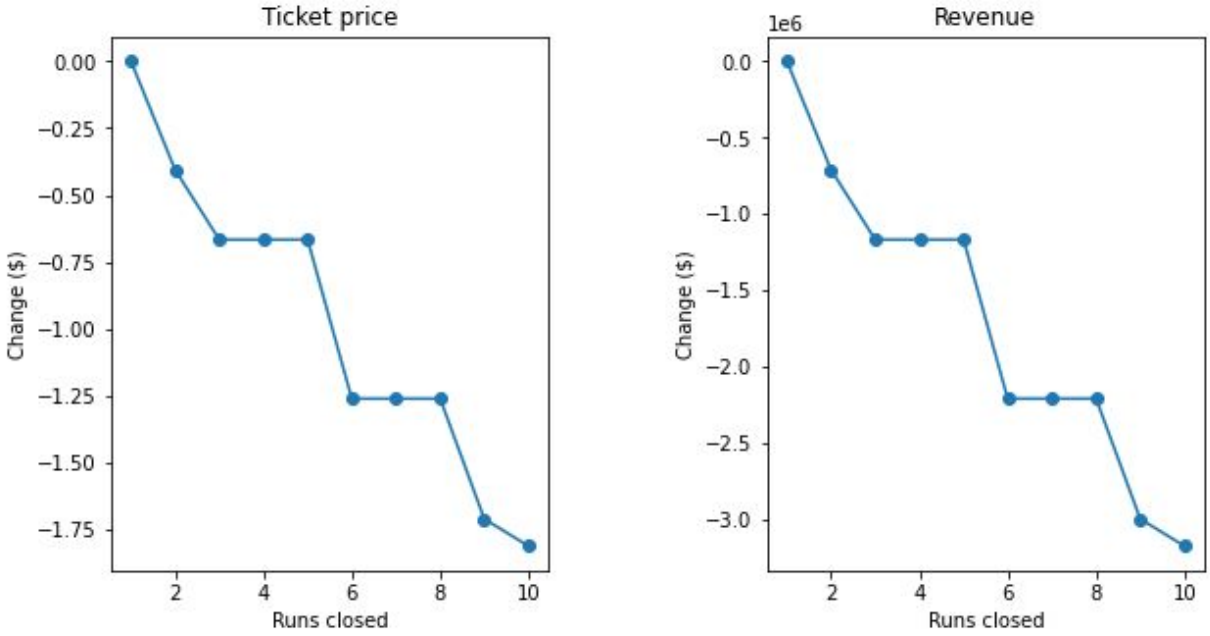
Big Mountain Resorts asked for scenarios which will optimize revenue and identify opportunities to adjust its pricing model, as well as capitalize on some facilities. This included the potential for installing an additional chairlift, estimated to cost $1.54M yearly in operating costs. There were also four proposed potential scenarios for either cutting costs or increasing revenue. This documentation will review the proposals and findings of the predictive model.

Scenario 1

Close up to 10 of the least used runs. The number of runs is the only parameter varying.



Scenario 1 only works if one run is closed, as there is no difference in predicted ticket price. Closing additional runs reduces support for ticket price and revenue.

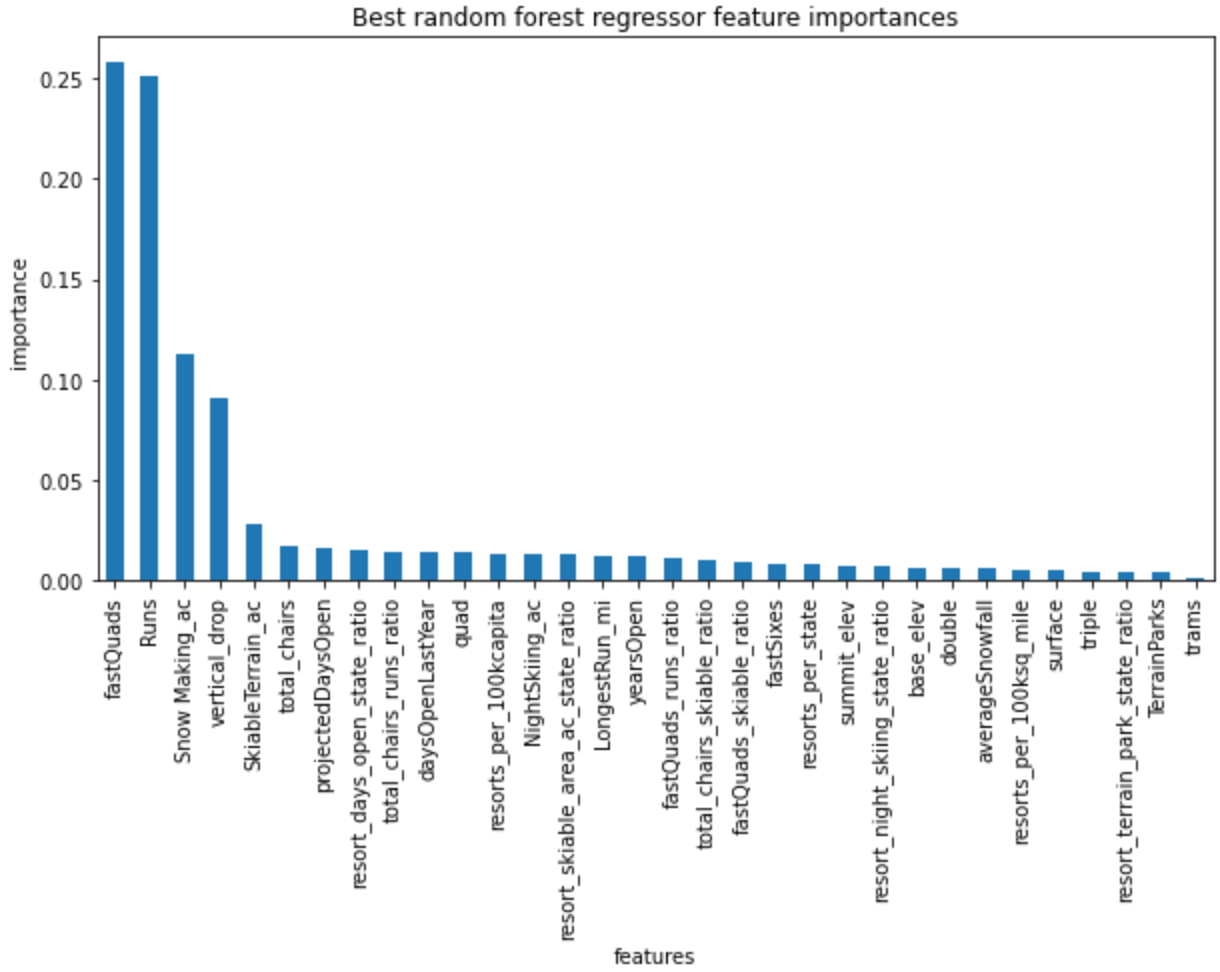
Scenario 2

In this scenario, Big Mountain is adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift.

This scenario increases support for ticket price by $1.99.

Over the season, this could be expected to amount to $3.47M. This covers the additional $1.54M expense of adding an additional chair lift.

This is the best scenario for increasing revenue out of the proposed four. This is further supported by the random forest model indicating that number of runs and vertical drop are in the top 5 biggest influencers of ticket price.



Scenario 3

In this scenario, you are repeating the previous one but adding 2 acres of snow making.

This scenario increases support for ticket price by $1.99.
Over the season, this could be expected to amount to $3474638.
The revenue change is equal to scenario 2, but incurs additional expense of snow making.

Scenario 4

This scenario calls for increasing the longest run by .2 miles and guaranteeing its snow coverage by adding 4 acres of snow making capability.

No difference whatsoever. Although the longest run feature was used in the linear model, the random forest model (the one we chose because of its better performance) only has longest run way down in the feature importance list.

Conclusion

In conclusion, Big Mountain Resorts should install a new run, increase vertical drop by 150ft, and install a new chairlift to support the additional people needed to transport to the new run. These improvements allow for an increase in ticket price due to them all being important factors in determining ticket price. This is shown in the random forrest regression model.