Data-Driven Insights:

The Impact of Air Quality on Economic and Public Health Outcomes

Elevator pitch

AQI (Air Quality Index)

The Air Quality Index (AQI) is a standardized system used to measure and report air quality. It indicates how clean or polluted the air is and the associated health effects.

| Air Quality Index (AQI) Values	Levels of Health Concern	Colors
When the AQI is in this range:	...air quality conditions are:	...as symbolized by this color:
0 to 50	Good	Green
51 to 100	Moderate	Yellow
101 to 150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

AQI-Comparison of the 3 States (NY,NM,WA)
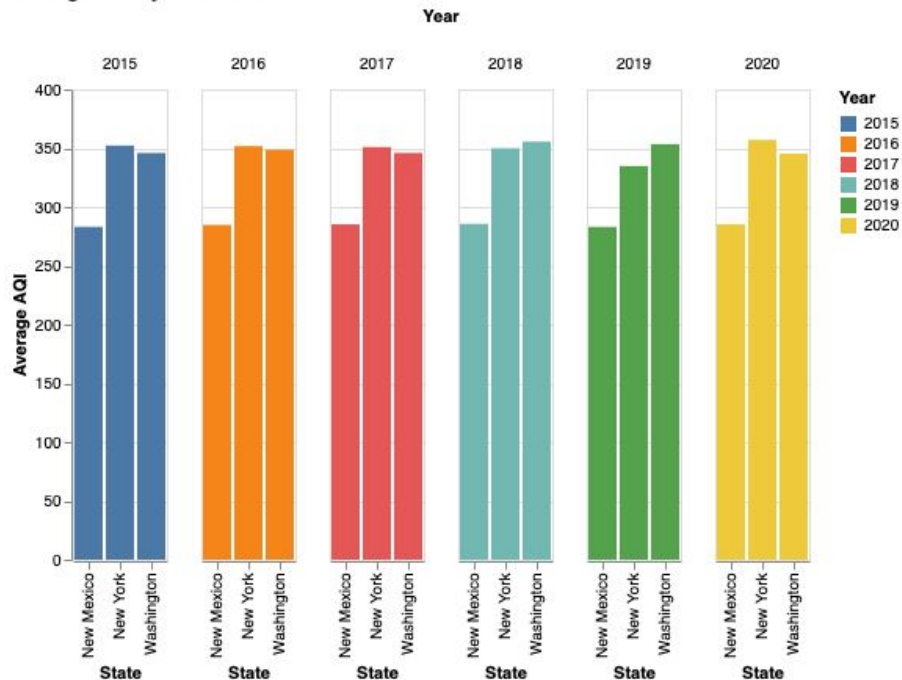

Average AQI by State and Year
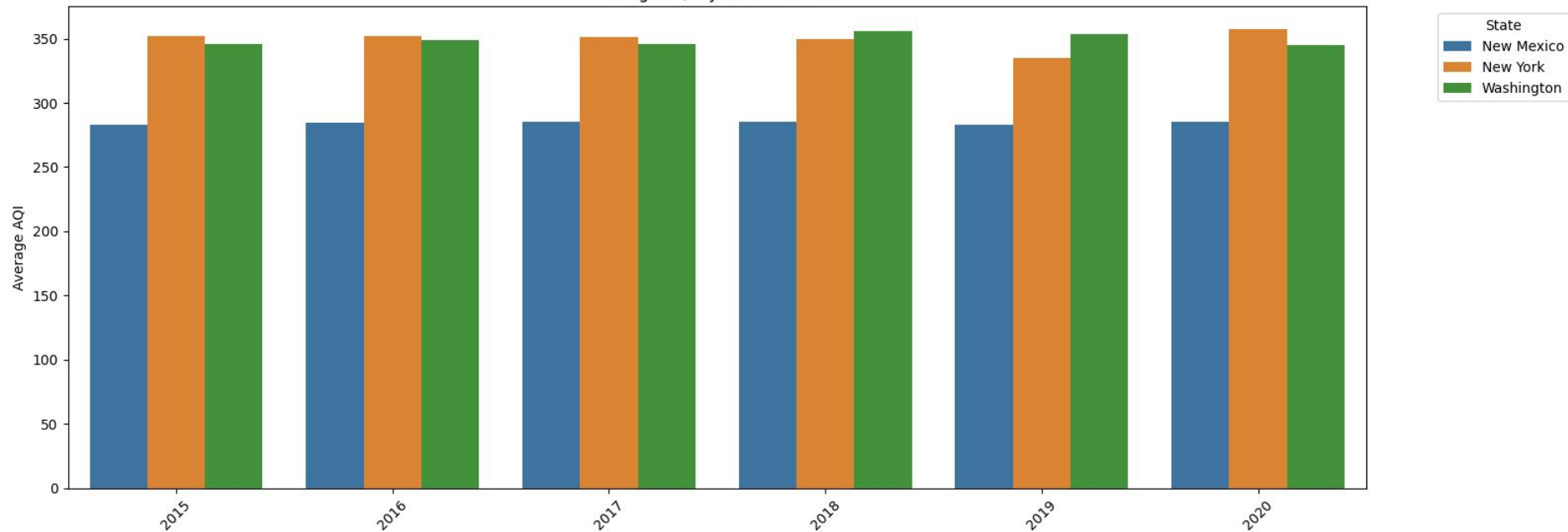
AQI vs Economic indicators

GDP vs Max AQI Over Time for Washington

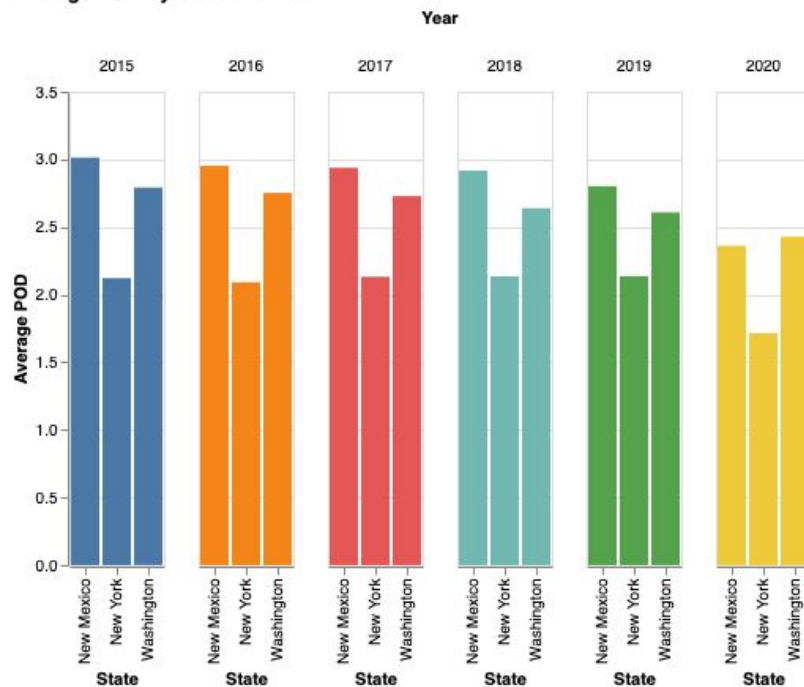GDP vs Max AQI Over Time for New York
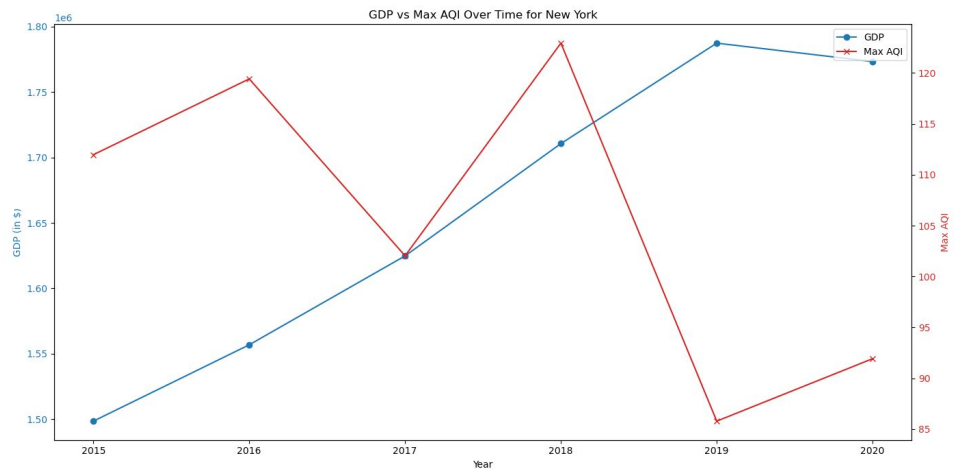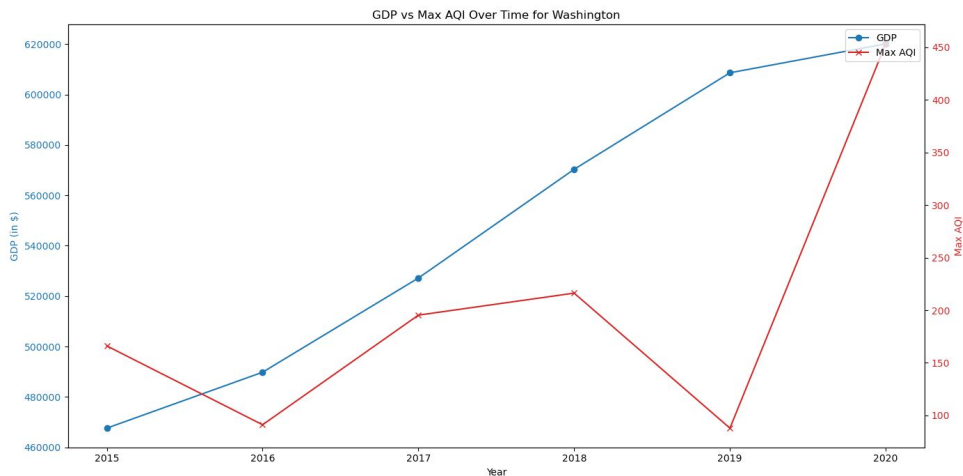
AQI vs Health Indicators

Average AQI by State and Year

Average POD by State and Year

Health Indicators

Probability of Death by State and Year

Probability of Death by State, Year, and Sex based on Chronic Respiratory illness

Probability of Death by State, Year, and Sex based on Chronic Respiratory illness
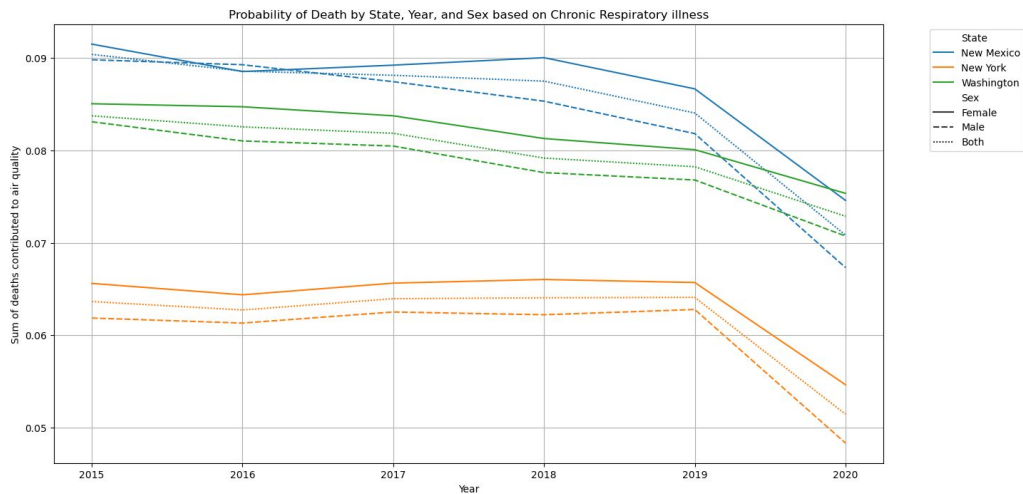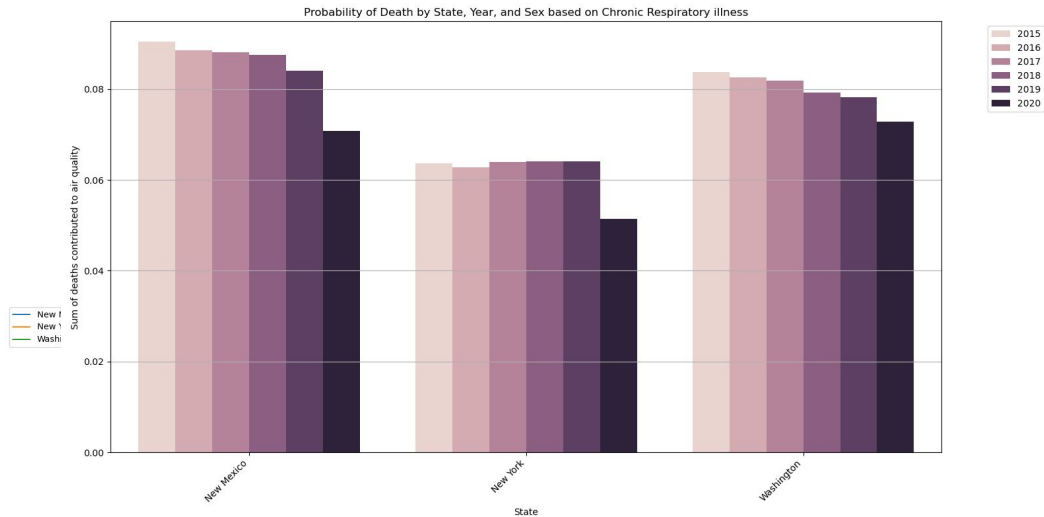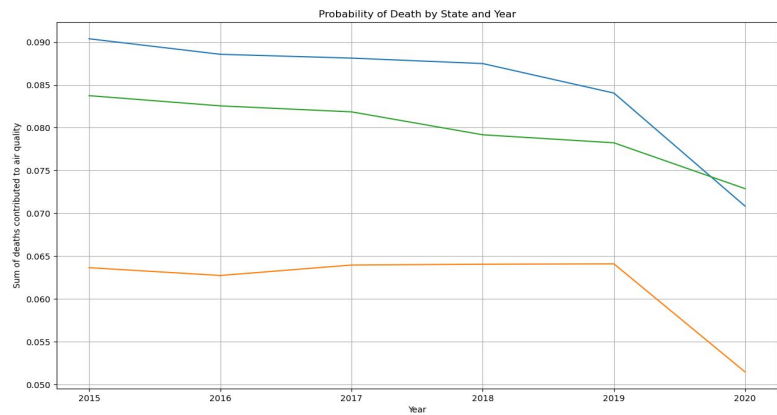
Conclusions

Economic Growth and Air Quality
- Economic growth does not always lead to environmental degradation.
- New York achieved strong economic growth while maintaining superior air quality.

Washington's Divergence
- Washington's GDP growth coincided with periods of poorer air quality.
- Highlights the need for tailored approaches to balance economic and environmental goals.

Role of Policies and Factors
- Effective environmental policies and strategic planning are crucial.
- Geographical factors and the nature of economic activities influence air quality outcomes.

Directions for Future Development

Integrated public health and environmental strategies are essential. Further research is needed into specific industries, population density, and regulations.

Suggestions:

- Develop and enforce stricter emissions regulations for high-polluting industries.
- Research the long-term health effects of varying air quality to guide future strategies
- Expand air quality monitoring networks for more granular data.
- Utilize advanced analytics and AI for predictive modeling of air quality trends.

Citations

- U.S. Bureau of Economic Analysis. (2024). Regional GDP & Personal Income, 2015-2020[Data set]. U.S. Department of Commerce. Available from BEA.gov/iTable
- U.S. Environmental Protection Agency. (2024). Air Quality Index (AQI) by County, 2015-2020 [Data set]. Air Quality System Data Mart. Available from aqs.epa.gov/aqsweb/airdata/download_files
- Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2021 (GBD 2021) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2022. Available from https://vizhub.healthdata.org/gbd-results/