

# Data Visualizations (Project 4)

## Insight 1:

[https://public.tableau.com/views/Insight1Project4\\_16944952390210/Sheet1?:language=en-US&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/Insight1Project4_16944952390210/Sheet1?:language=en-US&:display_count=n&:origin=viz_share_link)

This analysis aims to discern the states with the most favorable transportation conditions while defining the parameters of what constitutes "optimal" transportation. It leverages critical transportation metrics such as commute times, the prevalence of public transportation usage, and the average number of vehicles per household as yardsticks for evaluation. In this specific instance, our focus narrows down to the examination of average commute times as a barometer of transportation quality. Employing Tableau, we establish a connection with pertinent US Census Demographic Data, ensuring data is suitably primed for analysis. Subsequently, we craft a bar chart that effectively visualizes the spectrum of average commute times across states. The introduction of interactive elements equips users with the tools to dissect transportation metrics in alignment with their chosen criteria, presenting a holistic view of transportation quality across states.

The analysis also delves into average commute times across states, ordered from the shortest to the longest durations. In this exploration, we acknowledge that various factors can influence commute times. These factors encompass the size of cities within each state, the efficiency of public transportation networks, the geographical routes commuters must navigate, disparities between rural and urban areas, and other key determinants. Additionally, the visualization provides valuable insights into the average population within each state, contributing to a more comprehensive understanding of the transportation landscape.

## Insight 2

[https://public.tableau.com/views/Insight2Project4\\_16945745880690/Sheet1?:language=en-US&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/Insight2Project4_16945745880690/Sheet1?:language=en-US&:display_count=n&:origin=viz_share_link)

This insight looks at the income vs. poverty levels across America. The map is color coded to showcase the average percentage of poverty with a map that indicates the higher percentage the darker green. What I have observe is that Puerto Rico has the highest percentage of poverty, factors can include, lack of jobs, factoring in it is an island. Other states cause may stem from lack of employment. This Tableau visualization is designed to shed light on the geographic variations in income and poverty levels across the United States. The primary focus here is on understanding the distribution of poverty rates, a vital socio-economic metric. The steps to create this visualization involve connecting to the US Census Demographic Data, ensuring that the dataset contains pertinent fields such as "poverty\_rate" and "state."

The visualization employs a map format to present the data vividly. States are geographically represented, with their respective poverty rates depicted using a color scale, allowing viewers to intuitively grasp variations across regions. Moreover, a tooltip feature enhances user interaction by providing poverty rate details when hovering over individual states.

Visual customization, including color schemes and legend design, is carefully considered to ensure that the map is both visually engaging and informative.

To deepen the understanding of income and poverty trends, users can harness interactivity features that enable filtering by different years or other relevant dimensions, facilitating a dynamic exploration of changes in poverty rates over time.

In essence, this visualization serves as a valuable tool for comprehending the complex interplay of income and poverty within the diverse landscape of the United States.

## Insight 3

[https://public.tableau.com/views/Insight3project4/Sheet1?:language=en-US&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/Insight3project4/Sheet1?:language=en-US&:display_count=n&:origin=viz_share_link)

In this insightful analysis, we delve into the multifaceted factors that exert influence on commute times, unraveling the intricate web of considerations that shape transportation within urban areas. The treemap visualization serves as our guide, shedding light on several pivotal factors that play a significant role in commute time dynamics.

**\*\*Factors Explored\*\*:**

1. **\*\*Total Population\*\*:**

- Total population emerges as a pivotal factor, especially pronounced in larger states. The density and sheer volume of residents can markedly impact transportation infrastructure and commute experiences.

2. **\*\*Public Transportation\*\*:**

- The accessibility and efficiency of public transportation systems are pivotal determinants of commute times. Cities with robust public transit networks tend to offer smoother and more time-efficient commutes.

3. **\*\*Lack of Public Transportation\*\*:**

- Conversely, regions with limited or inadequate public transportation options may experience longer commutes, as commuters rely more on personal vehicles or alternative modes of transportation.

#### 4. **\*\*In-Office Work vs. Work from Home\*\***:

- The advent of flexible work arrangements, such as remote work, has had a transformative impact on commuting patterns. A shift towards remote work can alleviate congestion during traditional rush hours.

#### 5. **\*\*Construction\*\***:

- Construction activities, whether for infrastructure development or road repairs, can lead to temporary disruptions and longer commute times in affected areas. These disruptions can be particularly acute in densely populated urban centers.

#### **\*\*Treemap Insights\*\***:

The treemap visualization effectively conveys the relative significance of these factors, with larger blocks indicating a greater impact on commute times. Notably, the treemap illustrates that the most substantial influence is often wielded by the largest cities, where factors like population density, public transportation networks, and construction projects intersect to create complex commuting dynamics.

By scrutinizing this treemap, we gain a deeper appreciation for the intricate interplay of these factors and their repercussions on daily commutes. This understanding is instrumental in urban planning, infrastructure development, and policy decisions aimed at enhancing transportation efficiency and improving the daily lives of commuters.

### **Dashboard (Insight 4)**

[https://public.tableau.com/app/profile/tamika.reid/viz/Dashboard2\\_16950923732070/Dashboard1](https://public.tableau.com/app/profile/tamika.reid/viz/Dashboard2_16950923732070/Dashboard1)

Within the first insightful analysis on our dashboard, we delved into the unemployment rates across various states. The data revealed that states such as Puerto Rico, Arizona, and Alabama exhibited some of the highest unemployment rates. Upon closer examination of these figures and considering the respective state populations, it becomes evident that there is a substantial likelihood of widespread poverty, job insecurity, and food insecurity in these regions.

This first insight provides a crucial backdrop as we transition to the second insight, which focuses on the average child poverty rate per state. To effectively present this data, I opted to utilize a treemap visualization, arranging the states with the highest childhood poverty rates from the most significant to the least significant.

Childhood poverty can stem from various factors, including food scarcity within certain neighborhoods, elevated unemployment rates, and limited access to transportation resources. By exploring these insights in tandem, we gain a deeper understanding of the multifaceted challenges faced by communities, which can inform more targeted interventions and policy decisions.