Visualizing Air Quality Index and Deaths due to Air Pollution - India

1. **Region and Domain:**

   India
   Air Quality Index (AQI), Deaths due to Air Pollution

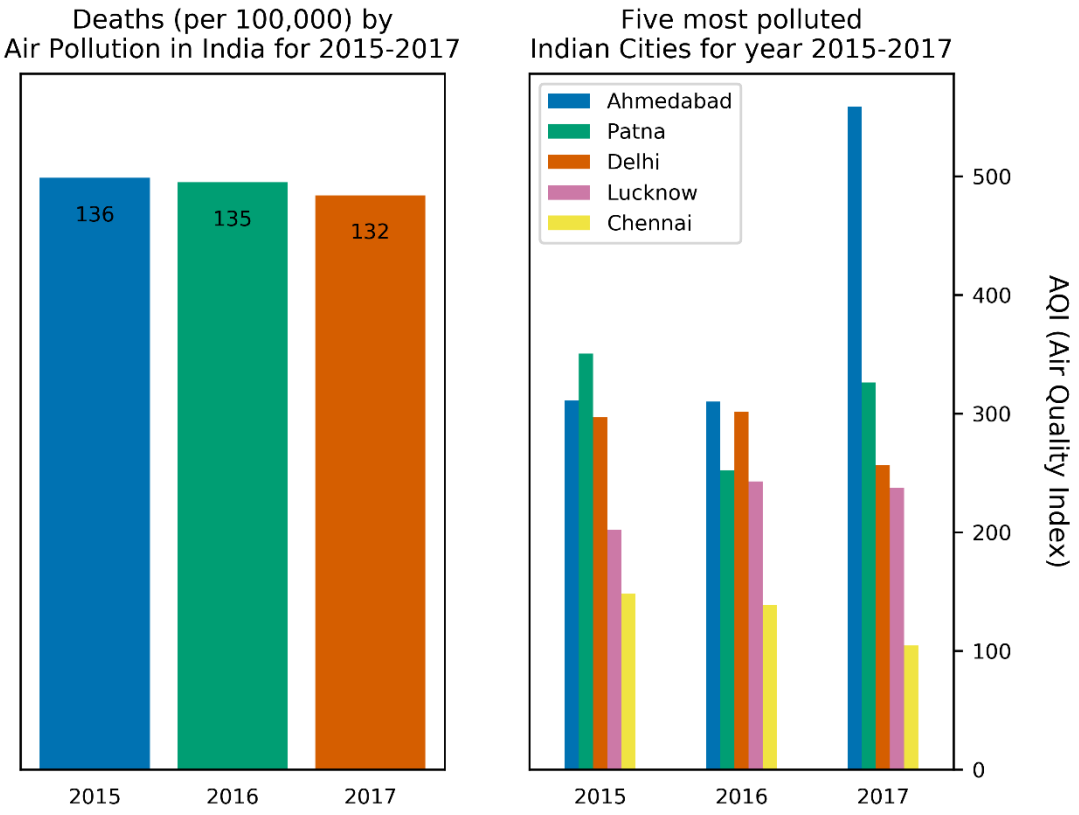
2. **Research Question:**

   How has the Air Quality Index has changed in India for the year 2015-2017 and death rate caused by it during the same period?

3. **Links:**

   https://www.kaggle.com/akshat0giri/death-due-to-air-pollution-19902017
   https://www.kaggle.com/rohanrao/air-quality-data-in-india?select=stations.csv

4. **Image:**



5. Discussion:

A detailed analysis of Air pollution in India is done by taking open datasets from Kaggle and this visualization was built to answer the research question which is focused on the change in trends of Air Quality Index and no. of Deaths caused by the Air pollution in India. Due to limited amount of data availability, analysis is done for 3 years i.e. 2015, 2016, and 2017 as complete records were available for this period.

According to the visualization, the number of deaths were maximum in 2015 and then got decreased by a small amount in 2016 and 2017. AQI for the most polluted cities in India first decreased in 2016 for Patna and Chennai, remaining almost same for Ahmedabad and Delhi while increasing for Lucknow. However, the AQI increased gradually for Ahmedabad in 2017 followed by Patna, decreasing for Delhi and Chennai while remaining almost same for Lucknow. This clearly shows that cities with high pollution have took almost few to none efforts to reduce the pollution and in some cases the situation even got worse.

6. Cairo's Principles:

- **Truthfulness:** In order for visualization to be more accurate and truthful, datasets used were backed by the government of India and Bar charts were used to plot the data in order to make differences more prominent.
- **Beauty:** Visualization was cleaned by removing junk labels, ticks and legends wherever they were not required and values were labelled directly on the bars where the differences were subtle to read.
- **Functionality:** Bar charts were used as they are appropriate for comparison of a single variable over multiple time frames.
- **Insightfulness:** The visualization does not only provide aesthetics but also address an alarming concern which is being faced by every developed and developing countries and also being largely ignored by many.