Introduction to the Research Question

RESEARCH QUESTION : Is there statistically significant relationship between country's women population and its Gross Domestic Product?
H0: There is no statistically significant relationship between country's women population and its Gross Domestic Product.
H1: There is statistically significant relationship between country's women population and its Gross Domestic Product.

Assumptions:

- Normality
- Homoscedasticity
- No Extreme Outliers
- Linear Relationship
- Random Sample
- Ratio or Interval variable

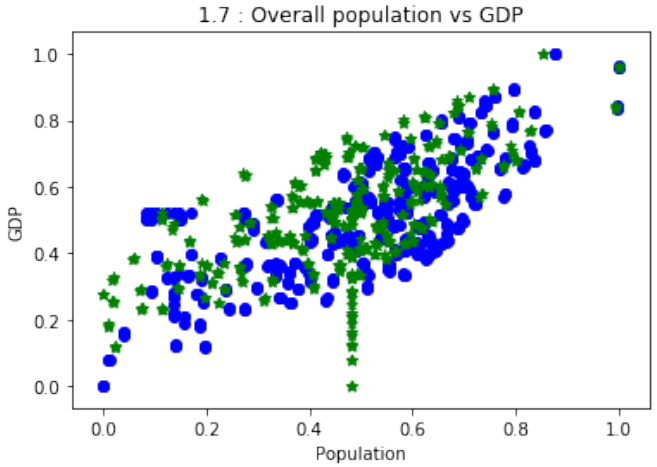
Sample:

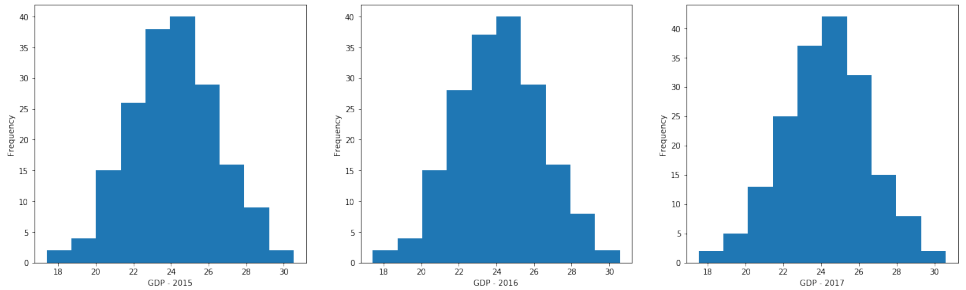
The data contains semi-structured data on GDP, Total Population, Female Population Percentage and Country to Region Mapping for various countries between 2015 - 2017 and the source of data is World Bank. The World Bank data set is a subset of data extracted from the primary World Bank collection of development indicators, compiled from officially-recognized international sources.

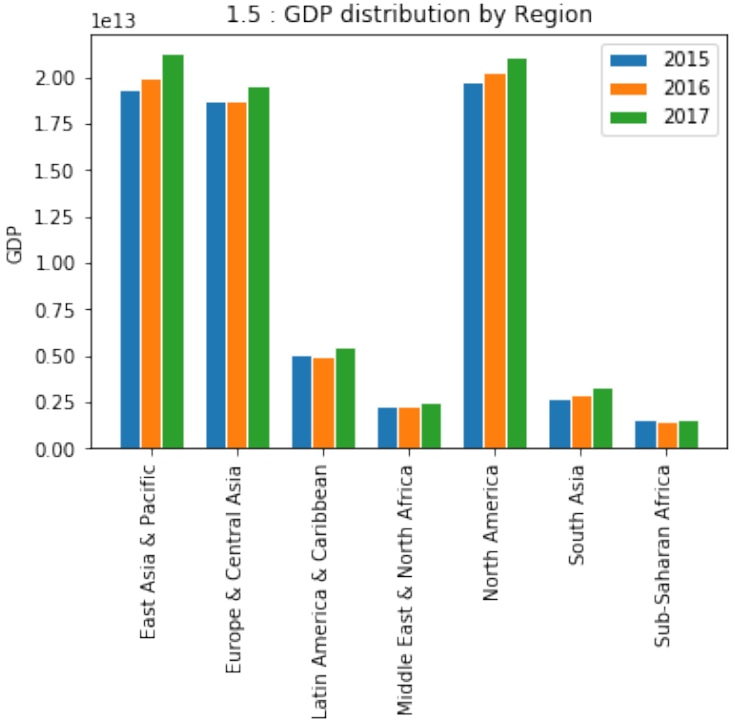
- **GDP:** Includes GDP data for countries from 2015 to 2017.
- **Total Population:** Includes Total population data for countries from 2015 to 2017.
- **Female Population Percentage:** Includes female population percentage data for countries from 2015 to 2017.
- **Countries:** Includes country mapping data.

Analysis Result

- As we can see data is having **ratio and interval data** and represent **random sample**.
- The **Shapiro–Wilk test** is a test of normality, and our result are in favour of null hypothesis i.e. data is from **normal distribution**.
- As we can see that there is **strong statically significant** relationship between country's women population and its Gross Domestic Product **rvalue = 0.64 pvalue = 1.58**
- There is **no extreme outliers** and shows **homoscedasticity**.







- GDP for all the regions is in **incremental way** (i.e. GDP-2017 > GDP-2016 > GDP-2015).
- GDP of **North America** and **Asian Region** is much higher compares with other regions; This is because North America is having The **United States** and Asian Region is having **China** which is contributing in the result.

Result and Conclusion

A zero order correlation was used to evaluate the null hypothesis that there There is no statistically significant relationship between country's women population and its Gross Domestic Product where **N=181**. Result of Pearson's analysis yielded that there is strong positive correlation between country's women population and its Gross Domestic Product by **rvalue = 0.64** and **pvalue = 1.58**.

Research Conclusion : The analysis provide evidence in favour of alternative hypothesis

- Our model shows a promising result, although further evaluation and tuning is still required.
- Choice of the model is due to the fact that as per graph 1.7 : Overall population vs GDP we can see linear pattern in the data**.**