Analyzing Income Inequality in Urban vs. Rural Areas Across the U.S.

By: Maarij Rizvi

Research Question

- **Is income inequality greater in urban areas compared to rural areas in the U.S.?**

Hypothesis, Null & Alternate

Starting Hypothesis:

- **There will be higher income inequality in urban counties compared to rural counties across the U.S. due to varying economic opportunities and population densities**

Null Hypothesis:

- **There is no difference in income inequality between urban and rural counties. (This will be measured through Gini Index)**
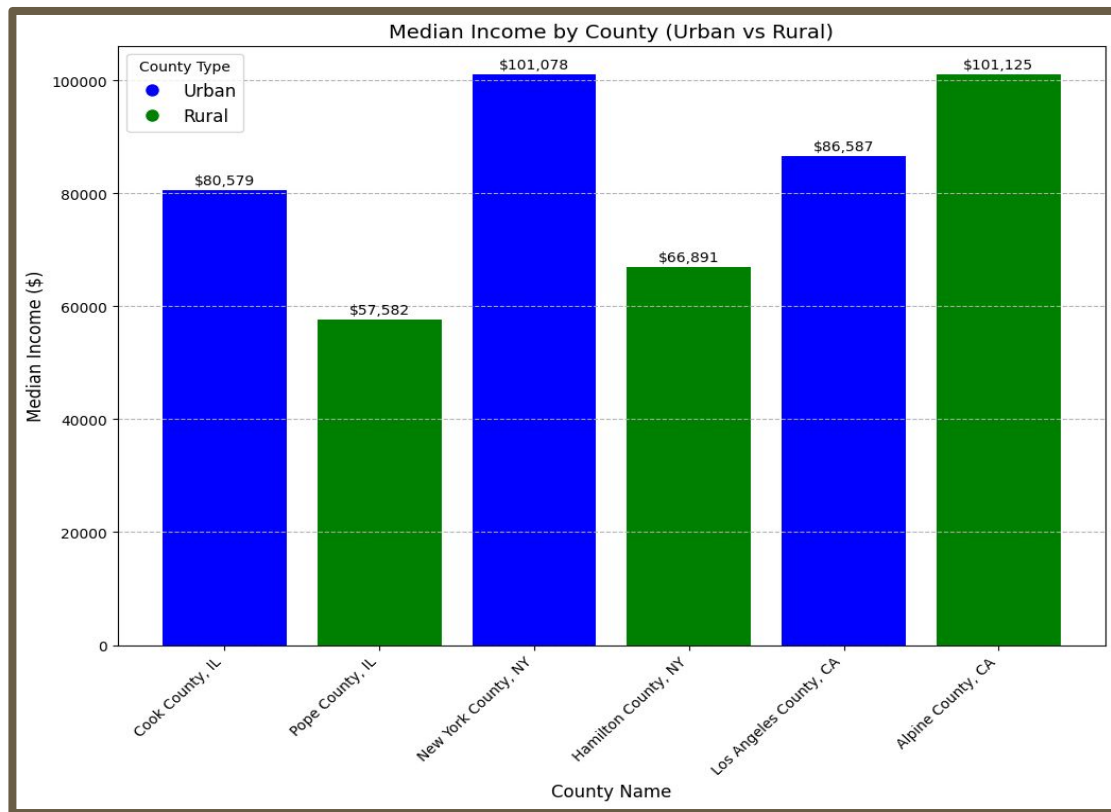
Alternative Hypothesis:

- **Urban areas will have significantly higher income inequality than rural areas**

Data Collection

- **Data was collected through US Census site**
- **Picked the largest state by population across the U.S.**
  - **New York for east coast, Illinois for midwest, and California for west coast**
- **Picked the most urban and rural counties which typically meant the most and least densely population counties**
- **Took the median income for households as the basis for income**
- **Too much data if I took income, population data from every county**
  - **Or maybe not, I couldn't find an efficient way to do so**
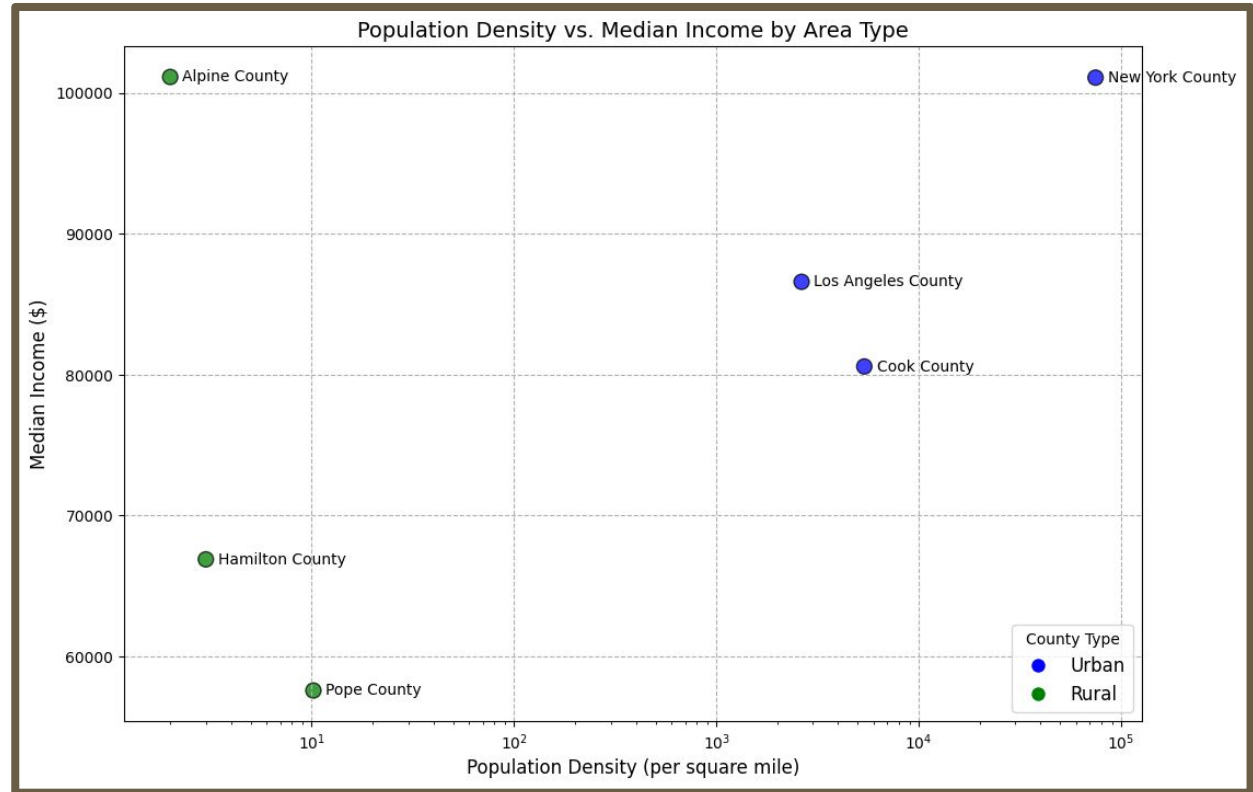
Bar Chart - Median Income by County (Urban vs Rural)

- **Shows median income of households for each county**
- **Urban county households typically have higher income than rural county ones**
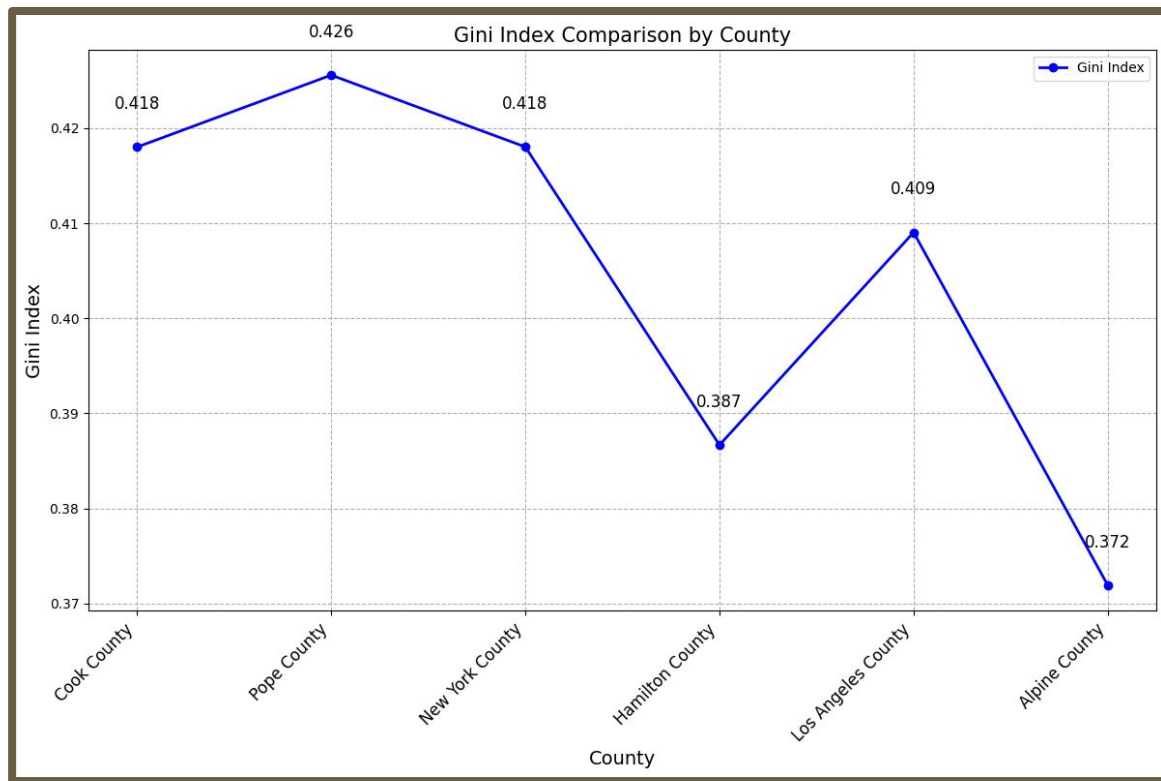- **Alpine seems to be an outlier**

Scatter Plot - Population Density vs. Median Income by County Type

- **Further shows how as population density increases, so does the median income**
- **Also shows Alpine County being an outlier**

Line Plot - Gini Index Comparison by County

- **This shows the Gini Index for each county**
- **Closer to 1 means more income inequality**
- **Closer to 0 means more income equality**
- **Better way to display graph?**

Gini Index Comparison by County

Results

- **According to Gini Index, results seem to show that my hypothesis was correct in that urban counties have higher income inequality than rural ones**
- **There was an outlier with Alpine County, California**
- **Is there a better way to gather data for this research question?**
  - **Should I increase my sample size of counties. If so, by how much?**
  - **Also is there a way to get data from all counties in the U.S. without it being a tedious process?**