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Udacity Data Visualization Summary

Question to be answered:

Which states have the best accessibility to transportation?

Section 1: Methodology to answer the question at hand:

To answer the question of which state and their corresponding counties have the best accessibility to transportation, I have decided to use both the mean commute time for the state/county and the composite percentage of; “Average other transportation”, “Average public transit”, and “Average walk”. The dashboard I have created can answer many questions when it comes to differences in transportation methods between states and even inter state counties. I wanted the user of the dashboard to be able to make their own insights outside of the main question that I have answered.

Based on the criteria that I have listed above, the 3 best states for transportation accessibility and the three worst states for transportation accessibility are:

Best:

1. Alaska
2. District of Columbia
3. Hawaii

Worst:

1. New Jersey
2. Maryland
3. Puerto Rico

Section 2: Links to visualizations:

1. Average Numeric distribution of states based off of transportation methods (and WFH percentage) including outliers - https://public.tableau.com/app/profile/brandon7935/viz/AverageNumericdistributionofstatesbasedoffoftransportationmethodsandWFHpercentageincludingoutliers/AverageNumericdistributionofstatesbasedoffoftransportationmethodsandWFHpercentageincludingoutliers
2. Breakdown of the average percent of the population of a state that uses each type of transportation to get to work - https://public.tableau.com/app/profile/brandon7935/viz/Breakdownoftheaveragepercentofthepopulationofastatethatuseseachtypeoftransportationtogettowork/Breakdownoftheaveragepercentofthepopulationofastatethatuseseachtypeoftransportationtotgettowork
3. Average County Commute Map - https://public.tableau.com/app/profile/brandon7935/viz/AverageCountyCommuteMap/AverageCountyCommuteMap

4. Average State Commute Bar Graph - https://public.tableau.com/app/profile/brandon7935/viz/AverageStateCommuteBarGraph/AverageStateCommuteBarGraph
5. Dashboard - https://public.tableau.com/app/profile/brandon7935/viz/Dashboard_16890044154370/Dashboard

Section 3: Summary

My dashboard and the worksheets used to create the dashboard provide a comprehensive overview of transportation accessibility across every United States territory (state/county). The dashboard uses a variety of visualizations to present data on key indicators such as average commute time, percentage of population that takes public transit, and percentage of population that takes other means of transportation. The main visualization is a map that breaks down each state in their associated counties based on its assorted transportation accessibility scores. Users can interact with the dashboard by selecting specific states or regions to filter the data, viewing detailed information about how each state and county compares to each other, and by grouping only the states or counties that they are interested in for a more streamlined analysis. Additionally, the dashboard includes the metric of the percentage of population that works from home, which in my eyes is an adjacent metric that can heavily affect the accessibility of transportation in an area.

Users have a variety of ways to filter information including filtering only one state or county, grouping states and counties into a bucket and then filtering based on the group, and filtering data without excluding the other data points from the dashboard (used to compare data in the box plots for easy visual comparison between data points). Users can also see the measures of center by hovering over the body and tails of the box plots at the bottom of the dashboard.

Overall, the worksheets and dashboard that I have built can be used to make many insights about the census data that was provided. I designed it in a way that if the question pertains to state/county transportation, then there will be insights to be made of some shape or form.

Section 4: Design

The only real design principles I wanted to follow with my visualization were keeping everything clean and concise. I did not want to incorporate any unnecessary colors or patterns, and used a very simply black on blue color palette that is easy on the eyes and allows for extended analysis without extra ocular fatigue. To make this visual accessible for those with color blindness or other ailments that may make distinguishing color more difficult, I decided to keep the standard blue color for all data points being displayed in each of the graphs incorporated into the dashboard. This way there could not be any confusion based on colored groups or patterns changing when filtering data or dynamically interacting with the dashboard.

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Section 5: Resources

https://community.tableau.com/s/question/0D54T00000C6gNPSAZ/need-to-change-the-color-of-dropdown - Used to format the drop-down box that I incorporated into the dashboard.

https://www.simplypsychology.org/boxplots.html - Used to refresh my knowledge on box plots and what they display. This validated my idea that using one in my dashboard could help the user distinguish how one state compared to another visually.

https://community.tableau.com/s/question/0D54T00000C5k9gSAB/dashboard-with-interaction-between-two-sheets - Used to refresh knowledge on how interactions between multiple pages works in tableau.