Air Quality in Beijing

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Project Overview - The Silent Killer

Every year, around 7 million deaths are due to exposure to both outdoor and indoor household air pollution.

Objectives:

- How do meteorological conditions in Beijing influence air quality?
  - Temperature
  - Wind speed
  - Precipitation

The data consists of hourly measurements between 2013 and 2017 in 12 different districts of Beijing.

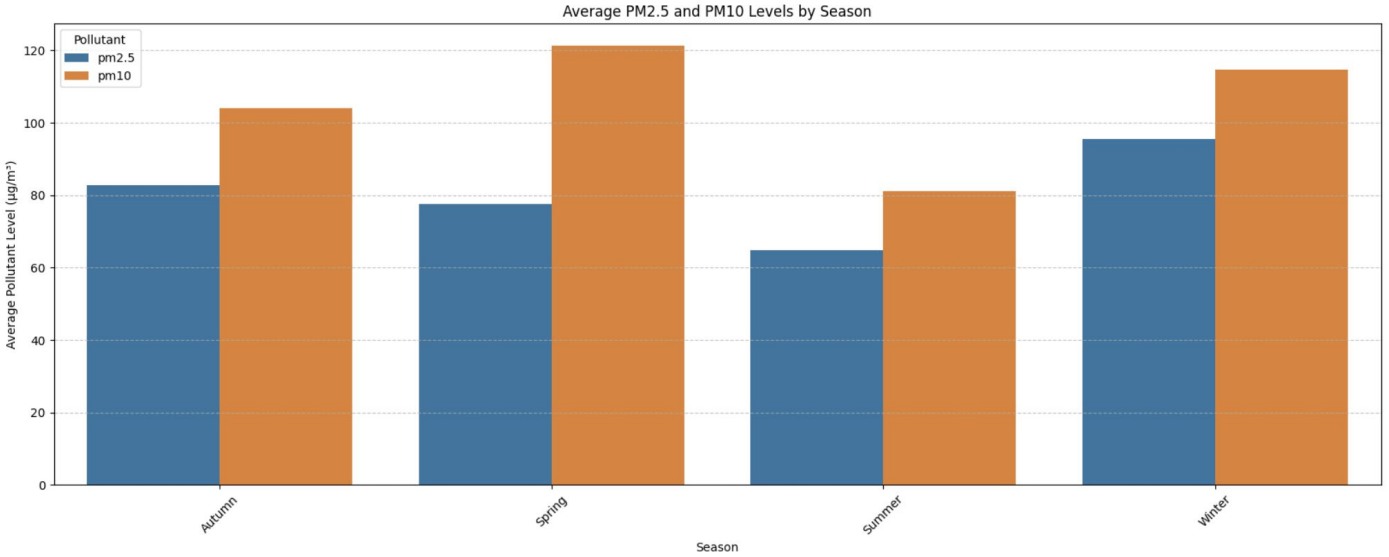
Data Wrangling and Cleaning

Method: Concat, Forward-Fill, unit conversion, creating new columns, inconsistencies

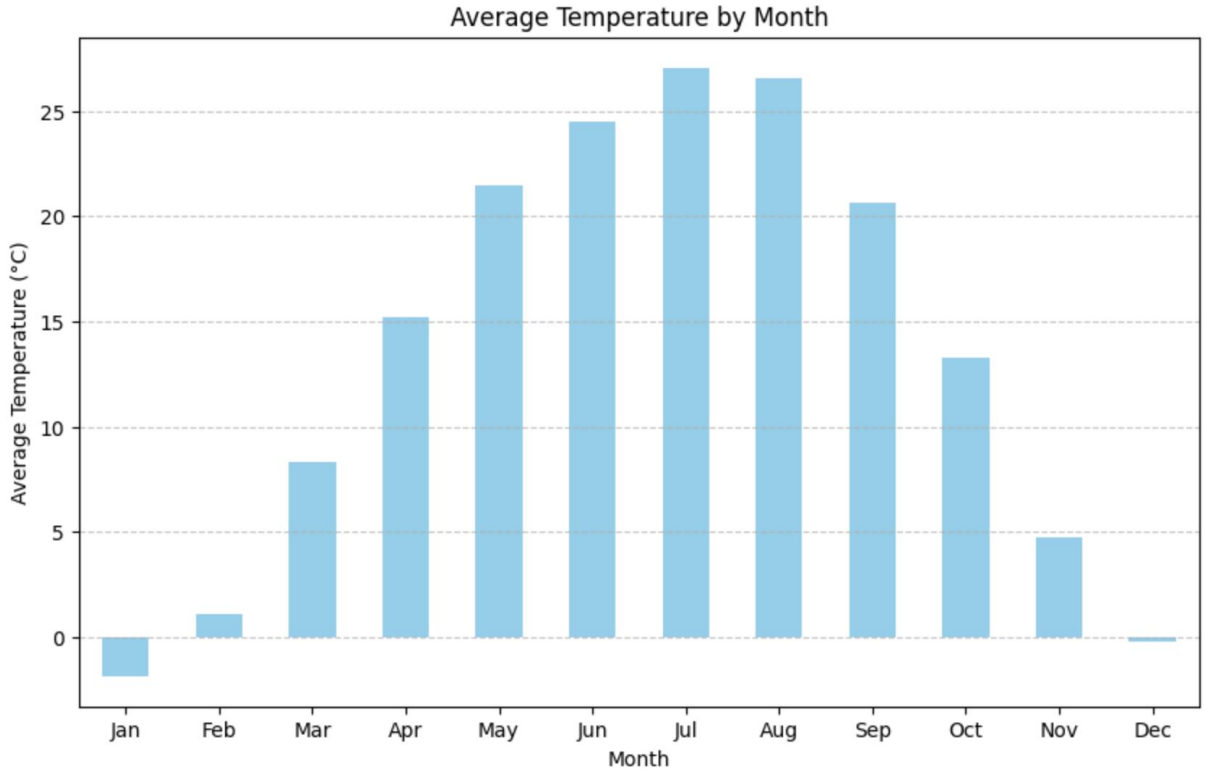
Workflow: Project planning, hypothesis formulation, data cleaning, hypothesis testing, presentation preparation

Constraints: Determining the time frame, plotting correlation matrix

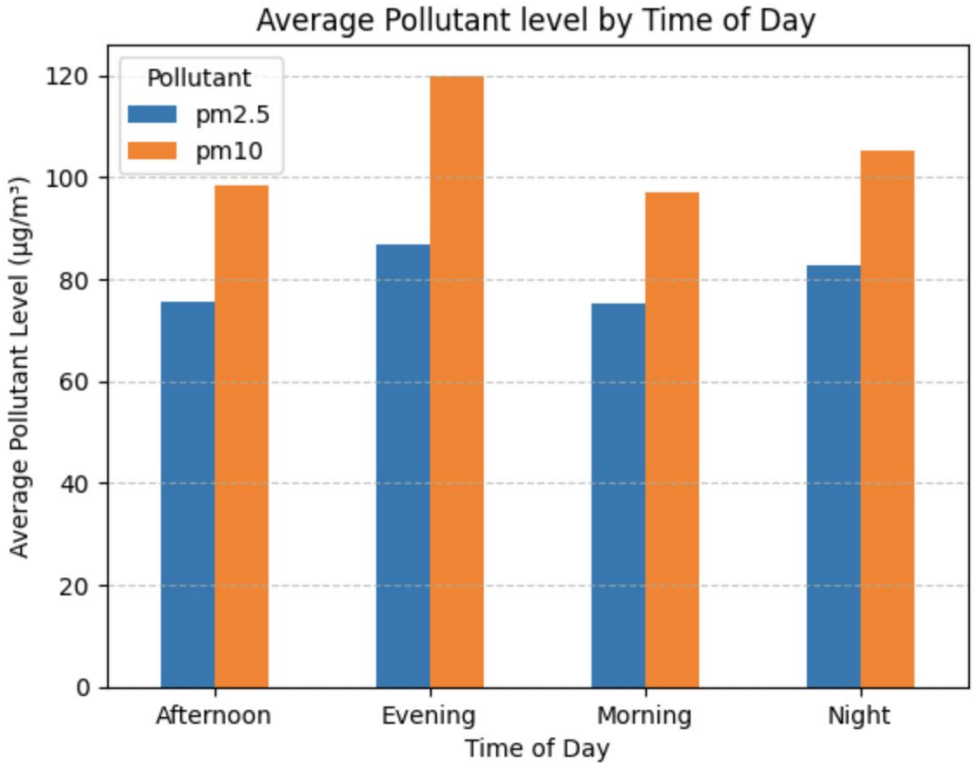
Average Pollutant Levels By Season



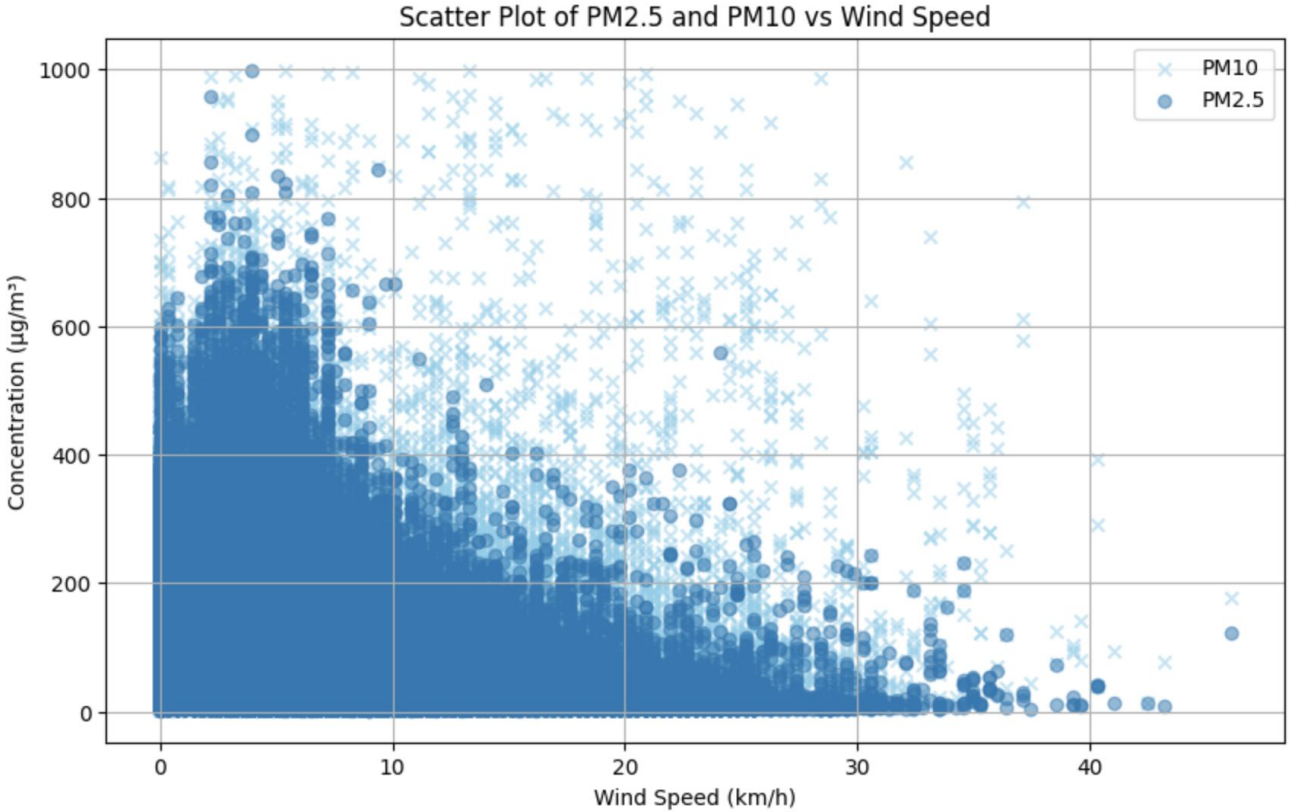
Average Pollutant Levels By Season



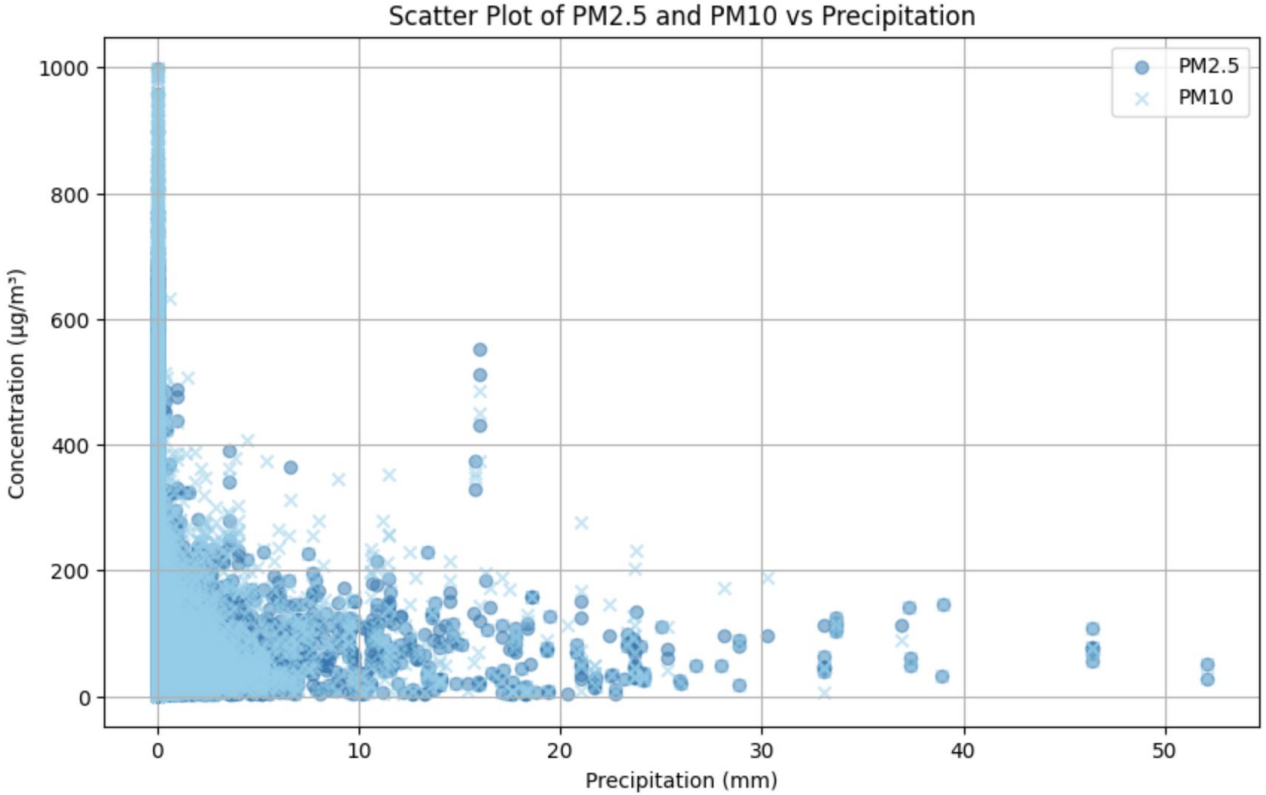
Average Pollutant Level by Time of Day



Question: Does Wind Speed Affect Air Quality?



Question: Does Precipitation Affect Air Quality?



Conclusion

- Between the years 2013 and 2017, pollutant levels around different districts of Beijing were extremely high and posed significant health treats
  - Beijing has since seen drastic improvements in their air quality following certain mandates to decrease levels of pollution in the air
- Higher pollutant levels were also observed during the winter season.
  - Replace burning coal for electricity and natural gases for heating can reduce levels of pollutants in the air
- During periods of high precipitation, lower levels of PM2.5 were recorded.
  - Advised that individuals with health concerns minimize exposure to the outdoors or consider wearing a face mask to prevent inhalation of pollutant.

Thank you!

Pollutant Levels Over Time