Indian Cities Case study Analysis

In the Indian cities case study, we have data on Indian population. We have details on the total population as per the States & Cities and the literacy rates as per the gender.
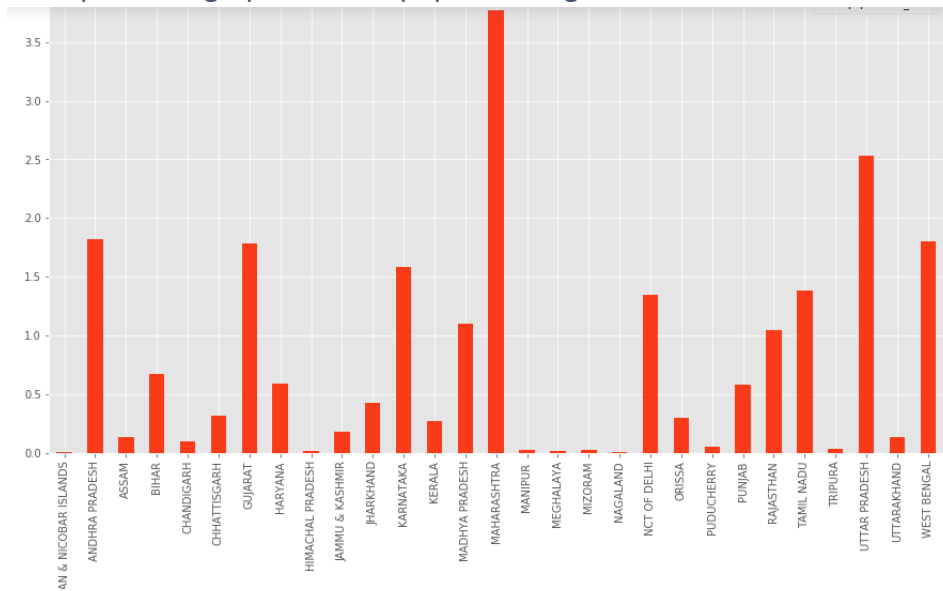
We will now try to get insights on population in each state, total male/female population, Children population, sex ratio and child sex ratio, literacy rates as per gender for each states.

Following are my observation from the data:

1. We have data for 29 states/regions. For each State, data provided on population and literacy rate for one or more cities.
2. After summarizing the numerical Data, we can see that :
    *   Data for total population is right skewed. This indicates presence of huge outliers as there is significant amount of difference between the median and the mean values, which means few States, have very high population in comparison to other.
    *   Data for total population Male/Female is also right skewed. It is also indicating that Females are less than Males. Later on, we will plot a graph, to see how much the difference in population between the two is.
    *   There is similar relation among children between 0-6 years of age.
    *   The literacy rate is showing a right skew relation again.
    *   There is slightly a different observation when we see the summary for Sex ratio and child sex ratio. The sex ratio is showing almost a normal distribution, though mean is more than median but that difference is low. This indicates that there is not much difference between the Male/female populations. In case of child sex ratio, the data is normal distributed, which means population for male and female kid is almost same.
    *   Moving on to Literacy rates, there is normal distribution in literacy rate for overall literacy rate, male literacy rate and female literacy rate.
    *   Finally, if we look at the graduate's population, it is showing a right skew relation, means that at some places more people (male/female) are graduate and at some places less.
3. I have dropped few column after analyzing the summary, column like District code, state code, and location. District code is same across multiple cities belonging to different states. District code is not unique specific to one state. Therefore, the analysis based on the district code will not make any point.
4. I have decided to do all the comparison based on the state name. Based on State, I will draw insights on distribution of population and literacy rates across the region. Hence, also dropped state code and location column.

Conclusion based on comparison and Graphs

1. Have plotted a graph for total population against each state.

As per the plot, Maharashtra has highest population. UP has the second highest population. The population in union territories , north east and hilly states like Puducherry, Andaman, Himachal, Manipur etc. has very low population. This can be due to the area.
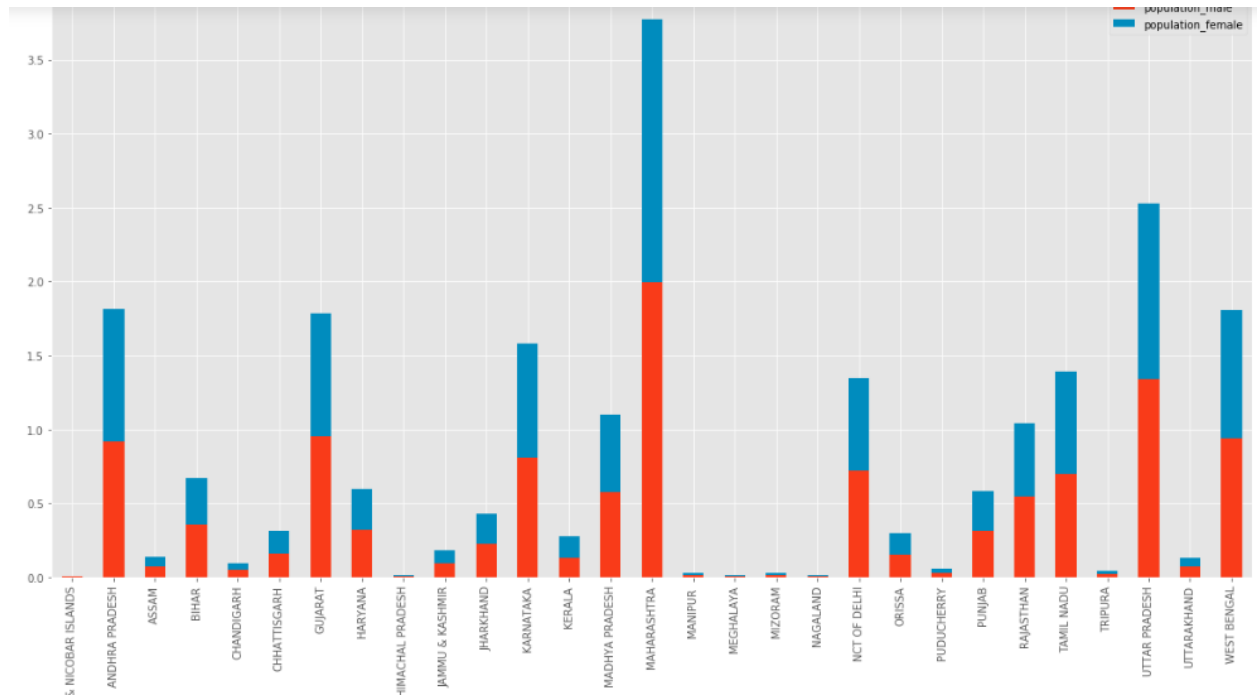
Population in State like Tamilnadu, Karnataka, AP, and West Bengal is almost same with slight differences.
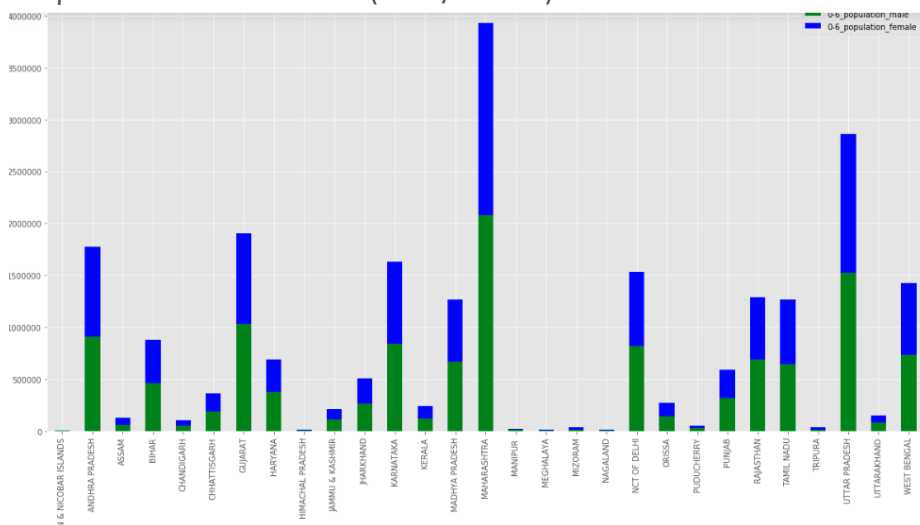
2. Graph for Total Male and Female population

There is not much difference between overall male and female population. Male population is slightly more than Female population. We can say approximately that female population is 5-10% less than the Males.

3. Male Vs Female in each state
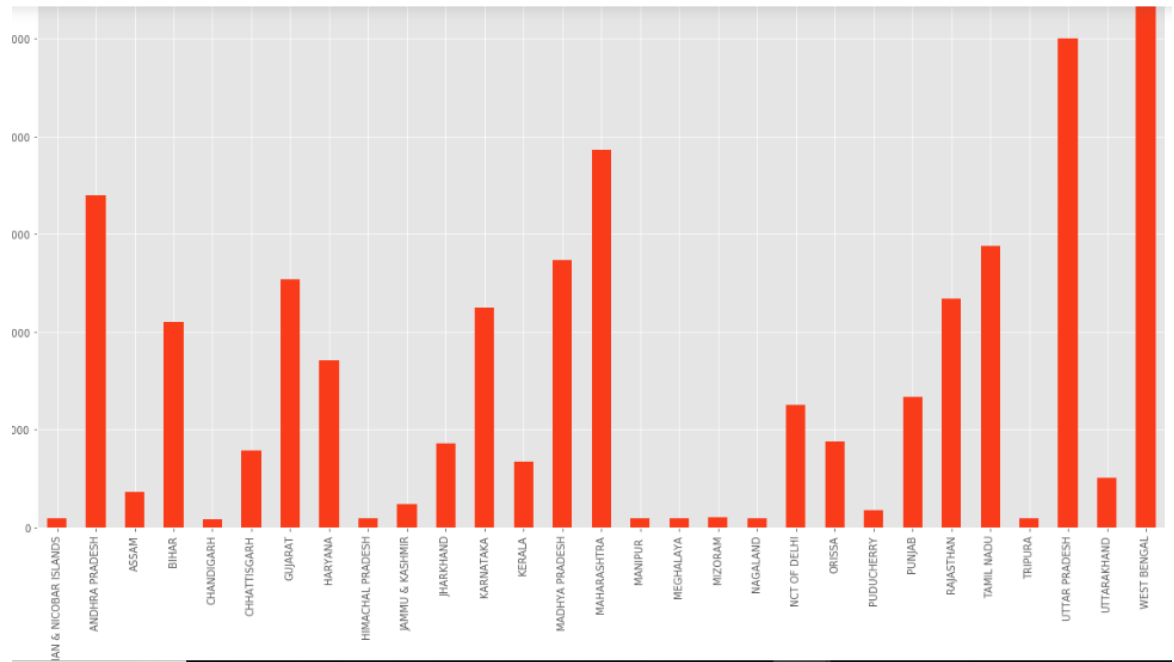

In most of the States, Male and female population is almost same with slight difference, but not much.

4. Graph for total kids under 6(male/female) in each state

The Distribution is similar to the previous plot. Male/female kids population is almost same across the states.
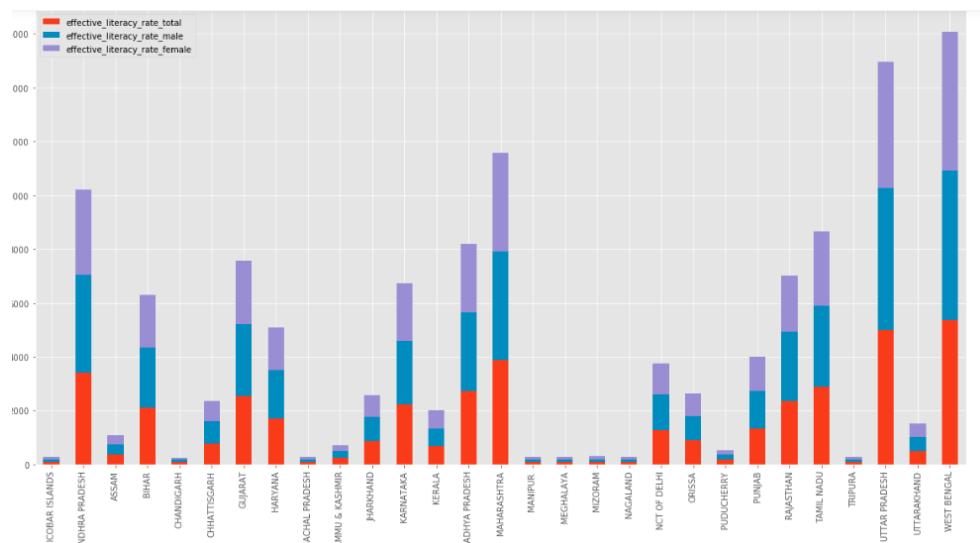
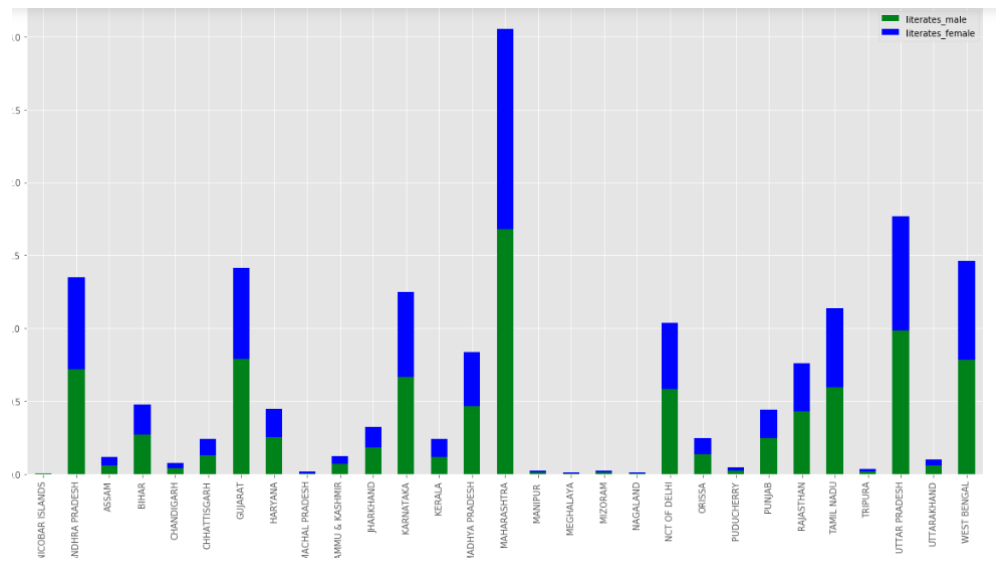5. Graph to compare overall literacy rates between states.

However, the population was high in Maharashtra, but the literacy rate is higher in West Bengal and UP. WB being the top and UP being the second highest.

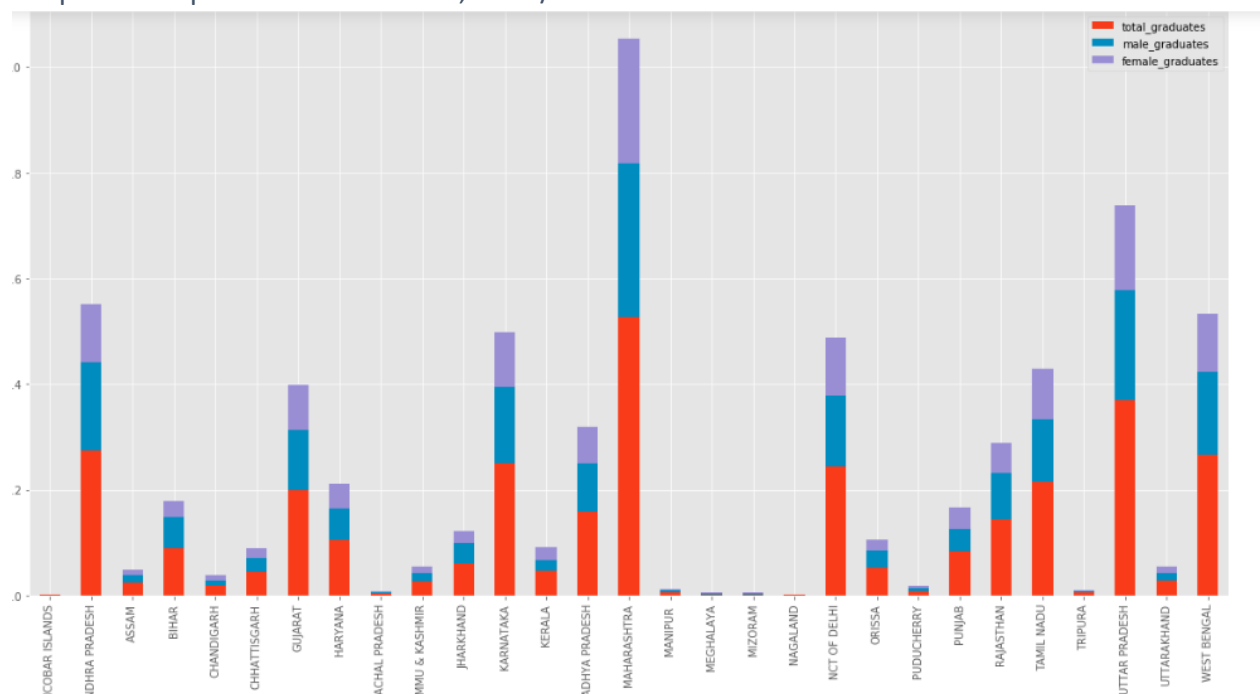Literacy rate is lowest in UT, Northeastern State and Himalayan States.

6. Graph to compare Overall Literacy rate , Male/Female Literacy rate across the States

The literacy rate among Mena and women is depicting the relation same like Male/Female Population. Literacy rate is slightly more for Men than Women are across the States.

7. Graph to compare total Graduates, Male/Female Grads across the States.

Total graduates are highest in Maharashtra. There are slight difference in number of graduates between states like UP, WB, AP, and Karnataka, TN, which are all major states if we compare size in area, development and population.

Male Graduates are slightly more in each State but there is not significantly high difference.