**Main topic:**

**How are the countries’ Corruption Perception Index correlated to key economic, social, and sustainability performance indicators from 2000 to 2018**

**Corruption Perception Index** : <https://www.kaggle.com/transparencyint/corruption-index>

**Time scope** : 2013-2018 (So we could consider evolution of data)

**Area scope**: Global. But let’s take into consideration, depending on the countries' development situation. (I.e. when comparing corruption and economics between developed and developing/underdeveloped countries.)

**FOR DATA ANALYSIS - AT LEAST**

* **50 individuals (COUNTRIES)**
* **6 variables**

**Question(s) to ask:** **To what extent can a country’s level of corruption be linked/correlated to the degradation of its economic, social or environmental situation?**

1. **Does a High Corruption Index lead to poor economic results (i.e. limited GDP per capita or small industrial production score) ? Or the other way around?**
2. **Does a High Corruption Index lead to environmental degradation (i.e. high CO2 emissions, weak sustainable development index or high waste country level)? Or the other way around**
3. **Does a High Corruption Index lead to a deteriorated social situation (i.e. small human development score, high homicide rate, gender inequality or high poverty) ? Or the other way around**

**Objectives:**

* Identifying what are the significant variables impacting the corruption perception of the country
* Assessing the degree to which (relative importance) these variables affect the corruption perceptions
* Interpreting the variables in terms of the underlying unobservable factors
* Developing a model to classify any country with a given set of variables into a distinct corruption perception bucket
* Understanding which of the significant variables obtained are controllable in nature and how the underlying factors (contributing to those variables) can be modified through appropriate steps to change the corruption perception of the nation

**Data**:

**Economic:**

* Per Capita GDP Growth 2013-2019 ([World Bank](https://databank.worldbank.org/reports.aspx?source=3690&series=5.51.01.10.gdp) - this does not include european countries
* [GDP per capita (current US$) | Data (worldbank.org)](https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2019&start=1960&view=chart&year=2013) - this one includes more countries
* Industrial Production Index 2013-2019 ([World Bank](https://databank.worldbank.org/reports.aspx?source=3690&series=5.01.01.01.indust))

**Environmental**:

* Environmental Performance Index - per year (Need to Login : [EPI](https://sedac.ciesin.columbia.edu/data/collection/epi/sets/browse))
* Sustainable Development Index 1990-2015 ([SDI](https://www.sustainabledevelopmentindex.org/time-series))
* CO2 Emissions Estimates ([UNdata](http://data.un.org/Data.aspx?d=GHG&f=seriesID%3aCO2))
* “What a Waste” Global Database (Country Level Database - [World Bank](https://datacatalog.worldbank.org/dataset/what-waste-global-database))
* *Possible to add indicators on: Freshwater access, Biodiversity, etc.*

**Social**:

* Human Development Index 1990-2018 ([UNdata](http://data.un.org/DocumentData.aspx?q=human+development&id=418) / [UNDP](http://hdr.undp.org/en/data#))
* Poverty and Inequality Database 1974-2019 ([World Bank](https://datacatalog.worldbank.org/dataset/poverty-and-equity-database))
* Homicide Total Rates and Counts XX-2018 ([UNdata](http://data.un.org/DocumentData.aspx?id=432) /
* Gender Equality Rating 2005-2018 ([UNdata](http://data.un.org/Data.aspx?q=gender+equality&d=WDI&f=Indicator_Code%3aIQ.CPA.GNDR.XQ))
* *Possible to add: Mortality or Health service coverage, etc.*

If needed: [World Bank link](https://databank.worldbank.org/source/world-development-indicators) where can be chosen the area and time scope, and indicators among a broad range of development indicators - and then possibility to download the associated data file.

Projects/research papers that look a lot like ours:

* <https://tejas.iimb.ac.in/articles/Corruption_Tejas_mar17.pdf>
* <https://link.springer.com/article/10.1023/A:1013882225402>
* <https://towardsdatascience.com/can-budget-allocation-be-related-to-poor-government-performance-and-corruption-f9a1dc397bf0>

Sources:

* Transparency International
* World Bank Databank:
  + [https://databank.worldbank.org/home.aspx](https://meet.google.com/linkredirect?authuser=0&dest=https%3A%2F%2Fdatabank.worldbank.org%2Fhome.aspx)
  + [https://databank.worldbank.org/source/world-development-indicators](https://meet.google.com/linkredirect?authuser=0&dest=https%3A%2F%2Fdatabank.worldbank.org%2Fsource%2Fworld-development-indicators)
* UN SDN
  + <https://unstats.un.org/sdgs/report/2020/>
* Kaggle
  + <https://www.kaggle.com/transparencyint/corruption-index>
  + <https://www.kaggle.com/jeegarmaru/corruption-perceptions-index-for-10-years>

Data Analysis :

**Q1 : Corruption and Economics :**

**CPI vs GDP per cap :**

[**https://public.tableau.com/profile/arthur3715#!/vizhome/CorruptionvsEconomics/Dashboard1?publish=yes**](https://public.tableau.com/profile/arthur3715#!/vizhome/CorruptionvsEconomics/Dashboard1?publish=yes)

**Clustering of countries :**

**k=2 :** [**https://public.tableau.com/profile/arthur3715#!/vizhome/Clusteringk2/2Clusters**](https://public.tableau.com/profile/arthur3715#!/vizhome/Clusteringk2/2Clusters)

**k=3 :** [**https://public.tableau.com/profile/arthur3715#!/vizhome/Clusteringk3/3Clusters**](https://public.tableau.com/profile/arthur3715#!/vizhome/Clusteringk3/3Clusters)

**k=4 :** [**https://public.tableau.com/profile/arthur3715#!/vizhome/Clusteringk4/4Clusters**](https://public.tableau.com/profile/arthur3715#!/vizhome/Clusteringk4/4Clusters)

**Factors (from Factor Analysis) used for 2D representation of clustering (Factor Analysis) :**

**Decomposition of Factors :**

[**https://public.tableau.com/profile/arthur3715#!/vizhome/FactorsDecomposition/FactorsDecomposition?publish=yes**](https://public.tableau.com/profile/arthur3715#!/vizhome/FactorsDecomposition/FactorsDecomposition?publish=yes)

**Comparison of Factors :**

[**https://public.tableau.com/profile/arthur3715#!/vizhome/FactorsComparison/FactorsComparison?publish=yes**](https://public.tableau.com/profile/arthur3715#!/vizhome/FactorsComparison/FactorsComparison?publish=yes)

**Meeting Dec 11th**