Blackwell Electronics

Memo

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| To: | Danielle Sherman |
| From: | Richard Valades |
| cc: | Name |
| Date: | 3/29/2022 |
| Re: | Insights on customer transaction data |

Hello Danielle,

I’ve reviewed the data file of customer transactions you provided and can report some findings based on my analysis.

The main questions you asked were: “Do customers in different regions spend more per transaction and which regions spend the most/least.” “Is there a relationship between the number of items purchased and amount spent?

In answering your first question, I created a stacked column chart to illustrate the relative proportionality of amounts spent in groupings of $0 - $1000, $1000-2000 and $2000+ across all regions.

Chart, bar chart

Description automatically generatedFrom the chart, you can see that the West Region generates the highest number of transactions and has proportionally larger amounts of sales per transaction. This contrasts with the South Region, which demonstrates high transaction counts but relatively lower sales per transaction.

Chart, scatter chart

Description automatically generatedAnother way we can evaluate spend by region is to plot the density of transaction amounts across the regions. You can see that the sales amounts for region 2 (South region) are concentrated in the $0-$500 range, whereas in the West region, the concentration is much more dense in the $1000-$2000 range.

In answering your second question, I ran a correlation test to determine whether there is a relationship between items and amounts. In the heat map visualization below, all the features of the data are represented.

Chart, treemap chart

Description automatically generated

If we look at this matrix and compare “items” and “amount,” the intersection of those two features shows no correlation between the two.

In contrast, we can see a strong correlation between region and amount, and even a negative correlation between age and amount.

There is a great deal more data exploration that we should pursue, but for now I hope this summary has been beneficial to you. Thanks!

Richard Valades