**Health Studies for the Asian and African regions**

*Analyse of the initial dataset filtered per region for each study.*

*Study of the health evolution in Asia and Africa regarding the vaccination coverage of Hepatitis B, Polio, Diphtheria, the reported cases of Measles and the prevalence of HIV/AIDS.*

Question: ***How does the vaccination rates and viruses such as Measles and HIV/AIDS influence the life expectancy in Asia and Africa over the 2004-2014 period?***

1. **Study of the Hepatitis B vaccination coverage**
2. **Study of the Polio vaccination coverage**
3. **Study of the Diphtheria vaccination coverage**

**For each study:**

* Scatter plot and regression line of the vaccination coverage vs life expectancy
* Mean of the vaccination coverage grouped per year within the time frame 2004-2014
* Bar plot visualisation per year of the vaccination coverage to see how the vaccination **is spread within the time frame more in detail.**

**Observations:**

* Each scatter plot and regression line outputs show a positive correlation which shows the correlation between vaccination coverage and life expectancy.
* We notice a clear increase in the vaccination coverage overtime in Asia while it is not the case for Africa.

1. **Comparison of the 3 vaccination coverages together (with bar plot visualisation) within the timeframe 2004-2014**

Visual comparison of each of the 3 vaccination coverages grouped together.

1. **Study of the prevalence of HIV/AIDS within the population**

**For this study:**

* Scatter plot of the HIV and AIDS prevalence per continent vs life expectancy + regression line
* Mean of the HIV/AIDS prevalence grouped per year within the time frame 2004-2014
* Bar plot of the HIV/AIDS mean prevalence per year vs life expectancy.

Observations:

* Both scatter plots and regression lines show a negative correlation, however the prevalence scale in Asia is much lower than Africa (0 to 1.2 against 0 to 50)
* The life expectancy in Asia remains much higher compared to Africa.
* The bar plots reveal a higher drop of the HIV/AIDS cases in Africa over time, however the scale of prevalence remains higher than Asia for the entirety of the studied period.

1. **Study of the Measles reported cases**

For this study:

* Scatter plot and regression line of the reported cases vs life expectancy
* Grouping of the data per year and mean of the reported cases for each year.
* Bar plot of the reported cases per year within the time frame 2004-2014
* Calculation of the cases per capita and mean for each year.
* Bar plot of the mean of the cases per capita and per year

Observations:

* Higher ratio of reported cases in Asia and positive regression line while we observe a negative correlation for Africa, however the life expectancy remains once again much higher in Asia (around 70yo versus under 60yo for Africa)
* Mean cases per capita for Asia of 96.83 vs 3.79 for Africa, which shows that this disease impacts the Asian region much more than it does in Africa (potential external factors playing a role)
* The 2005 year sees the highest rate of cases for both continents.