Global Analysis of Economic Growth and Education in Mortality in the 21st Century

**Team # 6 - Team names:**

- Carlos Mario Chávez Aguilera

- Deisi Yohana Sandoval Borja

- Daniel Arturo Duran Páez

- Elder Giraldo

- Fernán Antonio Marsiglia Hernández

- Juan Pablo Álzate Tamayo

- Marta Rocío Ordoñez Parra

- Mateo Moreno Giraldo

**Overview of the Problem**

Some research has found a positive correlation between income inequality and some indicators tracked by the WHO such as mortality (measured as a mortality ratio). In addition, inverse relationships have been observed between economic development indicators (measured under different parameters), education and mortality, mainly at young ages.

**Specific Problem to be Solved**

To evaluate whether the mortality of age groups is determined by economic growth and education levels in a given country or region. Thus, we propose to analyze variables related to economic growth (see Datasets/Economic Development) and education (see Datasets/Education). Also, to understand how these variables influence the mortality of age groups in countries and their regions.

In addition, it is proposed to use Machine Learning models to try to predict mortality indicators according to the relationships that are to be found in the inferential statistics analyses carried out in the project.

Finally, we will establish an interactive Dashboard with all the data and models in order to analyze the results found in the project in a dynamic and visual way.

**Note:** The possibility of adding other variables to the analysis, such as the Quality-of-Life Index and population density, is not ruled out.

**Motivation**

Economic growth and education may reflect the effects of other socio-economic variables that may also be related to mortality. For this reason, it is important to conduct comprehensive and interdisciplinary analyses that take into account as much information as possible relevant to governmental decision-making on the direction of each country and/or region. This can enable the design and implementation of public policies aligned with the needs of the population and the objectives and goals of sustainable development (Agenda 2030).

**Desired Datasets**

| **Dataset** | **Description** | **Major variables** |
| --- | --- | --- |
| <https://platform.who.int/mortality/themes/theme-details/mdb/noncommunicable-diseases> | WHO mortality database. Deaths by sex and age group for a selected country or area and year can be explored. | Mortality |
| <https://data.worldbank.org/indicator/SE.PRM.UNER.MA?view=chart> | Children out of school, primary, male | Education |
| <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?view=chart> | Government expenditure on education, total (% of GDP) |
| <https://data.worldbank.org/indicator/SE.ADT.1524.LT.ZS?view=chart> | Literacy rate, youth total (% of people ages 15-24) |
| <https://data.worldbank.org/indicator/SE.PRM.CMPT.ZS> | Primary completion rate, total (% of relevant age group) |
| <https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?view=chart> | Unemployment, total (% of total labor force) (modeled ILO estimate) |
| <https://data.worldbank.org/indicator/SE.PRM.ENRL.TC.ZS?view=chart> | Pupil-teacher ratio, primary |
| <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?view=chart> | Literacy rate, adult total (% of people ages 15 and above) |
| <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?view=chart> | GDP growth (annual %) | Economic growth |
| <https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG?view=chart> | GDP per capita growth (annual %) |
| <https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?view=chart> | Exports of goods and services (% of GDP) |
| <https://data.worldbank.org/indicator/EG.USE.PCAP.KG.OE?view=chart> | Energy use (kg of oil equivalent per capita) |
| <https://data.worldbank.org/indicator/EG.USE.COMM.FO.ZS?view=chart> | Fossil fuel energy consumption (% of total) |
| <https://data.worldbank.org/indicator/EG.FEC.RNEW.ZS?view=chart> | Renewable energy consumption (% of total final energy consumption) |
| <https://data.worldbank.org/indicator/GC>. | Revenue, excluding grants (% of GDP) |
| <https://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG?view=chart> | Inflation, GDP deflator (annual %) |