To: Blackwell Electronics’ CTO Danielle Sherman

From: Alma P. Martinez, Data Analyst/Scientist

Date: August 25, 2021

Subject: Customer Demographics Report

Body:

Are there differences in the age of customers between regions?

By analyzing the data, we can say that, yes there is differences in the age of customers between regions. In the visualization below we can see that the ages from each region vary, for example, region 1 (North) starts on less than 20 years but also ends on less than 80 years. On the other hand, for region 4 (West), the highest number we get is less than 70 years.

Chart

Description automatically generated

If so, can we predict the age of a customer in a region based on other demographic data? By getting the average age per number of items for examples is possible to see that the overall results are similar, therefore age cannot be determined by analyzing it with another feature. As a result, we cannot predict the age of a customer in a region based on other demographic data.

Table

Description automatically generated

Is there any correlation between age of a customer and if the transaction was made online or in the store?

In an easier way, the correlation will show us the strength of a relationship between 2 or more things or in this case variables as age of a customer and if the transaction was made online. The closer to 1 the correlation is, the stronger the relationship and as the score decreases from 1 the weaker the relationship. On this case we can see that based on a score of -.17, which is less than 0 and therefore on the opposite side of 1, there is no correlation between the age of a customer and if they buy online or in-store.

Text

Description automatically generated

Or do other factors correlate to an online or in-store transaction? No, there is no other factors that correlate to an online or in-store transaction. Is possible to see this on the table above by looking to the correlation scores. With the visualization below we have the example of amount and in-store per region. The graph show us that there is no relationship between the amount and if the purchase is online or in-store.

Chart, bar chart

Description automatically generated

Respectfully,

Alma P. Martinez