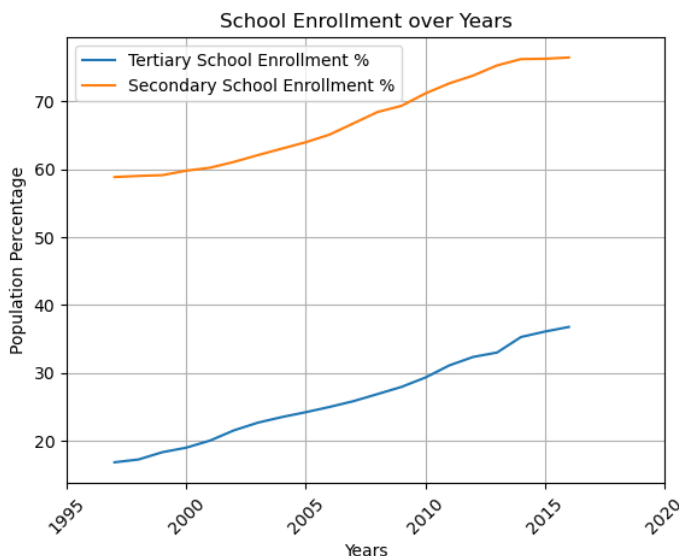


Worldwide Economic Transformation - Education, Employment, GDP

Introduction:

Conducted a detailed analysis of the factors shaping global employment over the years 1997 to 2016. The analysis is focused on the interlinked relationships between increased school enrolments and its effect on various job sectors mainly industrial, agriculture, and service sectors. Also, various factors are linked to them like tax revenue and GDP. Lastly, we will identify the correlation between these factors in this report.

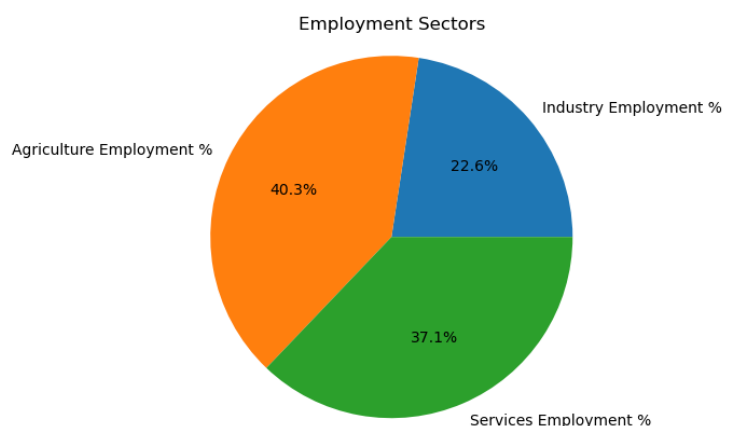
The school enrolments have shown a huge percentage increase from the year 1997 to 2016 in tertiary education which shows that people



are believing how important is it to get higher education rather than just stopping with secondary education. Secondary education has always been important as we can see that 58% were enrolled in the year 1997 while the tertiary enrolment was just 16%. From the year 1997, we can see at least a 1% increase in the enrolments both in secondary and tertiary education. Over these 19 years, secondary education enrolments have increased by 31% whereas tertiary education enrolments have increased by 125%. The line plot has been drawn by comparing both the enrolments over the years. The blue line shows the growth of tertiary school enrolments, and the orange line shows the secondary enrolments. We can observe the growth and difference of the growth between these two in the above figure.

The huge percentage of the increase in tertiary enrolments plays a vital role in the employment sector's distribution. The employment sector is mainly divided into three sectors namely Industrial, Agriculture and service sectors.

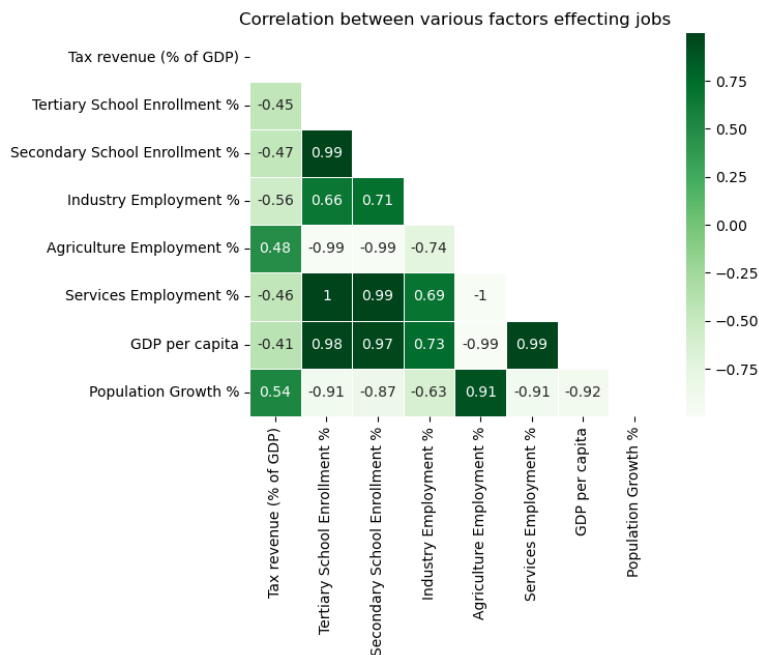
The agriculture sector has been top one with 40% of the employees working in this sector in the year 1997 and the industrial, and service sectors were with 22.5% and 37% respectively. However, by the end of 2016, the service sector overtook the agriculture sector to become the most employed sector with more than 50 percent of the employees working in this sector which is the highest for any sector ever all over the decades. The agriculture sector which was at 40% in the year 1997 has only 26% of employees working in it now. The industrial sector had well maintained its fair share with an average of 22.5% all over the years. There was a major shift from the agricultural to the service sector with an increase in the number of people choosing tertiary education. More people choose higher education more the increase in the service sector as it requires a high level of education. So, the total average of all the years of employment (1997-2016) has been



shown in the Pie chart, Orange represents the Agricultural sector which has been 40.3% average. Blue, and green represent the Industrial and service sectors which are been at 22.6 and 37.1% respectively.

As we find out the skewness and kurtosis of the values. The positive skewness in the secondary and tertiary school enrolments and the service employees shows a stronger right tail in the

distribution. For the agriculture sector and GDP per capita, skewness is near 0 which indicates that these distributions are symmetric. The population has the highest positive skewness



with 1.12. A few of the skewness values are Tax revenue (% of GDP)-0.281181, Tertiary School Enrolment % 0.202781, Secondary School Enrolment % 0.229235, and Industry Employment % -0.360017.

All the Kurtosis values are negative except the population growth which means the distribution is mostly flat. For the population growth, we can see a steeper peak in the distribution.

To compare all the correlations between the factors which are affecting the jobs a heatmap has been plotted. The secondary and tertiary enrolments have a strong positive correlation with the GDP per capita with correlation values of 0.98 and 0.97. A strong negative correlation in employment sectors with GDP has been seen with the agriculture sector (-0.99) and a strong positive has been seen with the service sector (0.98) which implies it contributes more towards the GDP. Tax revenue plays another important role in influencing the GDP as it has a 0.98 correlation with it. We can observe more correlations from the heatmap. In the same way, a correlation can be found between all the factors. The heatmap has been plotted based on the dataset values, darker the shade of green represents how positive the correlation is and the lighter the shade of green represents how negative the correlation is.

Conclusion:

After analysing the world data report on employment, education, and GDP with the plots and the correlations here are the conclusions. The secondary and tertiary enrolments have increased a lot which shows that education has become more accessible over the years, tertiary enrolments have shown a 125% increase in these 19 years which is huge, this played an important role in service sector improvements which is directly proportional to the GDP. Educated people are mostly employed in the service sectors rather than in agriculture and industrial sectors so there was a decline in agriculture employment. But the industrial sector has been constant all over the years. The population is increasing but the growth rate has been decreasing which is a good sign to keep the growth at a medium pace. There are significant changes that happened in the world over these two decades such as ease of travelling and technology, which allowed more people to study higher education. Subsequently, shifted employment towards service sectors which directly contributed to the economic growth.

Dataset:

<https://databank.worldbank.org/source/jobs>

GitHub link:

https://github.com/balajianitha/BalajiADS_Assignment

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