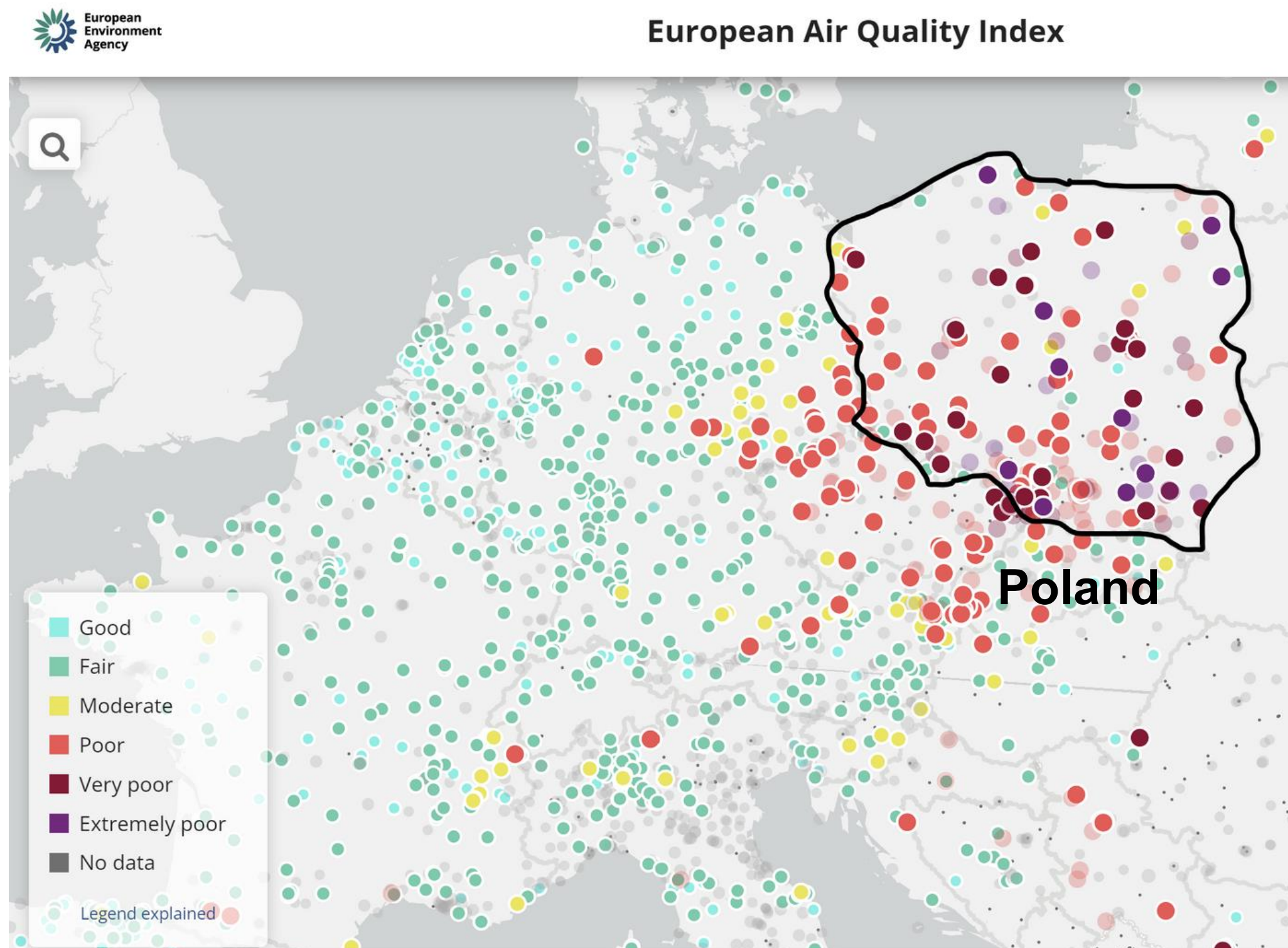




Investigating Causes and Impacts of Air Pollution in Poland

Context and Problem



LIVE AQI CITY RANKING

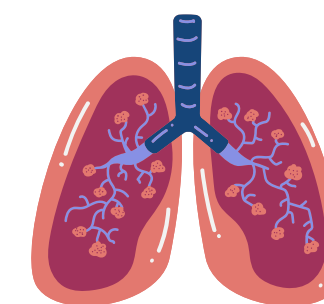
World major city air quality ranking ⓘ

#	CITY	US AQI
1	Delhi, India	288
2	Dhaka, Bangladesh	223
3	Kolkata, India	197
4	Lahore, Pakistan	193
5	Wroclaw, Poland	185
6	Krakow, Poland	181
7	Hangzhou, China	181
8	Chengdu, China	180
9	Wuhan, China	180
10	Shanghai, China	178

08:18, Jan 11 (local time)

5-6th rank worldwide

In 6 Cities in Poland Between 2015 - 2020



long-term exposures to ambient PM_{2.5}, PM₁₀, NO₂, and O₃ led to:

6700 deaths for non-accidental causes,
2310 deaths for cardiovascular diseases,
500 deaths for respiratory diseases

Extent of air pollution in Poland

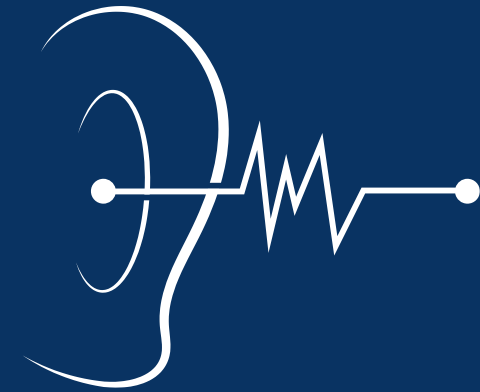
Objective



To investigate the causes of air pollution and how these causes differ between the various regions of Poland.



To investigate the disproportionate health impacts of air pollution on people in Poland



To understand the perception of Polish residents on air pollution in Poland.

Proposed Method

Study Area Poland



Administrative boundary of Poland

Data required and strategy to get the data

Data required

- Air Quality – AQI, Pollutants with locations and time
- Power Plants – with location and time
- Land use - with location and time
- Forest Fire - with location and time
- Traffic Movement - with location and time
- Respiratory illness data – medical data, mask sold data
- Demographic data
- Social media – Opinions

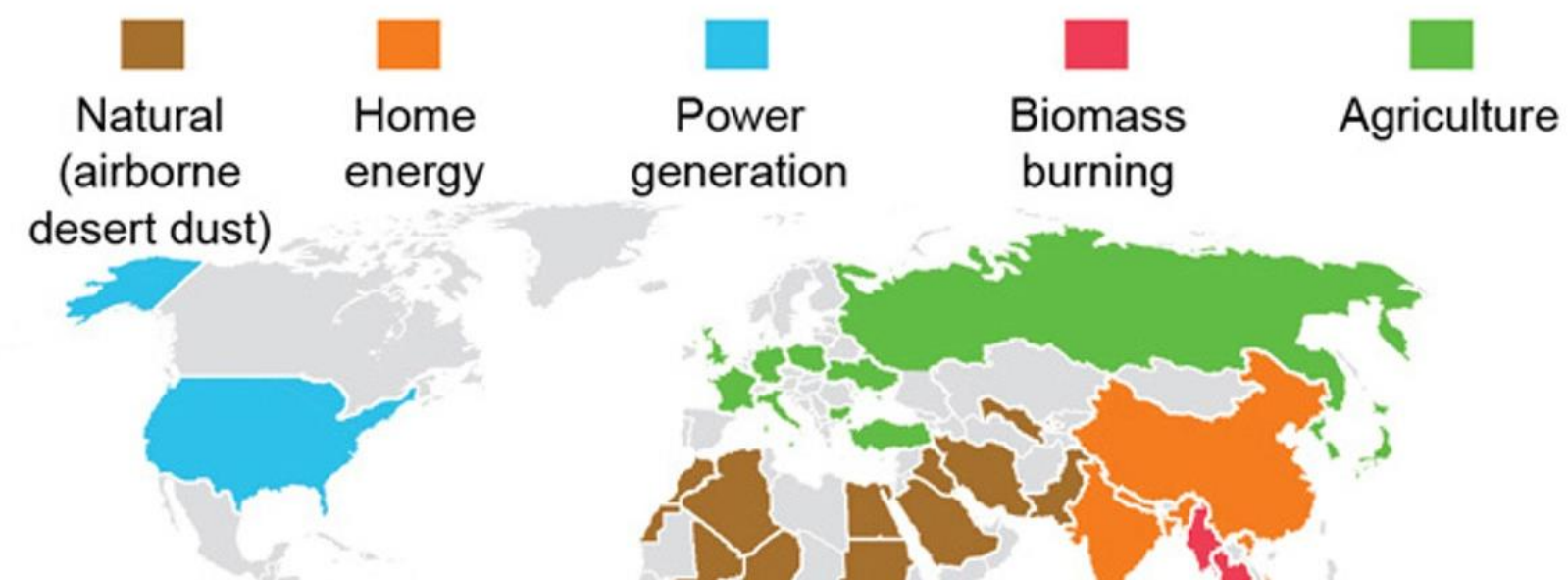
Strategy

Download the data or use API to call data from portals. For social media data, use web scrapers.

Approach and techniques for analyses and visualization

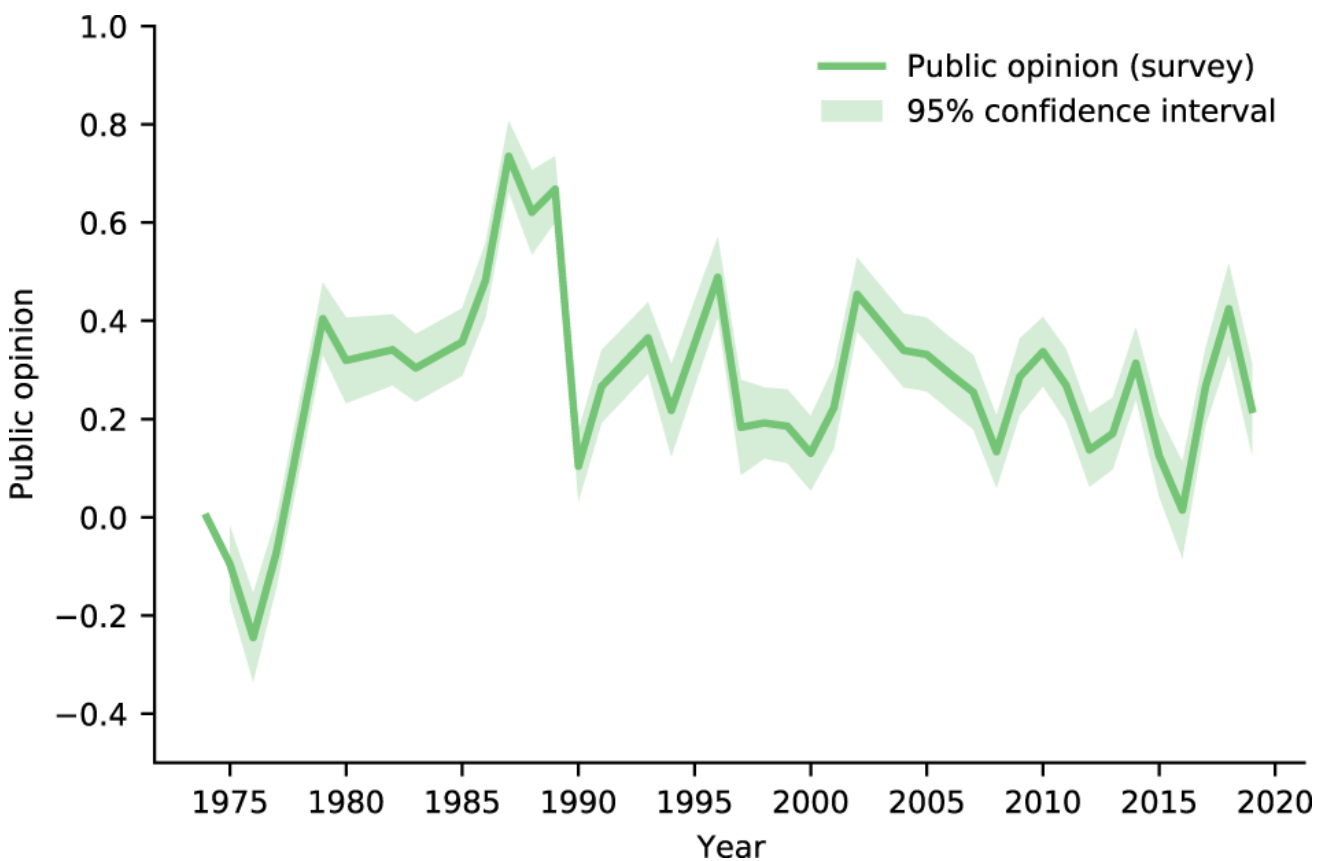
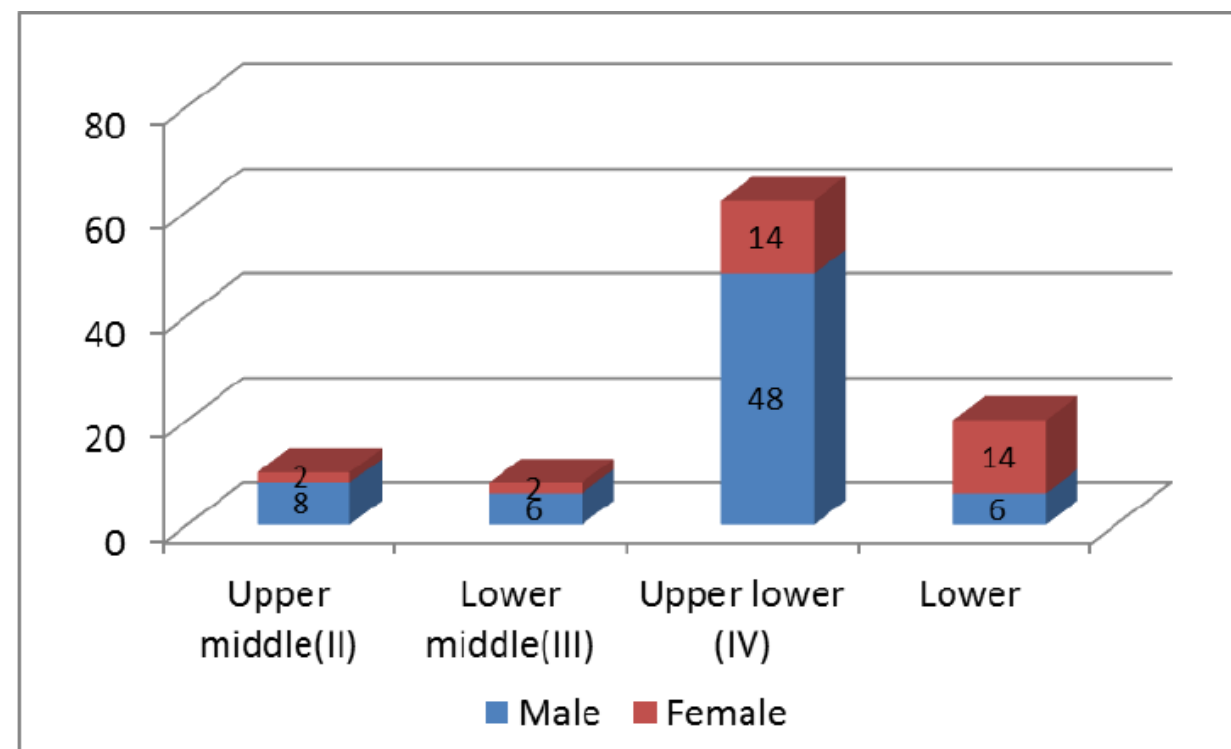
- Geospatial Analysis – Overlay, GeoDa?
- Statistical Analysis – Correlation analysis, building pattern
- Sentiment Analysis – for Perceptions
- Mapping – to visualize trend and causes
- Graphs – to show disproportionate impact on respiratory health, perception of people.

Expected Results



A Story Map with :-

- Trend of concentration of air pollutants in Poland
- Correlation between potential factors/causes and air pollution
- Relative contribution of each factor of air pollution, differing by region
- Respiratory illness occurrence, differing by socioeconomic status
- Trend of perception of air pollution in Poland.



Potential Pitfalls

Incomplete data



Timeframe



Resource
availability



Methodological
feasibility

