**Project 1**

**Air Pollution in the United States**

**Introduction**

Air pollutants are derived from many sources, but are not always visible to the naked eye. According to the United States Environmental Protection Agency (EPA), air pollution can be defined as a combination of gases and particles in the atmosphere that can reach harmful concentrations and have a negative effect on the health of people, animals, and the environment. There have been considerable air pollution prevention and control measures put in place over the years. The focus of this data study is to follow the trend of pollution in the United States over a 17-year period to determine if there are significant differences in pollution among U.S. regions, and if there is an upward trend in pollution levels in the U.S.

**Hypotheses**

**TEST 1:**

**Null Hypothesis:** There are no significant differences in pollution among U.S. regions between the years 2000 to 2016.

**Alternative Hypothesis:** There are significant differences in pollution among U.S. regions between the years 2000 to 2016.

**TEST 2:**

**Null Hypothesis:** There is no upward trend in pollution levels in the U.S. between the years 2000 to 2016.

**Alternative Hypothesis:** There is an upward trend in pollution levels in the U.S. between the years 2000 to 2016.

**Data Summary**

Data source: data.world

Link to data:<https://data.world/data-society/us-air-pollution-data>

Format: csv

Size: 411.49 MB

The dataset contains 1,746,661 rows and 28 columns of air pollution data documented by the U.S. EPA on a daily basis from 2000 to 2016. The dataset contains information about four pollutants: Nitrogen Dioxide (NO2), Sulphur Dioxide (SO2), Carbon Monoxide (CO) and Ozone (O3). It describes the following information for each of the pollutants in 5 different columns: units measured, mean of concentration, air quality index, maximum value of concentration in a given day, and hour when the value was recorded. In addition, the dataset includes the state, city, address, and date of monitoring.