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D210: Representation and Reporting
Prof. Smith
Jan 13, 2025

A1:

The dashboard is included alongside this document in the submission. It can also be accessed from Tableau Public from this [link](#).

A2:

The datasets are included alongside this document in the submission. It uses the churn dataset, and a census dataset pulled from an online source.

A3:

1. Click this link to access the dashboard: [Task 1 Dashboard](#)
2. (OPTIONAL) The dashboard can also be accessed by downloading and installing Tableau, then opening the attached .twb file.

A4:

The dashboard is designed to be easy to use and understand. It is a one-page dashboard that presents important key metrics about churn related to the customer base.

B:

Panopto Link is included in the submission.

C1:

1. Explain how the purpose and function of your dashboard align with the needs outlined in the data dictionary associated with your chosen data set.

The purpose and function of this dashboard align with the needs outlined in the data dictionary associated with our chosen data set because it gives insight into key attribute related to customers that have churned and their attributes. There are four different data representations included in this dashboard to assist in executive decision making. The visuals mostly assist with understanding if there is a specific gap in the customer base where there are customers that are churning more often than others based on certain attributes like gender or age.

C2:

2. Explain how the variables in the additional data set enhance the insights that can be drawn from the data set you chose from the provided options.

From the additional dataset, I included two visuals that use data from the census dataset. These two visuals are: Census Average Income by Gender and Census Average Income by Age. These two visuals provide additional insight by providing us with data outside of what we have internally within the company dataset. For instance, we can determine if there a certain working age demographic that tends to have more disposable income than others. If the graph is flat across the graph, then maybe a lack of current customers in a certain age demographic should be fixed as the company may be missing out on a lot of business in a certain age group. Gender can also be used to understand whether or not a certain gender has more disposable income than another. According to the dataset, the average male income is about five thousand dollars higher than the female. The business would then have to decide if this is a significant enough deviation to target different customers based on attributes.

C3:

3. Explain **two** different data representations from your dashboard and how executive leaders can use them to support decision-making.

The first data representation I will go over is the Count of Churned Customers by Gender. In this data visualization, we can see the count of UID for churned customers in the churn database. In this visual, we can see that there are more male customers that have churned compared to female customers.

The second data representation I will go over is the Count of Churned Customers by Age. Executives can use this visualization to see if there is a certain age demographic that is churning at a higher or lower rate compared to other age demographics. If there is a low churn rate in a certain age demographic than it may be useful for executives to understand why that certain age demographic is not churning as much compared to others. If a certain age demographic has a high churn rate, maybe the executives need to focus on retention of that specific age demographic and take lessons learned from other age demographics with low churn rate and apply how the business treats the low churn demographic to the high churn demographic. Or maybe, the business needs to shift focus and market more significantly to low churn rate demographics.

C4:

4. Explain **two** interactive controls in your dashboard and how *each* enables the user to modify the presentation of the data.

The two interactive controls that I included in the dashboard are buttons that allow the user to zoom in specifically on either census focused visualizations or churn focused visualizations.

C5:

5. Describe how you built your dashboard to be accessible for individuals with colorblindness.

The dashboard does not overly rely on colors to segment different sections. Similar colors are used throughout, and the divisions are focused on outlines so that the visualizations are understandable for everyone.

C6:

6. Explain how **two** data representations in your presentation support the story you wanted to tell.

Two data representations in my presentation that support that story I want to tell are Count of Churned Customers by Age and Census Income by Age. The Count of Churned Customer by Age visual helps us understand if there is potentially a certain age demographic that may currently be underserved in the customer base. If there is, there would be a large increase in values around a certain age range. As its overall pretty even across the graph, there is not too much concern for this being an issue. The second visual I wanted to look at was Census Average Income by Age. This is useful information for an executive to have as it helps them understand what demographic potentially has disposable income that they can spend on the company's products, and then the company can focus on making more products tailored to that demographic. These charts can be used together, as if there is a high churn demographic with high disposable income, maybe there is a specialized service that needs to be provided to that customer in order to better retain them.

C7:

7. Explain how you used audience analysis to adapt the message in your presentation.

I used audience analysis to understand what metrics and data I needed to focus on. Knowing that this is a report that is intended to be used by an executive, I don't want to make visualizations that are overly cluttered or too technical. An executive is going to want a quick overview that they can glance over to get a decent understanding of the situation.

Someone in that position is often busy and inundated with meetings, so they do not have time to go through and do any data analysis themselves for the most part.

C8:

8. Describe how you designed your presentation for universal access by *all* audiences.

I designed my presentation to be universal access for all audiences by keeping the color schemes simple and not overly relying on various different colors to tell key parts of stories in the visuals. I also made the button obvious and simple to understand show that less technically oriented users can still properly consume data from the dashboard with ease.

C9:

9. Explain **two** elements of effective storytelling that you implemented in your presentation and how *each* element was intended to engage the audience.

Two elements of effective storytelling that I implemented in my presentation are telling a story. I told a story in introducing myself, and also in walking the audience through the data. By creating a narrative, it is easier for the audience to follow along with numbers and data, rather than trying to comprehend it all off of technical speak. Another element of effective storytelling that I used are examples. By creating examples of someone that would be representative of the demographic that an age demographic might represent, it helps the audience further visualize and humanize the data and the people that the data represents.

D: SOURCES

<https://www.kaggle.com/datasets/tawfikelmetwally/census-income-dataset>

<https://app.datacamp.com/learn/custom-tracks/custom-d210-representation-and-reporting>