



Big Mountain Resort Weekend Ticket Price Analysis

June 7th 2020

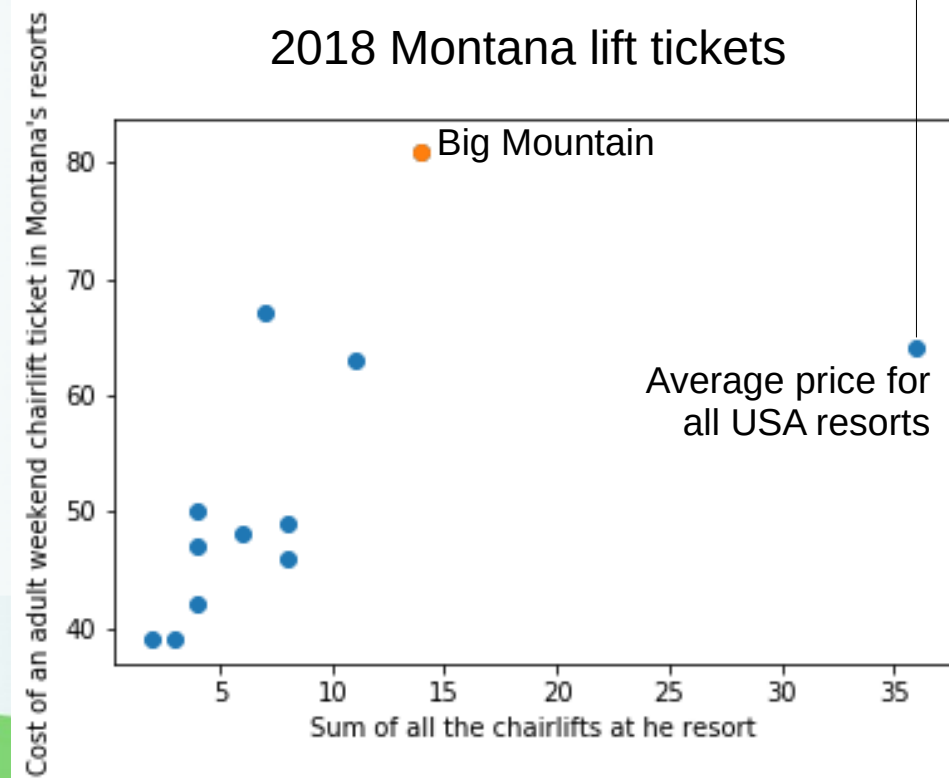
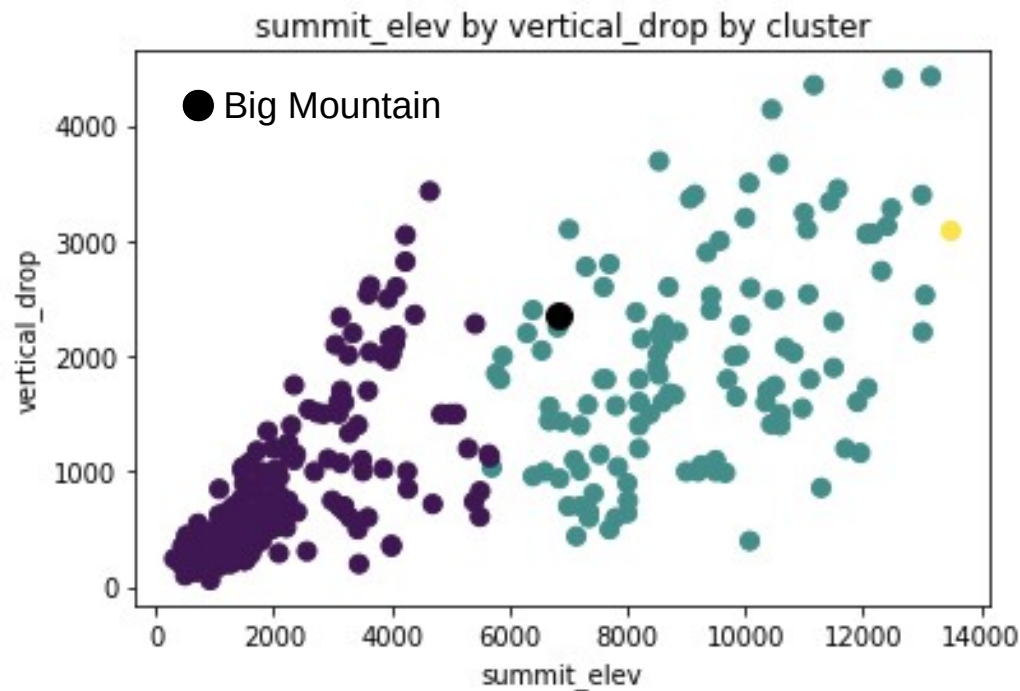
Problem Identification

- \$1.54M/year deficit to operate new lift
- 300k/year park visitors
- To keep ROR constant we must raise ticket prices at least $\$1.54\text{M}/300\text{k} = \$5.14/\text{ticket}$
- Is this price increase reasonable given Big Mountain Resort's amenities and competitor's pricing?



Recommendation and Key Findings

- Yes, the data supports an increase of up to 7\$.
- Largest driver for price is a combination of vertical drop and summit elevation.



Modeling and Analysis

- Used 2018 ski data
 - 330 USA resorts samples
 - 26 variables: Resort's characteristics
- Target variable: Adult Weekend Chairlift Price
- Missing price data was imputed with the sample mean. Big Sky Resort price data was missing (largest competitor in Montana).



Modeling and Analysis

- $IQR \times 1.5$ proved to be too harsh for removing outliers.
- Only a handful of outliers were removed in a case by case basis.
- Base elevation variable was dropped as it correlates 98% with summit variable.
- Data split: 75% training, 25% testing



Modeling and Analysis

- Used linear model regression.
- Selected model explains 94% of the variance, and has a 5.1 Mean absolute error.

10 most important variables
that drive chairlift price

	Coefficient
AdultWeekday	20.104048
clusters	2.633377
vertical_drop	1.948226
triple	1.369334
Runs	1.319585
surface	1.201067
daysOpenLastYear	1.170219
quad	1.141201
averageSnowfall	0.808173
fastQuads	0.669806

	Explained Variance	Mean Absolute Error	Features Dropped
Model			
Model 1	0.941232	4.877462	base_elev
Model 2	0.935345	5.069791	base_elev, state
Model 3	0.935736	5.088638	base_elev, state, summit_elev

Model Selected



Summary and Conclusions

- It is reasonable to increase Big Mountain weekend chairlift ticket price up to 7\$ to makeup for the new lift operation cost.
- I suggest we study the history of Big Mountain resort price increases and past customer sentiment if available to minimize risk of temporarily losing customer base after price increase.

