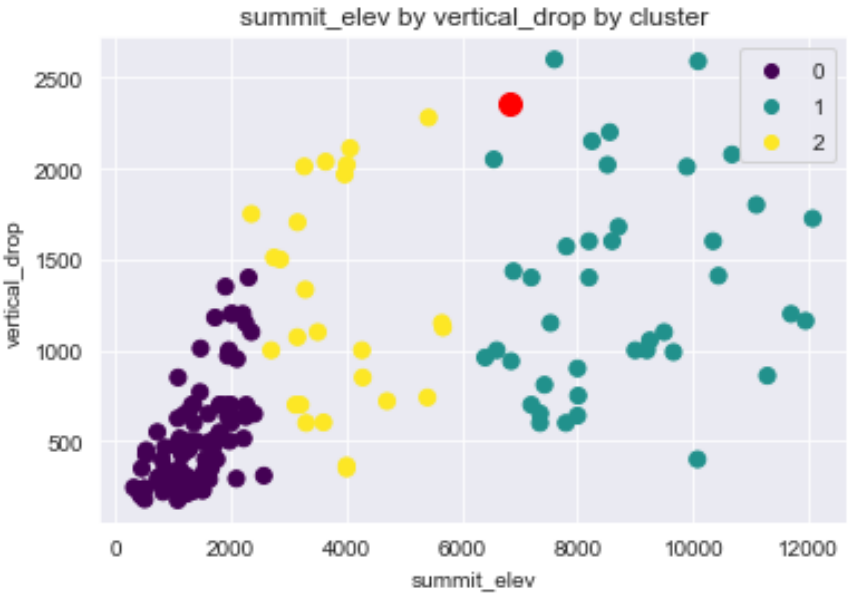
Big Mountain Resort Report

Big Mountain Resort is in north-western Montana, the resort was first opened in 1947, and it offers 105 named trails, vast bowl, and tree skiing. The snow sports in Big Mountain Resort are serviced by 11 lifts, 2 T-bars, and one magic carpet. Big Mountain Resort has recently installed an additional chair lift to increase the distribution of visitors across the mountain. The increase of the lift increased the operation cost of the lift by $1,540,00 this season. Big Mountain Resort needs to find a way to increase profit by up to 9.2% by the end of this ski season.

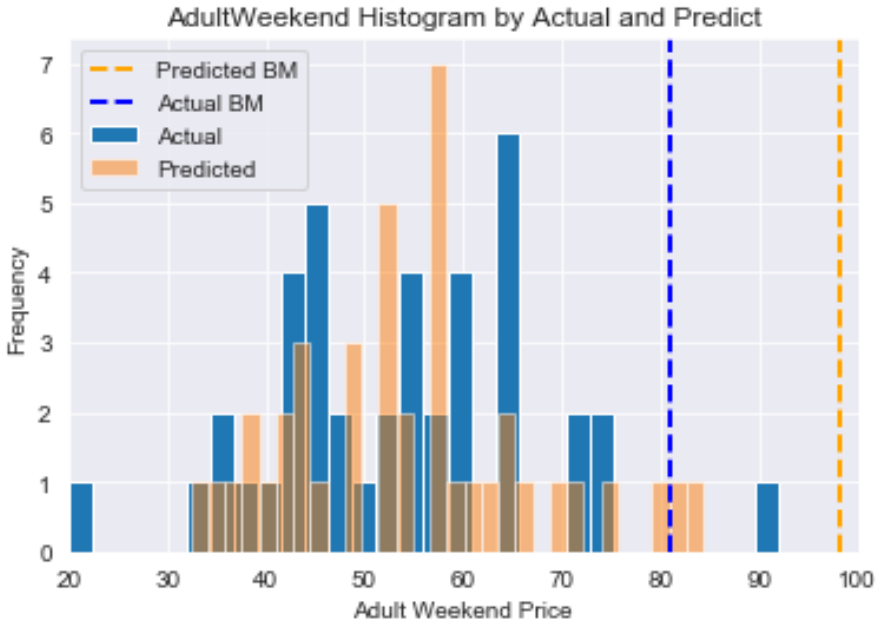


<Figure 1>

In the capstone project, unsupervised machine-learning model K-mean clustering was implemented to find the count of clusters and analyze by the cluster group. Figure 1 scatter plot represents the relationship between variable “vertical_drop” and “summit_elev” by cluster group. There are three cluster groups and the groups are separated by “summit_elev.” The cluster 0: purple is plotted below “summit_elev” 3,000, the cluster 2: yellow is plotted between “summit_elev” 2,000 and 6,000, and the group 1: green is plotted over 6,000 in “summit_elev.”

The red plot in figure 1 implies Big Mountain. The plot of Big Mountain Resort is located very close to the cluster group 1. The cluster group 1 indicate high “summit_elev” in figure one, which states

that big mountain has high “semmit_elev” compare to other resorts. Not only “summit_eleve” is high, but also “vertical_drop” is more extensive than other resorts, as seen in the scatter plot there are only two resorts with “vertical_drop” larger than Big Mountain Resort.



<Figure 2>

Supervised machine-learning model linear regression was applied to compare the difference between the actual price of “AdultWeekend”(Adult weekend lift price) and predicted rate of “AdultWeekend.” Figure 2 is the histogram of predicted and actual value of the “AdultWeekend” variable; the blue dotted line indicates the actual value of Big Mountain “AdultWeekend” and the orange dotted line indicates predicted value of Big Mountain “AdultWeekend”. There isn’t a large difference between predicted value histogram and actual value histogram in “AdultWeekend” in overall resorts, which proves high accuracy in the model. The actual “AdultWeekend” value of Big Mountain is $81, and the predicted value is over $98, the predicted value is about $17 higher than the actual value.

In conclusion, it is good to increase the adult weekend lift price up to $98. The Big Mountain Resort has a high “summit_elev” level, and high “vertical_drop” compare to other resorts in the dataset, which indicates the resort contains longer and higher ski route than other resorts. Besides, outliers in the dataset weren’t counted toward visualization. The price may seem high; however, there are resorts already more top than Big Mountain Resort.