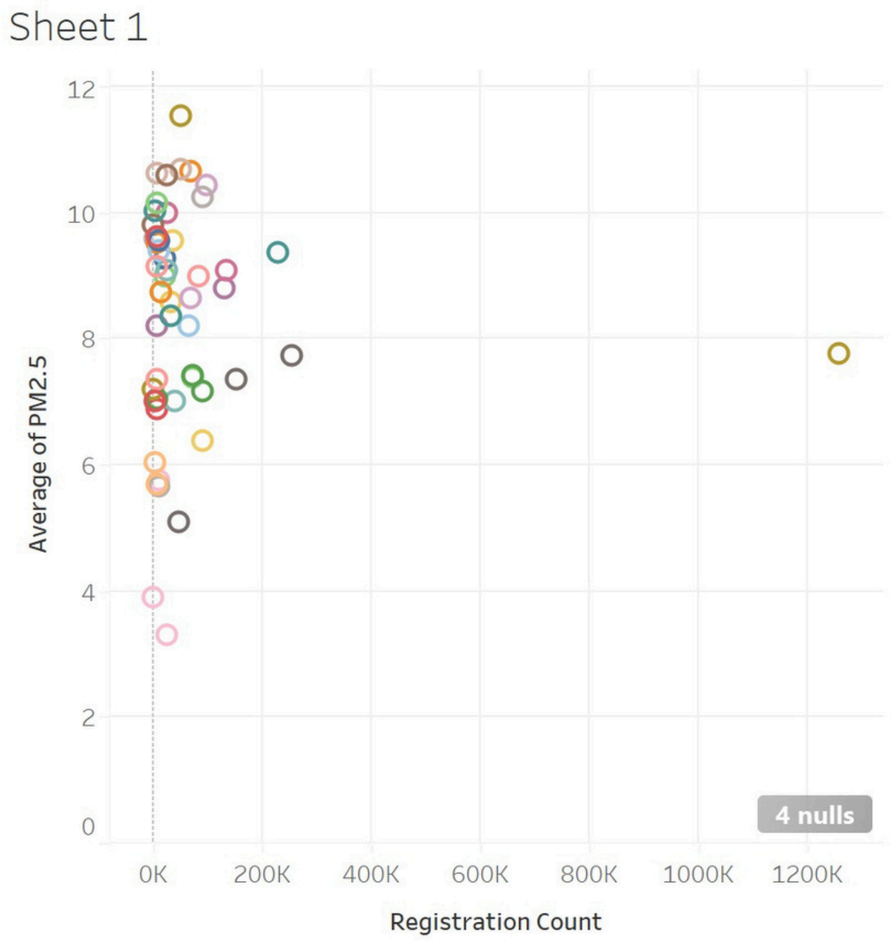
Exploring the Relationship Between EV Adoption and Air Quality Across the U.S.

Research question: “Is there a relationship between electric vehicle (EV) registration and air quality across different states?

As EVs gain popularity for their environmental benefits, it is important to examine whether their increasing adoption is already having an impact on local air quality.

What is PM2.5?

PM2.5 is a type of air pollution caused by fine particulate matter with a diameter of 2.5 micrometers or less. The particles are small enough to penetrate into the lungs and bloodstream, posing a significant health risk.



This Scatter plot compares the number of electric vehicles registered in each state with the average PM2.5 air pollution levels. Each point represents a state.

From the scatter plot, we see that registration count and average PM2.5 levels do not have a strong correlation.

This suggests that other factors-such as industrial emissions, geography, and local environment policies- may play a larger role in determining air quality.

It is also possible that the effect of EV adoption on air pollution may take more time to become noticeable.

Future studies could look at urban-level data, trends over multiple years, or significant pollutant types like NO2 or ozone.

Data Sources:

- EV Registration Data: U.S. Department of Energy, Alternative Fuels Data Center
- Air Quality (PM2.5) Data: EPA’s Air Quality Summary by State

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