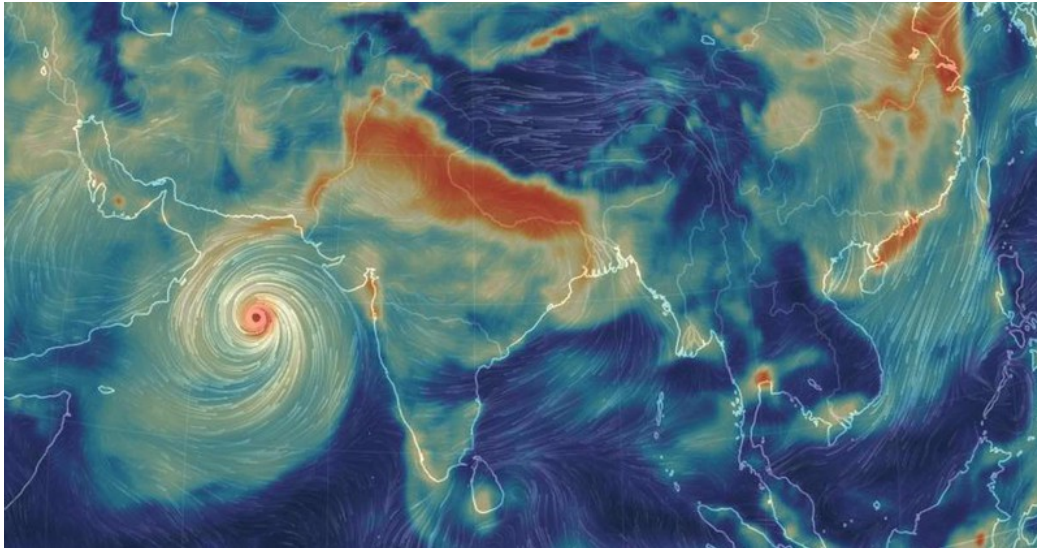




# AIR Quality Analysis

## Impact of Air Pollution on our Lives



INDIA AIR AQI

Air pollution in India is a serious health issue. Of the most polluted cities in the world, 21 out of 30 were in India in 2019. The 51% of pollution is caused by the industrial pollution, 27% by vehicles, 17% by crop burning and 5% by diwali fireworks.

City	Annual mean PM2.5	Excess over WHO target of 10	Estimated relative risk from exceeding WHO target	Cigarettes per day giving equivalent relative risk	Reduction in life-expectancy (months)	Equivalent time off life for each day exposed (minutes)
Delhi	122	112	1.92	19	82	197
Beijing	56	46	1.31	8	34	81
Bangkok	24	14	1.08	2	10	25
Paris	18	8	1.05	1	6	14
London	15	5	1.03	1	4	9
Pittsburgh	10	0	1.00	0	0	0
Stockholm	6		1	0	0	0

AIR AQI Different aspects

Show More

### 1. Agricultural Burning is also a Major Problem

Like tens of thousands of farmers in India's northern states of Haryana, Punjab and Uttar Pradesh, Satish, whose farm sits on the outskirts of the rural Haryana village of Gharaunda, had recently cleared his fields of old rice crop stubble to make way for wheat by setting it alight. The practice was banned when its contribution to the mounting pollution crisis in nearby Delhi and across northern India became impossible to ignore, but deprived of equally cheap and easy alternatives of preparing the fields, farmers have continued to flout the law. As record-breaking pollution threw Delhi into a state of crisis this week, and the city



was shrouded in a thick brown smog with toxins over 50 times the levels deemed healthy, crop burning – which began in earnest in late October and is due to continue for the rest of the month – was labelled as the chief culprit. According to the government environment agency, almost 50% of Delhi's pollution was from crop burning.

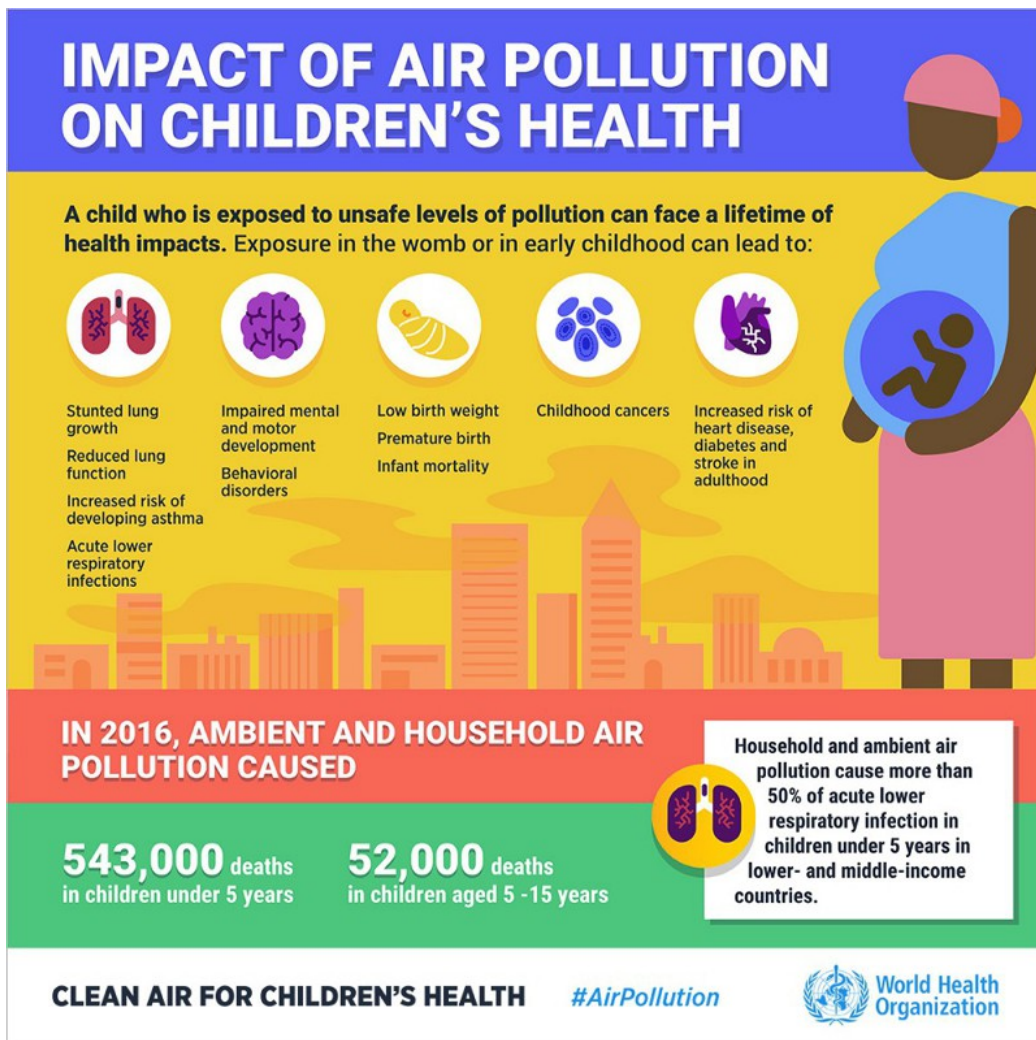
## 2. Traffic

One of the sources of PM 2.5 particles is car engine exhaust. While campaigning for more public transportation usage is in general good for the environment, the effectiveness toward reducing PM 2.5 pollution is unclear.

## 3. Industry And Power Generation

Various studies clearly show that causes of pollution, especially in Northern India cannot attributed to the farmers alone for burning farm biomass. Major share of the pollution is contributed by vehicular and industrial emissions.

Together, household air pollution from cooking and ambient (outside) air pollution cause more than 50% of acute lower respiratory infections in children under 5 years of age in low- and middle-income countries.



impact of AIR pollution on health

Show Health More



➤ Air pollution is one of the leading threats to child health, accounting for almost 1 in 10 deaths in children under five years of age. Every day around 93% of the world's children under the age of 15 years (1.8 billion children) breathe air that is so polluted it puts their health and development at serious risk. According to a new report from the World Health Organization (WHO) 600,000 children died from acute lower respiratory infections caused by polluted air in 2016. The new report also reveals that when pregnant women are exposed to polluted air, they are more likely to give birth prematurely, and have small, low birth-weight children. Air pollution also impacts neurodevelopment and cognitive ability and can trigger asthma, and childhood cancer. Children who have been exposed to high levels of air pollution may be at greater risk for chronic diseases such as cardiovascular disease later in life.

The health impact of air pollution is quite severe. It is estimated that 29% of cardiopulmonary deaths and 40% of lung cancer deaths are attributable to air pollution. Mothers and young children are especially vulnerable. During winter months (when pollution is highest) fetal deaths increase 3.5 times and birth defects are more common.



Delhi before and after covid 19 image

show Delhi

So if we are prepared to extrapolate up to high-levels of PM2.5, long-term exposure to Delhi's air is roughly equivalent to smoking 20 cigarettes a day, and will reduce life expectancy of inhabitants by around 7 years, equivalent to losing around 3 hours life a day.





Solutions to overcome this pollution

show Solutions

All countries should work towards meeting WHO global air quality guidelines to enhance the health and safety of children. reducing the over-dependence on fossil fuels in the global energy mix, investing in improvements in energy efficiency and, facilitating the uptake of renewable energy sources.



0:00 / 1:05



☐ Show DataSet

column names

☐ dataset shape

☐ check null values

☐ select columns to show

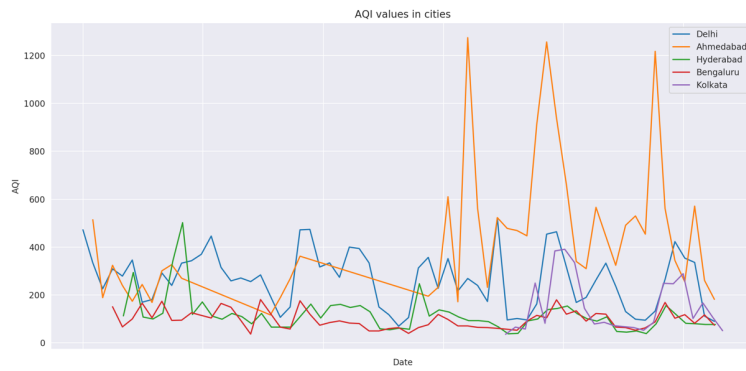
Data Types

Value Counts

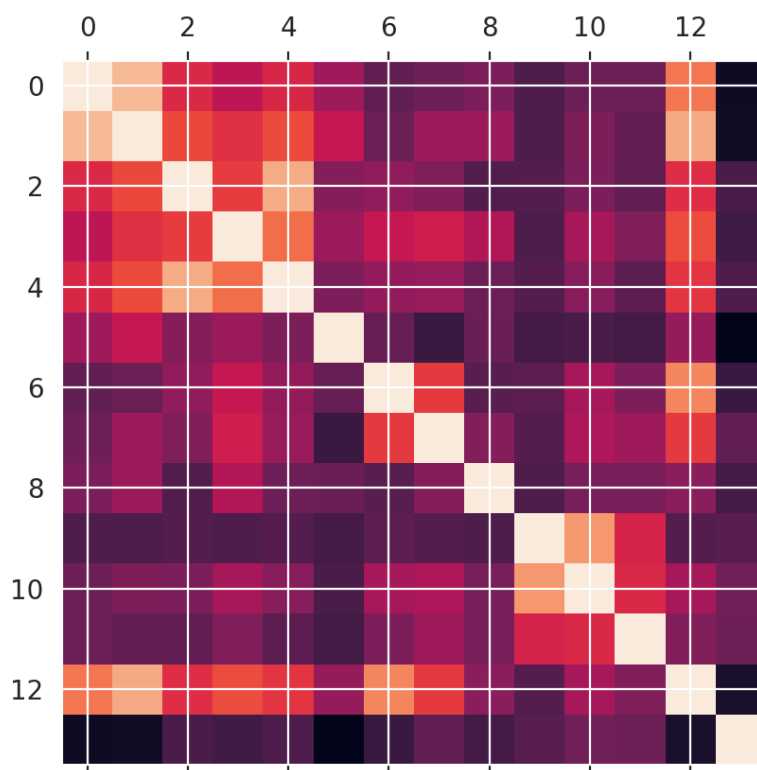
☐ Show Summary of Dataset

Data Visualization

See How AQI(air quality index) is distributed?

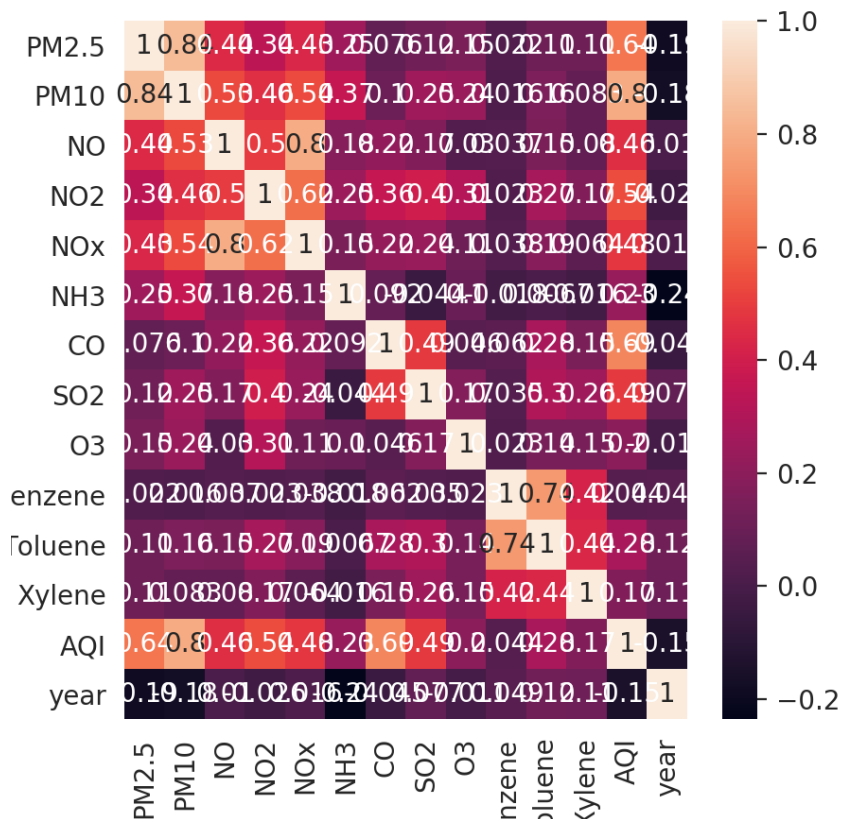


Correlation Plot [Matplotlib]



Correlation Plot with Annotation[Seaborn]

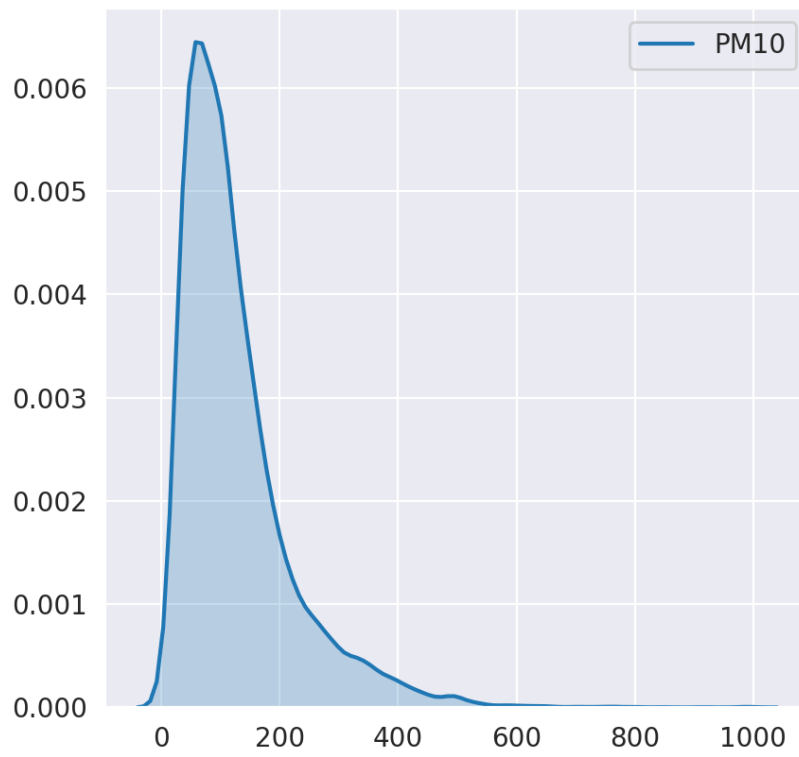
```
AxesSubplot(0.125,0.11;0.62x0.77)
```



Plot distribution to all the dataset columns

select column

PM10



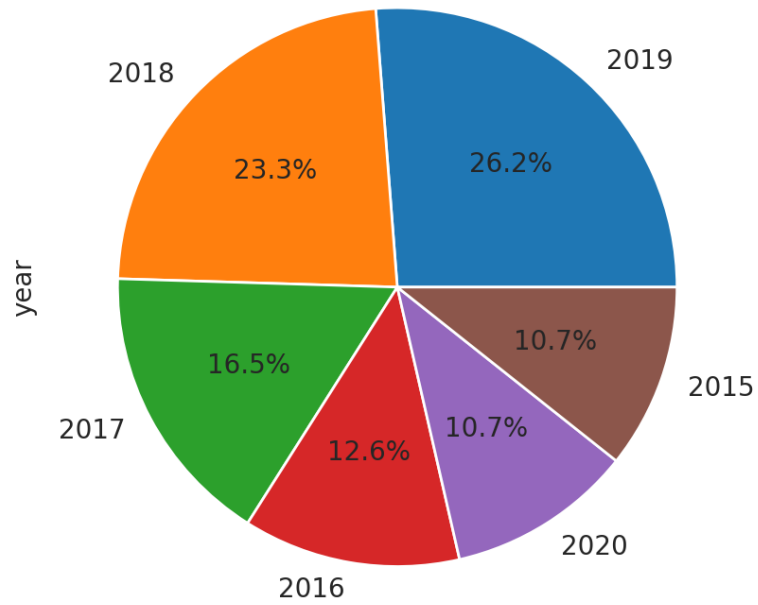
☐ Plot of Value Counts

Pie Plot

Generate Pie Plot

`AxesSubplot(0.1275,0.11;0.77x0.77)`





Generate Which city has lowest AQI?

Generate Which city has highest AQI?

☐ Cities with highest AQI per year

☐ Which city has highest PM2.5

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