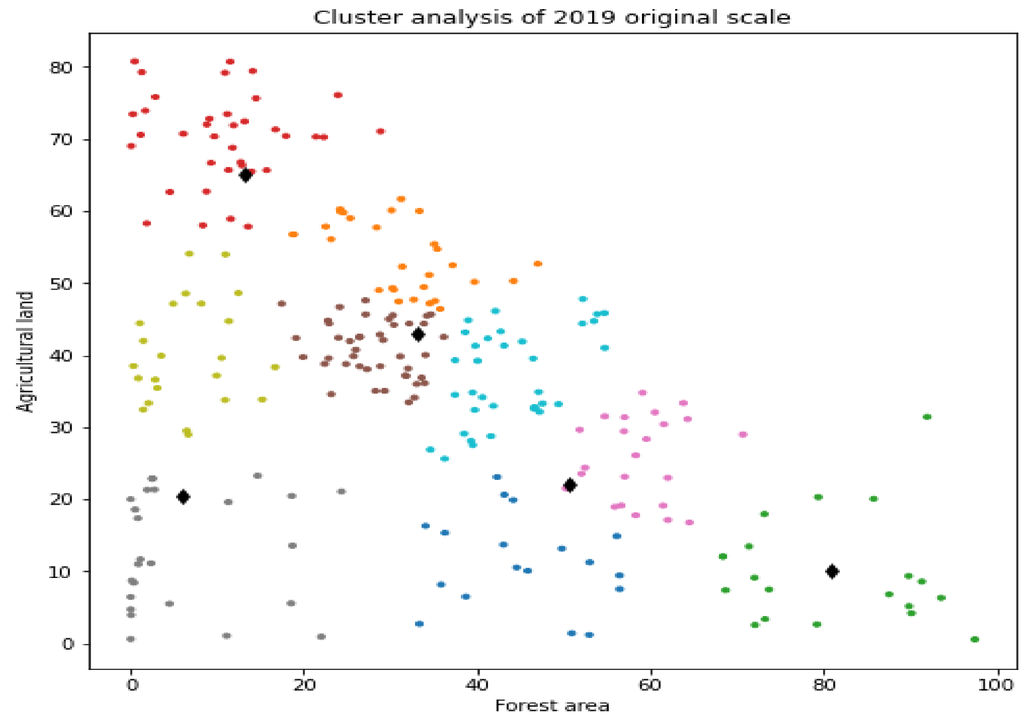
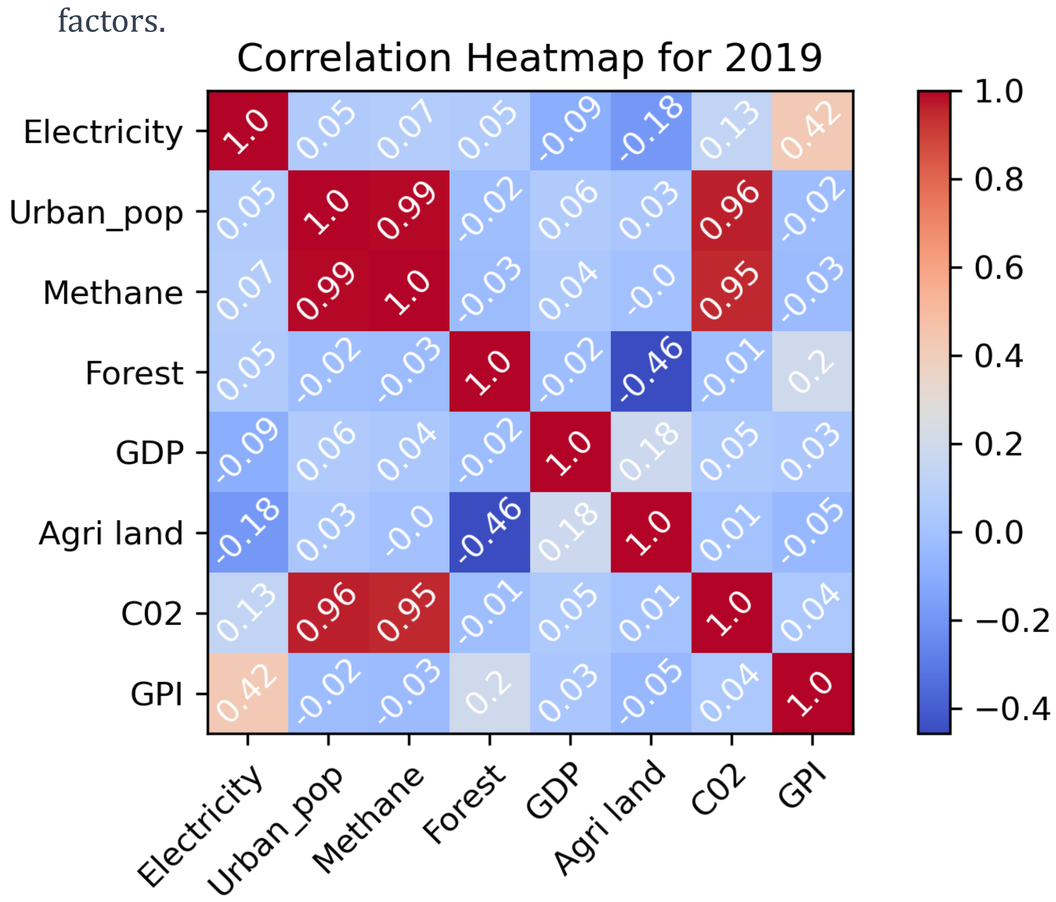
Analyzing World Bank Climate Change Indicators: Uncovering Development Clusters and Trends

Overview & Introduction

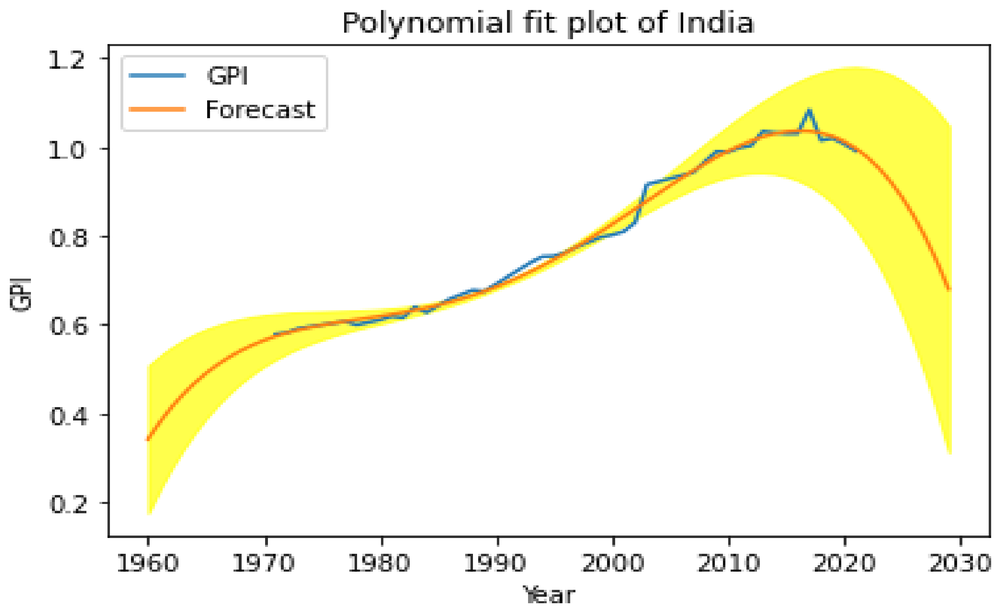
- This poster presents an analysis of World Bank indicators (urban population, methane emissions, electricity availability, GDP, gender parity index, and CO2 emissions) to identify patterns and relationships among them.
- Data visualization techniques and statistical analysis are used to identify distinct clusters of countries and examine variations within and between these clusters.
- The study offers insights into the complex relationships between economic development, energy use, gender equality, and environmental sustainability.
- The results highlight the need for integrated approaches to development that consider the interdependencies among these factors.





Forest and Agricultural Land in Top 10 GDP Countries 2019

Country	Forest area (% of land area)	Agricultural land (% of land area)
United States	33.9	44.2
China	22.1	54.1
Japan	68.5	13.2
Germany	32.1	48.1
United Kingdom	12.9	71.4
India	23.4	60.1
France	31.9	52.1
Brazil	59.2	33.6
Italy	31.9	47.5
Canada	38.5	5.5



Correlation Analysis : 1990 - 2019

Indicator	Correlation	Explanation
Urban population growth	Strong positive	As cities grow, they require more energy, which is mostly produced from fossil fuels that release methane.
Methane emissions	Strong positive	Economic development leads to increased consumption of goods and services, which leads to increased emissions of greenhouse gases such as CO2 and methane.
CO2 emissions	Incredibly positive	Economic development leads to increased consumption of goods and services, which leads to increased emissions of greenhouse gases such as CO2 and methane.
Forest area	Growing negative	As more land is used for agriculture, less land is available for forests.
Agricultural land	Growing negative	As more land is used for agriculture, less land is available for forests.
Gender parity index	Growing positive	Women's participation in the workforce is increasing, leading to higher electricity access and oil energy usage.
Electricity access	Growing positive	Women's participation in the workforce is increasing, leading to higher electricity access and oil energy usage.
Oil energy usage	Growing positive	Women are more likely to drive cars, which use oil.
GDP	Neutral Insignificantly negative	No significant correlation with most indicators.

Gender Parity in India: 1990-2019

- Gender parity index in India improved from 0.58 in 1990 to 0.93 in 2019.
- India made significant progress in gender parity index over the past 3 decades and its 2030 forecast says the rate to be at 1.19.
- Gender parity index increased steadily in India from 1990 to 2019.

Conclusion

- GDP growth rate and forest land have a positive correlation, while agriculture land has a negative correlation with GDP. This suggests that countries with higher GDP tend to prioritize industrialization and urbanization over agriculture and forestry.
- The top 10 countries with the highest GDP in descending order are the USA, China, Japan, Germany, the UK, India, France, Brazil, Italy, and Canada. Among them, the USA and Canada have the highest forest land area, while India and Brazil have the highest agriculture land area.
- The Gender Parity Index (GPI) in India has shown improvement over the years, indicating a reduction in the gender gap in education. However, the GPI for secondary education remains below 1.0, indicating a significant gender disparity.
- Overall, the analysis highlights the need for sustainable development practices that balance economic growth with conservation efforts to ensure long-term environmental and social well-being.

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