GRP 8

Project 1

US ARMY BASES + POVERTY RATES

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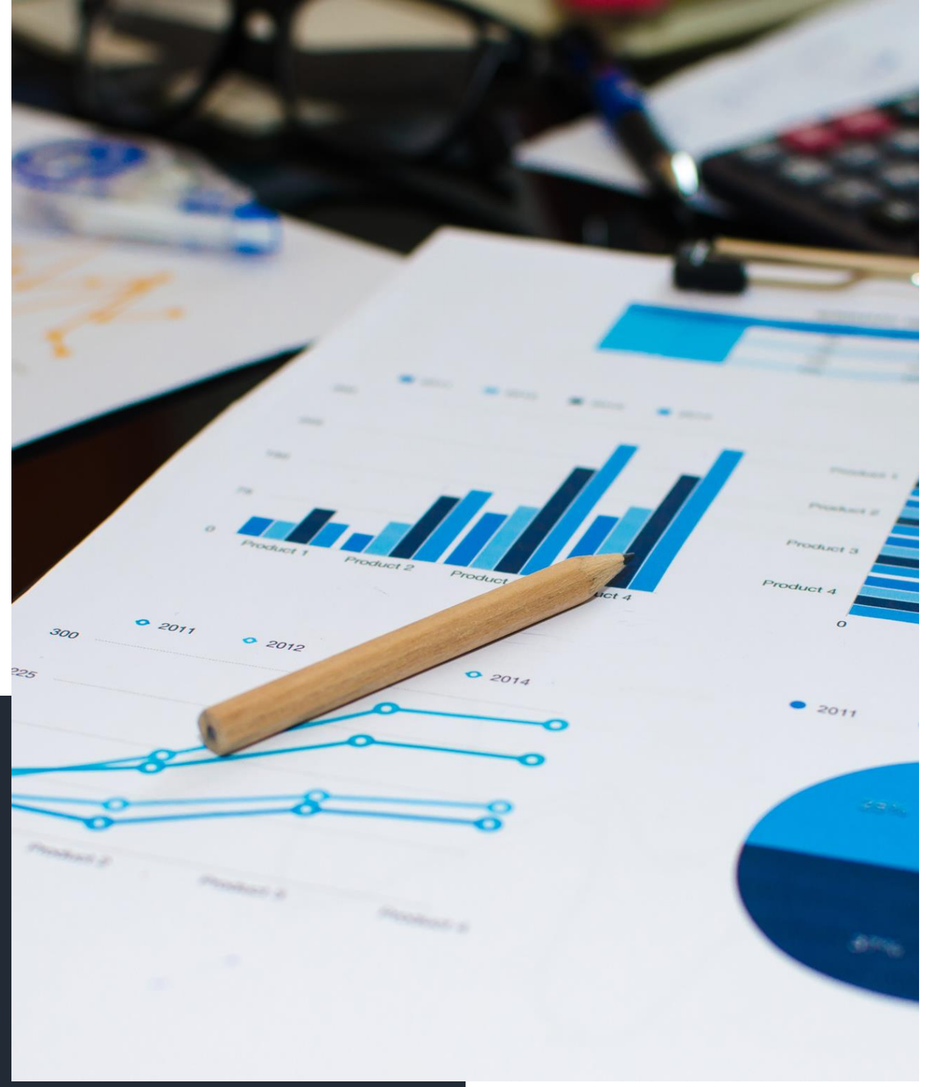
OUR HYPOTHESIS (H1)

The geographical location of US Army bases is positively correlated with poverty rates in surrounding areas, such that areas with US Army bases exhibit higher poverty rates compared to areas without.

Null hypothesis (H0)
There is no significant correlation between the geographical location of US Army bases and the poverty rates in surrounding areas.

Alternative hypothesis (H2)
There is a significant positive correlation between the geographical location of US Army bases and the poverty rates in surrounding areas, indicating that areas with US Army bases have higher poverty rates than those without.

PROJECT
LIMITATIONS



- We limited the project to the **US Army** branch only.
- We limited the bases to US Army **forts (larges bases)** only.
- We located the **nearest town or city** for poverty rates.

OUR DATA SOURCES

We also used **Google** and **ChatGPT** to validate some of the data pulled, to answer questions, and read articles.

US CENSUS DATA

US MILITARY DATA

DATA CLEANSING

- Removed random **symbols**
- Deleted unnecessary **columns**
- Strange code **output** corrected

Number of rows in the DataFrame: 27

Out[15]:

	Name	Household Income	Population	Median Age	Per Capita Income
0	Fort Novosel	67574.0	5912.0	24.1	22206.0
1	Fort Huachuca	88135.0	5248.0	22.7	25388.0
2	Fort Irwin	[illegible]	9100.0	22.8	23651.0
3	Fort Carson	-666666666.0	5667.0	21.6	27354.0
4	Fort Eisenhower	51333.0	7933.0	22.0	27368.0
5	Fort Moore	[illegible]	16973.0	22.6	22642.0
6	Fort Stewart	50526.0	41967.0	29.7	23524.0
7	Fort Leavenworth	99000.0	6698.0	24.8	27877.0
8	Fort Riley	44219.0	16019.0	22.3	19177.0
9	Fort Campbell	51940.0	21028.0	21.8	20864.0
10	Fort Knox	70441.0	8916.0	25.6	29501.0
11	Fort Johnson	50280.0	11363.0	22.3	22561.0
12	Fort Detrick	92267.0	44783.0	37.7	43382.0

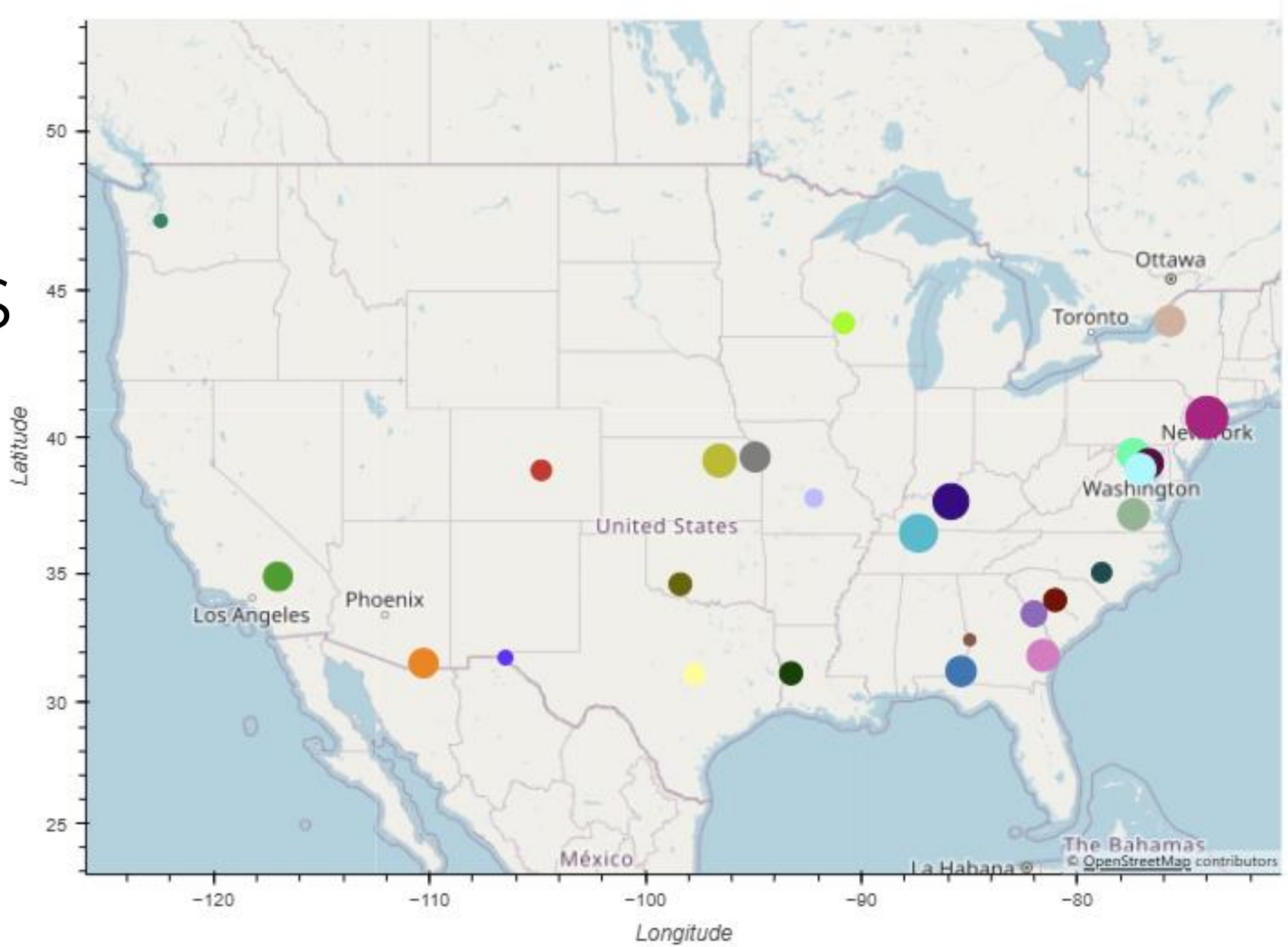
NATIONAL POVERTY RATE

We looked at the poverty percentage rate over the past few years, and decided to look at **13 percent** then the 2023 rate.

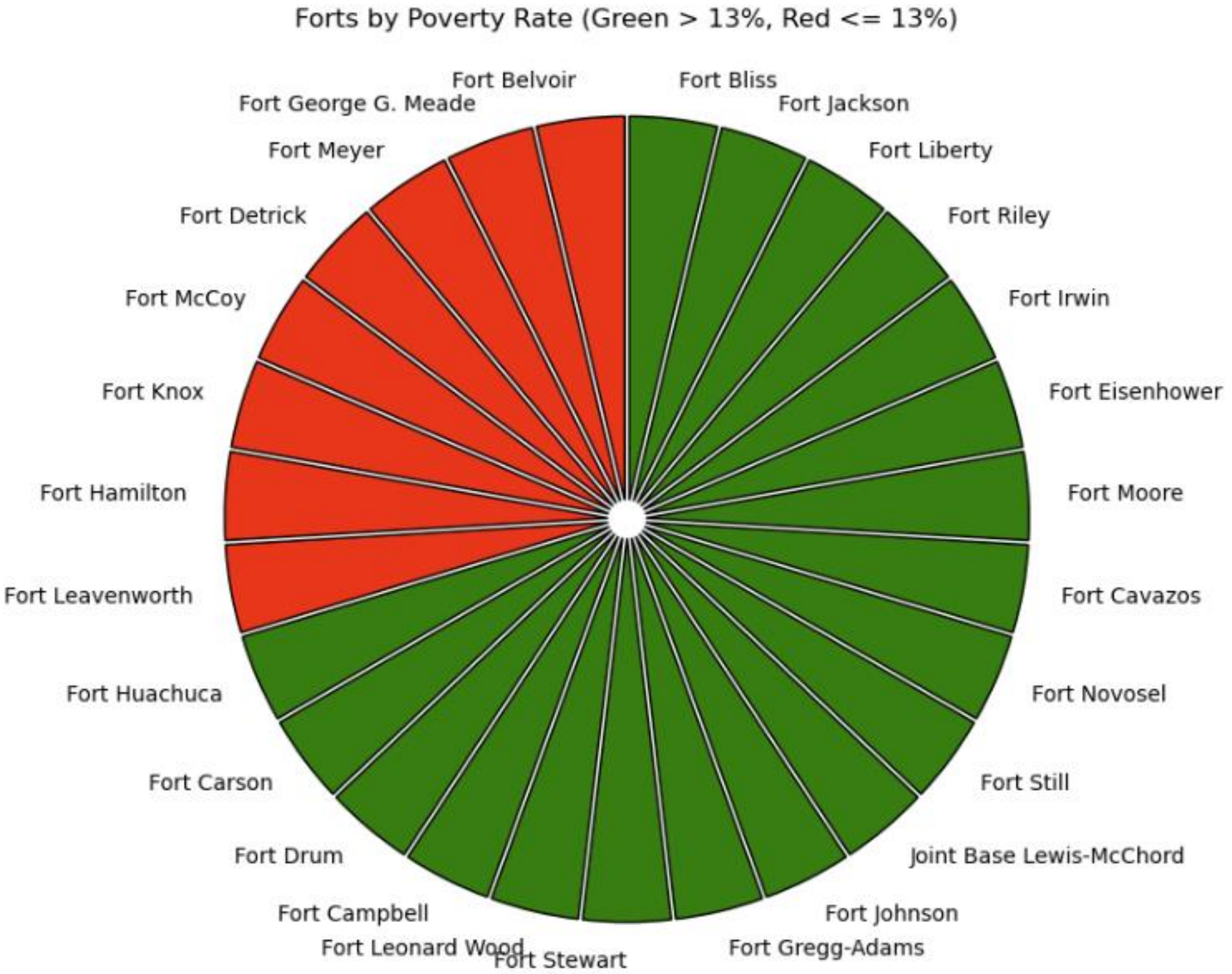
NATIONAL POVERTY PERCENTAGE RAGE

For **2023**, the US Census Bureau states the poverty percentage rage was **11.4 percent.**

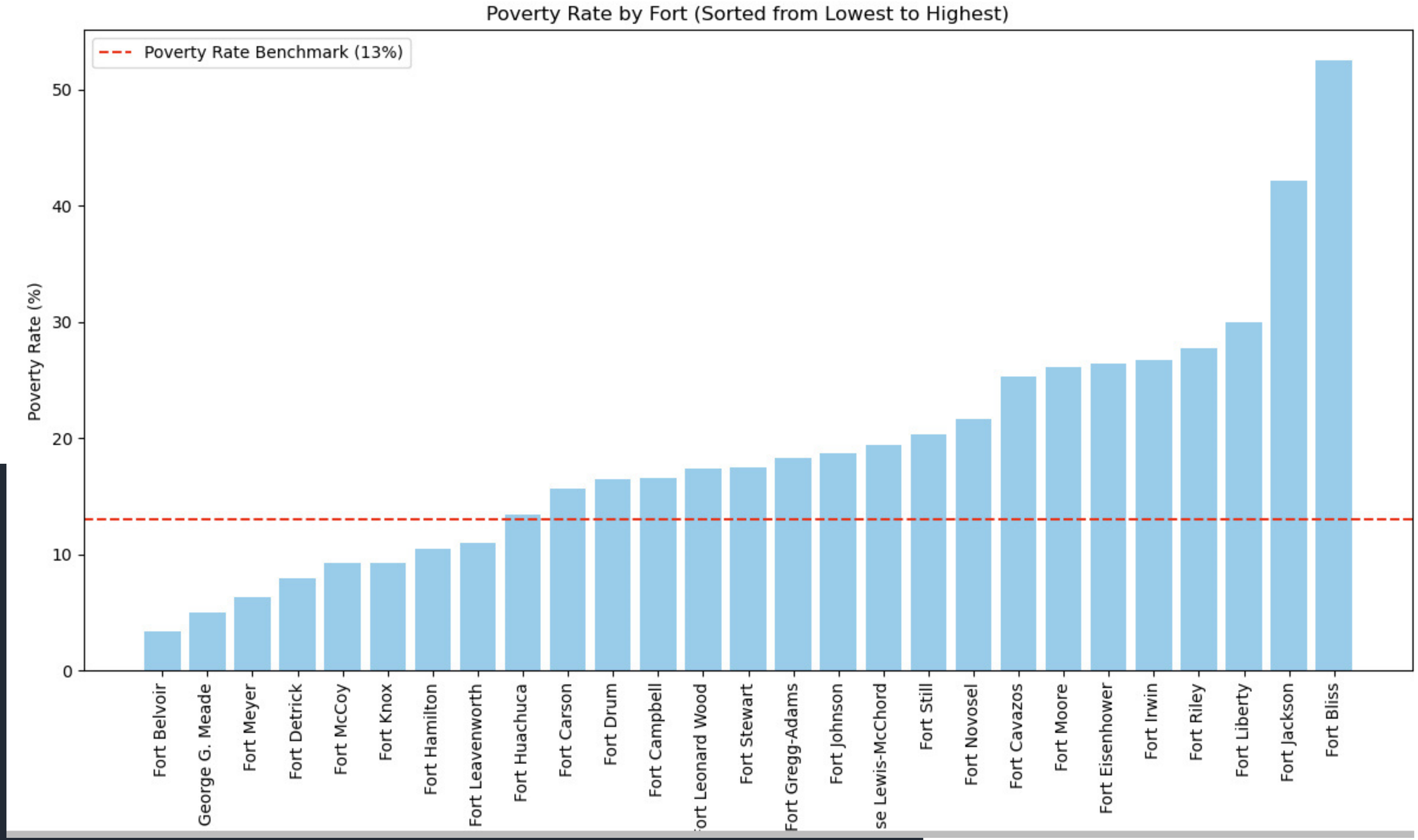
BASE LOCATIONS



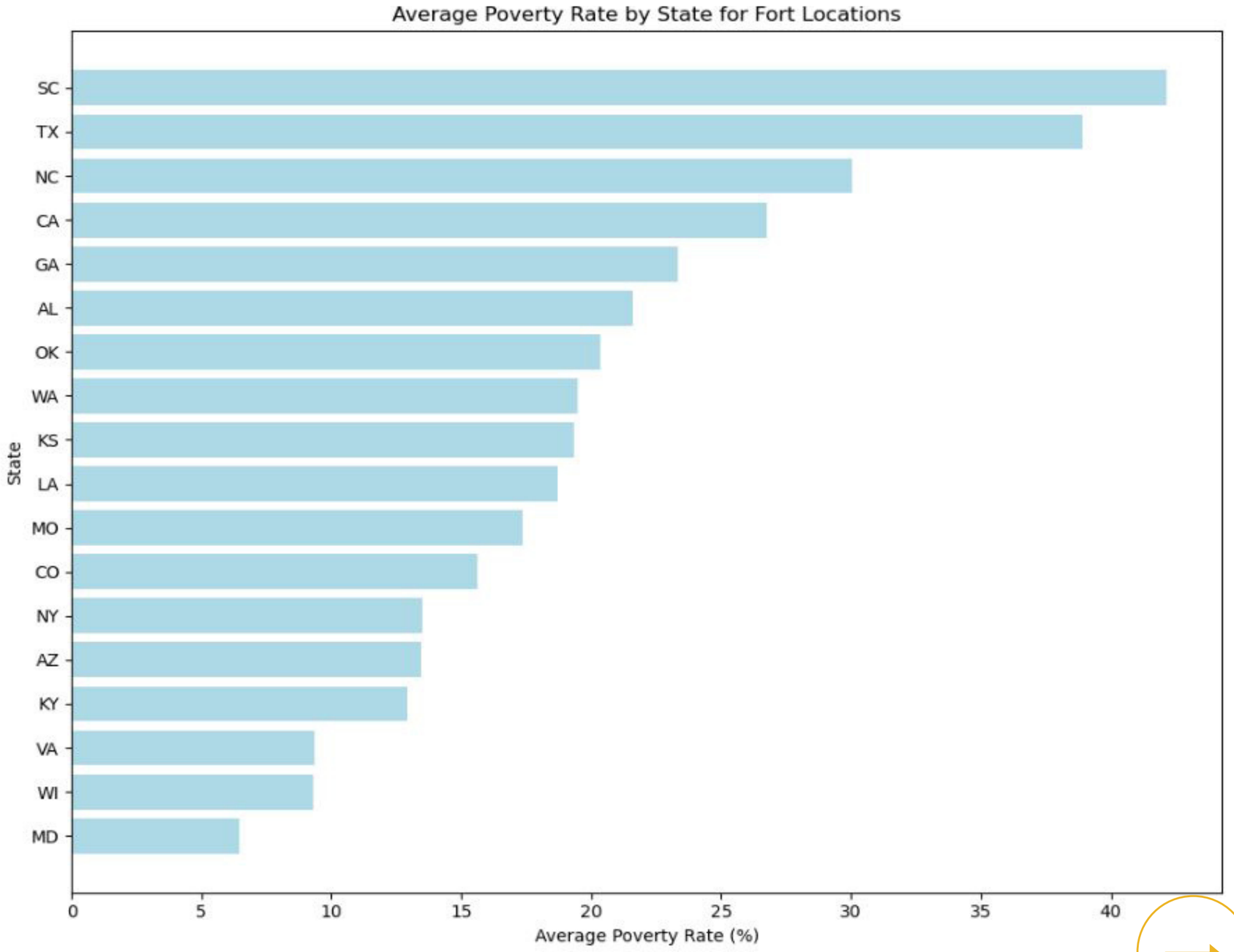
FORTS + POVERTY



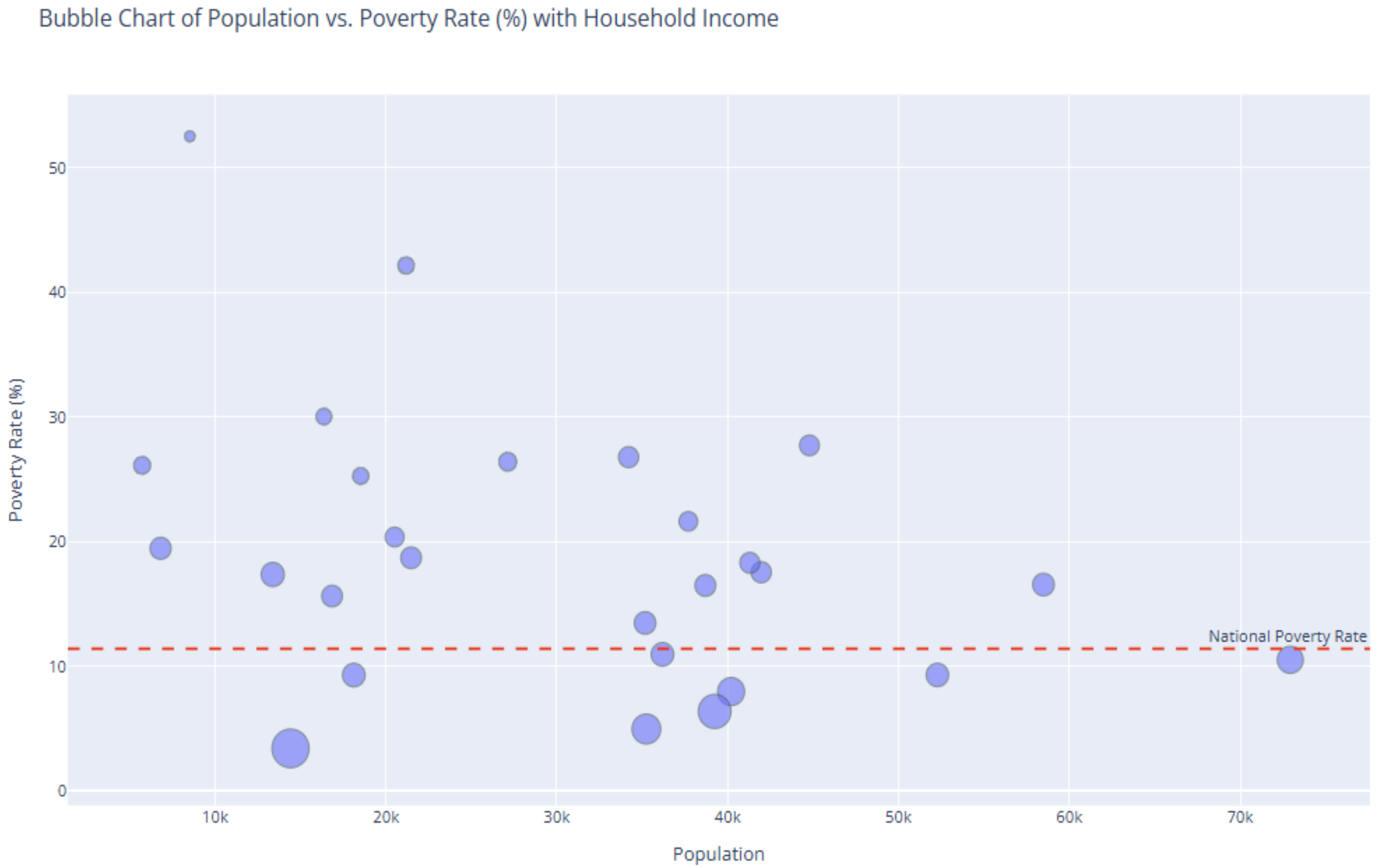
FORTS + POVERTY



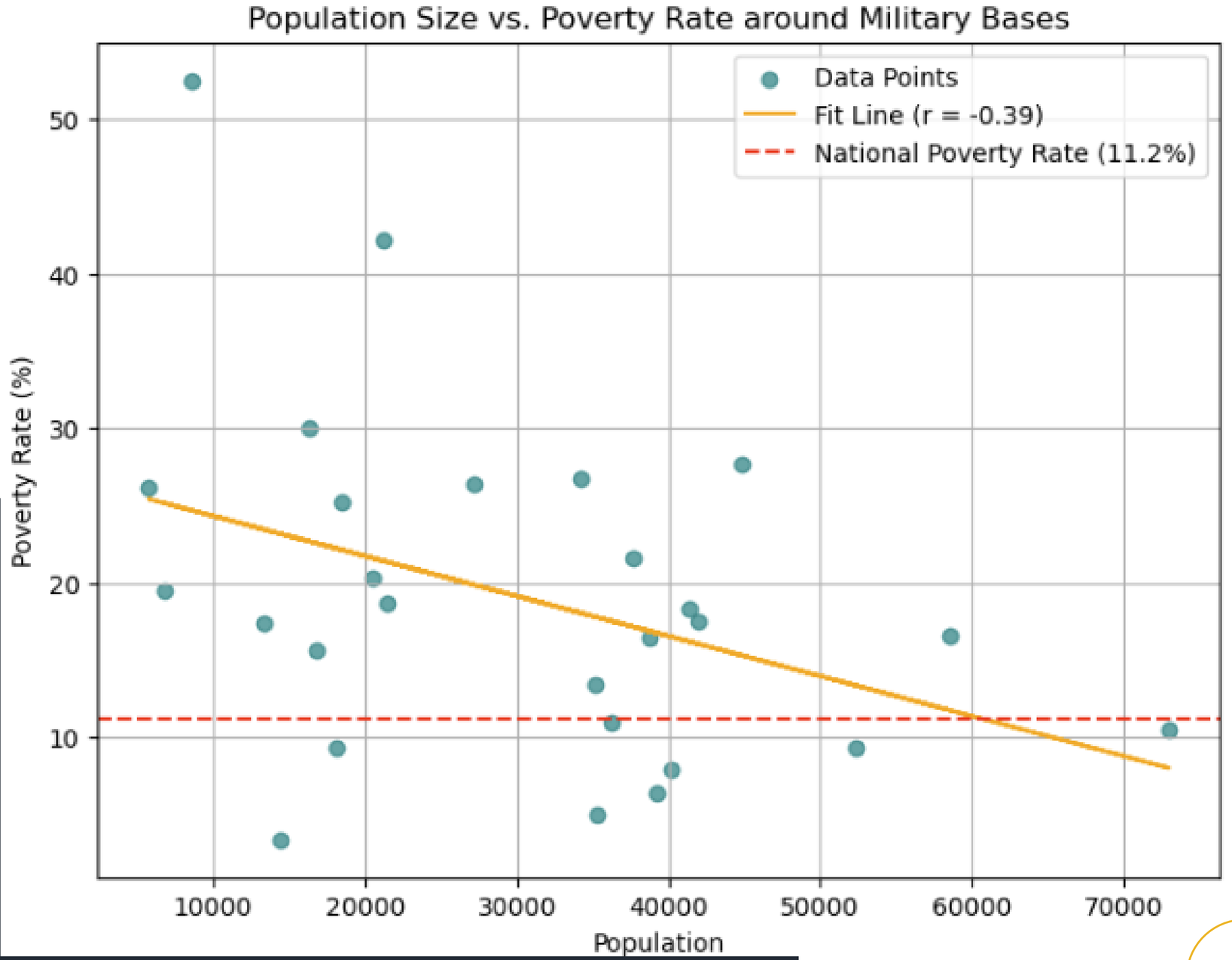
FORTS + POVERTY



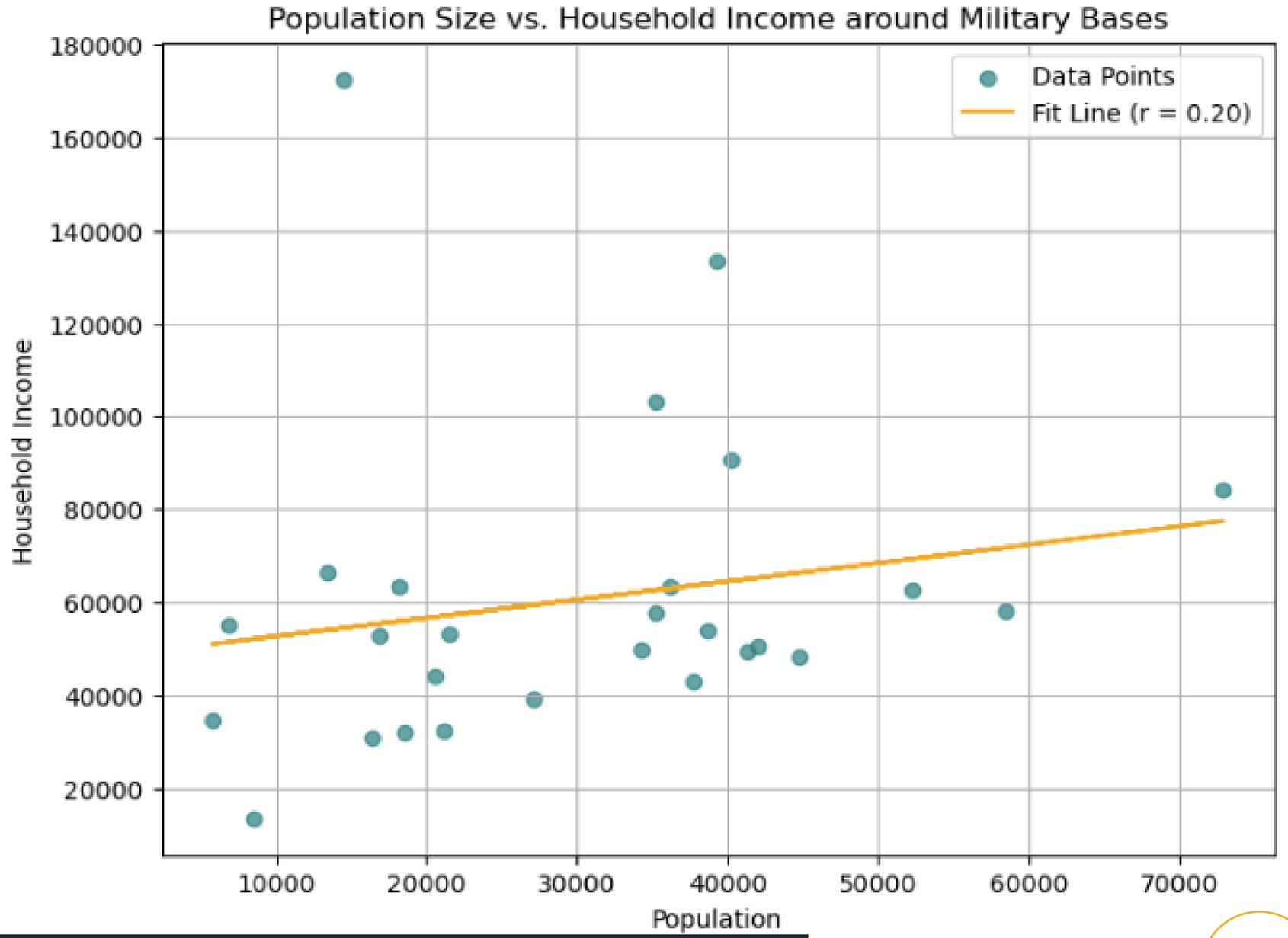
POPULATION
+ POVERTY



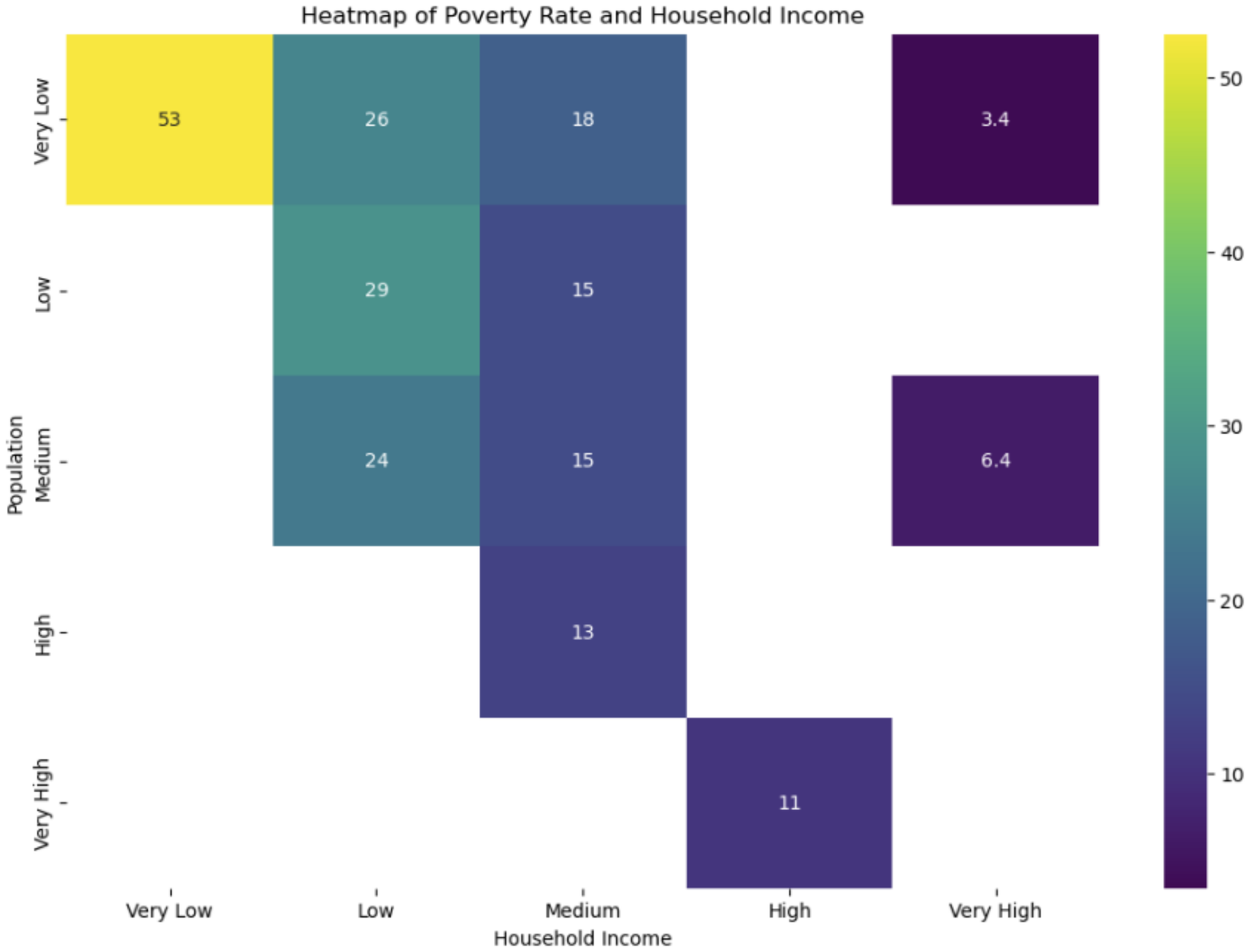
POPULATION
+ POVERTY



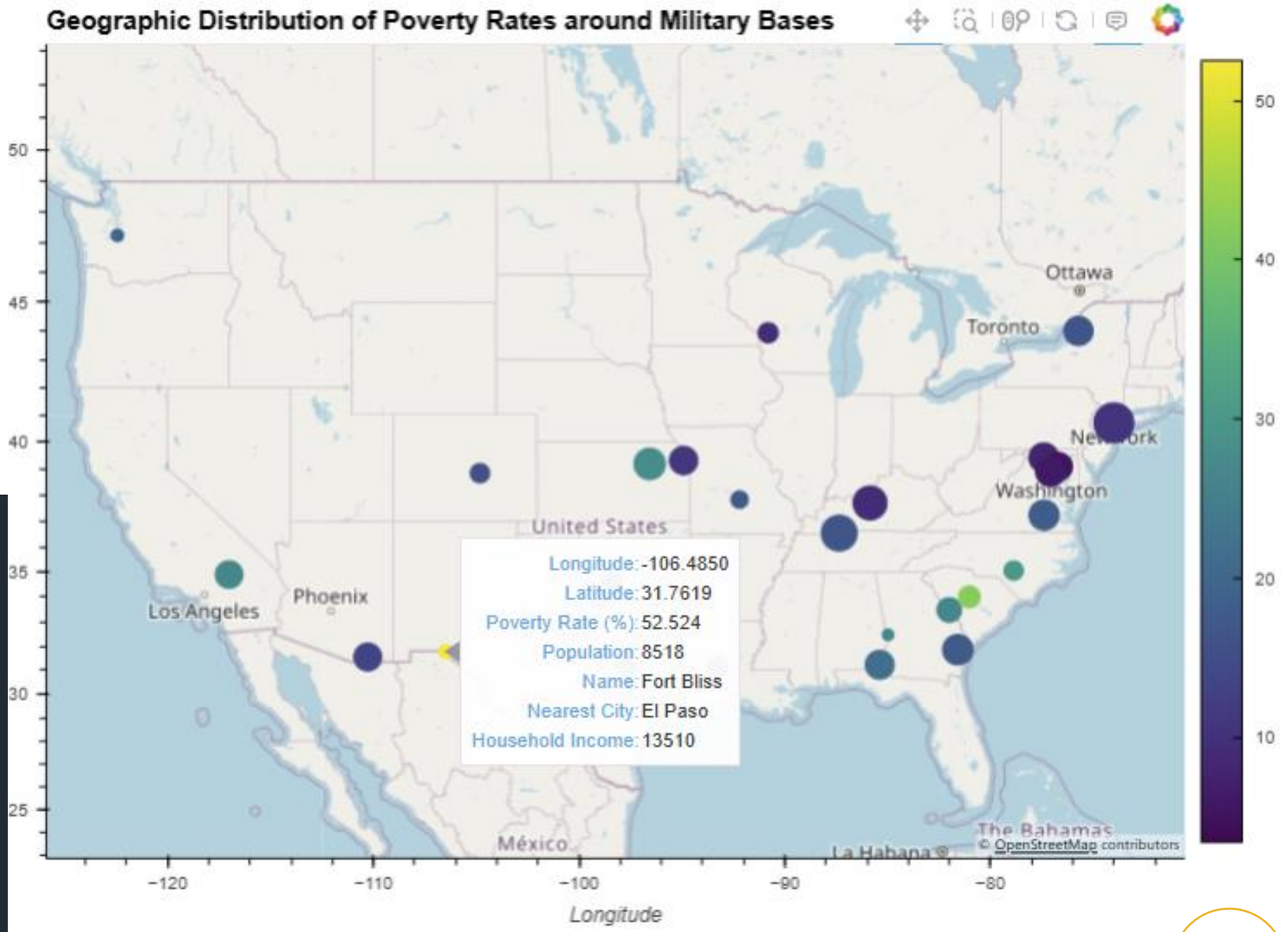
POPULATION
+ INCOME



INCOME
+ POPULATION



POVERTY
DISTRIBUTION



POVERTY RATE SPAN

From 3 percent to 53 percent poverty rate.

POPULATION SPAN

Most bases clustered between 35k and 40k.

DATA ANALYSIS

- **The majority** (19 of 27) of the bases have poverty rates above the national poverty rate.
- **Significant gap** exists between fort with lowest and highest poverty rates.
- **Weak negative correlation (-0.39)** between population size and poverty rate.
- **•Weak positive correlation (0.20)** between population size and household income.

0.00 to 0.19 very weak +/-
0.20 to 0.39 weak +/-
0.40 to 0.59 moderately +/-
0.60 to 0.70 strong +/-
0.80 to 1.00 very strong +/-

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NEXT STEPS

- Expand the scope
- Research socioeconomic factors
- Expand population demographics

GRP 8

THANK YOU!

Any questions for us?