Laveen Kirupakaran 18049379

Introduction

A growing number of countries are acknowledging the existence of climate change and taking steps to reduce their carbon emissions, including sectoral standards, carbon levies, and long-term planning. K-means clustering is used to identify and analyse these structural fractures, providing light on potentially game-changing strategies for emissions abatement. As measured by GDP per capita growth, these countries account for 80 percent of global carbon dioxide emissions.

Problem Statement

This study's goal is to forecast future changes in CO2 emissions depending on a country's GDP per person. With the help of a model and clustering, the data can be analysed. Be able to foresee outcomes and provide observations on those outcomes.

Procedure

It is therefore recommended that a series of intriguing indicators collected from the World Bank database be used to classify CO2 emissions, followed by an application of exponential fitting and analysis in order to discover what dimension these indicators could represent.

Dataset

Our final dataset has 20 indicators as features for 159 countries. We got rid of records for years when these indicators had less or no data.

Results and Analysis

Since the correlation is positive, it means that a higher GDP per person leads to more carbon dioxide emissions. As our analysis says, there is no point at which emissions start to go down when the GDP is high enough.

| Cluster	Description
0	There are 109 countries in this cluster. They are split into three groups: the most developed, the average developed, and the above average developed. But we found that even though people have good access to basic services, they are less involved in the development of the job market and professional services.
1	There are 49 countries in this group. Because of climate change, the economies of these countries are below average or worse than average. Agriculture and manufacturing are good or fair in these countries, but it is hard for young people to get access to important services like drinking water, the internet, and jobs.

Correlation Analysis
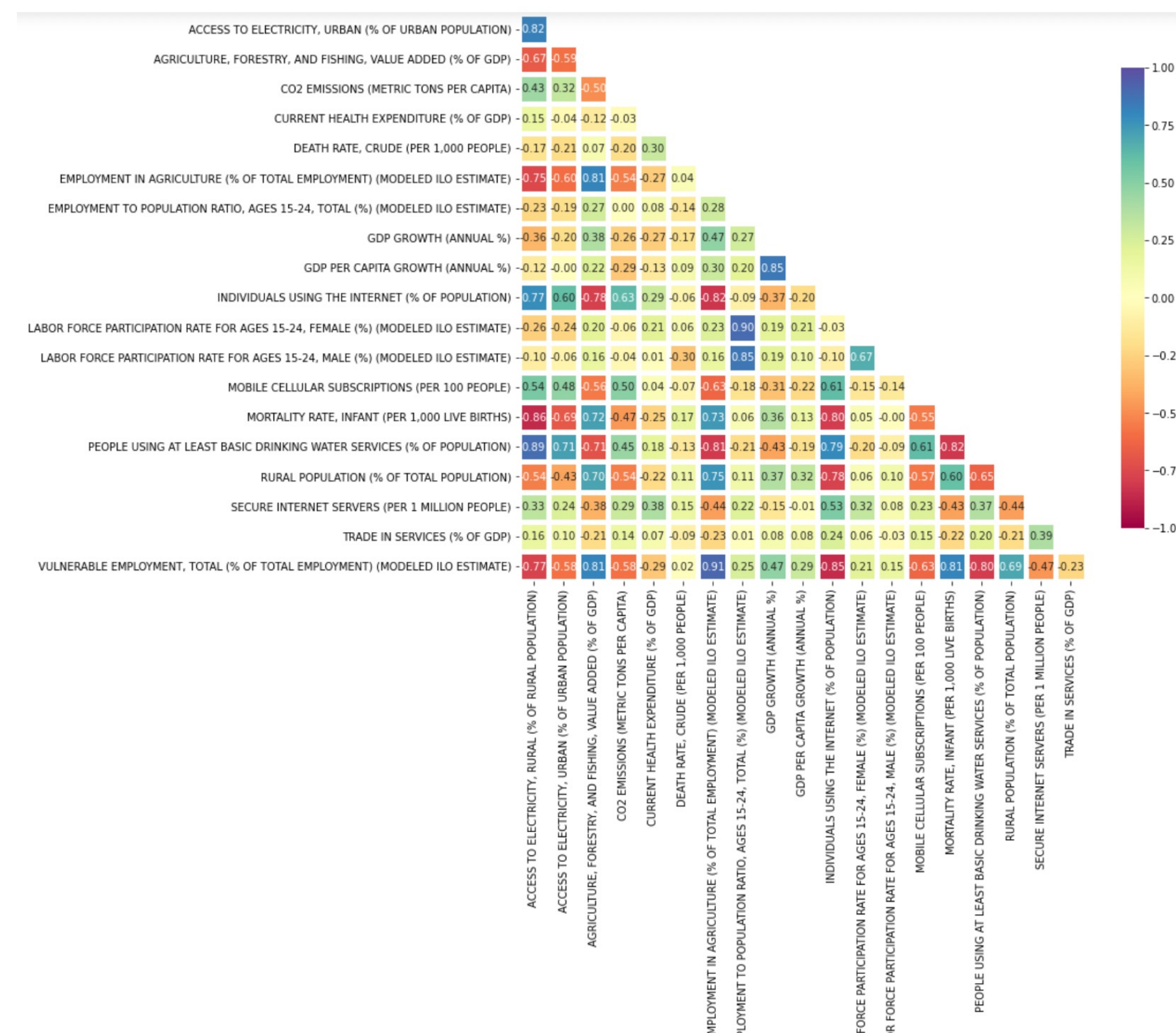
Optimal Number of Clusters
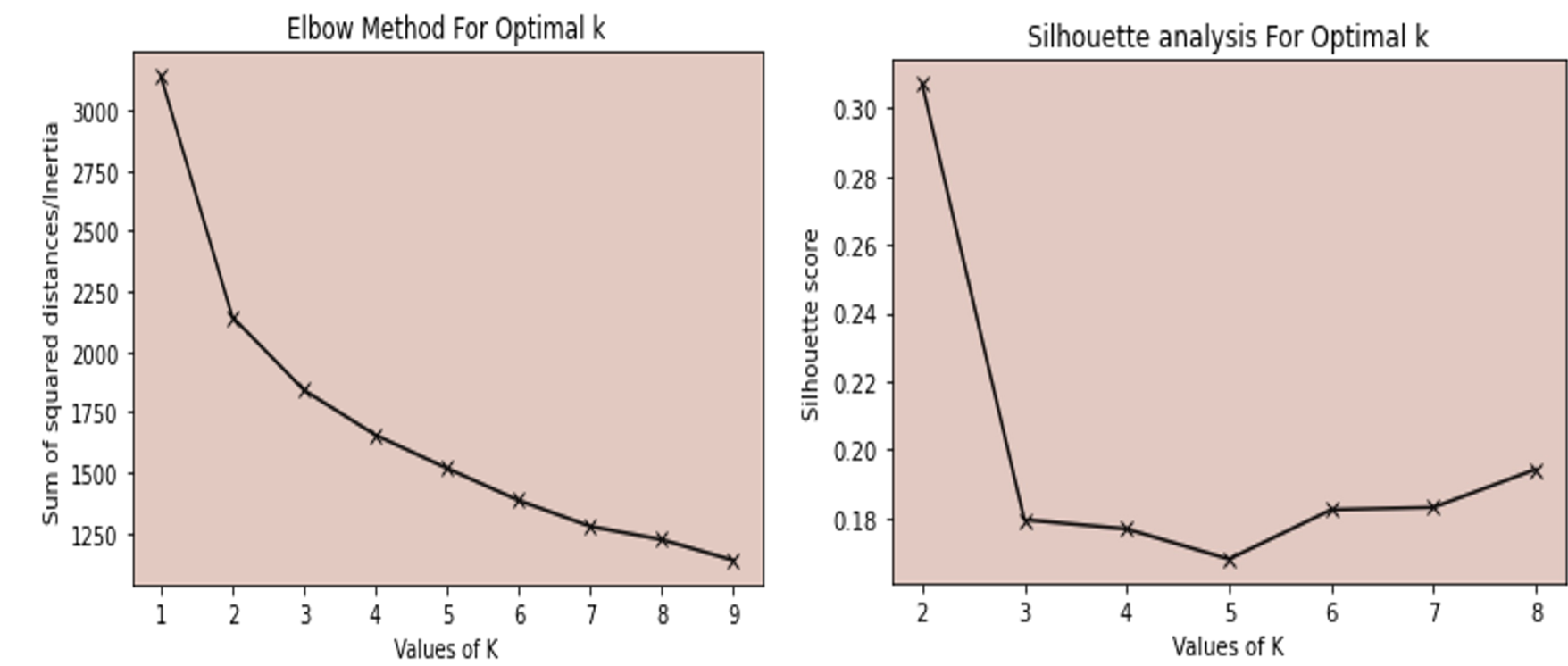
Clusters Analysis
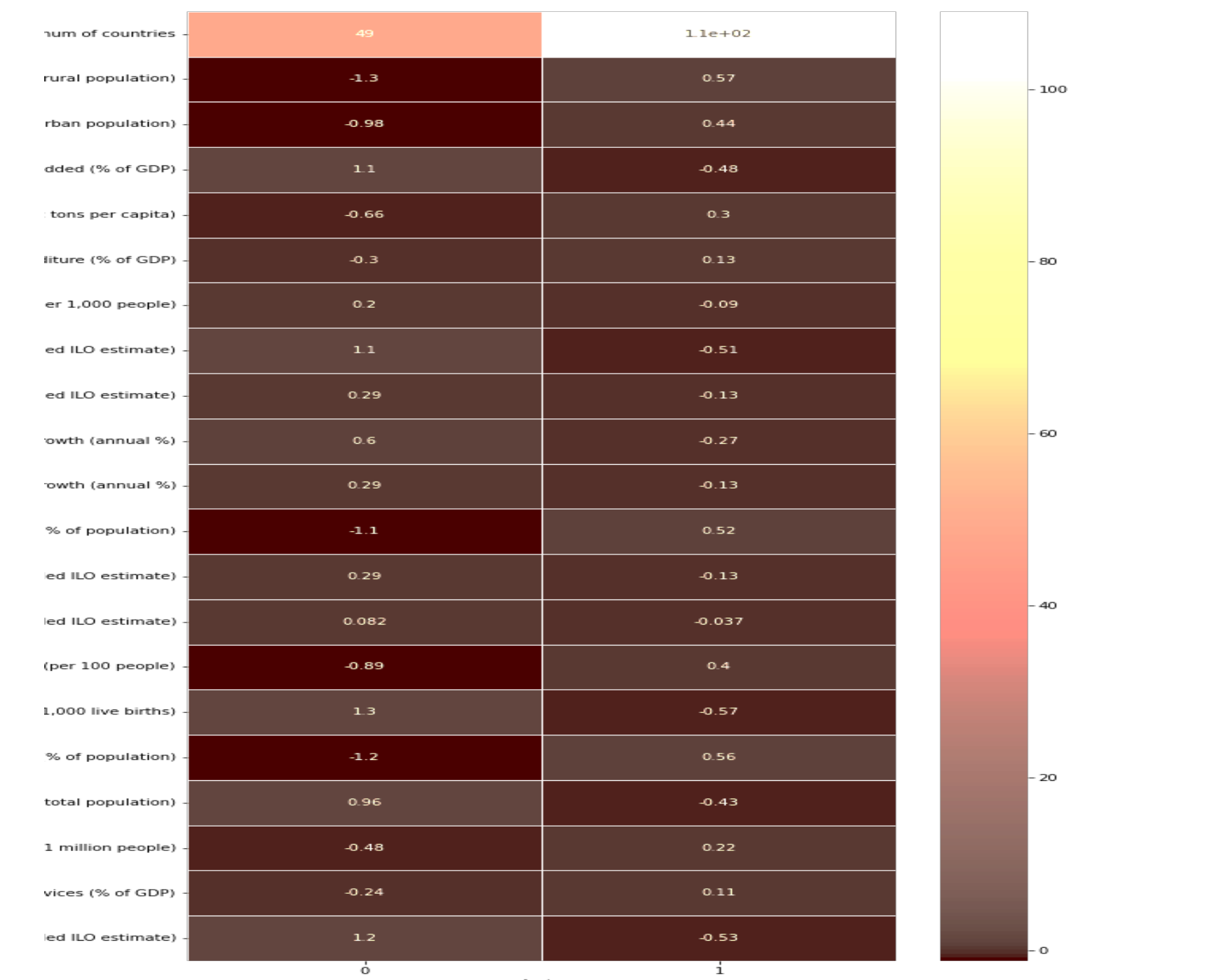
Curve Fitting (Year VS Internet)
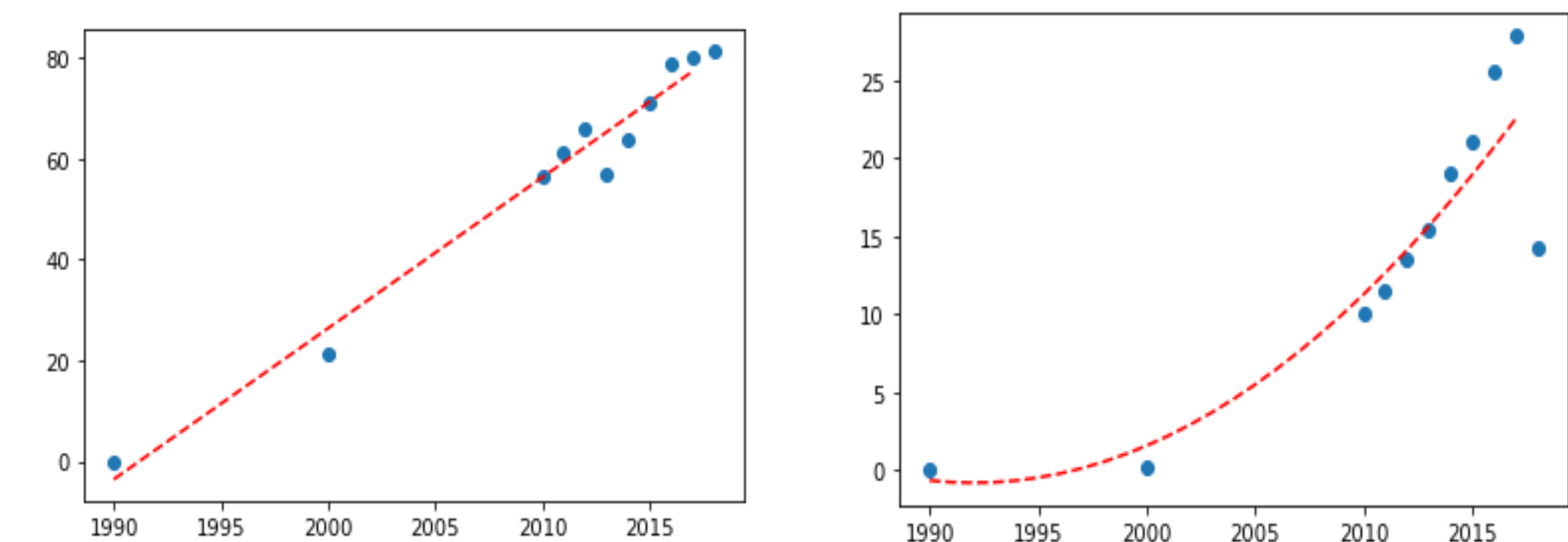
SRI LANKA FROM CLUSTER 1

COLOMBIA FROM CLUSTER 2

References

[1]. Data source:
https://github.com/jakebobu/world-bank