Data Visualization Project
Build Data Dashboard - Cindy Gosal (Sendy)

The link to the Tableau story includes three dashboards for the following summary below.

1. Which states have the most employment and unemployment?

- **Link –** Unemployment and Employment Top N by States Analysis dashboard.

- **Summary - Two dynamic bar charts were created inside the first dashboard** to show what state is at the top and bottom in unemployment. However, you can slide the parameter to show the state to analyze.

  Even though it used unemployment data, the second bar chart shows the top for employment (the bottom of unemployment means the top of employment).

  Puerto Rico is in the highest unemployment with an average of 19.4 percent, followed by Mississippi at 12.0 percent. In contrast, New Hampshire has the lowest unemployment at 5.8 percent, which makes it the highest employment from all states. The second highest employment is in South Dakota at 5.6 percent.

  From this visual, New Hampshire is an excellent place to live and work, and the employment rate drives the conclusion that the job chance is highest in this state.

- **Design –** I chose bar charts because it helps show categorically with numerical values inside of them. A straightforward database and the bar chart's space in its design make it easy to show the visualization, and it's understandable. Orange is perfect to use in this kind of visualization. It's demonstrated through the changes in the data. I added the ethnicity.

- **Resources –** New Hampshire was ranked one of America's safest and healthiest states.

2. How do income and poverty look across America?

- **Link –** Ethnicity map analysis by State related to unemployment, poverty, and income dashboard.

- **Summary –** Treemaps and Symbol maps are used in this dashboard to understand the answer to the question. Understanding how income and poverty look across America can be seen by looking at the symbol maps and by the treemaps.

The treemaps show the average income and poverty across the country. We can see by hover the state's name to get the value of those two. I use blue because I want to use a different color from the first dashboard to show the difference in the data. In this treemaps, the darker blue shows that income is low and poverty is high.

Puerto Rico has the highest Poverty average of 49,37 percent and the lowest in income, around 17.940 on average in a year. At the same time, the highest income is surprisingly not New Hampshire, as we found in the first dashboard. Connecticut has the lowest in poverty at 9.40 on average, but not the highest in income. The highest in income is New Jersey at 73.014 average in a year.

We see more between unemployment, poverty, and income in symbol maps. Puerto Rico has the highest poverty and low income, probably caused by the highest unemployment. However, we need to dig deeper to know the root of this.

Ethnicity is included in the data to show if there is a connection between the race and to three of them.

We found that among all those states, the average black ethnicity in the District of Colombia is in the first rank on income and poverty. This probably causes the average unemployment and employment by black ethnicity to be almost balanced.

- **Design –** I use treemaps to show the general ethnicity inside every state, followed by average poverty and income, so that we can compare the composition of each state.

  You can see when you hover over the state inside a tooltip that the value of each state consists of income, poverty, and ethnicity. The symbol maps can also find the ethnicity in a pie chart.

- **Resources -** N/A

3. What is the correlation between unemployment, income, and working at home by states in the US?

- **Link –** Correlation Analysis between unemployment, income and work at home by states dashboard.

- **Summary –** In both unemployment and income or unemployment and work at home, we found a negative trend line in the scatter plot where higher unemployment means lower pay.

However, we couldn’t see a negative trend line as something is unusual. Through the second plot, we found that South Dakota, the second in employment, is the highest in work at home at 10.424 on average. From here, we see that in this state, people like to work at home, or companies most likely allow their employees to do work at home. Therefore, low unemployment doesn’t mean people go to the office.

- **Design -** Using the scatterplot to show the correlation between unemployment and income across America. Also, between work at home and unemployment. The color in the plot distinguishes each state, while the size shows the average value and ethnicity. A scatterplot is best suited here as I would like to depict the relationship between two quantitative variables. I added a **trend line** so it is easy to see the direction and magnitude of the correlation. I added a **state filter** so readers can investigate the relationship between these variables in a specific state to see whether it differs from the national trend.

- **Resources -** N/A