

Lecture -3

Visualization of Citi Information Data

Data file: City Info Values.xlsx

The file City Info Data.xls contains demographic information about 273 cities in the US. Our goal is to visualize trends about cities, income, and population using Tableau.

0. Load data

- Load Tableau in your PC. Click Microsoft Excel and load the city information data into Tableau.
- Data source tab: Drag 'Sheet1' to the right or double click it.

The screenshot shows the Tableau interface with the 'Connect' dialog open. The 'Microsoft Excel' option is selected under 'To a File'. The 'City Info Values' data source is connected, and 'Sheet1' is selected in the 'Sheets' list. The 'Data Source' tab is active, showing a table of city data with columns like City, State, County, and Zip. The 'Sheet1' tab is also visible in the bottom left corner.

City	City Ascii	State Id	State Name	County Name	County Fips	Zip	Latitude	Longitude	Population
New York	New York	NY	New York	New York	36,061	11229 11228 11226 1122...	40.7615	-73.9814	
Los Angeles	Los Angeles	CA	California	Los Angeles	6,037	91367 90291 90293 9029...	34.0522	-118.2437	
Chicago	Chicago	IL	Illinois	Cook	17,031	60018 60649 60641 6064...	41.8500	-87.6501	
Houston	Houston	TX	Texas	Harris	48,201	77069 77068 77061 7706...	29.7633	-95.3633	
Philadelphia	Philadelphia	PA	Pennsylvania	Philadelphia	42,101	19154 19151 19150 1915...	39.9523	-75.1638	
Phoenix	Phoenix	AZ	Arizona	Maricopa	4,013	85008 85009 85003 8500...	33.4484	-112.0740	
San Antonio	San Antonio	TX	Texas	Bexar	48,029	78112 78233 78259 7825...	29.4241	-98.4936	
San Diego	San Diego	CA	California	San Diego	6,073	92109 92108 92106 9210...	32.7153	-117.1573	
Dallas	Dallas	TX	Texas	Dallas	48,113	75287 75098 75233 7523...	32.7831	-96.8067	

- Now we are ready to create plots! Go to 'Sheet 1'.

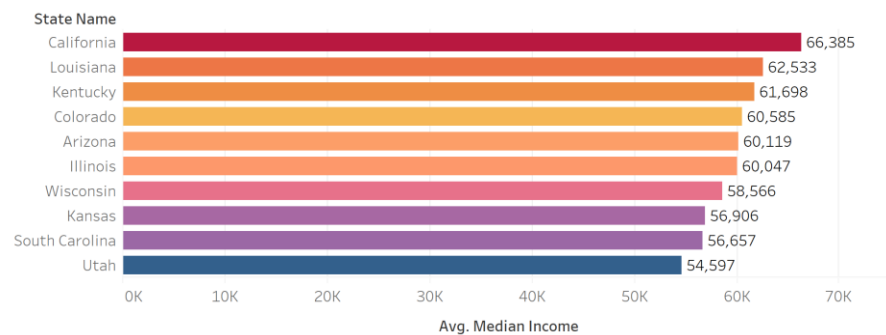
1. Plots for summary statistics

We will create plots for Median Income by state.

(i) Bar chart

Create a bar chart of **average** median income by state (top 10 states only)

Average Median Income by State (Bar Chart)

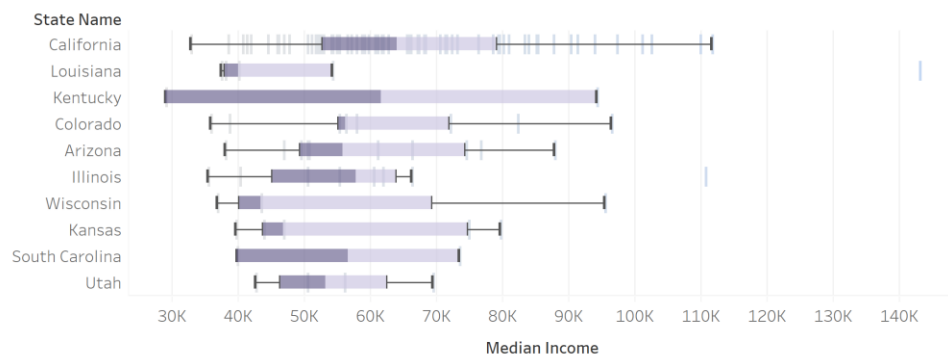


Average of Median Income for each State Name. Color shows average of Median Income. The view is filtered on State Name, which has multiple members selected.

(ii) Box plot

Create a box plot of Median Income by state (top 10 states only)

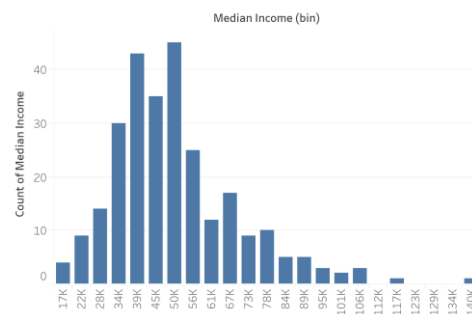
Average Median Income by State (Box Plot)



(iii) Histogram

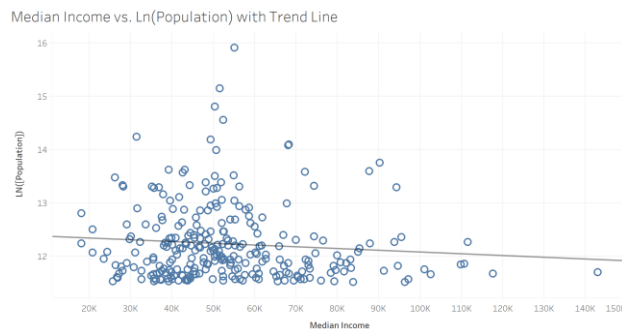
Create a histogram of Median Income.

Median Income (Histogram)



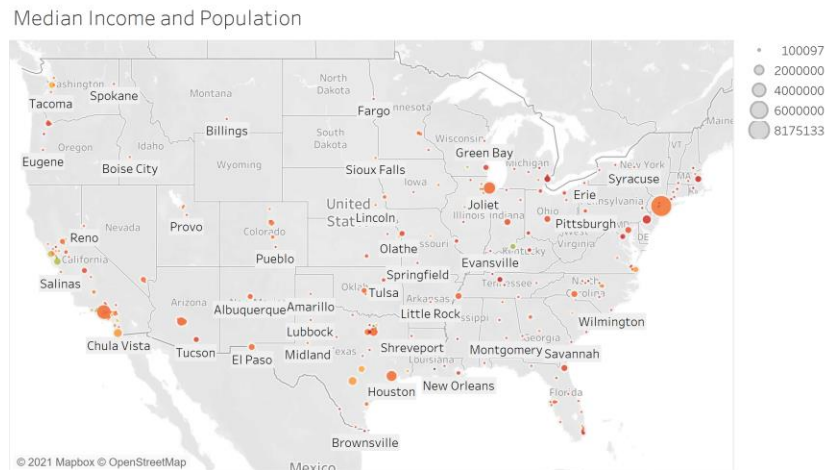
2. Scatter plot

Create a scatter plot of Median Income and LN(population)



3. Map

(i) Present Median Income and Population on a map



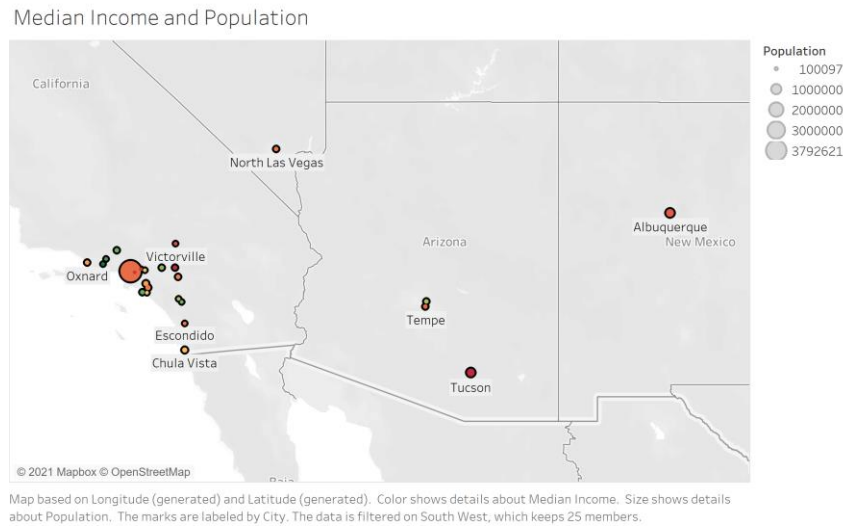
(ii) Sets and Groups for filtering: Present big cities in California (Population >250,000)

Median Income and Population
- California cities > 250,000



Map based on Longitude and Latitude. Color shows Median Income. Size shows details about Population. The marks are labeled by City. The data is filtered on California, which keeps 1 member. The view is filtered on Population, which includes values greater than or equal to 250000.

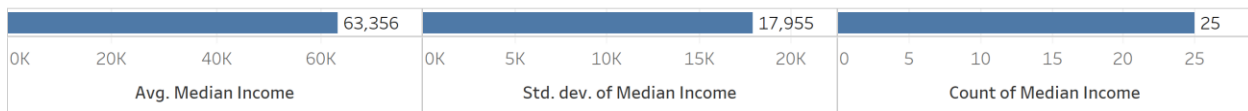
(iii) Lasso: Present cities in South west region



(iv) Comparisons: Summary statistics of South West Median Income

Average, Stdev, and Count (Sample Size)

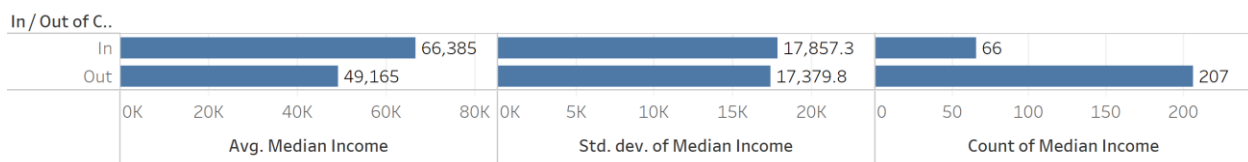
3-(iv) Med Income Southwest



Average of Median Income, standard deviation of Median Income and count of Median Income. The data is filtered on South West, which keeps 25 members.

(v) Comparisons: California vs all other states

3-(v) California In/Out



Average of Median Income, standard deviation of Median Income and count of Median Income for each In / Out of California.

4. Create more graphs and maps with other variables.