D210: Data Dashboard and Story Telling

November 22, 2021

**Part 1 - Guide**

1. Both datasets are attached
2. For installation, users can just double click the tableau table and it will open and run. This will start right at the dashboard 1 which is the initial dashboard, but users will be able to move around at their own leisure and see the backend of what is being presented if so desired, if not, then they can just stick to the dashboard to get the full story.
3. In the dashboards, there should be 3 interactive stories at the bottom. If the user navigates to the bottom of the window, they will see all the slides that are used in the project. The main ones that are to be used will be “Story 1”, “Story2”, and “Story 3”. If you select them, there should be a few little boxes up on the top right that provide options for interactivity within the story. Story 1 has options to see who has anxiety or not where you can select “Yes” or “No” to see the objects more clearly which would be of great use to people who are colorblind. The genders also have very distinct icons to distinguish each gender clearly on the graphs. The left graph on Story 1 compares patients who are overweight and have anxiety while the right graph depicts backpain along with anxiety. Story 2 gives a couple maps that showcase the United States and their obesity numbers and percentages. The top map of the US shows the absolute count of patients with obesity in the dataset. The bottom chart is sized to show the ratio of total number obese and shaded to show higher or lower percentages. To the right, the user can interact by selecting a state from the drop-down menu and seeing it highlighted on the map and the chart to show how they’re related. The final story (Story 3) gives a graph of gender and income by state along with showing anxiety levels. To the right, users can toggle whether anxiety is shown or not, or if they want to highlight a specific gender to find more information on.

**Part 2 - Video**

1. Panopto video: <https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=2c4461bc-3fa4-4e19-8121-adec015bbb06>

**Part 3** **– Reflection**

1. For this analysis, I wanted to do a comparison of price of care of the different genders in different geological regions with different pre-existing conditions. The data sets I chose to use are the medical data set that was provided by WGU and the other medical set was provided by tableau which helped enhance the analysis. The purpose of my dashboard shows how preexisting conditions and gender and income have different effects on price to better understand who has higher prices in the medical system.
2. By using the extra dataset provided by tableau, I was able to provide more data towards the gender datapoint along with some more geographical data along with more data about patients being overweight or having anxiety. Since both datasets had those datapoints, it was a great addition to really unlock the extra observations that appeared during my analysis.
3. The first dashboard that executive leaders could use is my map of the US along with the heatmap to determine obesity in the country. This one demonstrates where most obese patients are and could help allocate resources to help combat obesity in those areas. It also shows the percentage of obese patients in the below heatmap which would serve to help know the obesity rate per capita and could help decide whether to focus on absolute numbers, or rate of obesity.
4. One interactive control is the ability to filter by state on the sides of my map chart. This tool is useful in executives want to know the specific number of obese patients, and obesity rate in a particular state to make better decisions. Another tool to help executives modify the data is in the chart that plots bar charts for all 50 states based on income and has filters to the side that can filter out specific genders, along with filtering out patients with anxiety to help see how income by gender could be affected by if the patient has anxiety. The chart could also be clicked on the find specific chunks and if they’re male, female, nonbinary, and figure out the income that group of people make in total.
5. To make sure colorblind people could access my dashboard, I used colors specifically designed for colorblind people. It makes the colors show up distinct for different forms of color blindness so that they can be seen and understood by anyone. A couple charts I also used different shapes to help identify them if the same shape would be too easy to be confused by.
6. The story I mainly wanted to tell was that preexisting conditions affect the prices of healthcare. My data analysis did show that there seems to be a discrepancy for overweight people from the first dashboard. This one showed that the total charge a patient was getting if they were overweight was quite higher than backpain. It appeared that not having backpain added to the cost which seems counter intuitive. Since I found that people who were obese and were anxious or not anxious had higher total charges, I chose to dig into those variables more. The next part of the story I wanted to tell, was to see how geographical location affected cost and obesity rates. By using a geographic map of the US and comparing it to number of obese patients and the percentage of patients who were obese, I was able to draw conclusions that costs in areas with higher obesity rates had higher costs. This gets confirmed in my third graphic which when toggling anxiety, you can see that the costs are distributed evenly based on population, which can help eliminate anxiety as a factor in the cost of care calculation. Since I was able to eliminate anxiety by comparing it to cost and population, it was clear that obesity did affect the cost that a patient would incur on a visit.
7. For my presentation I knew I’d be working with executives who already are aware of what the numbers and categories of data are. Since they were familiar with the terminology, I was able to tailor my data story towards them so that they could make better business decisions and could help clear up the noise that is present in the data. By tailoring it towards them, I could use the infographics to help breakdown costs and biases in pricing practices/total costs from obese patients compared to other patients with different medical ailments.
8. For a universal access to the presentation, I was able to use colors that suit colorblind people, as well as using graphics that are simple to understand. If I tried to use something far more complicated, the message could get lost or distorted which would make the universal understanding of the presentation go over very poorly. By taking in the audience expectations, I was able to present the data in an interesting, yet accurate way so that everyone from executives to non-executives would be able to interpret it.
9. The first big element I wanted to use to tell a story was to use a map of the United States. Since my audience is from the US, I figured showing them something familiar would help them get a complete grasp on what is occurring in the data. I also decided to use the grid map and the US map in the same slide since it really helps show the breakdown of number of obese people vs percentage that is obese. The main goal to make this readable, was to use simple diagrams that don’t have too many factors being displayed at once. If too many factors get displayed it causes the audience to get confused on what is the target of the analysis. By using a heatmap overlayed with the US, along with another grid showing the proportions of obese vs nonobese people in a state, and putting them in the same dashboard, it simplifies the analysis and makes it easier for others to interpret.

**Sources:**

<https://www.tableau.com/support/help> Tableau Help, Tableau

<https://www.youtube.com/watch?v=JsDxcEH5VeA> Tableau Story, Visualize Intelligence

<https://www.youtube.com/watch?v=jEgVto5QME8> Tableau in Two Minutes, Penguin Analytics