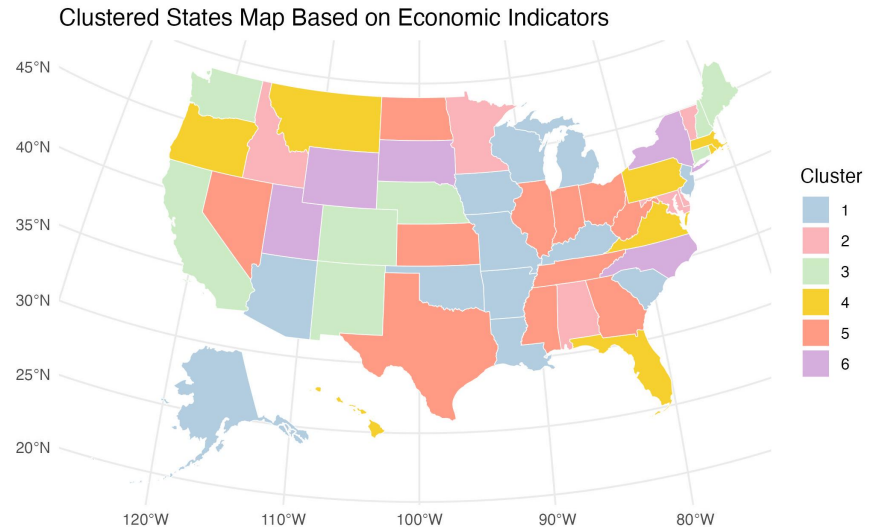


Economic Disparities Among U.S. States in 2023: An Analysis of Regional Data from the Bureau of Economic Analysis

Group 19
Ruisi Ma
Zhenjing Zhou
Dec. 2nd, 2024



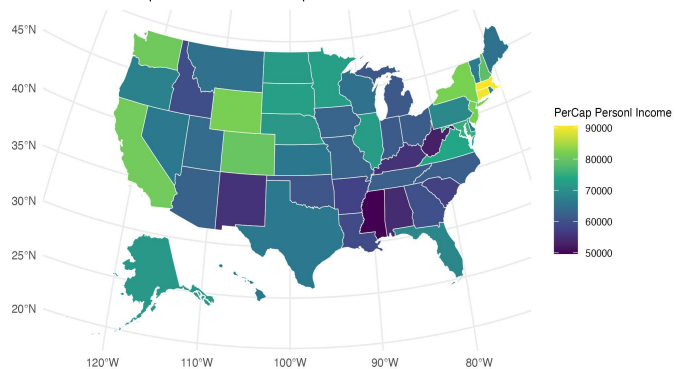
Description

- **Data Source:** Regional dataset from BEA - Using BEA's API and the bea.R package.
- **Research Question**
 - How do the U.S. States differ in employment density/GDP/PCE/GOS/income?
 - How do these indicators of economic disparities correlate with each other?
 - How does geographical proximity associate with economic disparities?
- **Level of Analysis**
 - State
- **Key Indicators**
 - SAINC30 Economic Profile (PerCap personal income, Total Employment)
 - SAGDP1 GDP by State Summary (Real GDP, Gross operating surplus)
 - SAPCE2 PCE by Major Type of Product (PerCap PCE)
 - Merged Data (self calculated: Employment PerThousand, PerCap Real GDP, PerCap gross operating surplus)

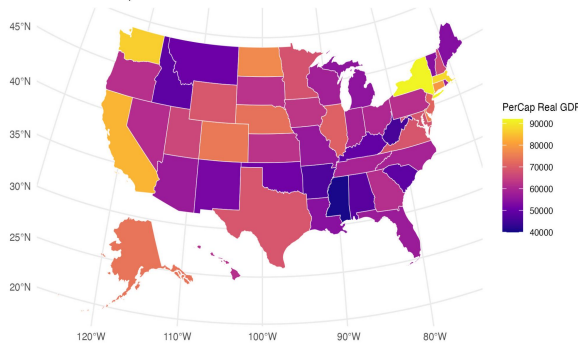
Eventually, the merged dataset contains 50rows x 22columns.

Description – Distribution

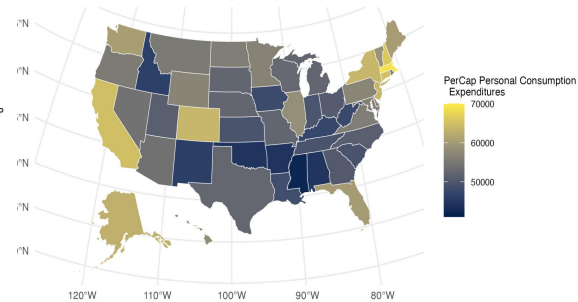
US States PerCapita Personal Income Map



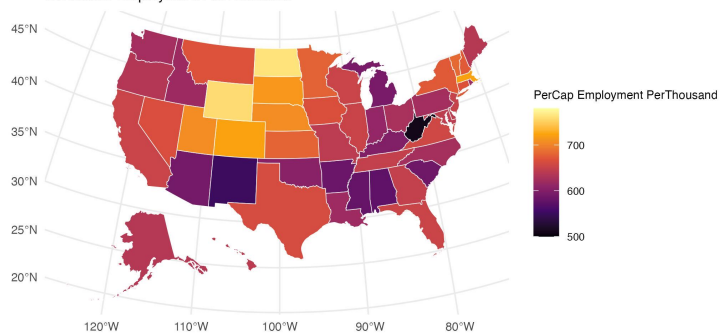
US States PerCapita Real GDP



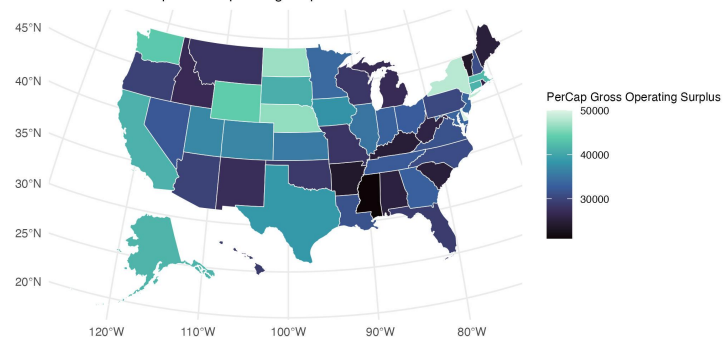
US States PerCap Personal Consumption Expenditures



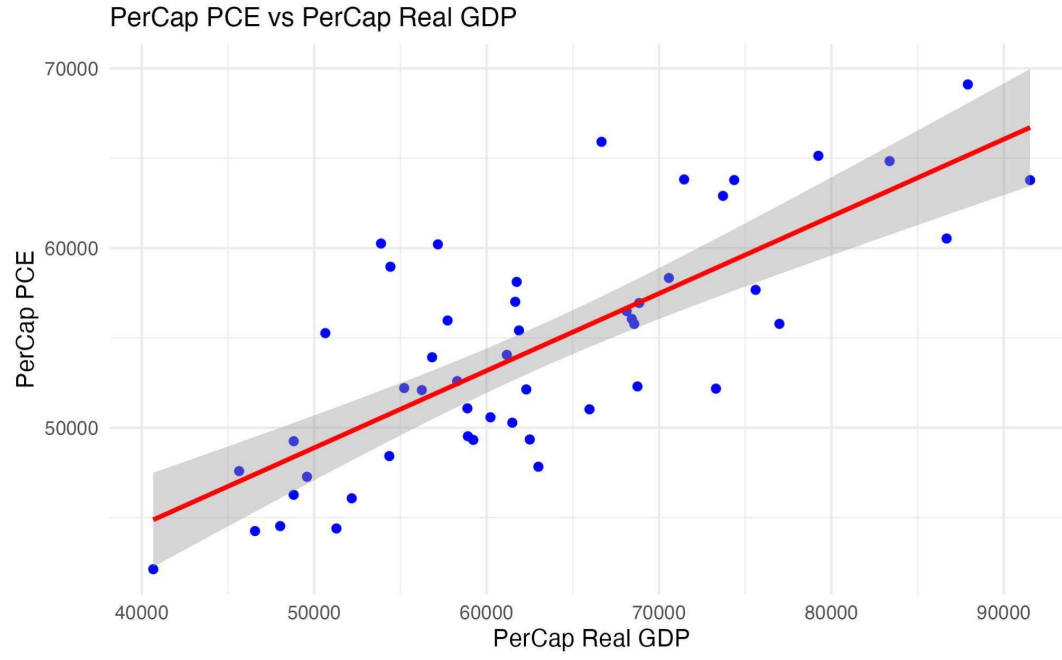
US States Employment PerThousand



US States PerCap Gross Operating Surplus



Visualization – Linear Model



Predictor

- PerCap Real GDP (40,000 to 91,000)
(Per Capita Real Gross Domestic Product)

Response

- PerCap PCE
(Per Capita Consumption Expenditures)

Conclusion

- Positive correlation
- As economic growth increases, PerCap PCE also tends to increase

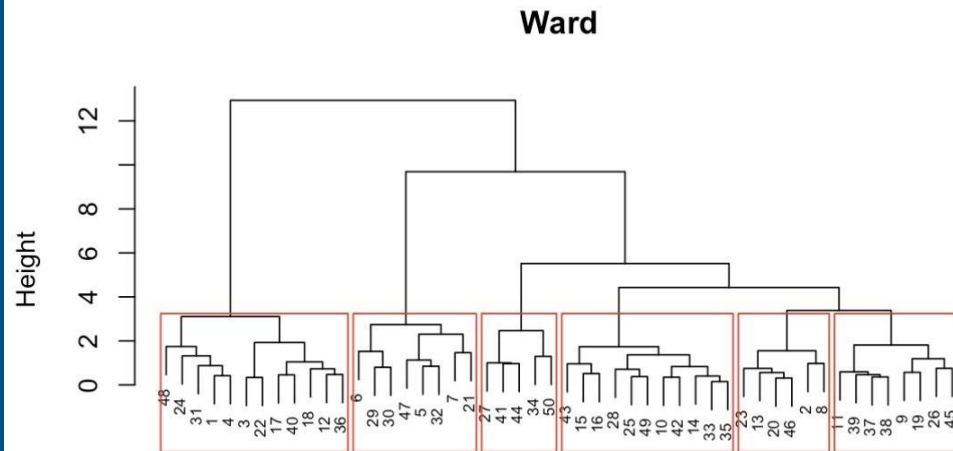
Visualization – Clustering

Dendrogram

- Hierarchical clustering
(based on economic indicators)
- States grouped into clusters
(highlighted by red boxes)

Clustered States Map

- Geographical Distribution
(colored by their respective clusters)
- Each color corresponds to the clusters
identified in the dendrogram



Clustered States Map Based on Economic Indicators

