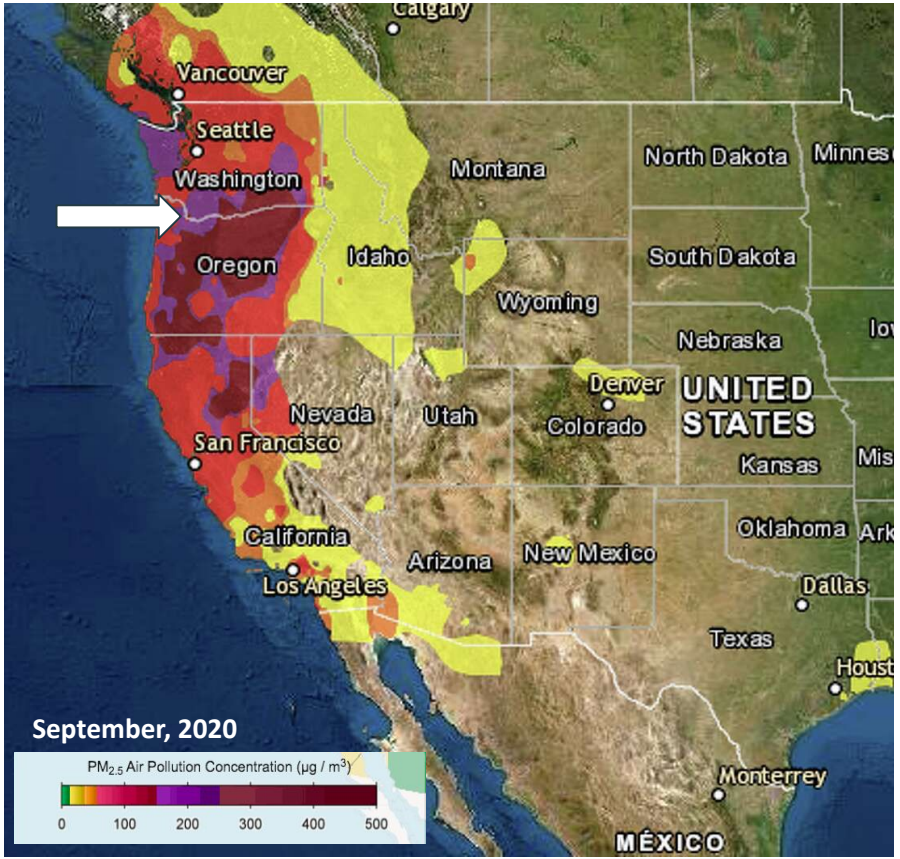
Vancouver, WA



Smoke Estimation

Health Impacts of Smoke Exposure

Economic Instability from Wildfires

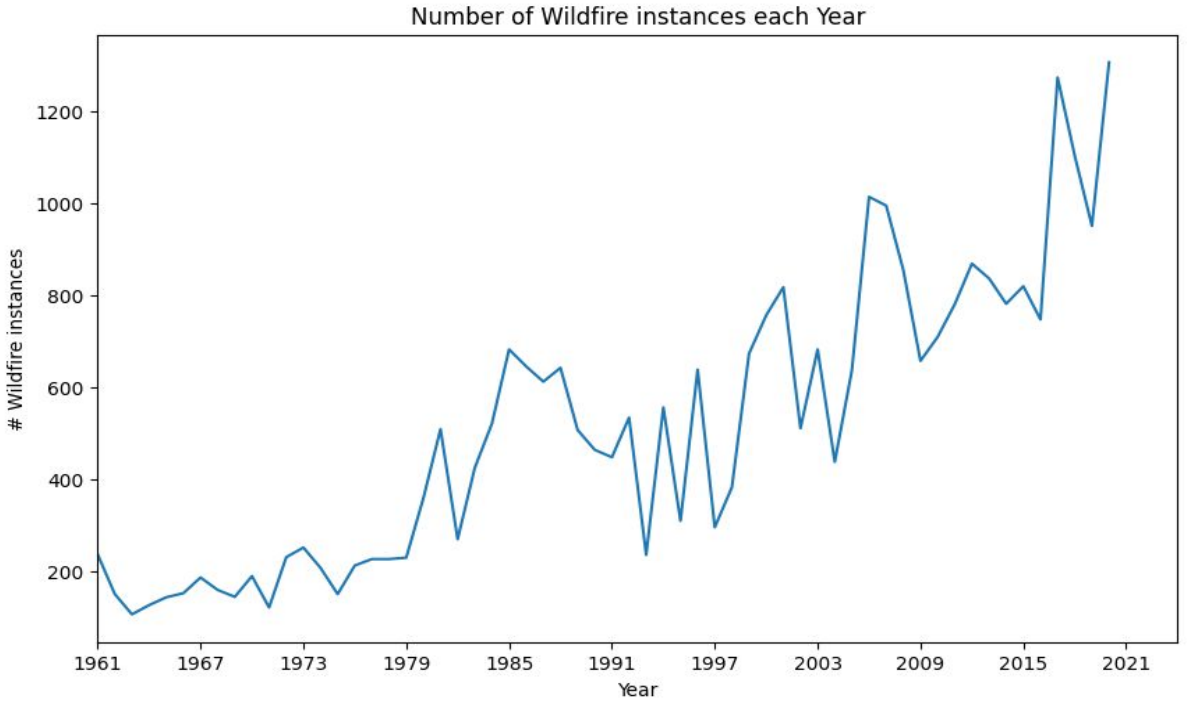
Data Acquisition | Data Processing | Statistical Analysis | Predictive Modeling

USGS science for a changing world

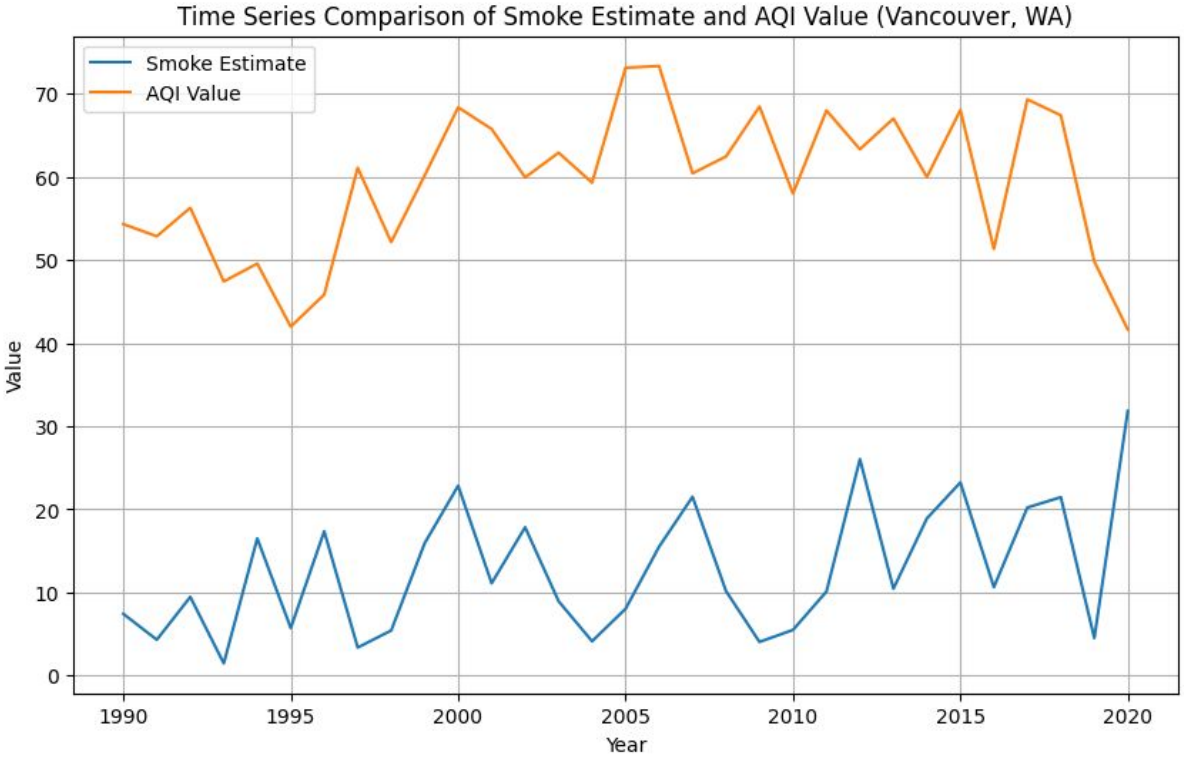
EPA United States Environmental Protection Agency

IHME | GHDx

FRED® ECONOMIC DATA | ST. LOUIS FED



$$\text{Smoke Estimate} = W \times c \times \text{GIS (SqMiles)} \times \frac{1}{\text{average distance}}$$



Spearman Correlation: 0.23

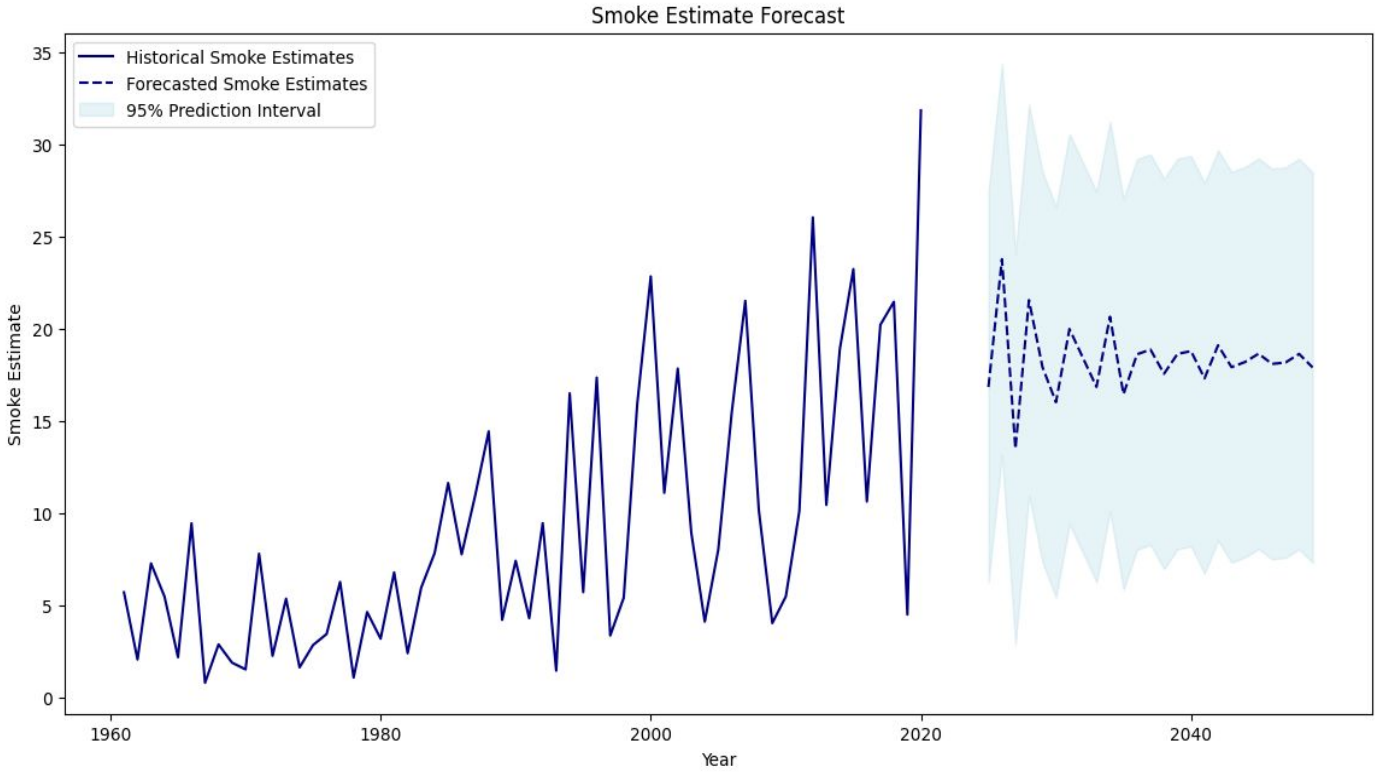
p-value: 0.22

Smoke Estimate Forecast (ARIMA)

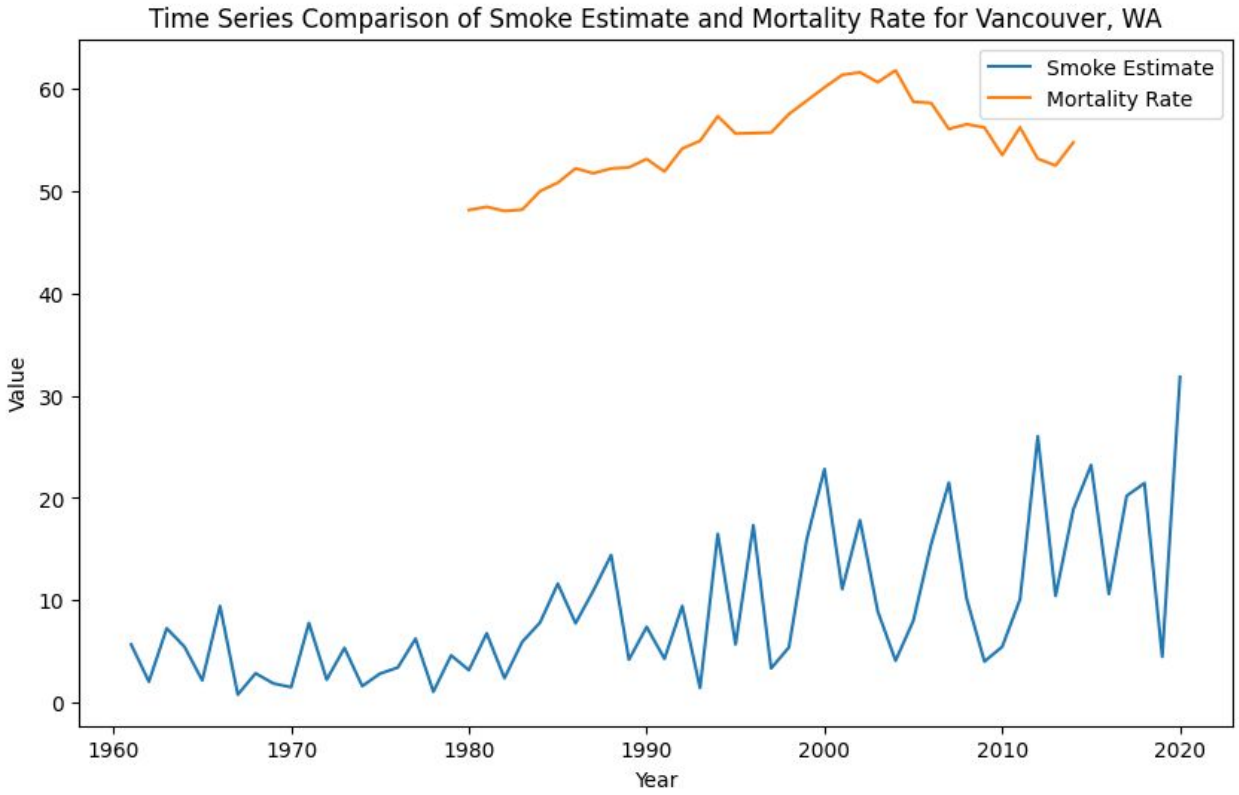
<u>After Differentiating:</u>

ADF Statistic: -7.42

p-value: 9.43e-11



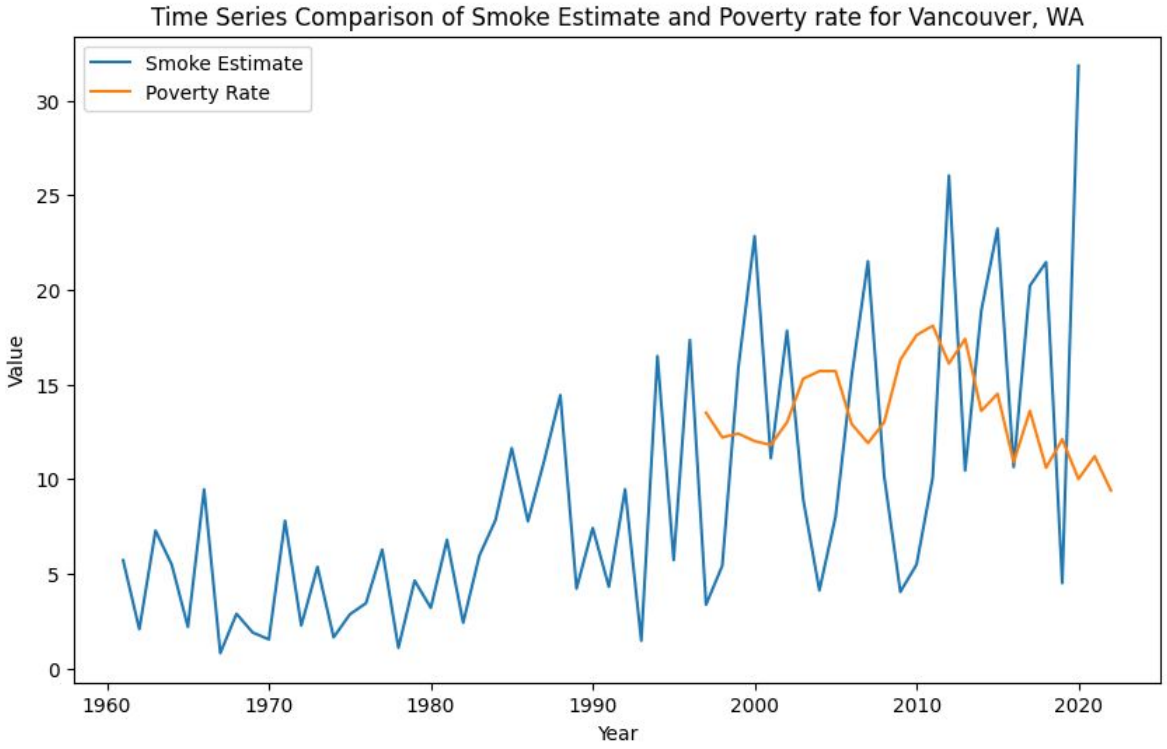
Respiratory Mortality Rate



Spearman Correlation: 0.32

p-value: 0.063

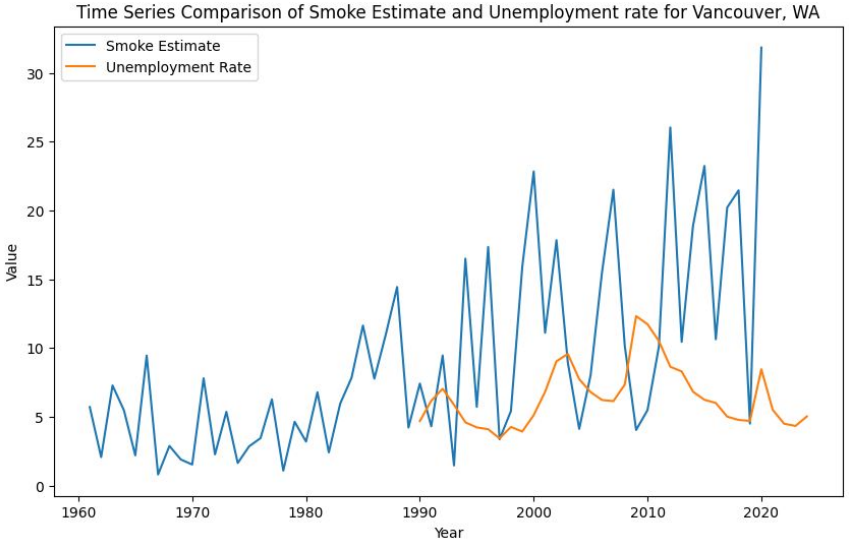
Poverty Rate



Spearman Correlation: -0.41

p-value: 0.03

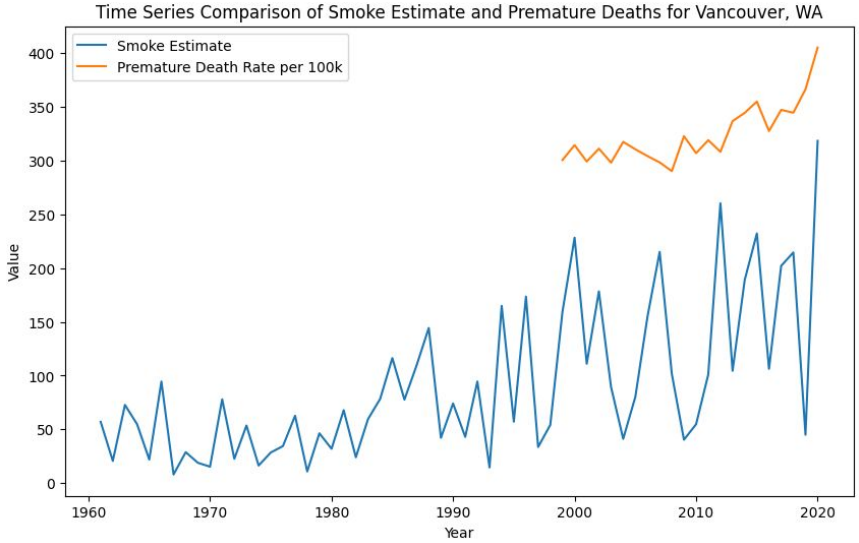
Unemployment Rate



Spearman Correlation: 0.045

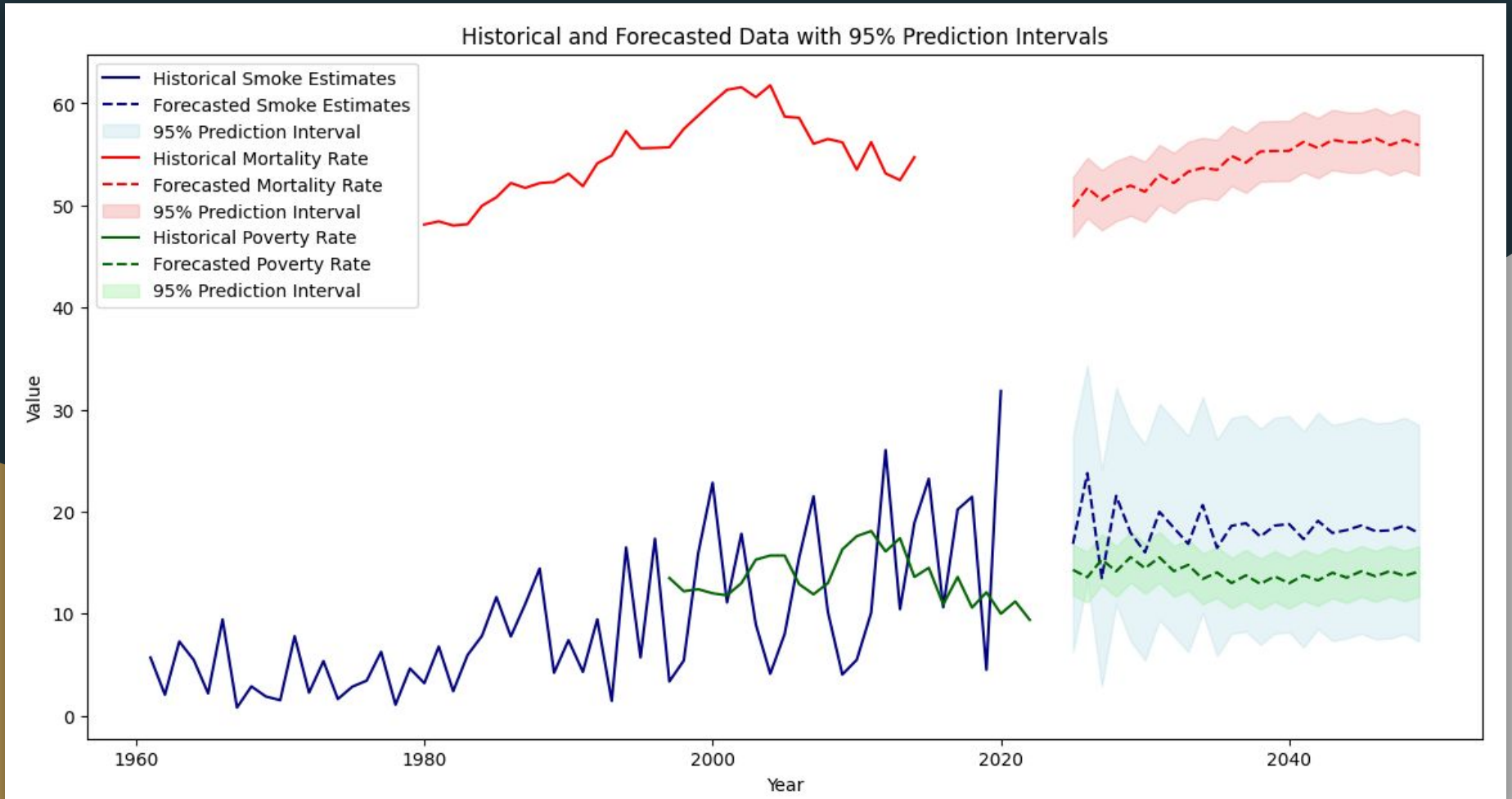
p-value: 0.809

Premature Deaths



Spearman Correlation: 0.193

p-value: 0.391


Historical and Forecasted Data with 95% Prediction Intervals
Historical Smoke Estimates
Forecasted Smoke Estimates
95% Prediction Interval
Historical Mortality Rate
Forecasted Mortality Rate
95% Prediction Interval
Historical Poverty Rate
Forecasted Poverty Rate
95% Prediction Interval
Value
Year
0
10
20
30
40
50
60
1960
1980
2000
2020
2040