***Customer Brand Preferences Report(C3-T2)***

1. **Overview of the Report**

The goal for the report is based up what have been asked by Chief Technology Officer, Blackwell Electronics

* For each method, did you experiment with adjusting the input values until you did not see an improvement in the error metrics?
* Did you include a brief explanation of your rationale for selecting the training model you did?
* Did you provide a simple chart that displays which brand Blackwell customers prefer?
* Did you include the logs of the results of each classifier run?

1. **Data**

* There are 9,898 data in the data frame with 7 variables as it is shown in the below result.

Text

Description automatically generated

1. **Analysis**

The data were analyzed based up on what have been asked.

* For each method, did you experiment with adjusting the input values until you did not see an improvement in the error metrics?
  + Yes, I had to change the data type for brand from integer to Factor.

Logo

Description automatically generated with medium confidence

Text

Description automatically generated

* + Result after changing the data type.

Text

Description automatically generated

* Did you include a brief explanation of your rationale for selecting the training model you did?
  + The prediction results for both models (Random Forest and GBM) are almost the same as per resample\_Results. The P- value is above 0.05.

|  |  |
| --- | --- |
| Graphical user interface, text, application  Description automatically generated | Chart, box and whisker chart  Description automatically generated |

* Did you provide a simple chart that displays which brand Blackwell customers prefer?
  + The below charts show the Customers Brand preference (0- Acer, 1-Sony). As we can see in all of the charts Customers prefer to have Sony over Acer.

|  |  |  |
| --- | --- | --- |
| Brand Preference | Code | Result |
| The whole  data set | Text  Description automatically generated | A picture containing text  Description automatically generated  Shape, square  Description automatically generated |
| Random Forest Model | A picture containing logo  Description automatically generated | A picture containing diagram  Description automatically generated  Square  Description automatically generated with medium confidence |
| GBM Model | A picture containing text  Description automatically generated | A picture containing text  Description automatically generated  Square  Description automatically generated with low confidence |

* Did you include the logs of the results of each classifier run?
  + The result for logs for each classifier is as shown below. The results are quite the same.

|  |  |
| --- | --- |
| Text  Description automatically generated | Text  Description automatically generated with medium confidence |

1. **Conclusion and Recommendation**

As per the result from the prediction analysis it can be concluded that Customers prefer to have Sony more than they want to have Acer. So I recommend that Blackwell Electronics will be more profitable if more attention is given on increasing the number of production for Sony Brand.