Assignment 2 – Statistics and Trends

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GitHub Repository Link: https://github.com/Bubly28/Statistics-and-Trends.git

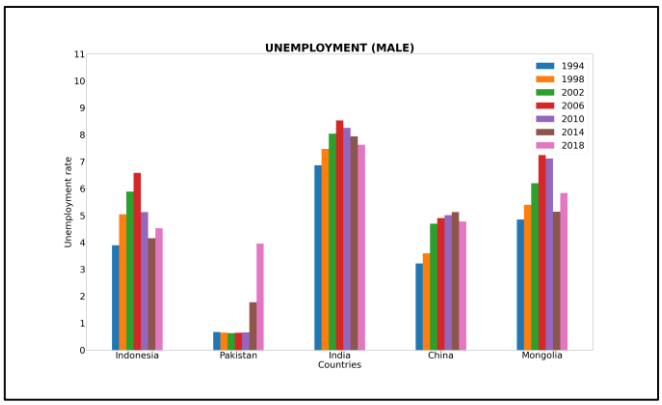
Data Source Link: https://data.worldbank.org/topic/gender

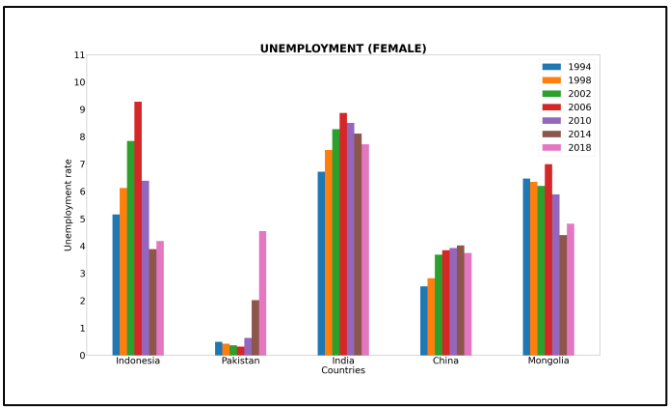
Abstract

This report analyses the gender statistics from Asian nations by taking into consideration various components. The study utilizes diverse visualisation strategies like bar plots, line plots, and heat maps. These visualisation tools empower us to dive deeper into the data, comprehend the trends observed over a few years, and identify any changes made. Moreover, heatmaps are used to identify associations and highlight the dissimilarity between the highest and lowest values of an indicator in a country.

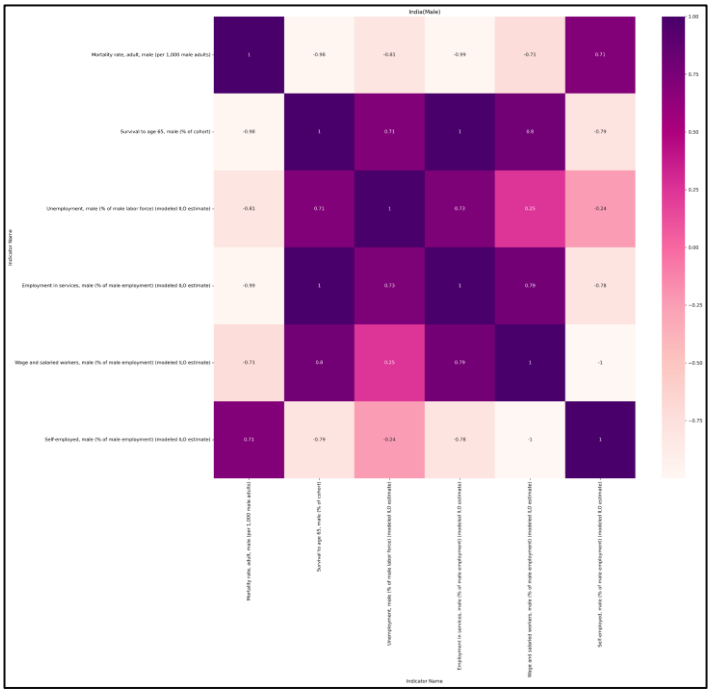
Gender data analysis based on World Bank data

For this analysis, specific nations on the Asian continent were chosen, and associations between the following variables in the male and female categories were looked at: Rates of life expectancy, adult mortality, survival to age 65, tertiary enrolment in school, unemployment, employment in the services sector, wage and salaried employees, and self-employment. Their underlying causes were analysed, and some correlations between the variables were discovered.





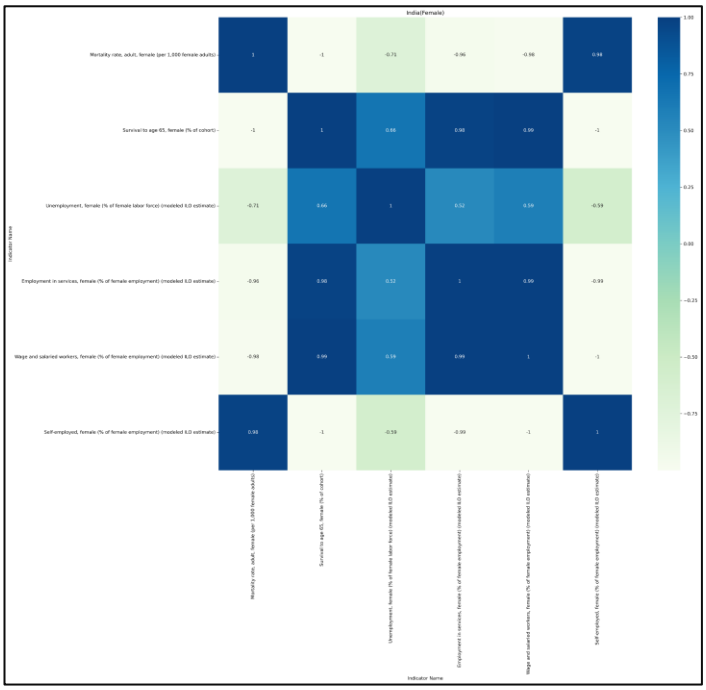
The unemployment rates for men and women in five Asian nations are depicted in these two bar graphs. It is evident from these two graphs that there is hardly any difference between the unemployment rates of men and women in India. While Indonesia has a greater percentage of jobless ladies than males, Pakistan has a relatively similar trend in both categories. In all four countries – aside from Pakistan – the unemployment rate for both men and women decreased in 2018. In Pakistan, both male and female unemployment rates raised between 2014 and 2018.



The first heatmap displays the links between several traits associated with men in India.

Males who lived over the age of 65 and the adult mortality rate are negatively correlated. However, there is a favourable association between men who earn a living and men who live to reach 65.

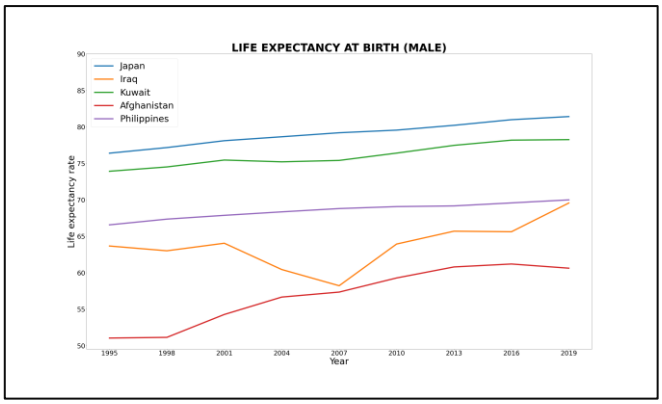
The unemployment rate of India grew between 1994 and 2006, before declining again after that, as seen by the bar graph. Additionally, it is evident from the heatmap that as there is an increase in the rate of males who lived up to 65 years, so does the rate of men with wages and salaries.

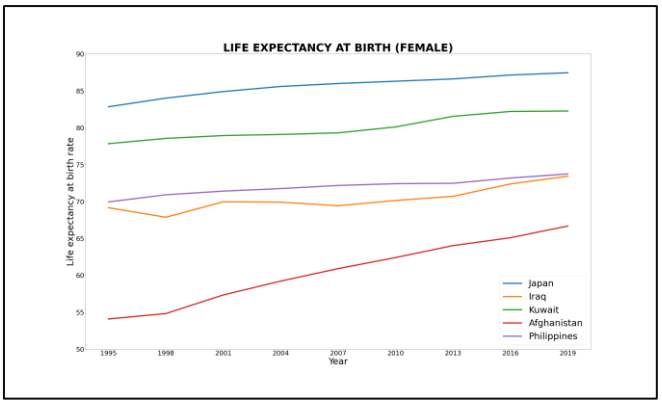


The second heatmap displays the links between several traits associated with women in India. It is abundantly obvious from this heatmap that the proportion of women who have worked in the service industry has an adverse correlation with adult mortality.

As like men, it is clear from the barplot that the jobless rate for women is falling after rising and there is a rise in the proportion of women with salaries and earnings when compared to the proportion of women who survived to the age of 65.

The map also shows a negative correlation between the rate of women who are self-employed and the rate of women with wages and salaries. Therefore, it is simple to conclude that there is a rise in the number of independent women in India.





The two line graphs above depict the male and female life expectancy rates at birth in five Asian nations between 1995 and 2019. The graph makes it evident that life expectancy for both sexes is rising globally, which will result in an increase in each nation's population. Male life expectancy in Iraq watched a significant decline in 2002, although it then rose once again. In both categories, Japan has the greatest life expectancy rate. The rate is gradually rising for Kuwait and Afghanistan, just like it is for Japan.

The following table shows the summary of China's statistics with 4 variables:

China's Summary Statistics

	Unemployment, male (% of male labor force) (modeled ILO estimate)	Unemployment, female (% of female labor force) (modeled ILO estimate)	Life expectancy at birth, male (years)	Life expectancy at birth, female (years)
count	21.0	21.0	21.0	21.0
mean	4.553380966285720	3.571238086333330	71.38261904761900	76.3815238095238
std	0.697038787785327	0.546642906942047 0	2.064662841148420	2.421403118422200
min	3.326999903	2.608999968	67.833	72.308
25%	3.614000082	2.835000038	69.723	74.189
50%	4.97300005	3.900000095	71.619	76.819
75%	5.073999882	3.979000092	73.08	78.326
max	5.221000195	4.09499979	74.379	79.772