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D210

Performance Assessment

*Part 1:*

*1.  Provide both data sets that serve as the data source for the dashboard.*

Datasets are included with download, and external dataset link is included in sources.

*2.  Provide step-by-step instructions to guide users through the dashboard installation.*

To install and use the dashboard:

1. Create a Tableau account at <https://www.tableau.com/>.
2. Download Tableau desktop.
3. Open the “TCina D210.twb” workbook file from within Tableau.
4. If it isn’t selected, click the “Dashboard 1” tab at the bottom of the screen.

*3.  Provide instructions to help users navigate the dashboard.*

The dashboard consists of 6 main components.

1. Total churn barchart.
2. Churn by region KPI
3. Median Income by region KPI
4. Churn Map
5. Churn Percentage Bar Chart
6. Filters

Component 1 is static and not interactable.

Components 2 and 3 reflect filtered regions.

Component 4 can be used to filter the selection of states displayed by the churn percentage bar chart and the KPI tables.

The available filters are as follows:

1. Region filter: filter the map and bar chart by region of the US.
2. Median income filter: filter the map and bar chart by median income range.
3. Map filter: the churn map is interactable and can be clicked to select individual states.

*Part 2:*

Panopto Video: <https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=f9a5eb24-1d6c-4871-ba81-b1d2017b66a4>

*Part 3:*

*C.  Write a reflection paper to demonstrate your understanding of data representation and reporting by doing the following:*

*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 data dictionary focuses on retaining highly profitable customers and reducing customer churn, as it is more expensive to acquire new customers than it is to retain existing ones. The dashboard reflects this need by modelling the relationship between churn and median income in different states and regions of the US. It is easy to see which areas have the highest median income and the median income disparity between the group of customers that have and have not churned in each state or region.

*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.*

The data dictionary mentions that the company has a panel of region vice presidents, so splitting the country into regions allows users to focus their efforts on the regions with the most churn and highest loss of profitable customers.

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

The churn amount by region KPI table provides the simplest representation of which regions of the country are performing the worst in terms of total loss of customers. This can be used by regional VPs to determine how their region is performing.

The churn map is a view primarily focused on the number of customers that have churned in each state and region. It provides insight into which individual states are experiencing the highest loss of customers and can be used to analyze disparities in churn between individual states and regions.

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

The churn map is an interactable filter that can be used to select individual states. The states chosen can be compared directly using the churn percentage bar chart.

The median income filter can be used to view median income ranges between states, as well as between customers who have and have not churned. It is most useful when viewing the churn percentage bar chart, but the churn map also reflects which states have churned customers in that median income range.

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

The primary color scheme of the dashboard is red/blue, which is a colorblind friendly palette. The table information is presented numerically without ambiguity.

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

The median income by region KPI table and churn percentage bar chart show the disparity between churned customers and the states and regions where the median income of churned customers is higher than the median income of customers that did not churn. In more than half of the regions, the median income of churned customers is higher than the median income of customers that did not churn. There’s a clear relationship between higher median income areas and customers that churned.

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

The audience is a group of data science peers in the telecommunications industry. Data science language and concepts will be understood by this audience, and generally don’t require a lengthy explanation. There’s no need to explain what things like median income or churn mean, as these terms are self-explanatory to this audience.

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

The presentation is hosted on Panopto which is not limited to specific devices, comes with built in captions for deaf audiences, and only requires a web connection to view or download to view offline.

The dashboard itself comes with instructions on its installation and use, uses a colorblind friendly palette for colorblind audiences, and uses intuitive visualizations to represent the data.

*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 used in my presentation are as follows:

1. My self-introduction serves to validate why I should be the one speaking on the subject and show that I have the relevant experience to explain what I’m talking about.
2. I motivated the concept by explaining the purpose of the dashboard and why the relationship it was trying to present was meaningful and should be analyzed, as well as the purpose of the two main visual components of the dashboard and how they can be used together to observe that relationship.

*D.  Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.*

US Regions dataset: <https://www.kaggle.com/datasets/omer2040/usa-states-to-region?resource=download>