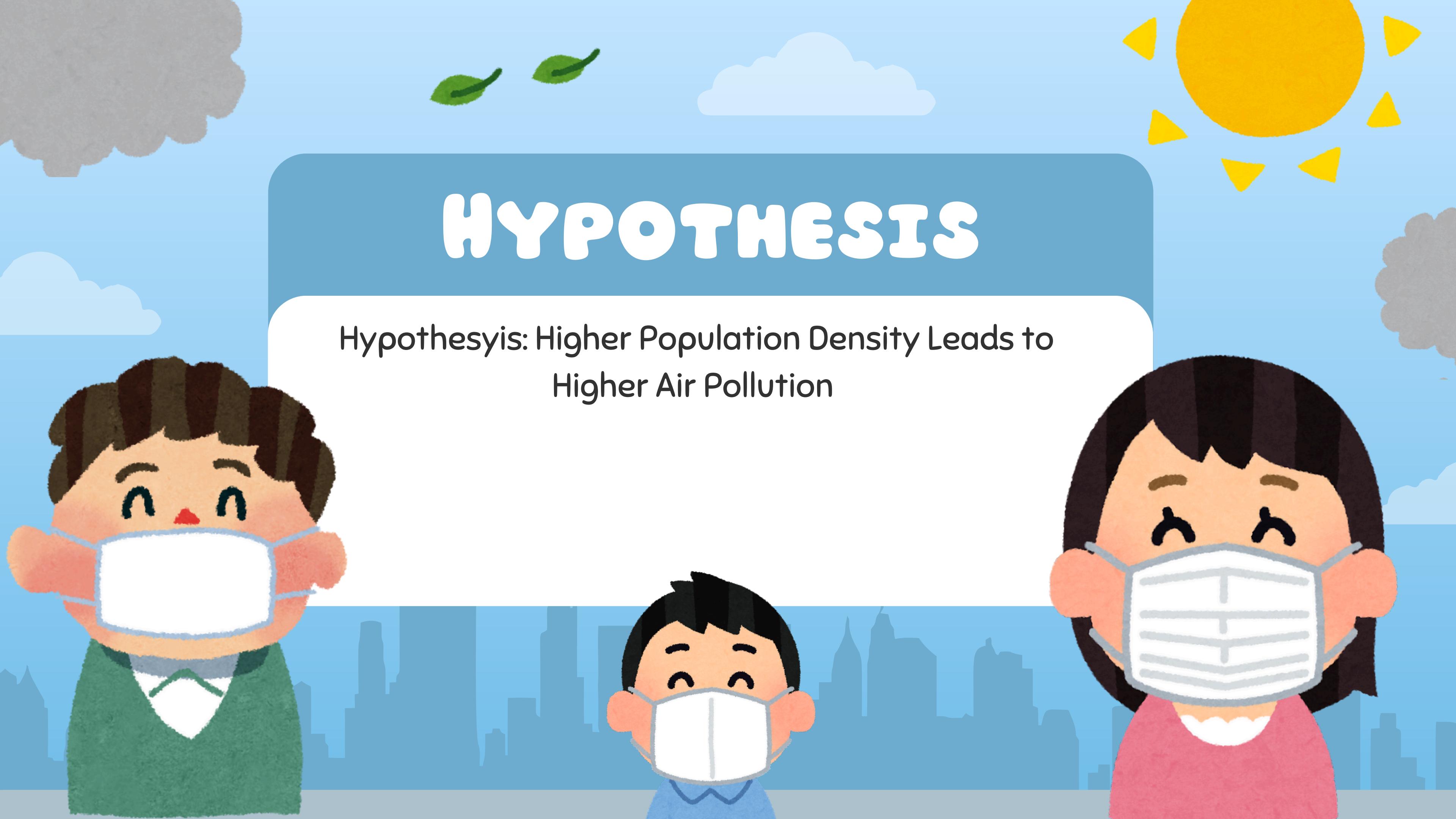




# **POPULATION & POULLUTION**

**SEBASTIAN  
DAVIDE**



# HYPOTHESIS

Hypothesis: Higher Population Density Leads to  
Higher Air Pollution



# STEPS

Data Collection and Integration:

Data Cleaning and Preprocessing:

Formulated two actionable hypotheses:

Exploratory Data Analysis (EDA):

Preliminary Findings:



# EXPLORATORY DATA ANALYSIS

	city	country	urban_pop	AQI_value
▶	Durango	United States	83	500
	Tynda	Russia	75	500
	Boksburg	South Africa	69	500
	Bahawalnagar	Pakistan	35	500
	Harunabad	Pakistan	35	500
	Lodhran	Pakistan	35	500
	Mailsi	Pakistan	35	500
	Yazman	Pakistan	35	500
	Gajraula	India	36	500
	Nagaur	India	36	500
	Nawalgarh	India	36	500
	Nuh	India	36	500
	Kasganj	India	36	500
	Pilibanga	India	36	500
	Bareli	India	36	500

city	density	AQI_value	CO_aqi_val	pm_2_5_value
Beausoleil	24360	56	1	42
Singapore	8592	91	1	91
Manama	1955	188	2	188
Male	1737	19	0	15
Naxxar	1672	39	1	22
Mosta	1672	70	1	42
Sliema	1672	39	1	21
Zebbug	1672	53	1	53
Birkirkara	1672	45	1	28
Zabbar	1672	51	1	51

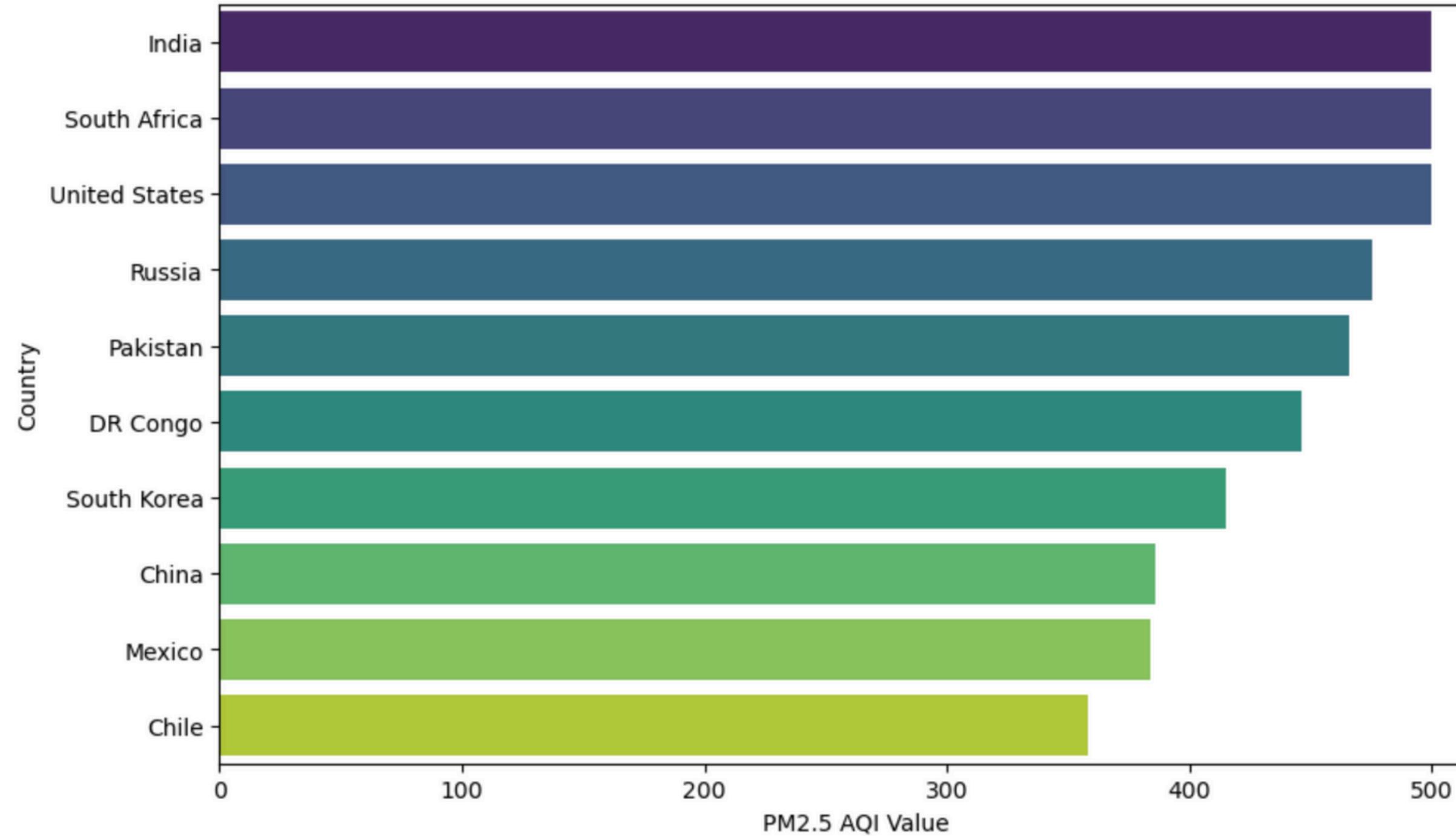


	density_range	avg_aqi	avg_pm25
▶	High Density	105.2211	103.1263
	Low Density	72.6735	69.1922
	Medium Density	43.4915	40.8892

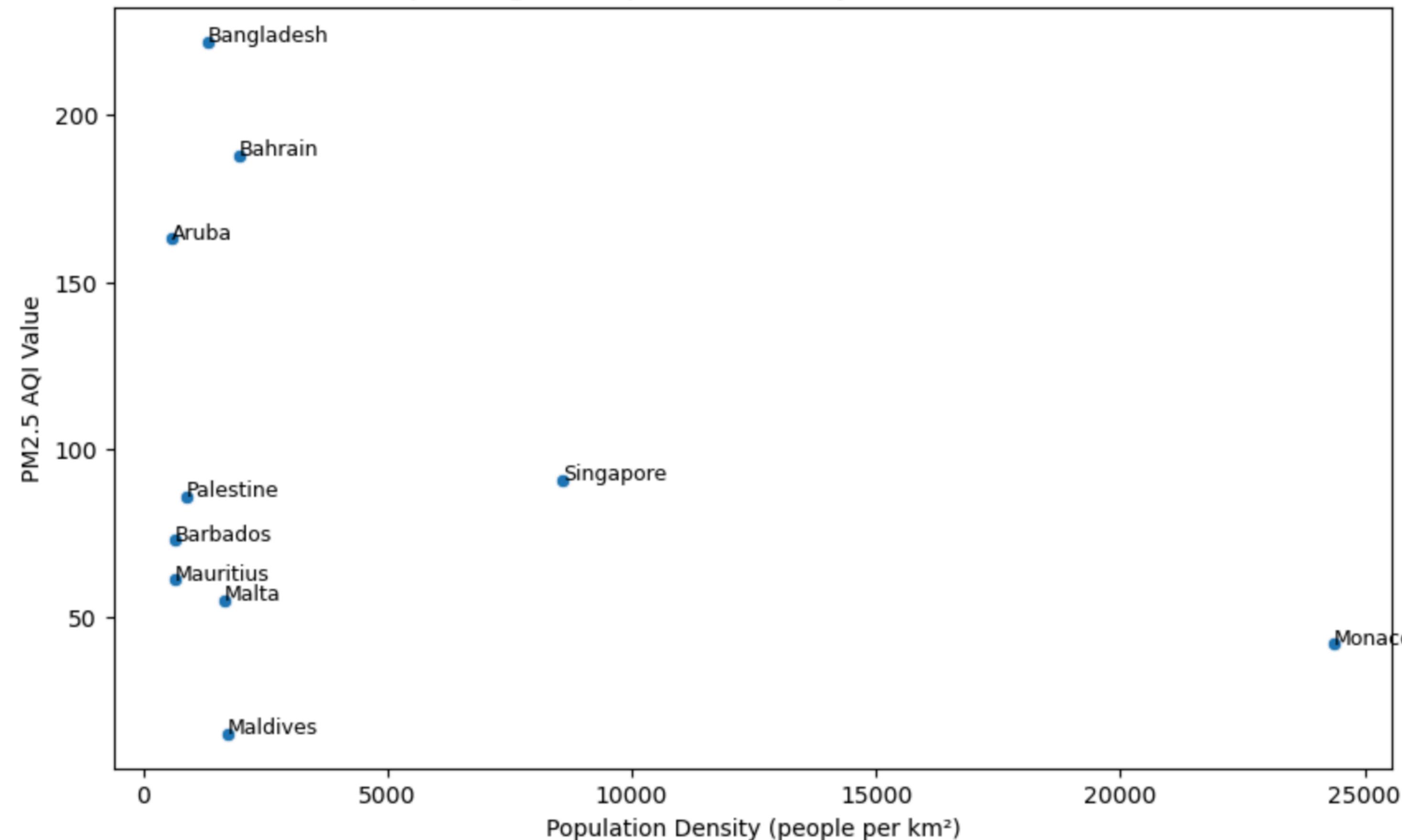
# HYPOTHESIS

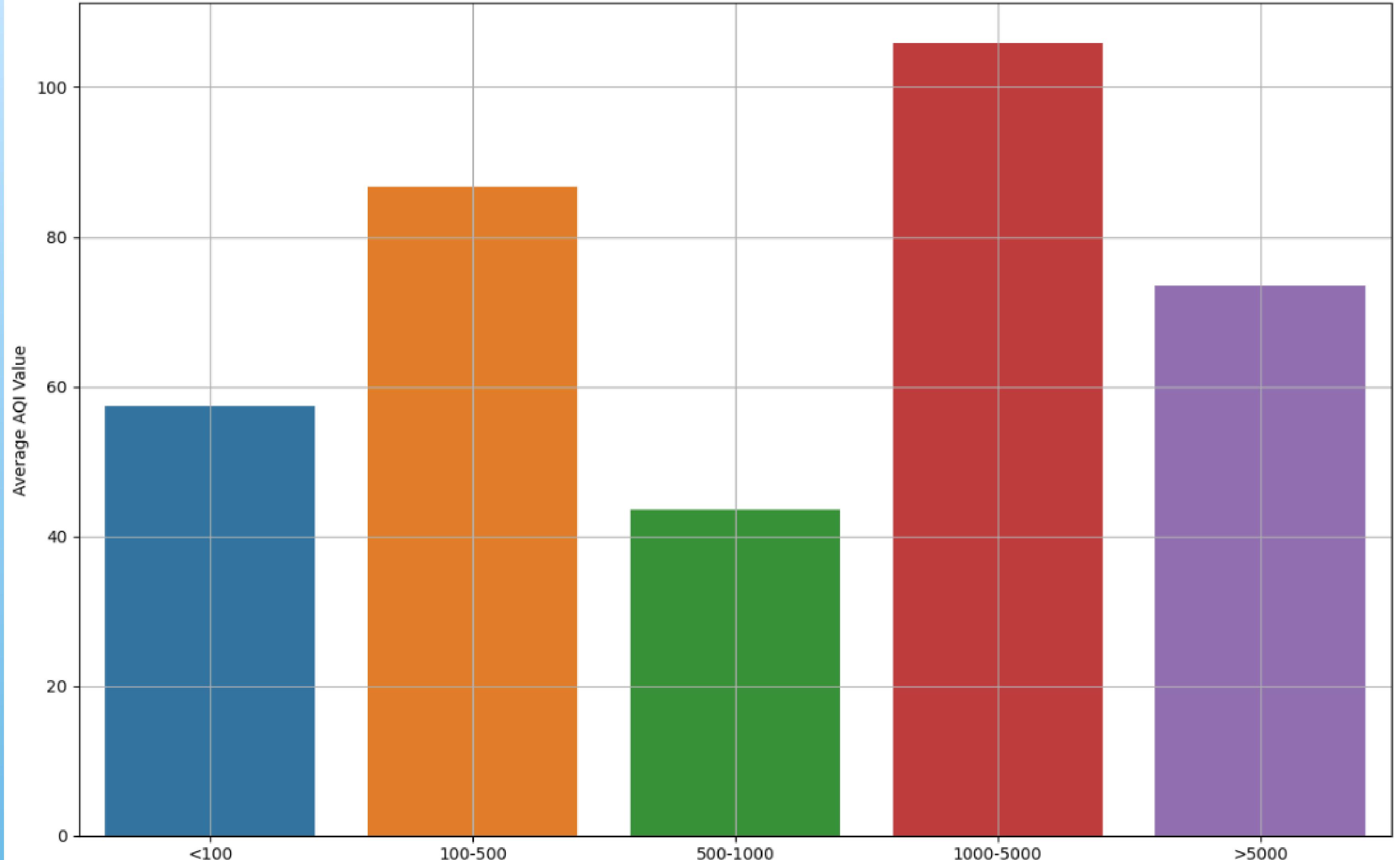


Top 10 Countries with Highest PM2.5 AQI Value



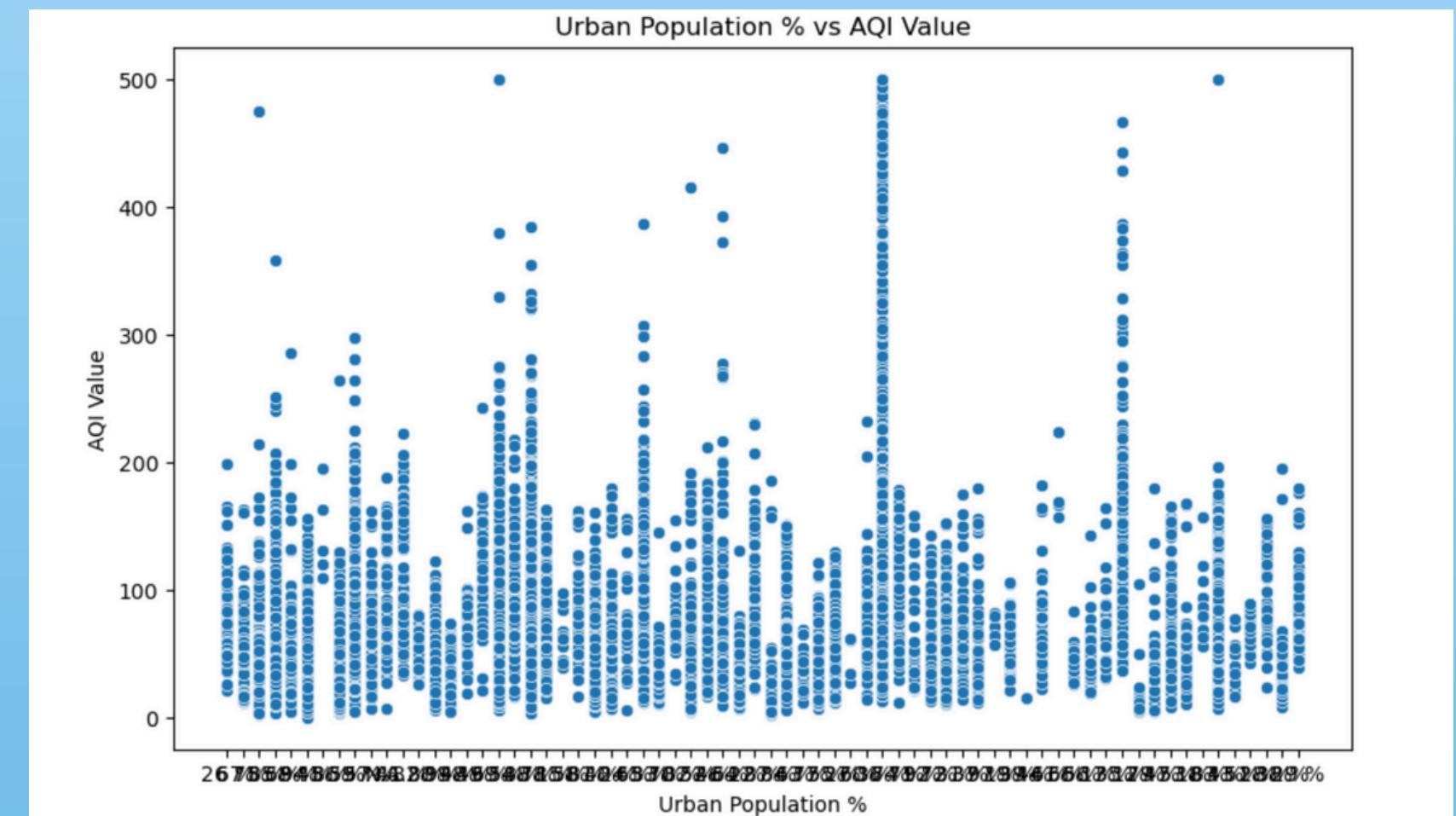
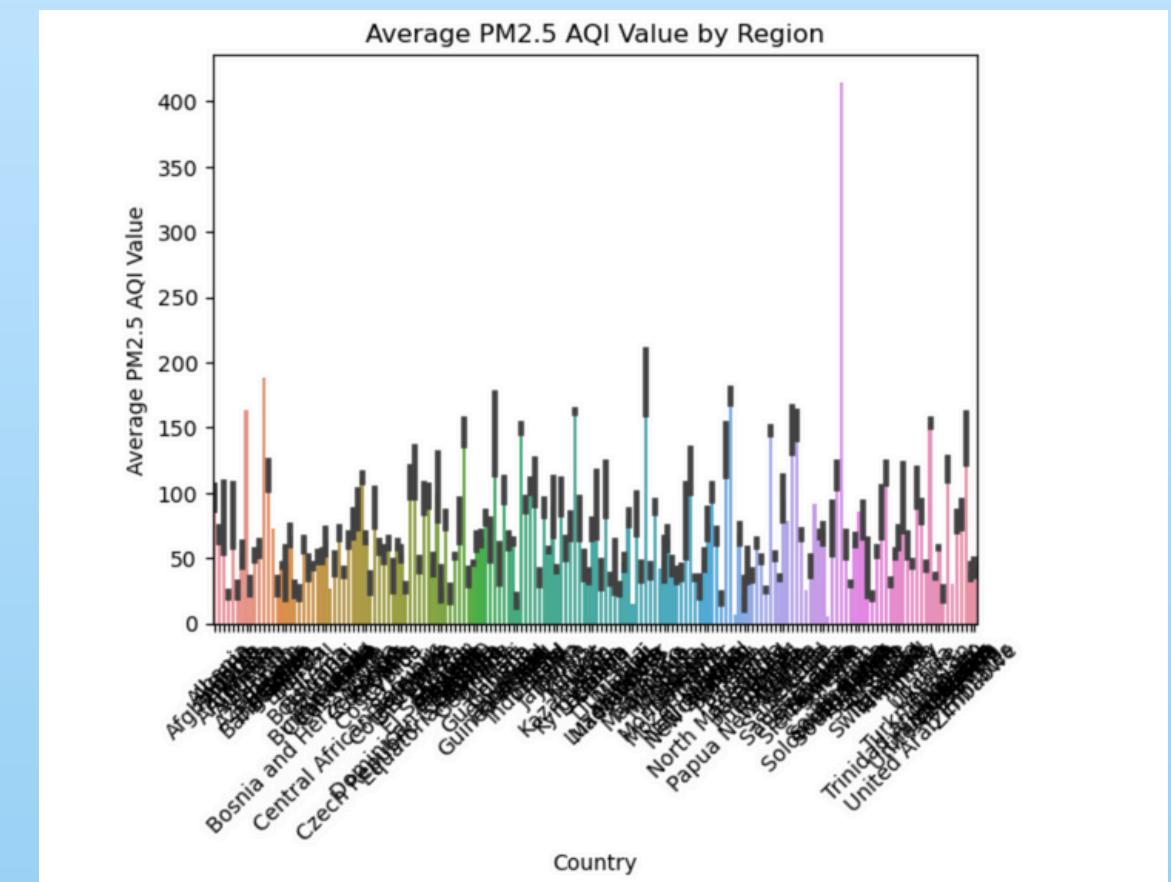
### Top 10 Highest Population Density vs PM2.5 AQI Value





# CHALLENGES

- Creating the data base in SQL
- Handling repetitive data in a large set
- Data outlier (India and Malta)
- Github



# CONCLUSION

- Positive Correlation Between Population Density and Air Pollution:**

Initial analysis shows a positive (but possibly weak) correlation between population density and levels of PM2.5 and PM10, suggesting that more densely populated areas tend to have higher air pollution levels.

- Impact of Urbanization on Air Quality:**

There is a notable correlation between the percentage of urban population and various air quality indices (AQI, CO AQI, NO<sub>2</sub> AQI, PM2.5 AQI), indicating that higher urbanization rates are associated with increased air pollution.





**THANK  
YOU**