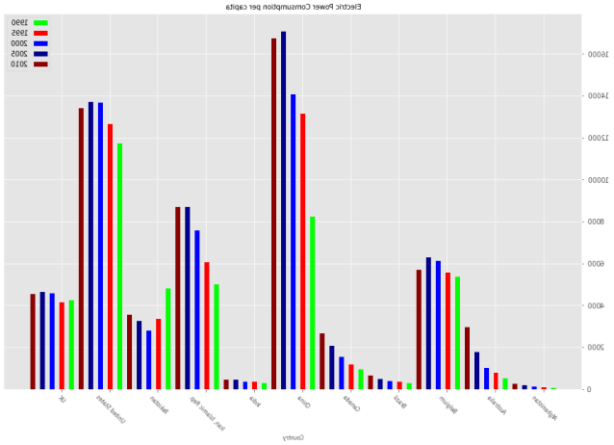
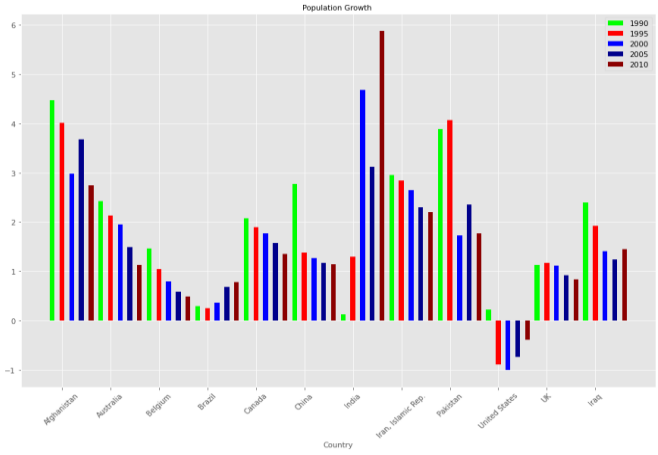
# Climate change data analysis based on World Bank data

For this analysis 10 countries from different continents were selected and the relation of the following factors to climate change was investigated: agricultural land, electricity power consumption, population growth, and urban population.

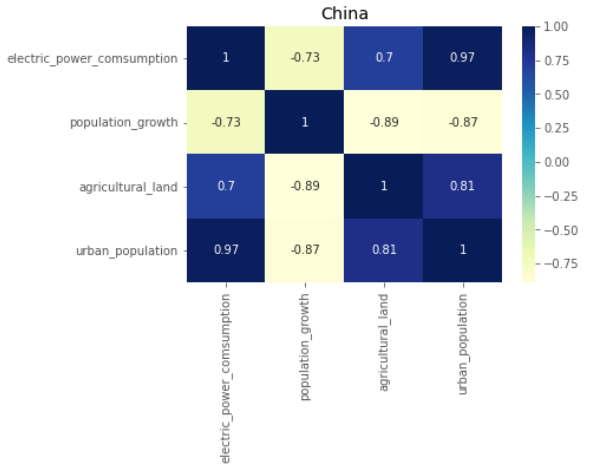
The analysis found some correlations between the factors and the causes behind them were investigated.



The group bar graph between countries and electric power consumption on the available data from 1990 to 2010 shows that China is consuming the highest electricity because it has huge urban growth in population in this period. In 2005 and 2010 china is almost using 16000-watt electricity per capita which is on the higher side if we compare it with the rest of our targeted countries. So, if we talk about the urban population stats it showed that the urban population is increasing with time because people move to urban areas because of more facilities they have in urban areas.




On the other hand, India and Pakistan are the highest population growth rate but if we see the effect of population on energy consumption in these countries we see it is very minimal because we don't have much increase in the urban population which directly affects the electricity consumption.



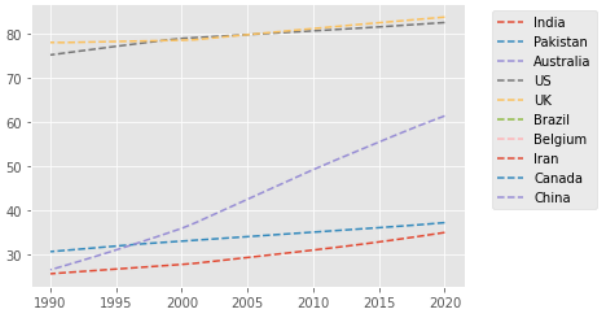

From the correlation heatmap for China above, it can be deduced that the growth in the urban population contributed to the growth of the economy and the modern lifestyle led to electricity consumption. So as we discussed above china has the maximum ratio of electric power consumption and one of the biggest reasons for this huge power consumption is the urban population of China.

The following table shows the growth in urban population (as per capita usage of the respective country) between 1990 and 2010. The urban population has increased enormously and it impacts electricity consumption directly.

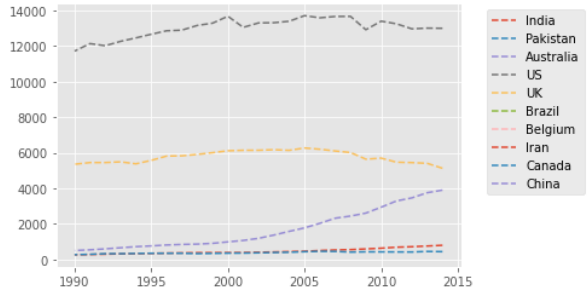


https://data.worldbank.org/topic/climate-change

| Country | 2005 | 2010 |
|---|---|---|
| Australia | 1800 | 3000 |
| Brazil | 445 | 610 |
| Canada | 2000 | 2900 |
| China | 17500 | 17000 |
| Belgium | 6200 | 5850 |
| India | 400 | 420 |
| Pakistan | 3700 | 3920 |
| Iran | 8800 | 8800 |
| United Kingdom | 4700 | 4650 |
| United States | 13800 | 13500 |

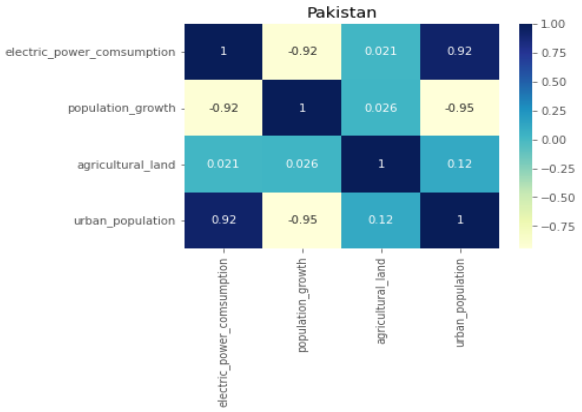




As the line chart shows the urban population has increased over time. China has the highest trend in the increase of urban population.




If we talk about power consumption it also increases with time. The US has the highest rate in increasing the power consumption per capita. The heat map on US data shows a correlation between power consumption and electric power consumption. However, it is negatively Correlated with the overall population growth in the country.

While analyzing the correlation of the Pakistan heat map we see the same trends as the US. Population growth has a negative correlation with power consumption on the other hand urban population who is increasing is highly correlated with power consumption.




We have multiple more combinations which we explore in world bank data we see the role of agricultural land on the GDP of the countries in this analysis we try to figure out how power consumption will affect the population growth and also the growth of population in urban areas.

https://github.com/Waqasquresh/Assigment2-worldbank (github resp link)



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