Case Study 2

STAT 580

The Awesome Bakery Company is concerned because the Newbie Bakery just opened two streets away. In an effort to ensure customer satisfaction the Awesome Bakery wants to test its chocolate chip cookies to make sure the cookies taste the best. Specifically the bakery is interested in determining if people can taste the difference in chocolate chip cookies with varying amounts of sugar and varying amounts of freshness. Nine batches of cookies were made, following the bakery recipe, except the amount of sugar. Each batch was randomly assigned to one of three treatments: half the normal sugar, the normal amount of sugar, and double the amount of sugar.

On the day the nine batches of cookies were baked, the researchers handed out five cookies from each batch (a total of 45 cookies) to people in the bakery and asked them to rate the cookies from 1 to 10 with 1 being inedible and 10 being the best. The rest of the cookies were stored for 1 day. One the second day (after 1 day of storage) 5 more cookies from the original nine batches were handed out to customers in the bakery who were asked to rate them from 1 to 10. The same thing was done on the third day.

The bakery has provided you with the results of the study and asked for your help in addressing the issue of how much sugar and how long cookies can be stored.

Your final case study must include the following:

Study diagram

EDA (graphs, tables and explanations)

Rational for inferential technique

Explanation of the inferential technique

Code

Explanation of code

Output

Explanation of output

What recommendations can you provide Awesome Bakery about the amount of sugar and storage time for the chocolate chip cookies so that they don’t loose customers to Newbie Bakery?