**Guided Capstone Project Report**

From performing data wrangling on the ski resort data, we determined that our primary aim was to determine the adult weekend ticket price. Additionally, we have also removed unnecessary columns such as *fastEight,* which had too much missing data, and *AdultWeekday*, which was repetitive as AdultWeekend represents nearly the same information but with less missing data.

By performing exploratory data analysis on the ski data, we have determined that the state column is unnecessary as it did not have any patterns regarding a strong correlation with ticket price such as in the following resorts\_per\_state graph:

A screenshot of a computer

Description automatically generated with medium confidence

Through preprocessing and training the ski data using the random forest model to select the best features, we end up with the following eight features in order of most positively correlated with ticket price to least:

* vertical\_drop
* Snow Making\_ac
* total\_chairs
* fastQuads
* Runs
* LongestRun\_mi
* trams
* SkiableTerrain\_ac

From comparing those eight best features of Big Mountain’s with its competitors, we obtain the following graphs:

Chart, histogram

Description automatically generated Chart, histogram

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Chart, histogram

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Chart, histogram

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Chart

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From these graphs, we can see that Big Mountain is always in the top percentile of the distribution of each graph (with the exception of the trams graph where nearly all resorts have the number of trams as zero). Big Mountain’s ticket price in comparison to other resorts is shown below:

Chart, histogram

Description automatically generated

We can see that Big Mountain’s placement in its ticket price is around the higher end in the middle of the distribution, which is not representative of Big Mountain’s top percentile placements in the eight best features graph listed above. This suggests that Big Mountain is undercharging its ticket price relative to its competitors, which is further supported by the fact that its current price of $81.00 is far less than its modeled price of $95.87.

Furthermore, with the additional operating cost of $1,540,000 from the installment of the new chairlift, Big Mountain needs to increase its current ticket price by at least $0.88 to cover that amount assuming 350,000 average visitors buying 5 day tickets for the season.

Ultimately, based on the results from modeling the ski data, it is heavily recommended that Big Mountain seeks to increase its ticket price.