

# GDP Correlation Analysis With Python & Alteryx

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Created by: Justin Lam

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**What are we  
looking into?**

# Objective

Identify any correlations between GDP per capita, GDP per capita growth %, Birth Rate, and the Global Hunger Index through reproducing the same results from Python and Alteryx

# Global Hunger Index Analysis

**The following only includes data points where there is complete information for GDP per capita, GDP per capita growth %, Birth Rate, and the Global Hunger Index.**

**Not every country has information for the Global Hunger index**

# Spearman Correlation Analysis

- GDP per Capita has a strong relationship with Birth Rate & Global Hunger Index
- GDP per Capita growth % has a weak relationship with most of the variables

	GDP per capita	GDP per capita growth %	Birth rate per 1000	Global Hunger Index
GDP per capita	1.0	0.09218068321454903	-0.7643479023475517	-0.854378762473425
GDP per capita growth %	0.09218068321454903	1.0	-0.3187176819384746	-0.15372211647545903
Birth rate per 1000	-0.7643479023475517	-0.3187176819384746	1.0	0.8178486498080532
Global Hunger Index	-0.854378762473425	-0.15372211647545903	0.8178486498080532	1.0

Created with Python

## Spearman Correlation Analysis

### Full Correlation Matrix

	GDP.per.capita	GDP.per.capita.growth..	Birth.rate.per.1000	Global.Hunger.Index
GDP.per.capita	1.000000	0.092181	-0.764348	-0.854379
GDP.per.capita.growth..	0.092181	1.000000	-0.318718	-0.153722
Birth.rate.per.1000	-0.764348	-0.318718	1.000000	0.817849
Global.Hunger.Index	-0.854379	-0.153722	0.817849	1.000000

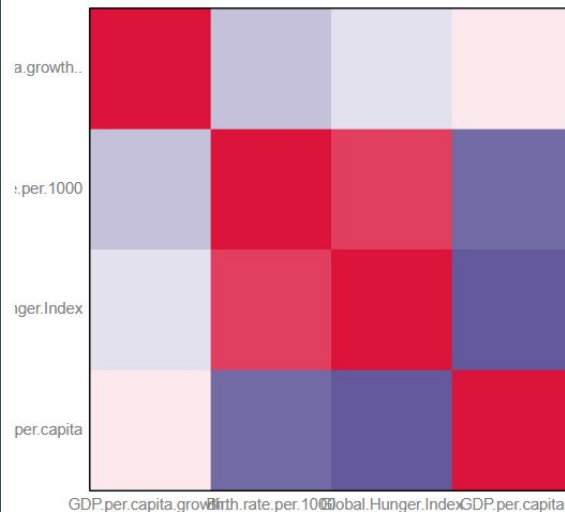
Created with Alteryx

# Correlation Heatmap



Created with Python

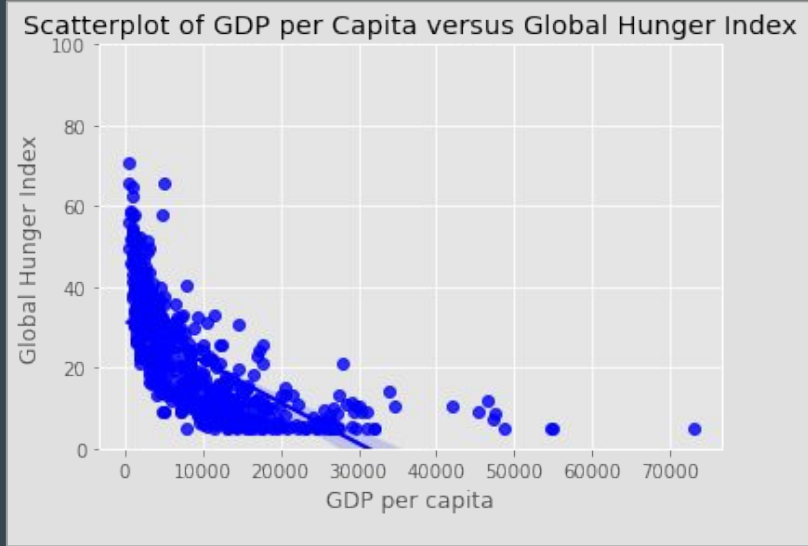
Correlation Matrix with ScatterPlot



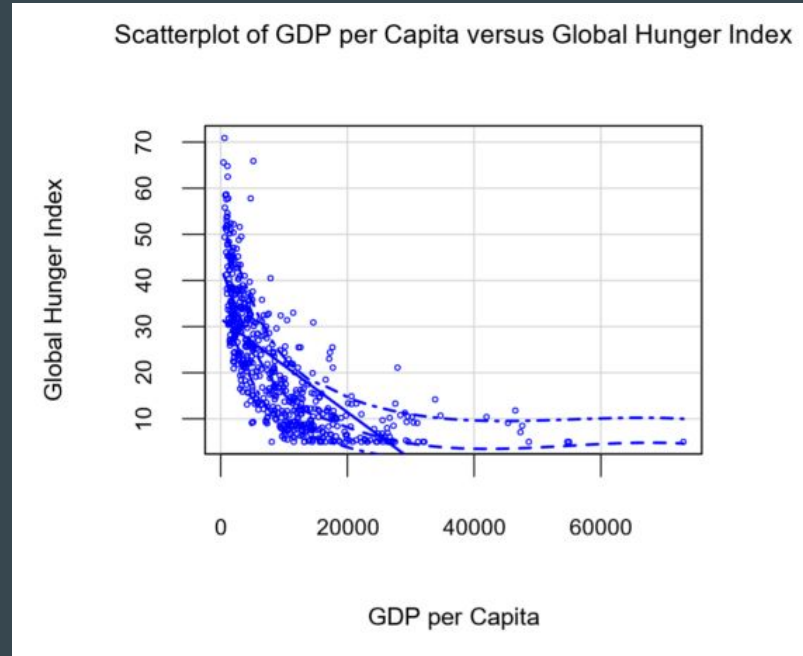
The left panel is an image of a correlation matrix, with blue = -1 and red = +1. Hover over pixels in the correlation matrix on the left to see the values; click to see the corresponding scatterplot on the right. The variables have been clustered based on degree of correlation, so that highly correlated variables appear adjacent to each other.

Created with Alteryx

# Scatter plot



Created with Python



Created with Alteryx



# Overall Analysis

**The following includes data points where there is at least complete information for GDP per capita, GDP per capita growth %, and Birth Rate**

**Not every country has information for the Global Hunger index**

# Spearman Correlation Analysis

- GDP per Capita maintains a strong relationship with Birth Rate
- GDP per Capita growth % maintains a weak relationship with Birth Rate

	GDP per capita	GDP per capita growth %	Birth rate per 1000
GDP per capita	1.0	-0.034078643581244905	-0.8073346731281977
GDP per capita growth %	-0.034078643581244905	1.0	-0.08653218345411229
Birth rate per 1000	-0.8073346731281977	-0.08653218345411229	1.0

Created with Python

## Spearman Correlation Analysis

### Full Correlation Matrix

	GDP.per.capita	GDP.per.capita.growth..	Birth.rate.per.1000
GDP.per.capita	1.000000	-0.034079	-0.807335
GDP.per.capita.growth..	-0.034079	1.000000	-0.086532
Birth.rate.per.1000	-0.807335	-0.086532	1.000000

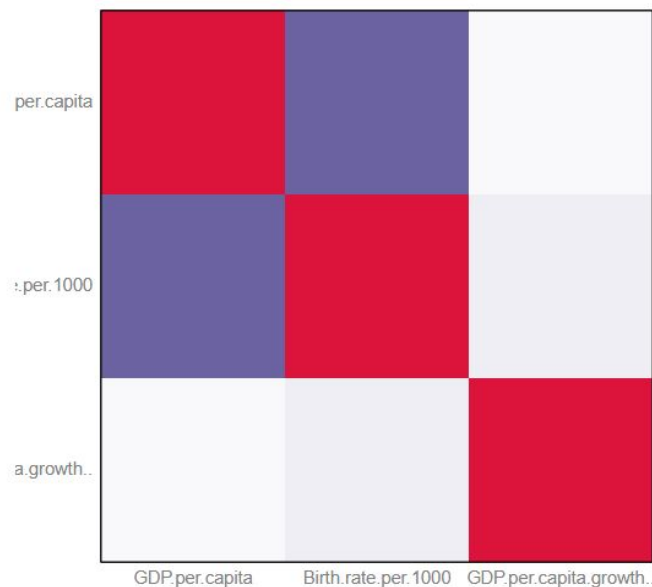
Created with Alteryx

# Correlation Heatmap



Created with Python

## Correlation Matrix with ScatterPlot

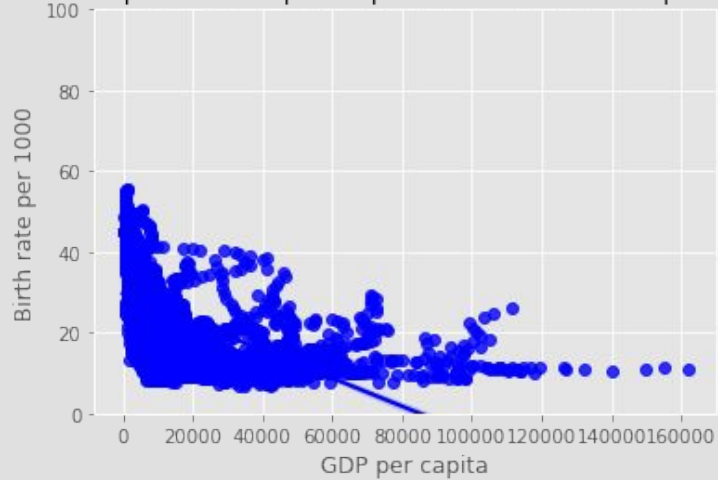


The left panel is an image of a correlation matrix, with blue = -1 and red = +1. Hover over pixels in the correlation matrix on the left to see the values; click to see the corresponding scatterplot on the right. The variables have been clustered based on degree of correlation, so that highly correlated variables appear adjacent to each other.

Created with Alteryx

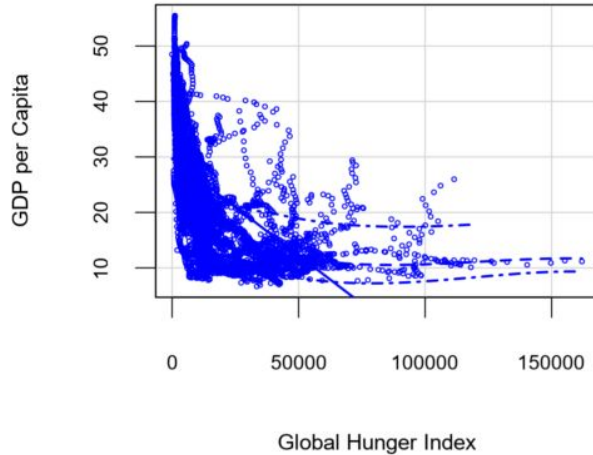
# Scatter plot

Scatterplot of GDP per Capita versus Birth rate per 1000



Created with Python

Scatterplot of Global Hunger Index versus GDP per Capita



Created with Alteryx

# Data Source

<https://ourworldindata.org/grapher/gdp-per-capita-worldbank>

<https://ourworldindata.org/grapher/gdp-per-capita-growth>

<https://ourworldindata.org/grapher/crude-birth-rate>

<https://ourworldindata.org/grapher/global-hunger-index>

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