**Week 1: Getting Your Research Project Started**

**Chosen dataset**

The GapMinder was the data set choosing. That data set is an independent educational non-proﬁt ﬁghting global misconceptions, it was created by Ola Rosling, Anna Rosling Rönnlund and Hans Rosling in 2005.

**Research Question**

How the economic indicators is related with the social and environmental indicators.

**Hypothesis**

The country with higher economic indicators can present goods social indicator, however the lowest sustainability indicators.

**Search terms/keywords used**

Economy indicators

incomeperperson - Gross Domestic Product per capita in constant 2000 US$.

Social indicators

lifeexpectancy - life expectancy at birth (years)

femaleemployrate - female employees age 15+ (% of population)

employrate - total employees age 15+ (% of population)

urbanrate - urban population (% of total)

internetuserate - Internet users (per 100 people)

Environmental indicators

co2emissions - cumulative CO2 emission (metric tons).

oilperperson - oil Consumption per capita (tonnes per year and person)

relectricperperson - residential electricity consumption, per person (kWh)

**Literature Review**

In the literature are many works with correlation between the economy, social and environmental indicators. Kummu and Varis (2021) use the Gapminer data set to analyse the indicators along the word latitude. Gallego (2005) use that indicators to analyze the developed in Spain. Fiorito (2013) study the ratio between the Electricity Consumption with Gross Domestic Product is related with the sustainability.

**Reference**

Kummu, M., Varis, O., 2011. The world by latitudes: a global analysis of human population, development level and environment across the north–south axis over the past half century. Appl. Geogr. 31 (2), 495–507

Gallego, I. (2006), The use of economic, social and environmental indicators as a measure of sustainable development in Spain. Corp. Soc. Responsib. Environ. Mgmt, 13: 78-97.

Fiorito, G., 2013. Can we use the energy intensity indicator to study “decoupling” in modern economies? J. Clean. Prod. 47, 465–473.

https://lcs-andrade.tumblr.com/post/665058629824708608/week-1-getting-your-research-project-started

The Variables separated in the data set are continuous quantitative variables for this reason was done a scaling the values, to better understanding.

The scaling adopted to “*incomeperperson*” variable are:

|  |  |
| --- | --- |
| X = Gross Domestic Product per capita in constant 2000 US$ | |
| X < 1000 | 1 |
| 1000< X < 10000 | 2 |
| 10000< X < 100000 | 3 |
| X > 100000 | 4 |

The scaling adopted to “*lifeexpectancy*” variable are:

|  |  |
| --- | --- |
| X = life expectancy at birth (years) | |
| X < 60 | 1 |
| 60<= X < 70 | 2 |
| 70<= X < 80 | 3 |
| X >= 80 | 4 |

The scaling adopted to “*femaleemployrate*” variable are:

|  |  |
| --- | --- |
| X = female employees age 15+ (% of population) | |
| X < 50 | 1 |
| X >= 50 | 2 |

The scaling adopted to “*employrate*” variable are:

|  |  |
| --- | --- |
| X = total employees age 15+ (% of population) | |
| X < 50 | 1 |
| X >= 50 | 2 |

The scaling adopted to “*urbanrate*” variable are:

|  |  |
| --- | --- |
| X = urban population (% of total) | |
| X < 50 | 1 |
| X >= 50 | 2 |

The scaling adopted to “*internetuserate*” variable are:

|  |  |
| --- | --- |
| X = Internet users (per 100 people) | |
| X < 50 | 1 |
| X >= 50 | 2 |

The scaling adopted to “*co2emissions*” variable are:

|  |  |
| --- | --- |
| X = cumulative CO2 emission (metric tons) | |
| X < 10000 | 1 |
| 10000 <= X < 100000 | 2 |
| 100000<= X < 1000000 | 3 |
| 1000000<= X < 10000000 | 4 |
| 10000000<= X < 100000000 | 5 |
| X>=100000000 | 6 |

The scaling adopted to “*oilperperson*” variable are:

|  |  |
| --- | --- |
| X = oil Consumption per capita (tonnes per year and person) | |
| X < 0.1 | 1 |
| 0.1 <= X < 1 | 2 |
| 1 <= X < 10 | 3 |
| X>=10 | 4 |

The scaling adopted to “relectricperperson” variable are:

|  |  |
| --- | --- |
| X = residential electricity consumption, per person (kWh) | |
| X < 10 | 1 |
| 10 <= X < 100 | 2 |
| 100<= X < 1000 | 3 |
| 1000<= X < 10000 | 4 |
| X>=10000 | 5 |