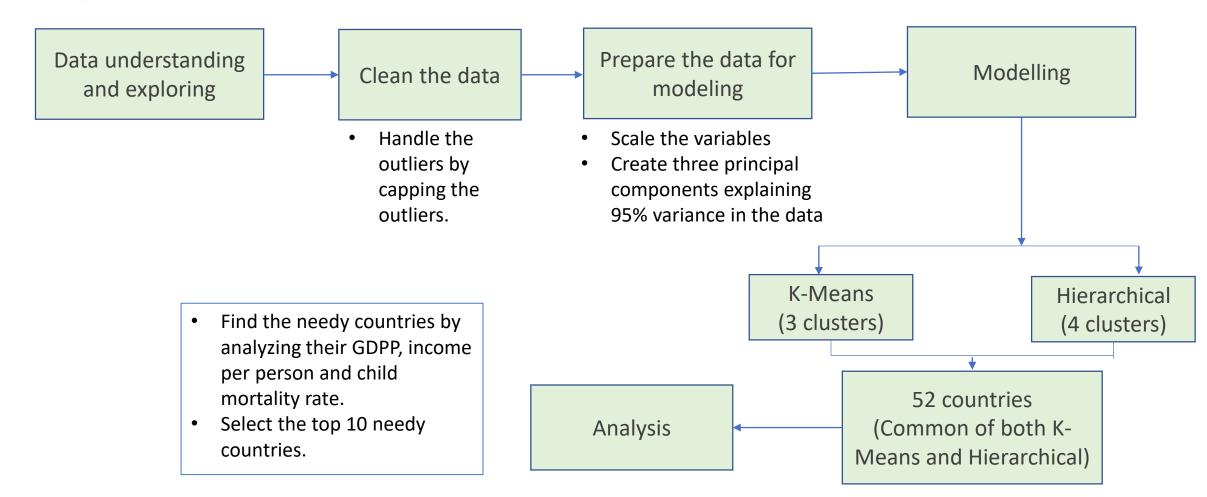
## Clustering & PCA Assignment

By Sahidul Shaikh

#### Problem statement:-

There are 167 countries socio economic data. Select the countries, which are in direst need of aid, by analyzing their socio economic features.

### Analysis approach:-



### Average GDPP, Child mortality rate and Income

#### 1. GDPP average

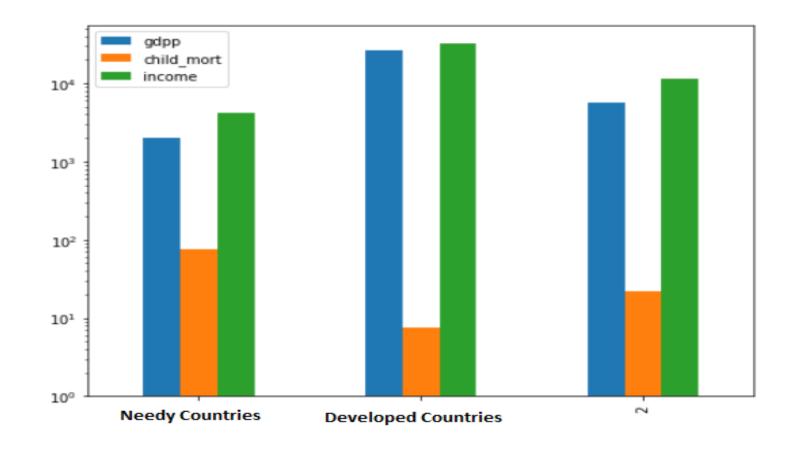
- Under developed countries:- 2004
- Developed countries:- 26717

#### 2. Child mortality rate

- Under developed countries:- 74
- Developed countries:- 7

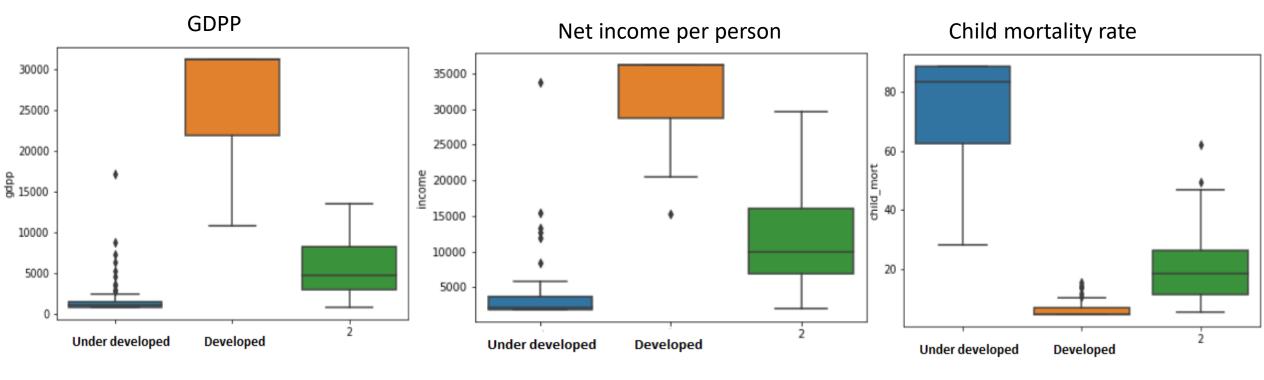
#### 3. Income per person

- Under developed countries:- 4125
- Developed countries:- 32427



- Compared to Developed countries, the average GDPP and net income per person are very low for under developed countries.
- Also, the average child mortality rate is very high for underdeveloped countries than the developed countries.

### Distribution of important measures



- GDPP of under developed countries is very low compared to the developed countries.
- The GDPP spread is around 1000 for under developed countries.

- Net income per person is intensively low for under developed countries.
- Net income per person spread is around 3000-4000 for under developed countries.

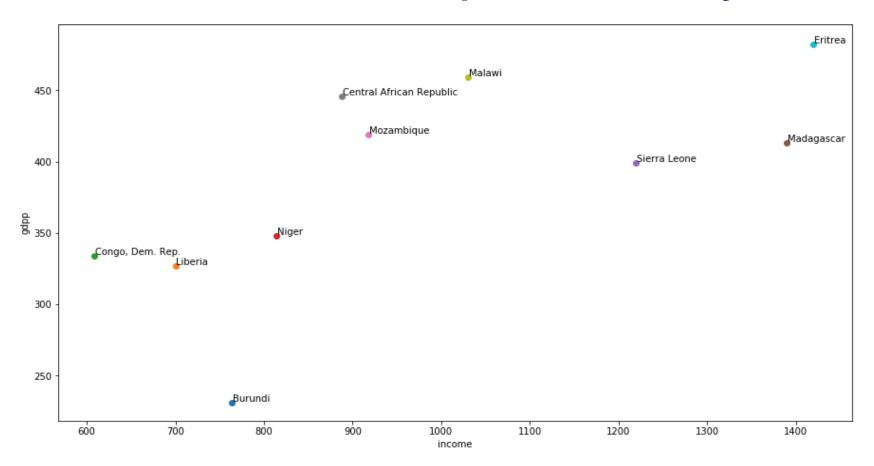
- Child mortality rate is very high for under developed countries comapred to the developed countries.
- Child mortality rate spread is around 65 to 85 for under developed countries.

## Top 10 needy countries

country	child_mort	exports	health	imports	income	inflation	life_expec	total_fer	gdpp
Burundi	93.6	20.6052	26.7960	90.552	764	12.30	57.7	6.26	231
Liberia	89.3	62.4570	38.5860	302.802	700	5.47	60.8	5.02	327
Congo, Dem. Rep.	116.0	137.2740	26.4194	165.664	609	20.80	57.5	6.54	334
Niger	123.0	77.2560	17.9568	170.868	814	2.55	58.8	7.49	348
Sierra Leone	160.0	67.0320	52.2690	137.655	1220	17.20	55.0	5.20	399
Madagascar	62.2	103.2500	15.5701	177.590	1390	8.79	60.8	4.60	413
Mozambique	101.0	131.9850	21.8299	193.578	918	7.64	54.5	5.56	419
Central African Republic	149.0	52.6280	17.7508	118.190	888	2.01	47.5	5.21	446
Malawi	90.5	104.6520	30.2481	160.191	1030	12.10	53.1	5.31	459
Eritrea	55.2	23.0878	12.8212	112.306	1420	11.60	61.7	4.61	482

- Top 10 countries, which are in direst need of aid.
- The socio economic conditions are very poor of these countries compared to the developed countries.
- The countries listed according to the lower GDPP, lower income per person and higher child mortality rate.

### GDPP-Income for top 10 needy countries



- Among the top 10 needy countries, Burundi has the lowest net income per person as well as it is
  one of the lowest GDPP country.
- Followed by Liberia, which also is one of the lowest GDPP and lowest per person income country.
- Eritrea has the comparatively little better GDPP and net income per person among the top 10 needy countries.

# Thank you!