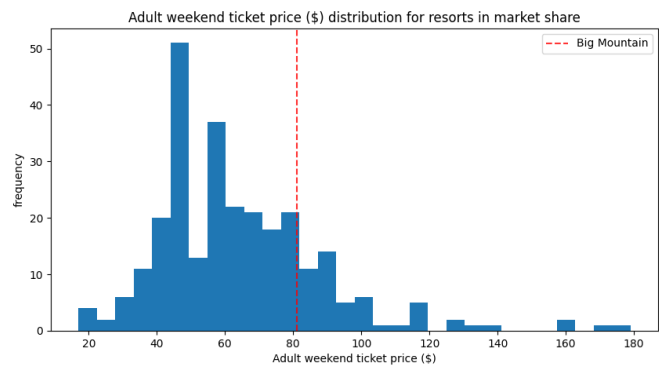
MODEL SELECTED = RANDOM FOREST REGRESSOR.

BIG MOUNTAIN RESORT **MODELLED PRICE** = \$ **95.87**.

BIG MOUNTAIN RESORT **ACTUAL PRICE** = \$ **81.00**.

BIG MOUNTAIN (----) RESORT IN ITS **MARKET CONTEXT:**

- IN THE **HIGH RANGE** OF FACILITIES AND PRICE.
- **JUSTIFICATION** FOR TICKET **OPTIMIZATION** BASED ON EXISTING FACILITIES.



SUMMARY & CONCLUSION

CONCLUSION:

- ❑ The study explored **four operational scenarios** aimed at optimizing costs and enhancing revenue.
- ❑ Key findings show that **strategic facility upgrades** (e.g., increasing vertical drop) can support **price increases** and **revenue growth**.
- ❑ Some proposed changes (e.g., expanding snowmaking) had **no significant impact** on pricing power or revenue.
- ❑ **Selective closures** of runs, if paired with cost-cutting measures (e.g., related lifts), may reduce expenses without hurting revenue.
- ❑ Further analysis requires **complete operational and customer data** to improve model accuracy and independence.
- ❑ A **decision support tool** is recommended to visualize scenario outcomes and assist strategic planning.