2015 - U.S. Census Demographic Analysis Project

Dashboard 1

The first dashboard, titled "Population Distribution," provides an analysis of the population distribution in the 2015 US Census demographic data. It focuses on the total population by state, the racial distribution of the population, the distribution of the population between men and women, and the women-to-men ratio (which is highlighted using a calculated field with an IF-ELSE statement to show whether there are more women or men in each state), and the percentage of citizens in each state.

I decided to utilize a map chart to depict population density. The darker the color, the higher the population density, and the lighter the color indicates a lower population density. The accompanying legend provides a clear illustration of the population numbers, allowing the viewer to understand the population distribution across the states easily. Additionally, hovering over a particular state displays the total population information.

I employed a bar chart to visually display the demographic distribution of various races in each state. The states are represented as rows, with the individual races presented as columns, each displaying its corresponding percentage of the population. This format makes it easy for the viewer to compare the demographic information from one state to another by simply scrolling. To maintain consistency and simplify the visual presentation, I utilized similar colors to the map chart.

I employed a stacked bar chart to visualize the population distribution between men and women in each state. The chart makes it simple to compare the population share and provides more insights when hovering over the individual color sections, indicating the total population of each gender per state. To maintain the simplicity and ease of the overall dashboard, I selected simple, visually appealing colors for the chart.

I utilized a box plot to showcase the distribution of the gender ratio by state. And each dot within the plot shows the county and gender ratio for that county. I created a calculated field to determine the women-to-men ratio and display it as a column. Additionally, I made another calculated field to display as a tooltip when hovering over the data. For instance, if the ratio of women to men is greater than 1, it will show "More women than men". If it is less, it will display "Fewer women than men", and if equal, it will show "Equal number of men and women". This provides an intuitive and easily digestible way to understand gender ratios by state.

For the purpose of displaying the proportion of citizens in each state, I utilized a treemap visualization. The treemap effectively displayed the total population of each state and the percentage of that population that was comprised of citizens. As recommended and to simplify the view, I employed a filter to limit the number of states displayed to 10 and utilized a color scheme that is more accommodating for color-blind viewers.

Dashboard 2

The second dashboard, named "Income, Poverty, and Unemployment," provides an analysis of various socio-economic indicators for states by displaying information on child poverty numbers by state, the relationship between average income and average poverty by state, and the unemployment rate by state.

For the representation of child poverty numbers, I opted to use a packed bubble chart. The aim was to display the number of children living in poverty within each state. The chart highlights states with the highest number of children living in poverty by increasing the size of the bubbles, providing a visually impactful representation of the significance of these numbers. To maintain consistency with the overall dashboard and story, I chose to use a color-blind-friendly color palette.

For the Average Income vs Average Poverty graph, I chose to use a scatter plot to compare the values of two numerical variables and to identify any relationships between the variables. The plot reveals that many states fall within the 35k to 55k average income range and the 10 to 25 average poverty range, however, there are exceptions such as Puerto Rico, which displays low average income and high poverty rates, and New Jersey which has a higher average income and lower poverty rate. To maintain consistency with the color-blind color palette throughout the dashboard, I chose to use the same color option.

For the final graph, I chose a text graph to display the unemployment rate of each state by presenting the number of employed and unemployed individuals. I aimed to keep the display as straightforward as possible in a text format and highlight the state or territory with the highest unemployment rate.

Dashboard 3

The third dashboard, titled "Transportation Dashboard," offers an analysis of transportation patterns in each state by presenting the mean commute time by state, which highlights the average amount of time individuals spend in traffic daily and a representation of the most frequently used modes of transportation for each state.

I opted to use a bar chart to show the average commute time for each state, ordered from longest to shortest, to effectively communicate the differences in travel time. I chose to keep it simple with a single color option, in line with the overall simplicity and cohesiveness of the dashboard and story.

To showcase the most widely used mode of transportation in each state, I opted for a stacked bar chart and included a legend that explains each mode of transport. This chart makes it evident which mode of transportation is most popular in each state. I maintained consistency with the overall project by using the color-blind color template.

Story -

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I constructed a comprehensive story utilizing the insights derived from the three dashboards. To enhance the visual appeal and focus of the analysis, I selected a sleek black background. To avoid over-cluttering the graphics with excessive color, I minimized the use of color and incorporated the "Color Blind" option where necessary to cater to color-blind viewers. Additionally, I included descriptive captions throughout the dashboard to provide an in-depth explanation of the analysis.