



Data Visualization

Education Infrastructure

SUBMITTED BY: DIYORA UJAS VINODKUMAR

ROLL NO.- 224161002

SUBMITTED TO: DR. ASHISH ANAND

Dataset Information

- ▶ Percentage of schools with boys toilet
- ▶ Percentage of schools with girls toilet
- ▶ Percentage of schools with water facility
- ▶ Percentage of schools with electricity
- ▶ Percentage of schools with computers
- ▶ Gross enrollment
- ▶ Dropout ratio



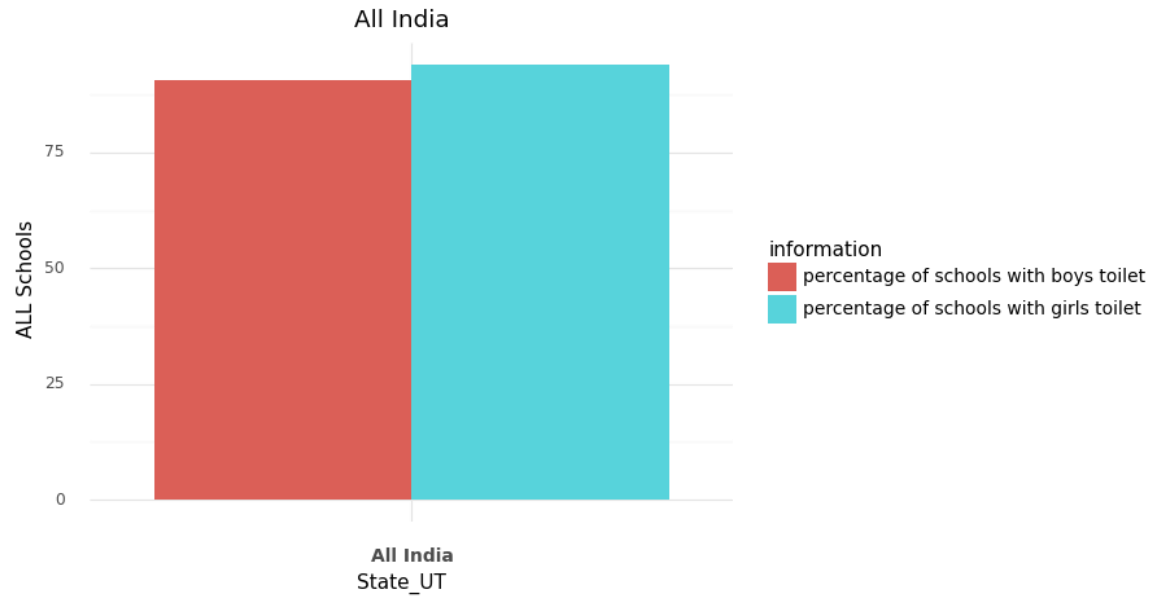
Questions:

Is there any gender bias with respect to percentage of schools with boys & girls toilet ?

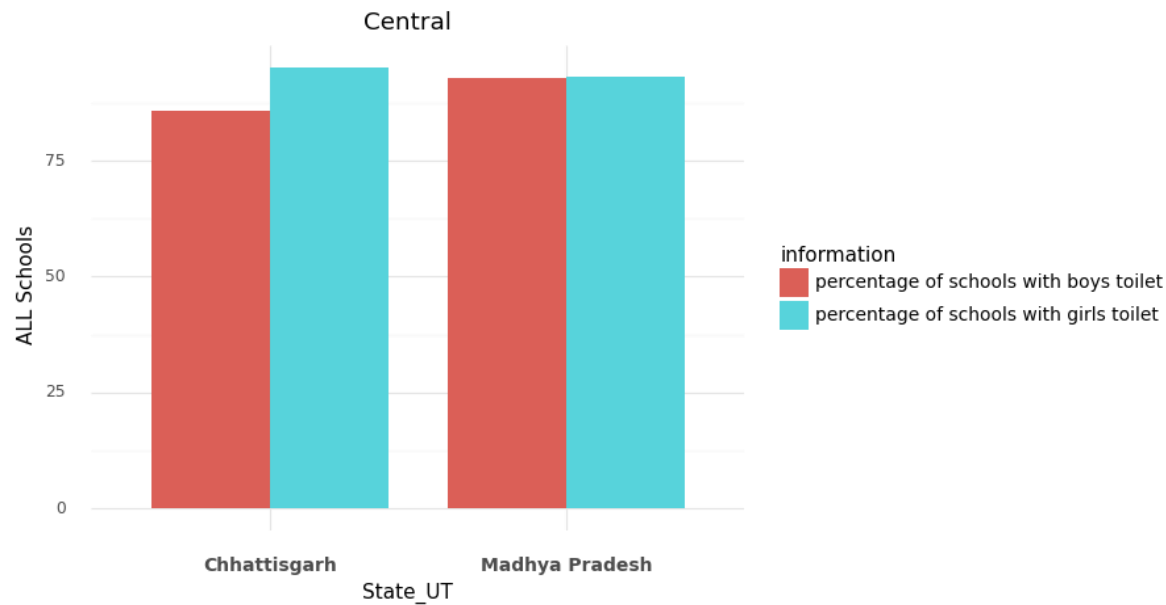
Which state has lowest and highest percentage?

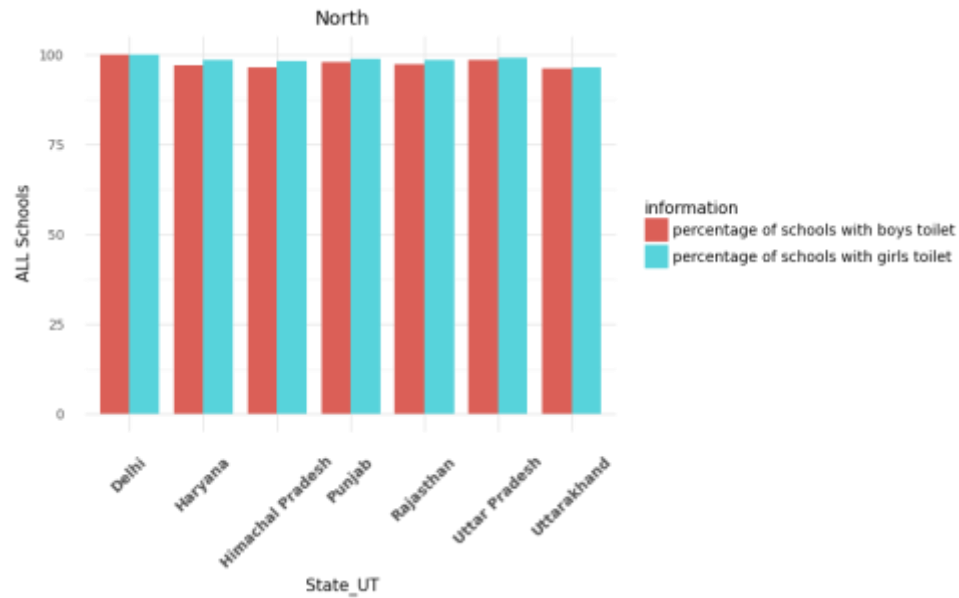
- ▶ Firstly, I have divided states into North, south, west, east and north-east region, along-with union territories
- ▶ I will compare this data by grouping them into secondary with Higher secondary schools and All schools.
- ▶ Then, we can get related answers for above questions

All Schools comparison



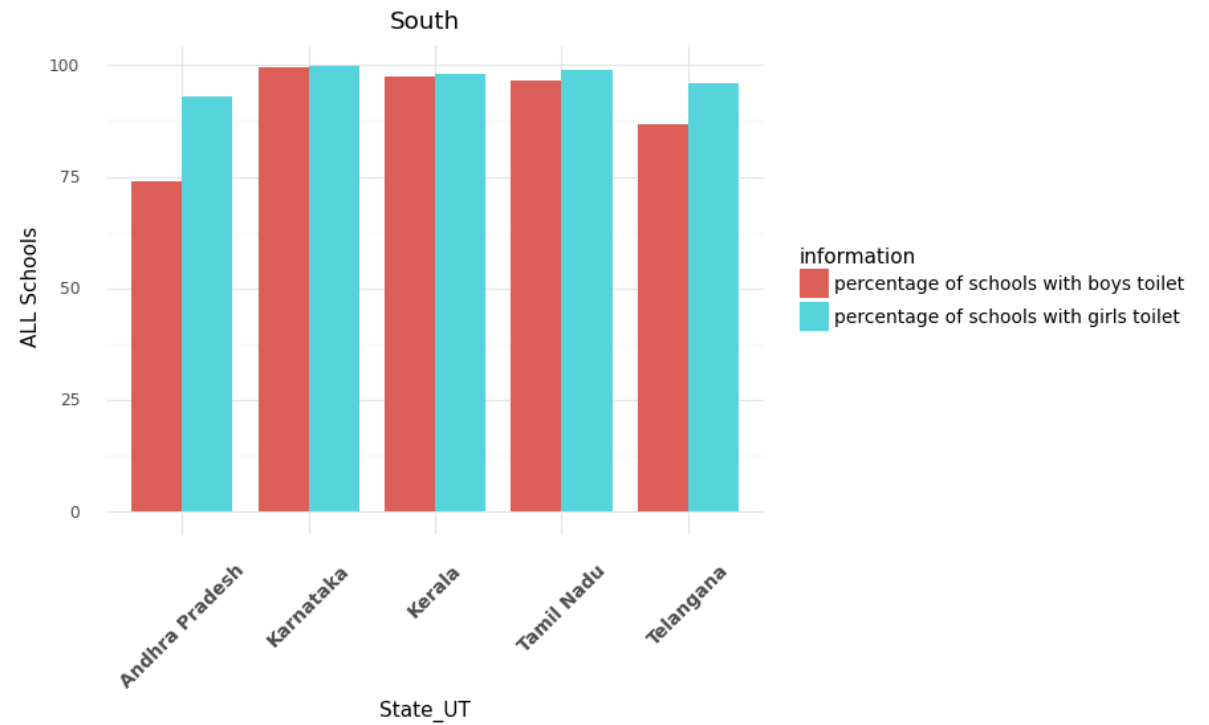
- There is no gender bias all over india
- In central region also, percentage of toilets of both gender is same

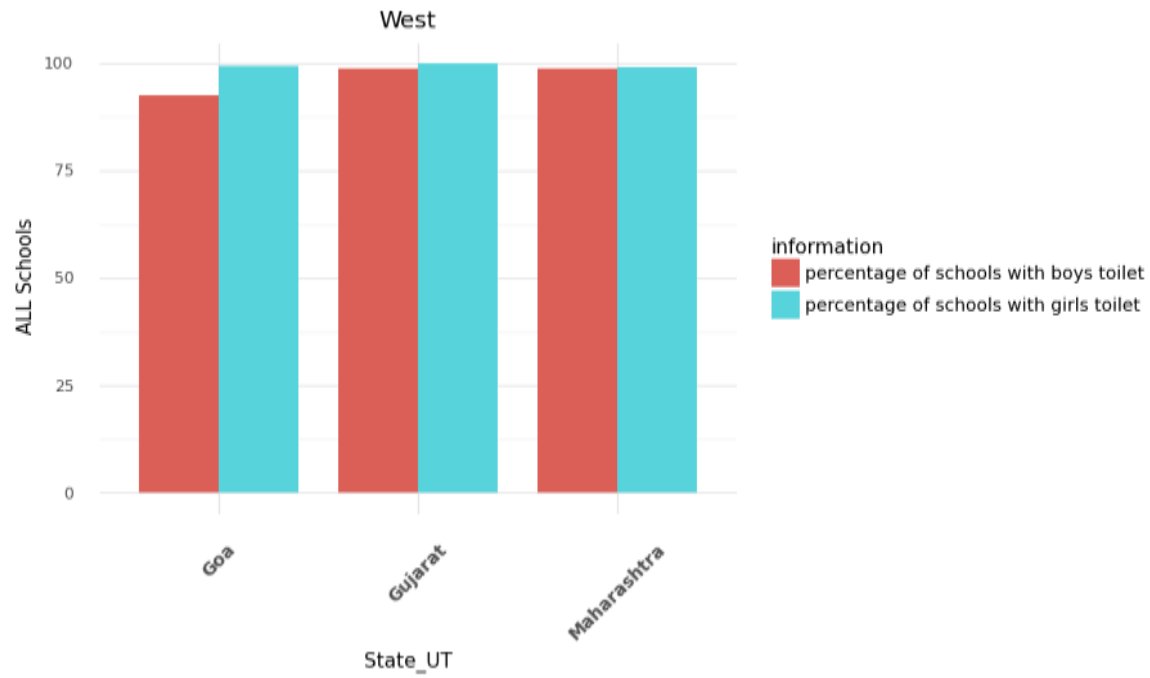




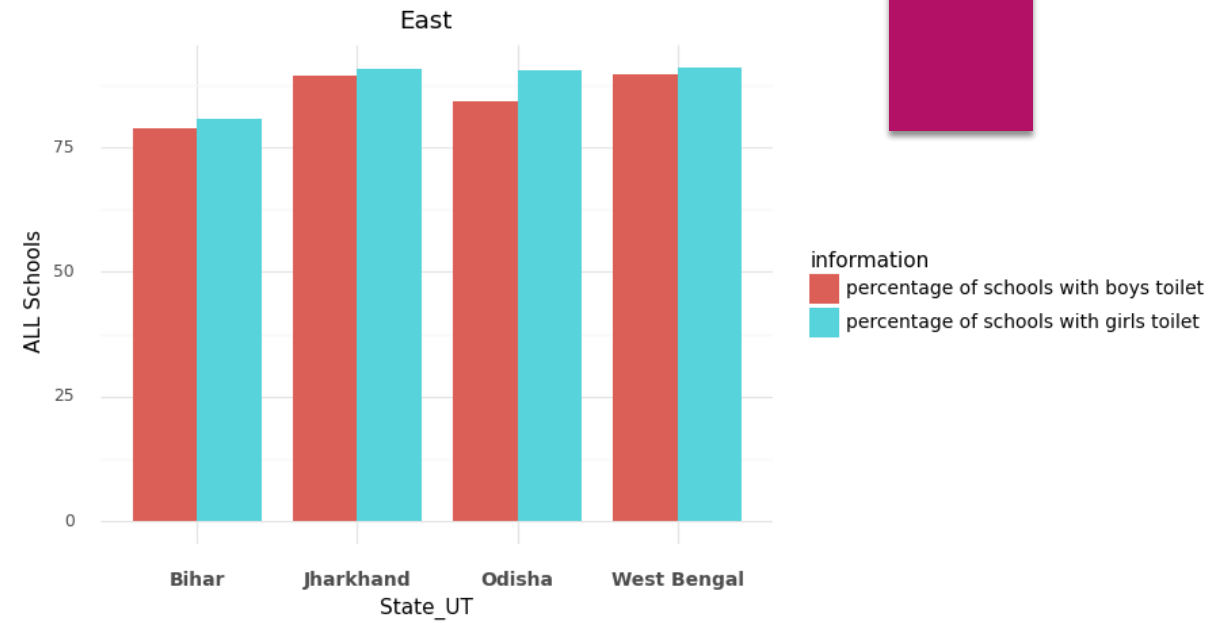
- In north region, percentage is same in all states

- In south, except Andhra Pradesh and Telangana, Percentage is same. Percentage of girls toilet is more than boys toilet in these both states.

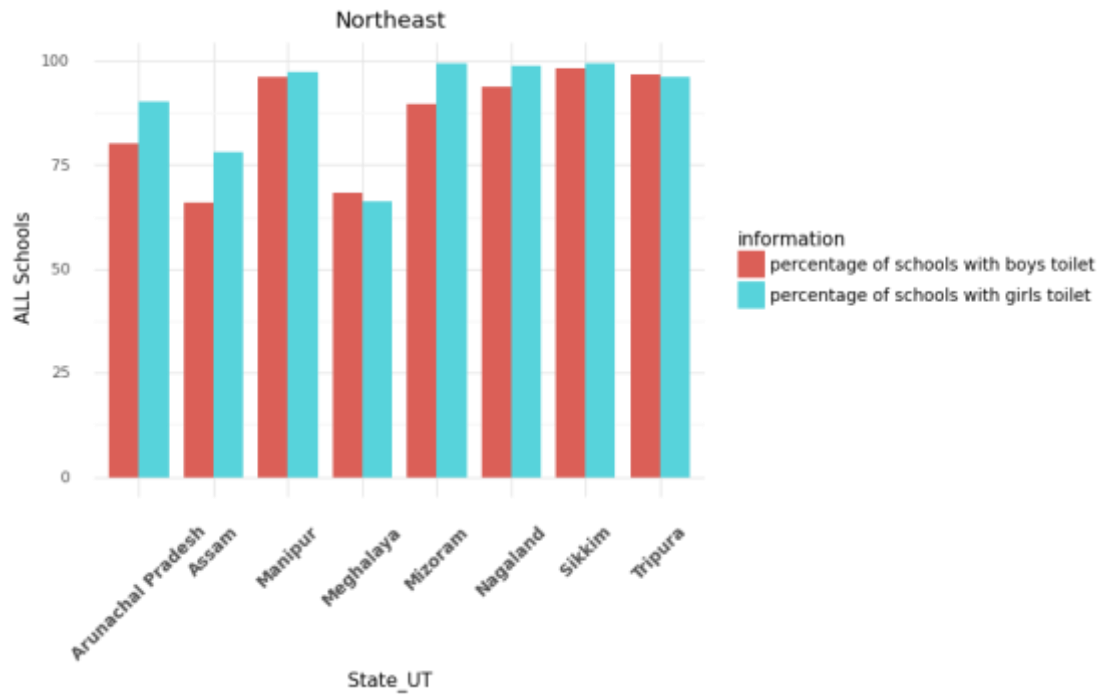




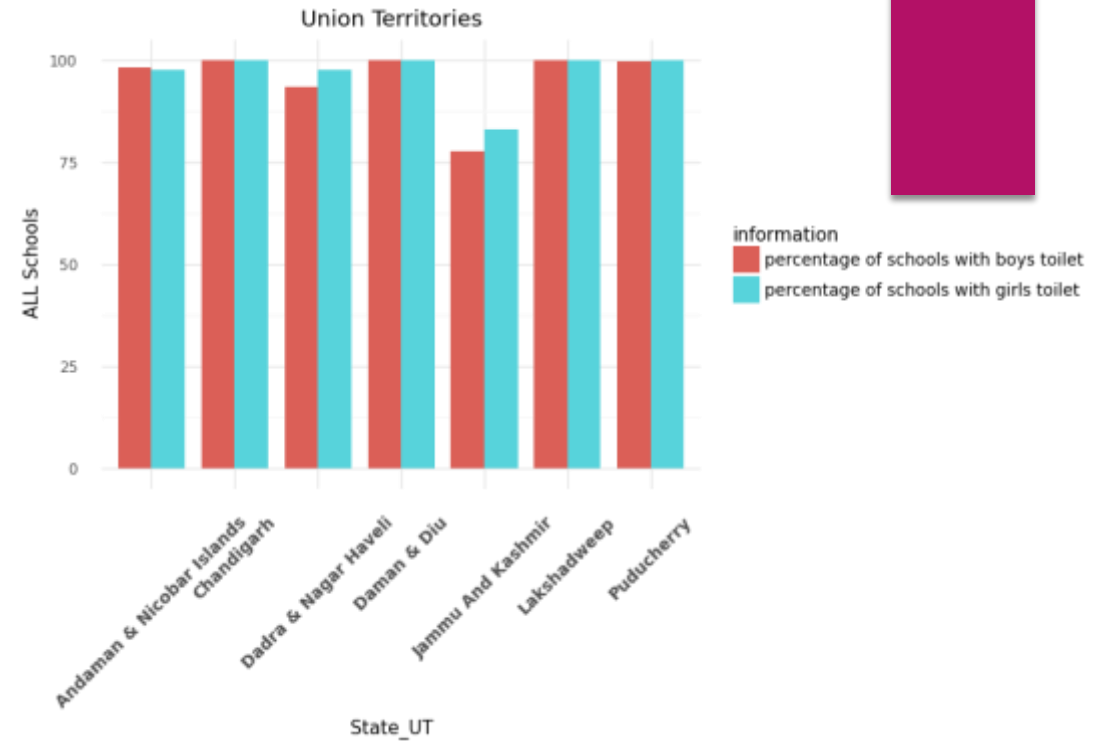
- In west, there is no gender bias. All states have almost same percentage variations



- In east, there is little gender bias observed in Odisha state
- Bihar has least percentage of toilet of boys and girls

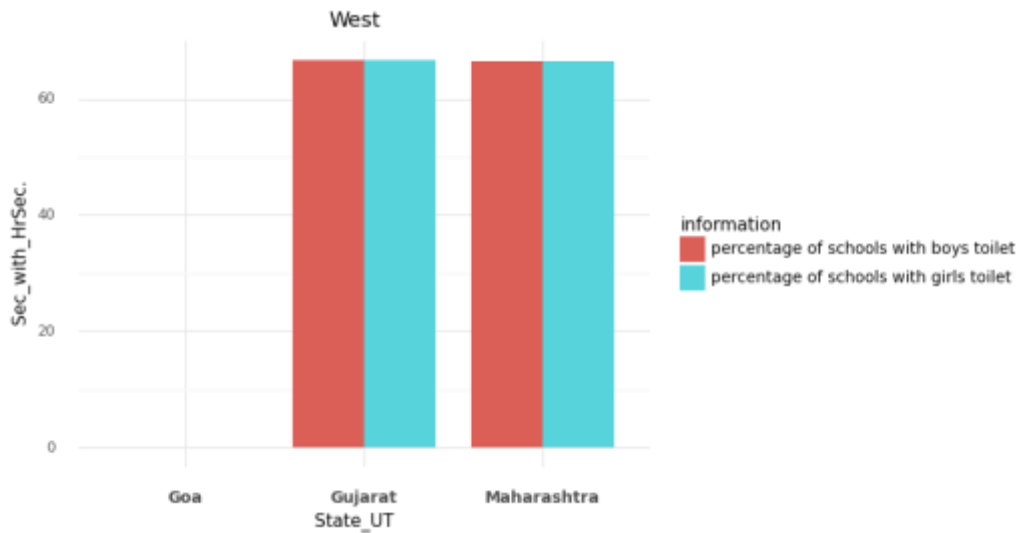
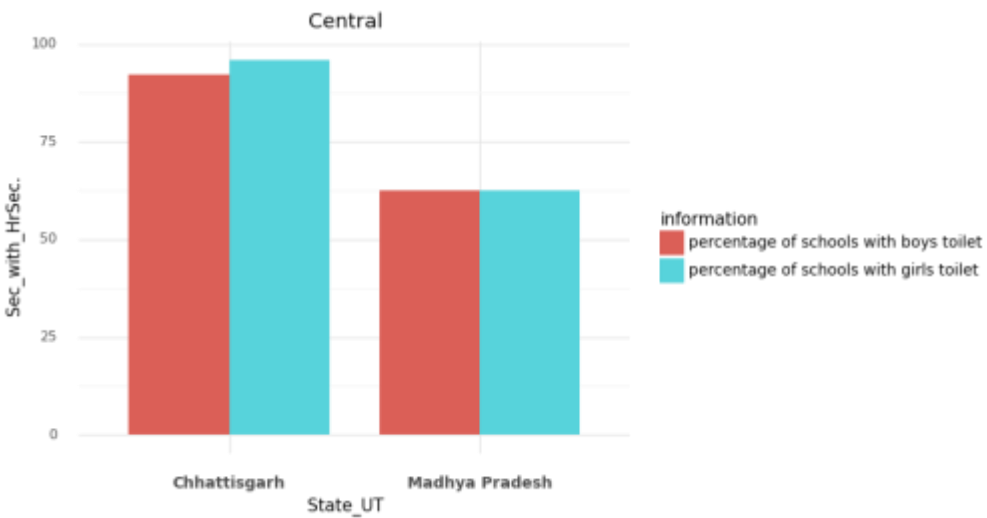
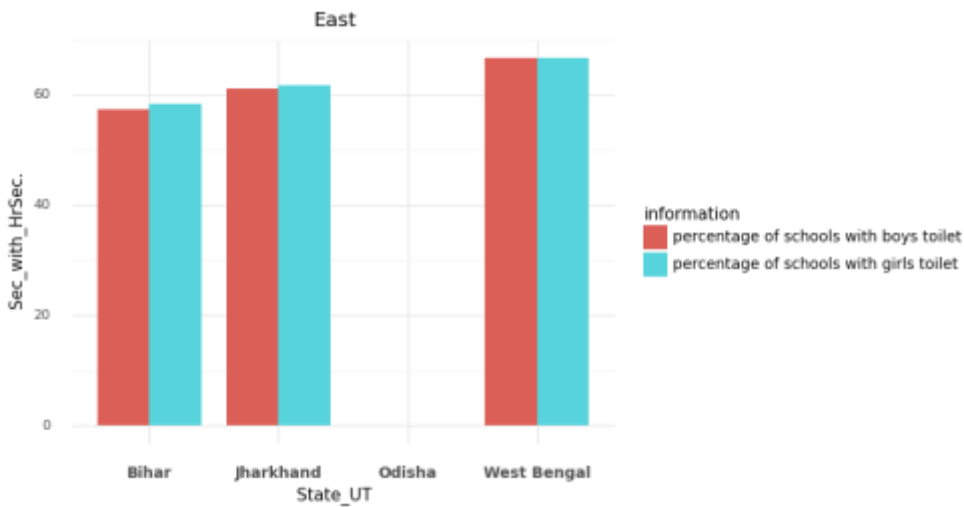
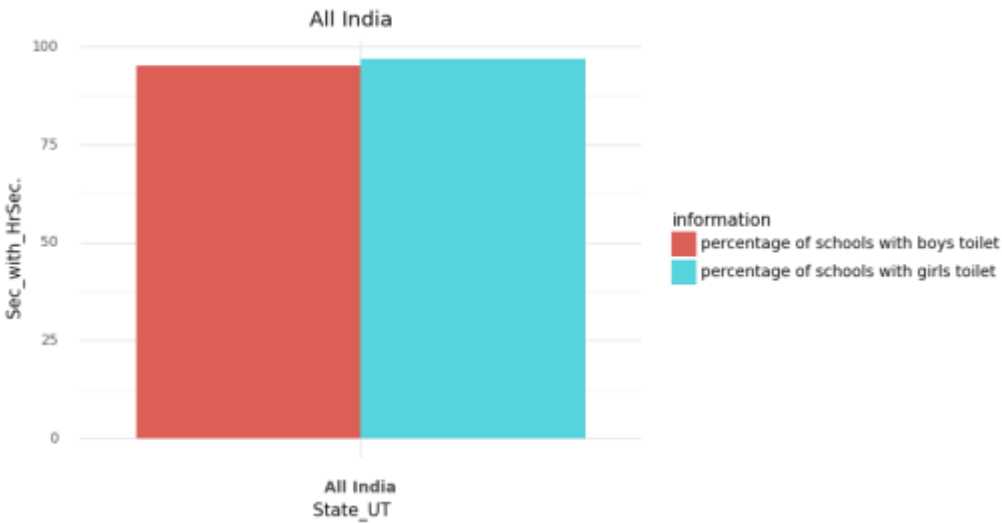


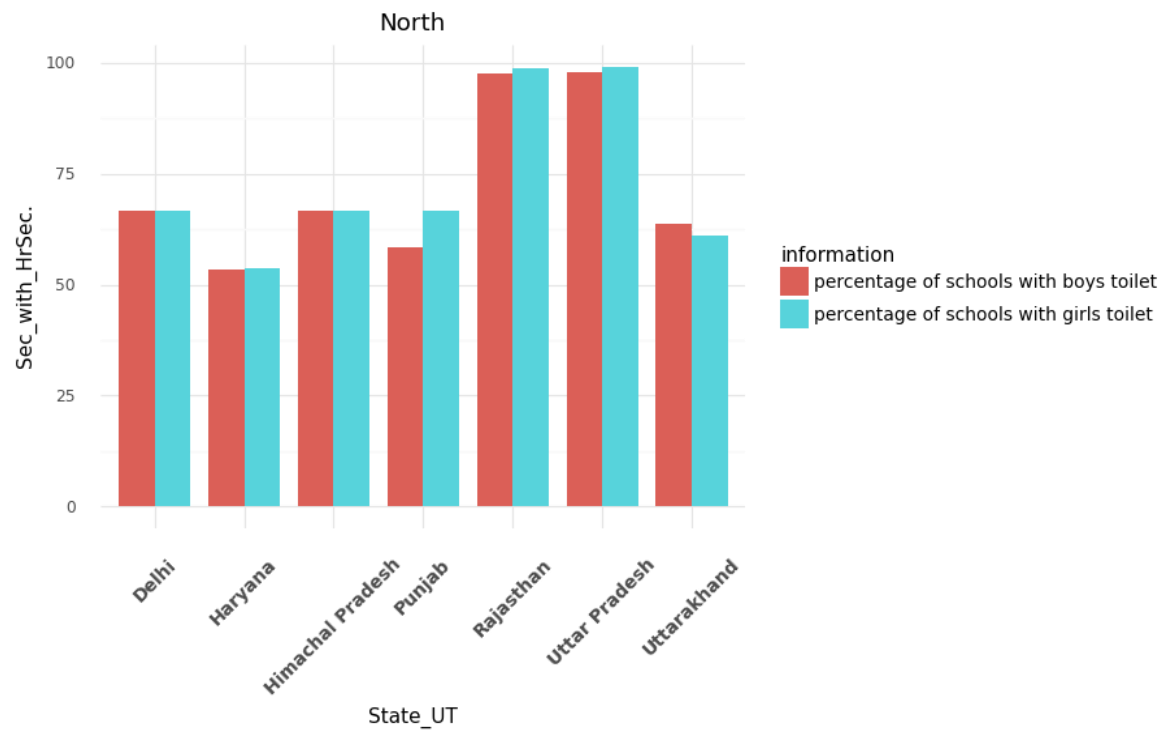
- In Northeast region, gender bias is observed in Arunachal Pradesh, Assam & Mizoram
- Population of Assam 35.6 million, which is more than all other states, but percentage of boys and girls toilet is less than all other states
- Sikkim has lowest population. However, its percentage value is highest among all states



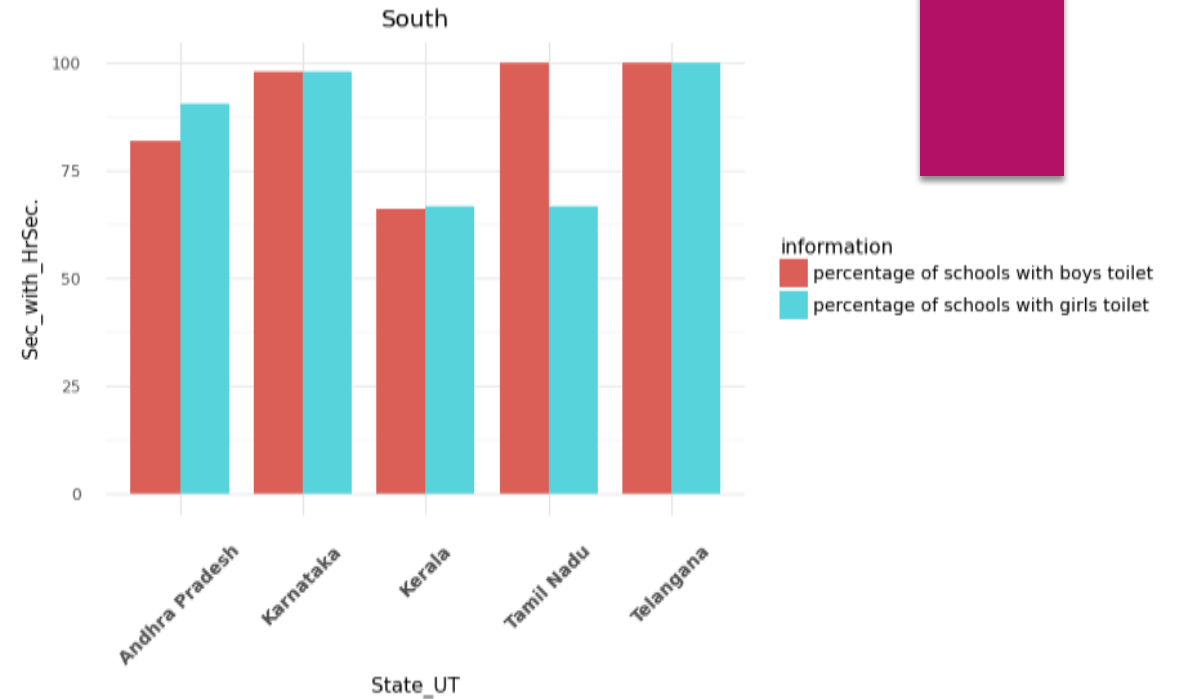
- Jammu & Kashmir has least percentage among all union Territories
- There is no gender bias observed.

Secondary & Higher Secondary school comparison

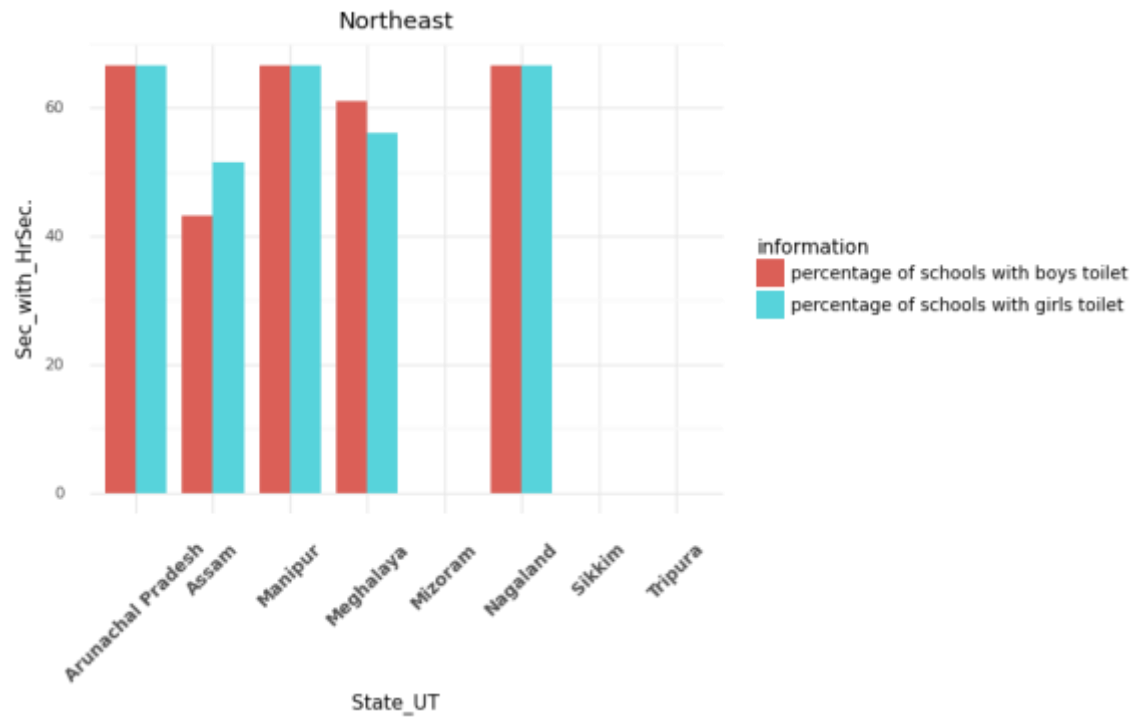




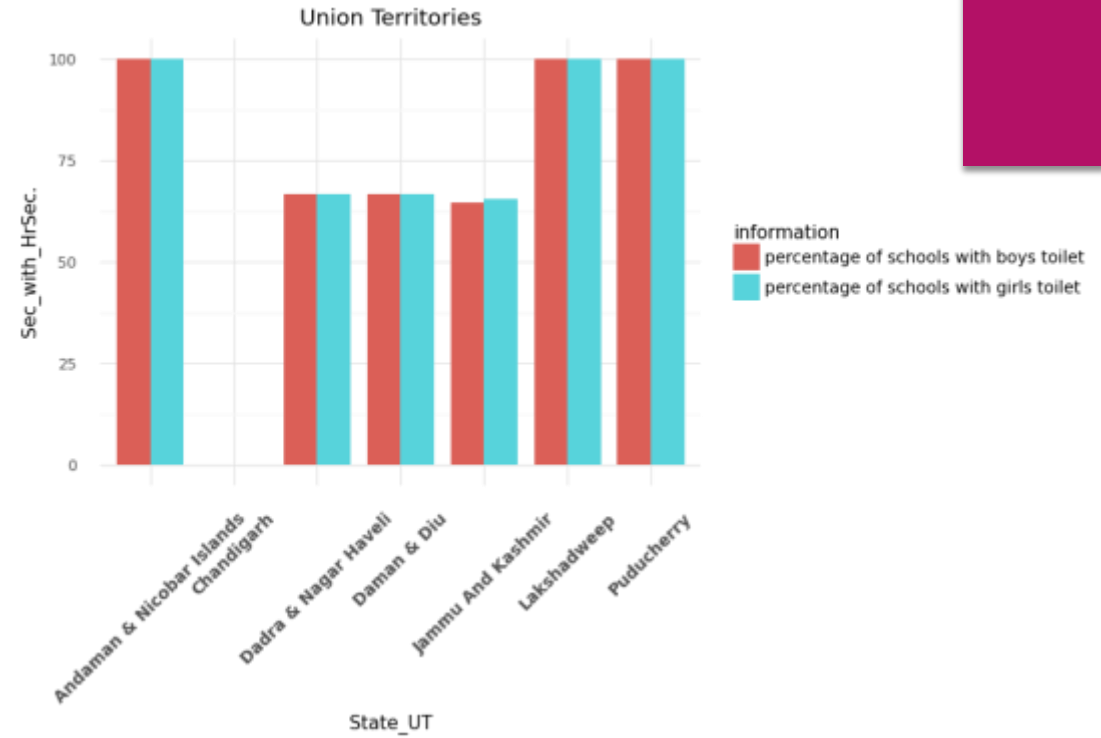
- Haryana has less number of toilets among all other states.
- Rajasthan and Uttar Pradesh has highest number of toilets.



- Tamil Nadu has gender bias.
- Kerala has less number of toilets among all other states.



- In Mizoram, Sikkim and Tripura , there are no boys & girls toilet.
- There is gender bias in Assam.

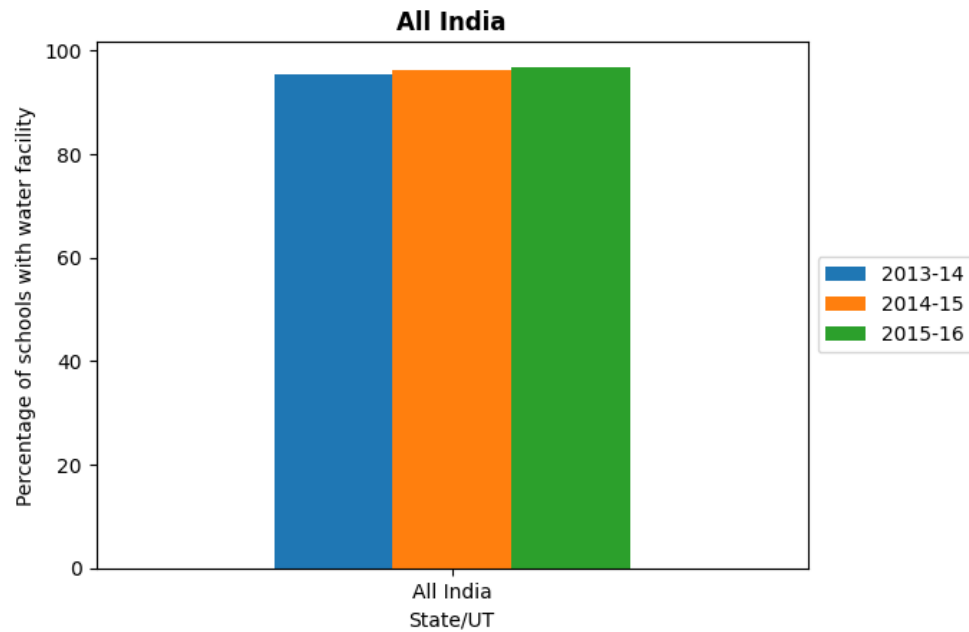
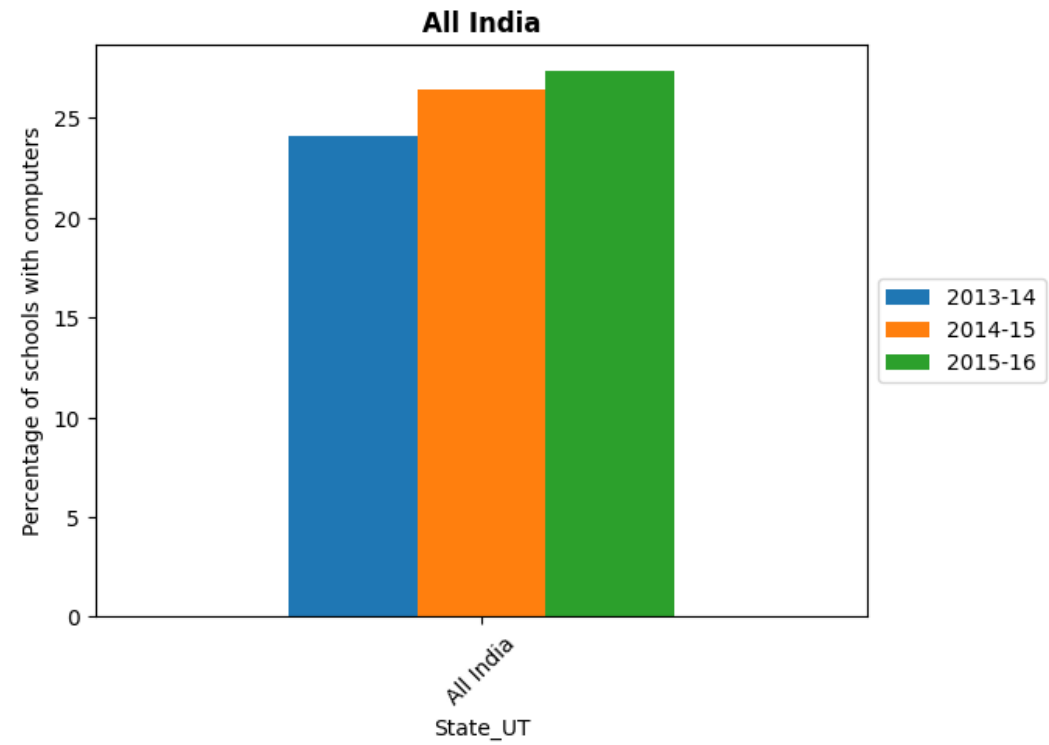
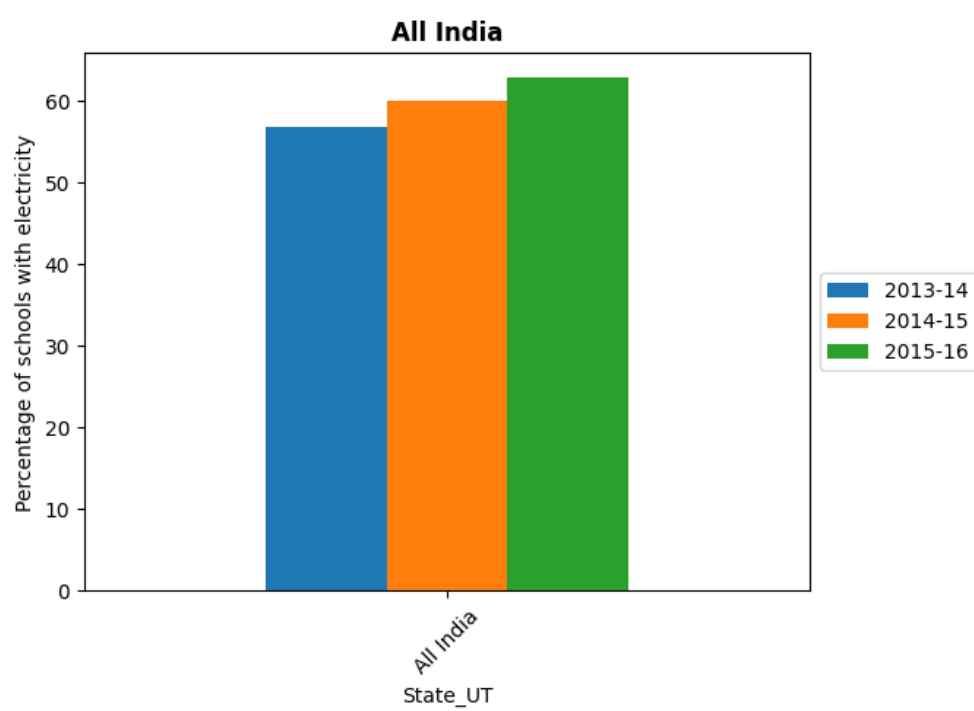


- In Chandigarh, there are no boys and girls toilet .
- There is no gender bias.

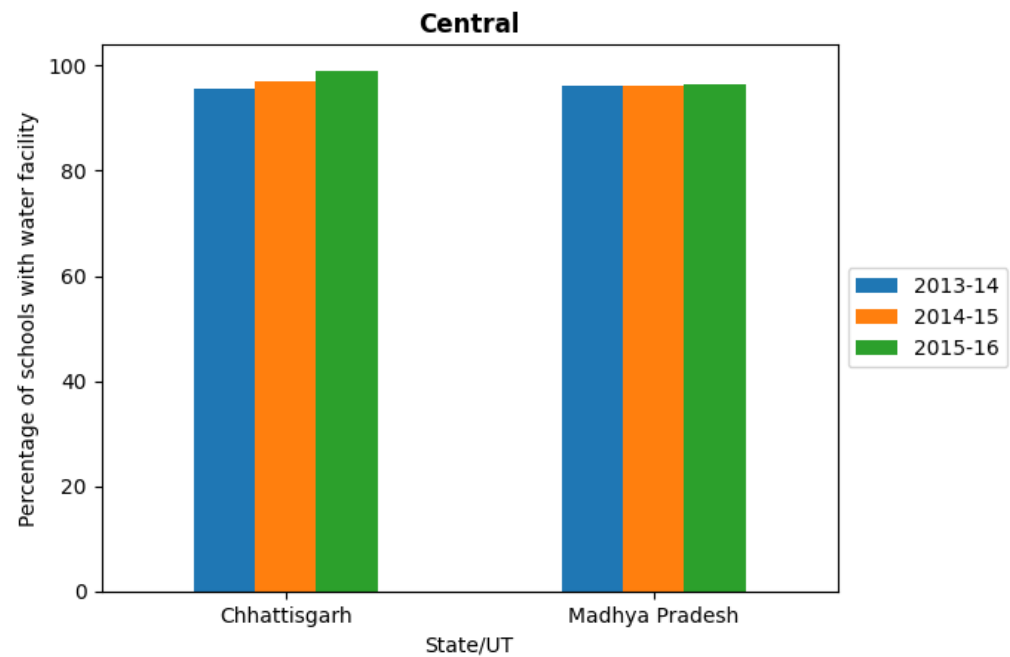
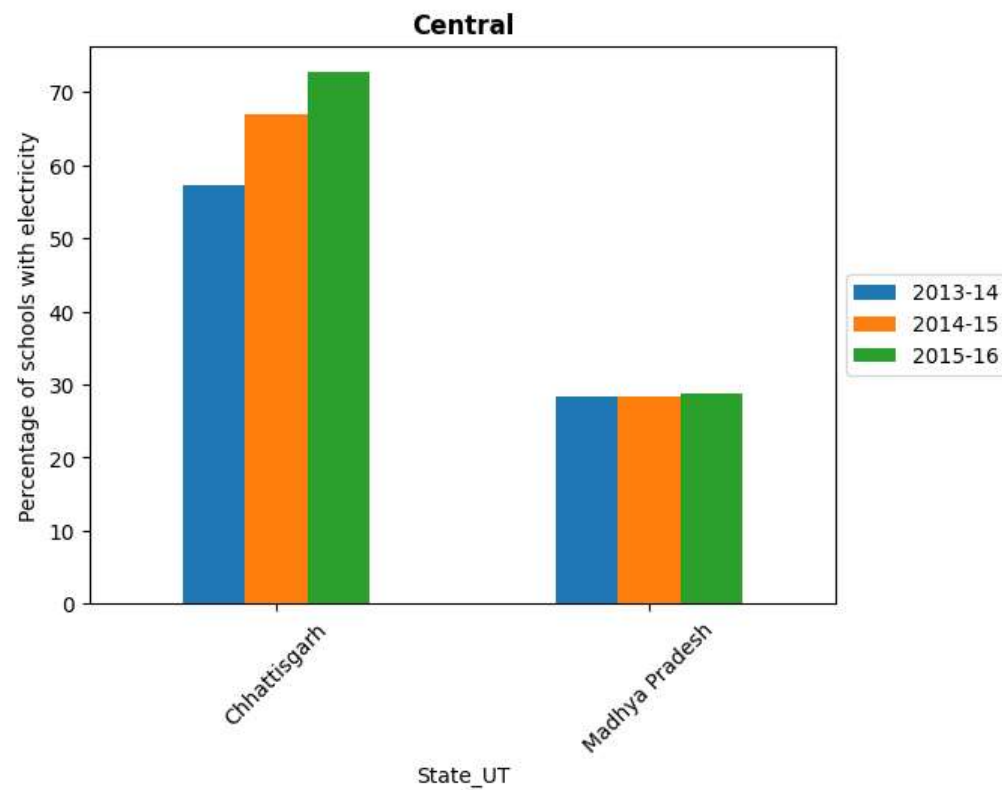
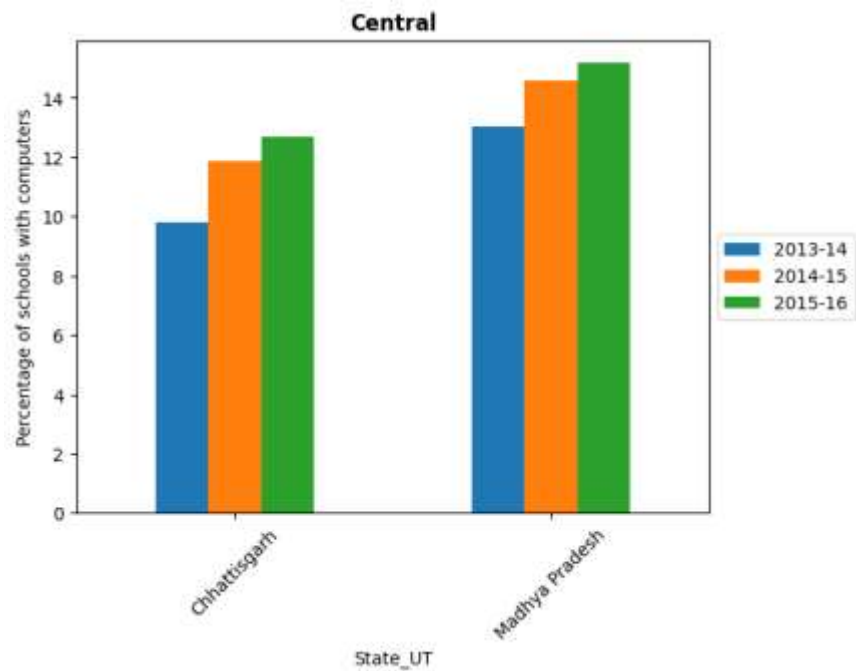
Percentage of schools with computers , water facility & electricity

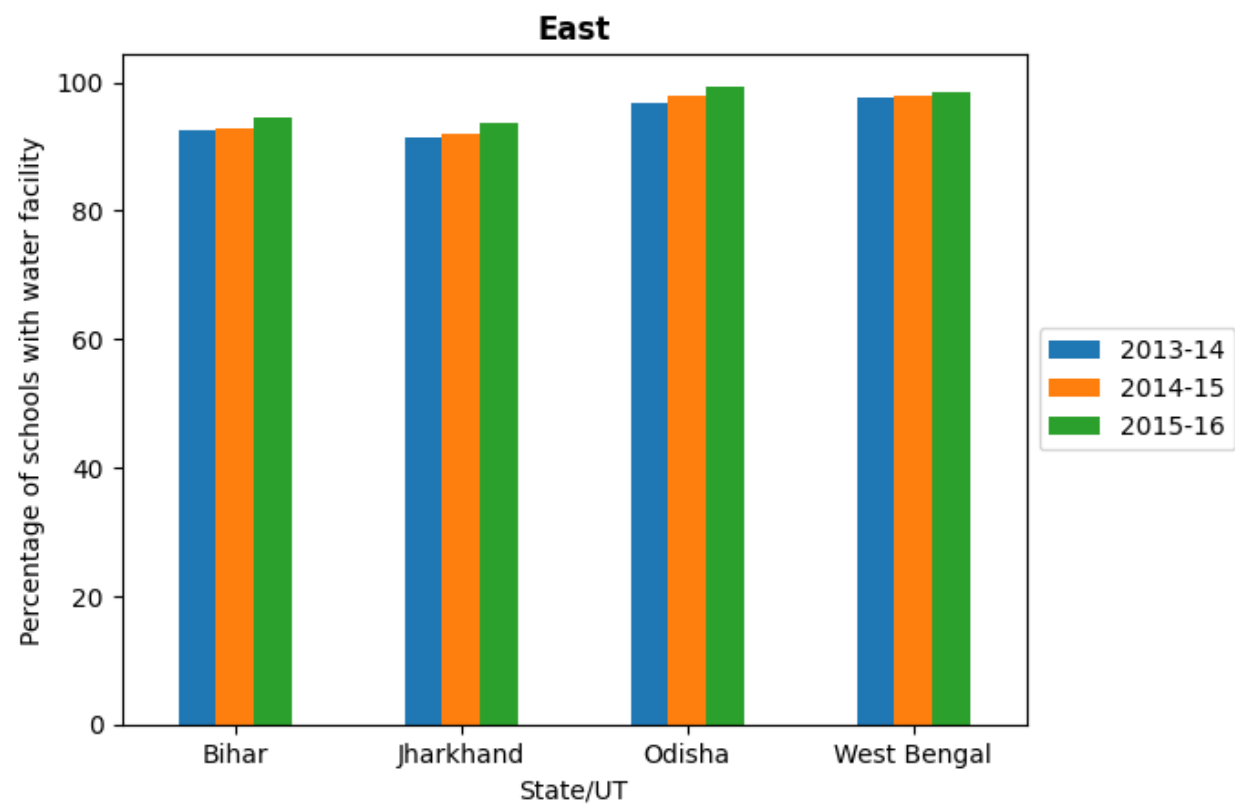
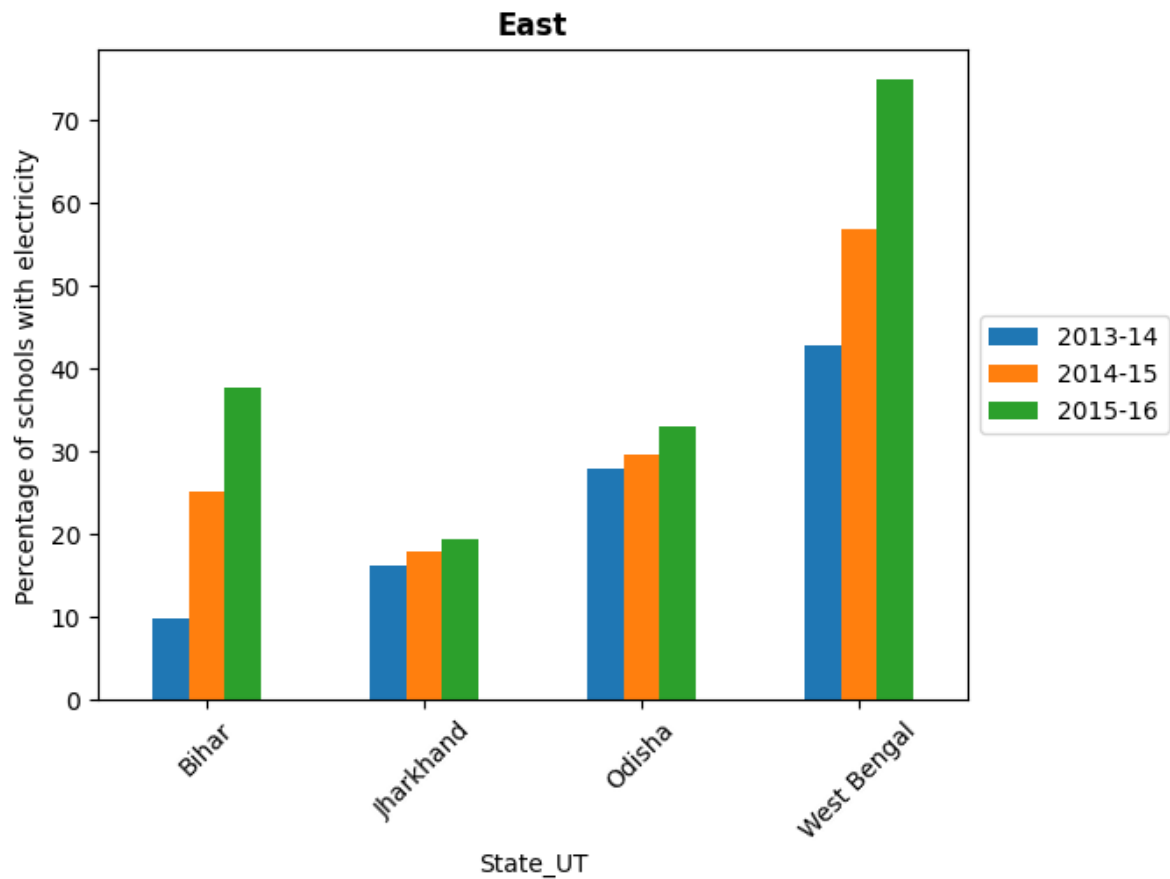
Question:

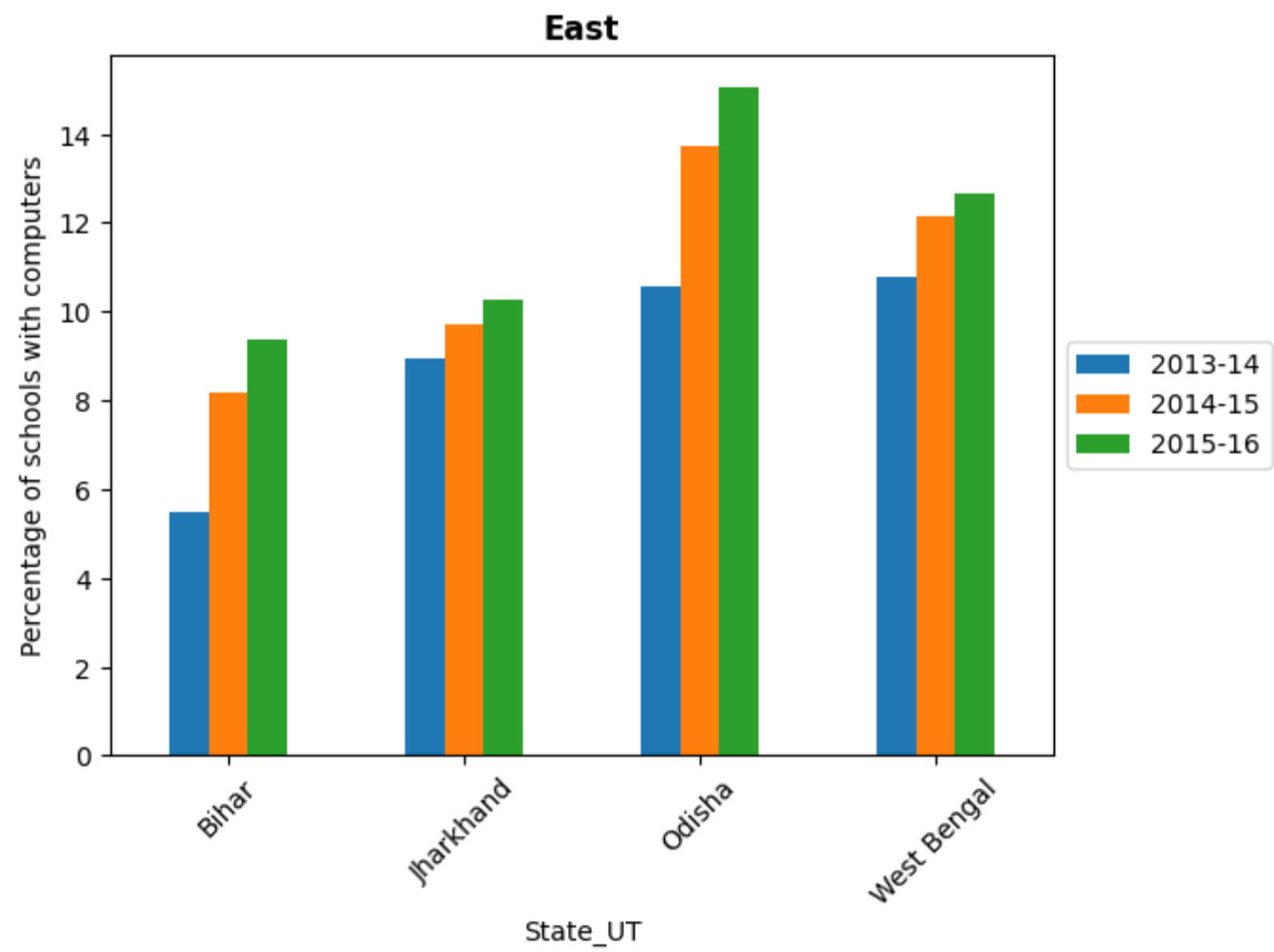
- What is year-wise variation of percentage of computers, water facility and electricity in all schools in all states with its respective region ?

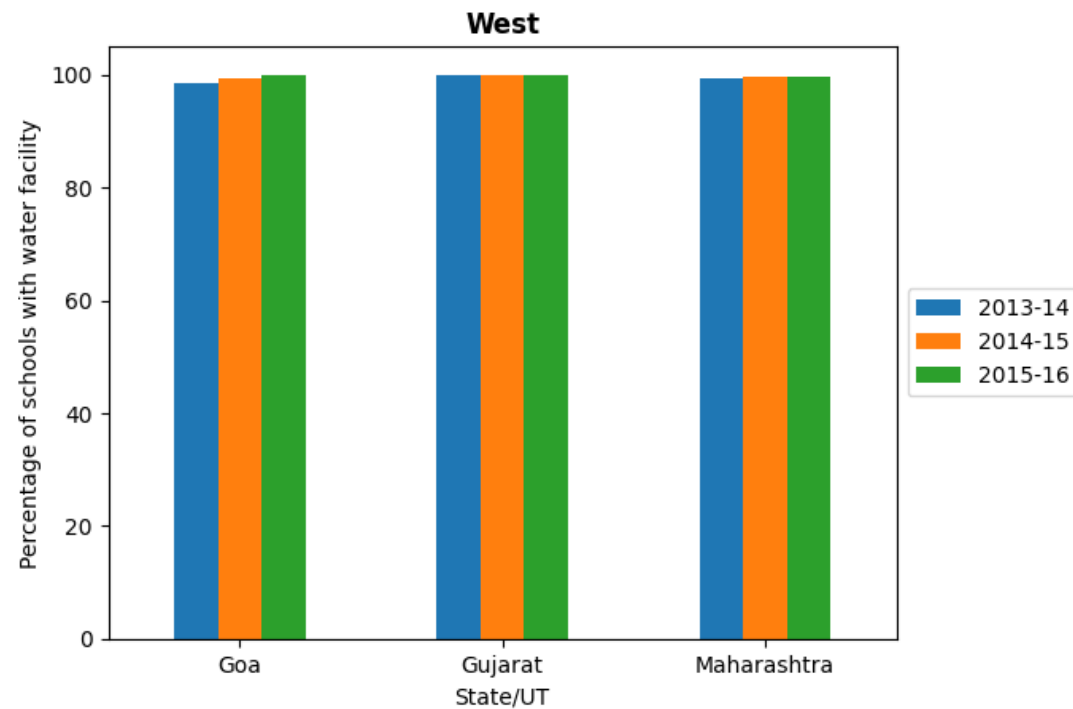
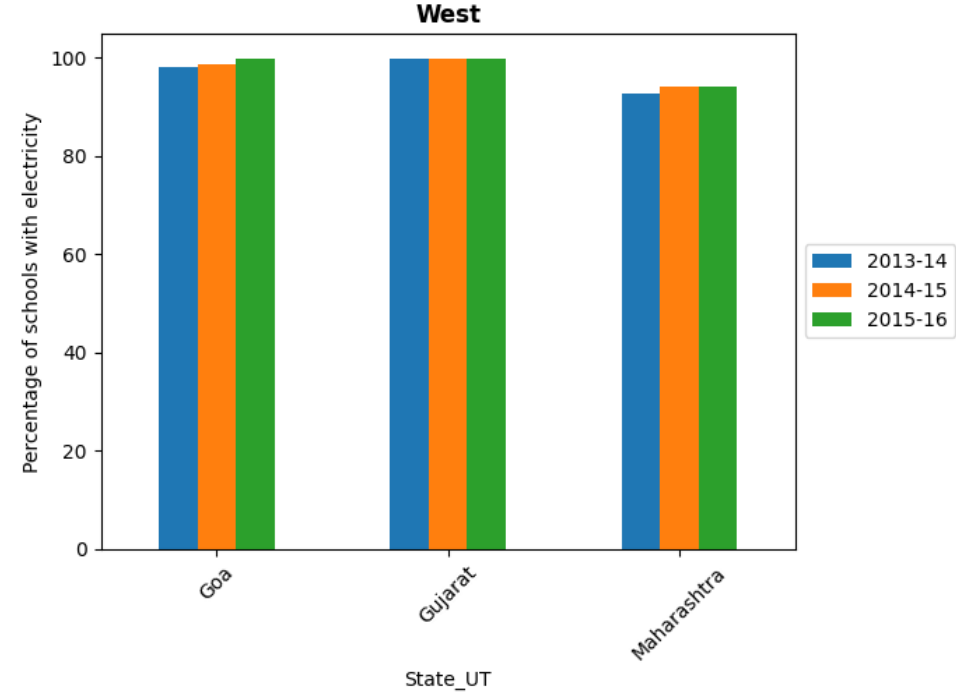
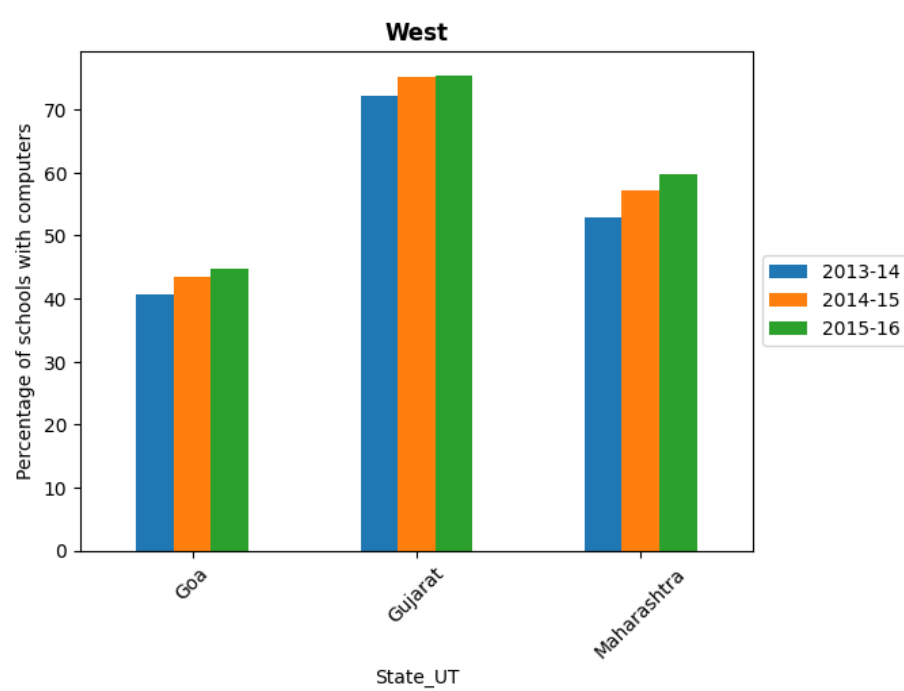


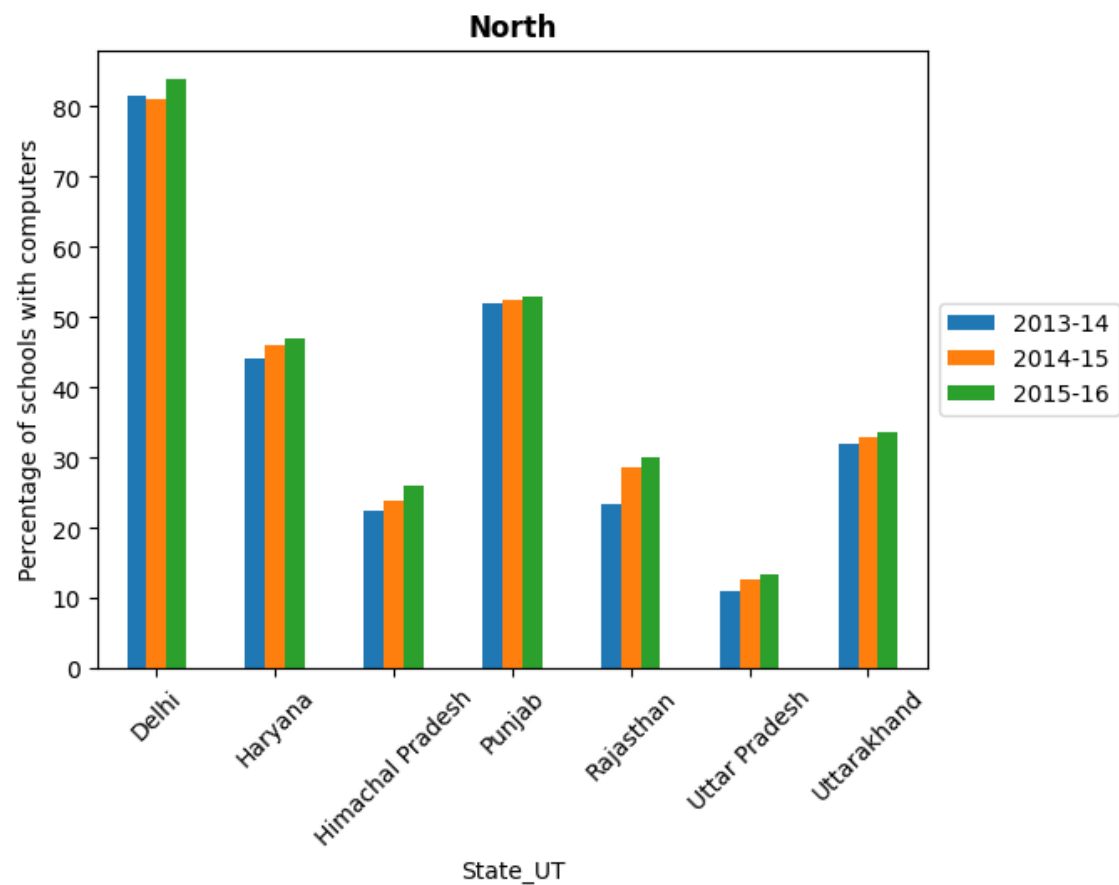
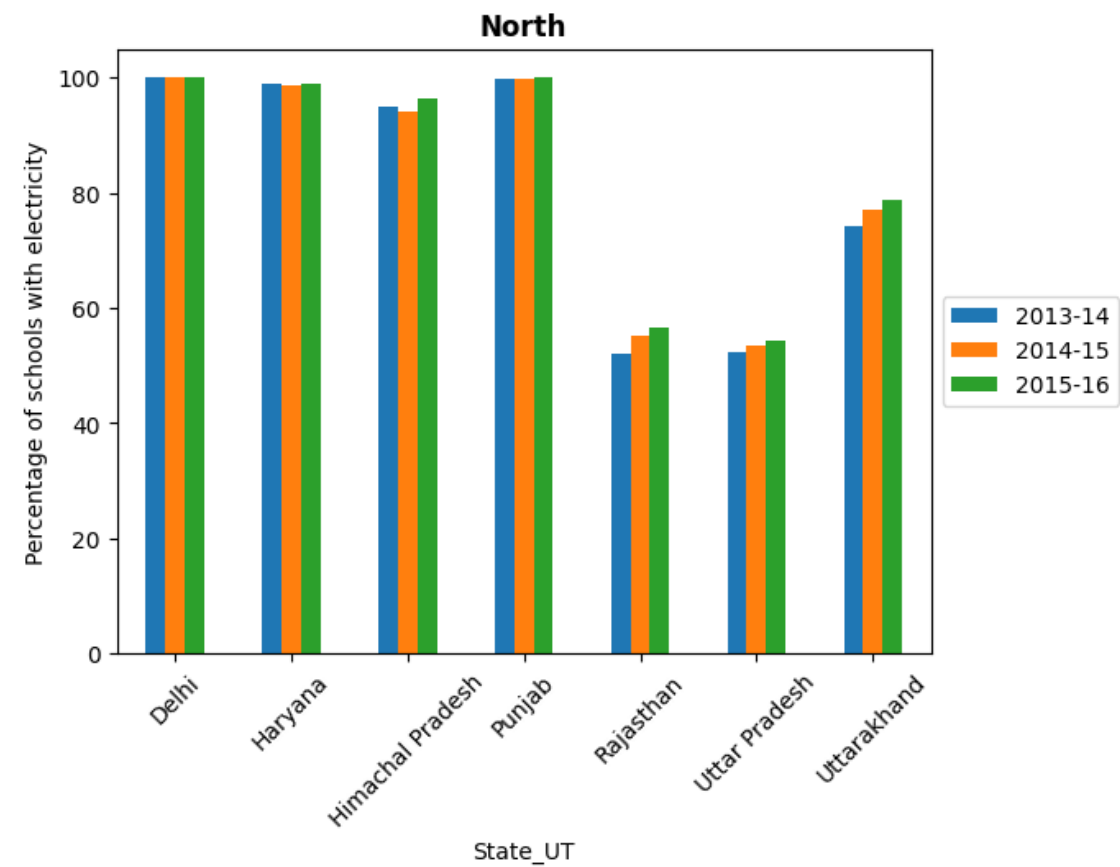
- As percentage is increasing , so all schools of India are developing. So, it indicates better future for India but still there is need for computers.

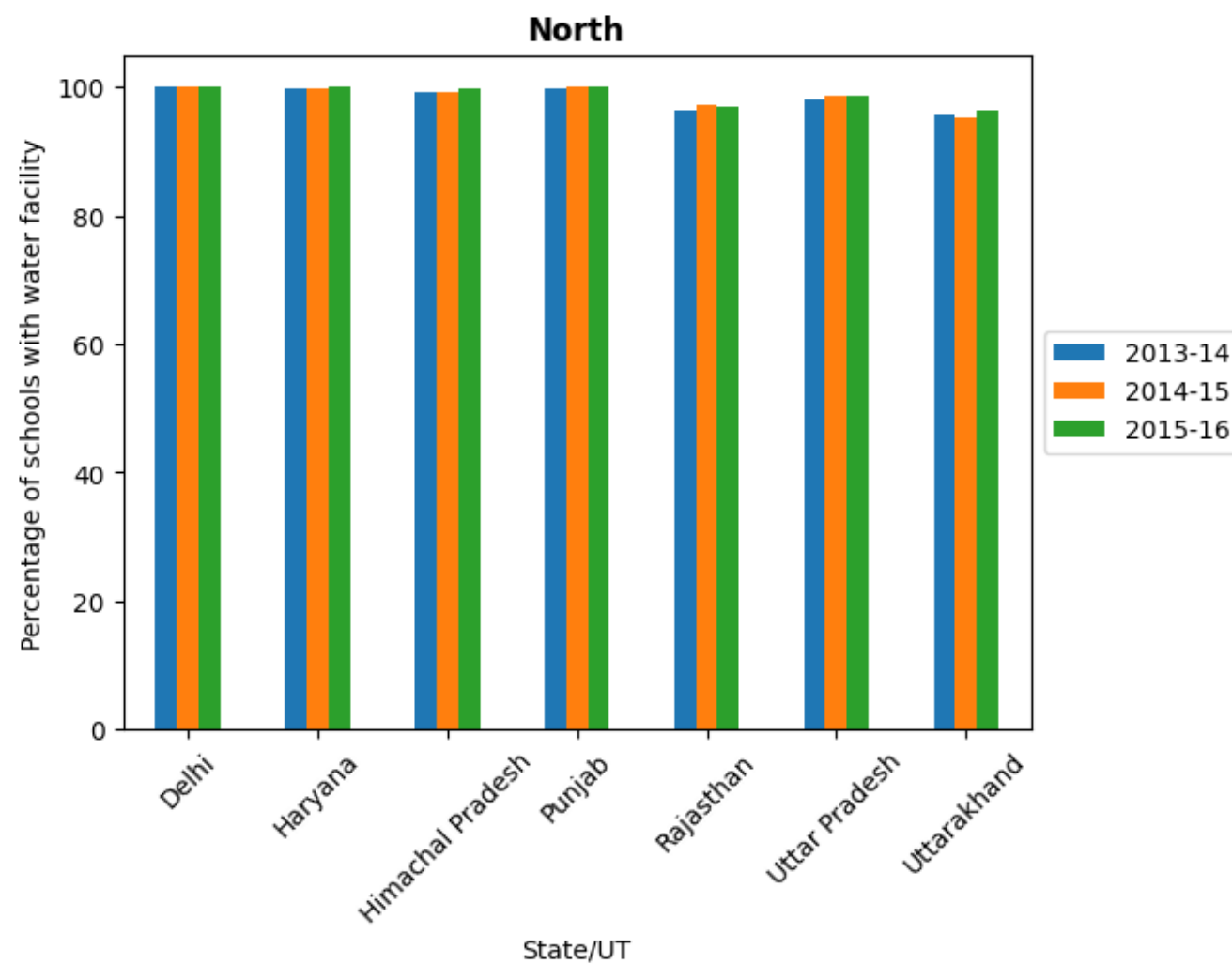




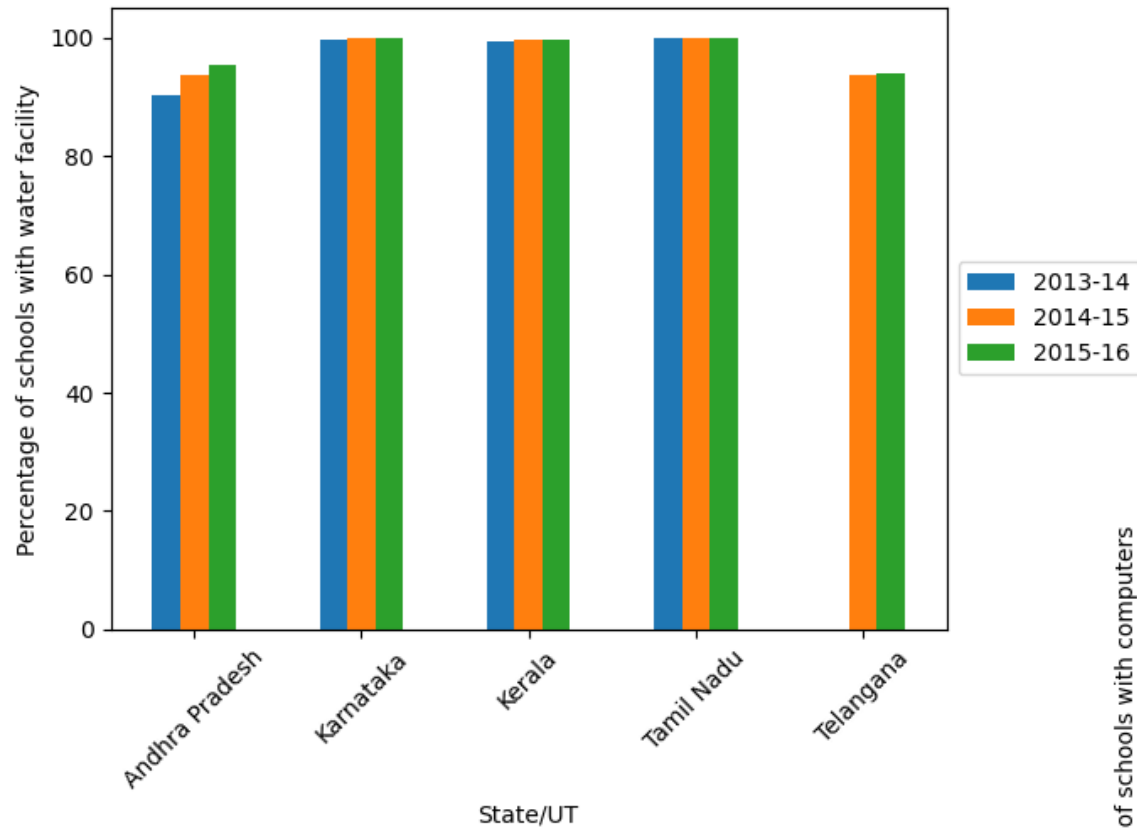




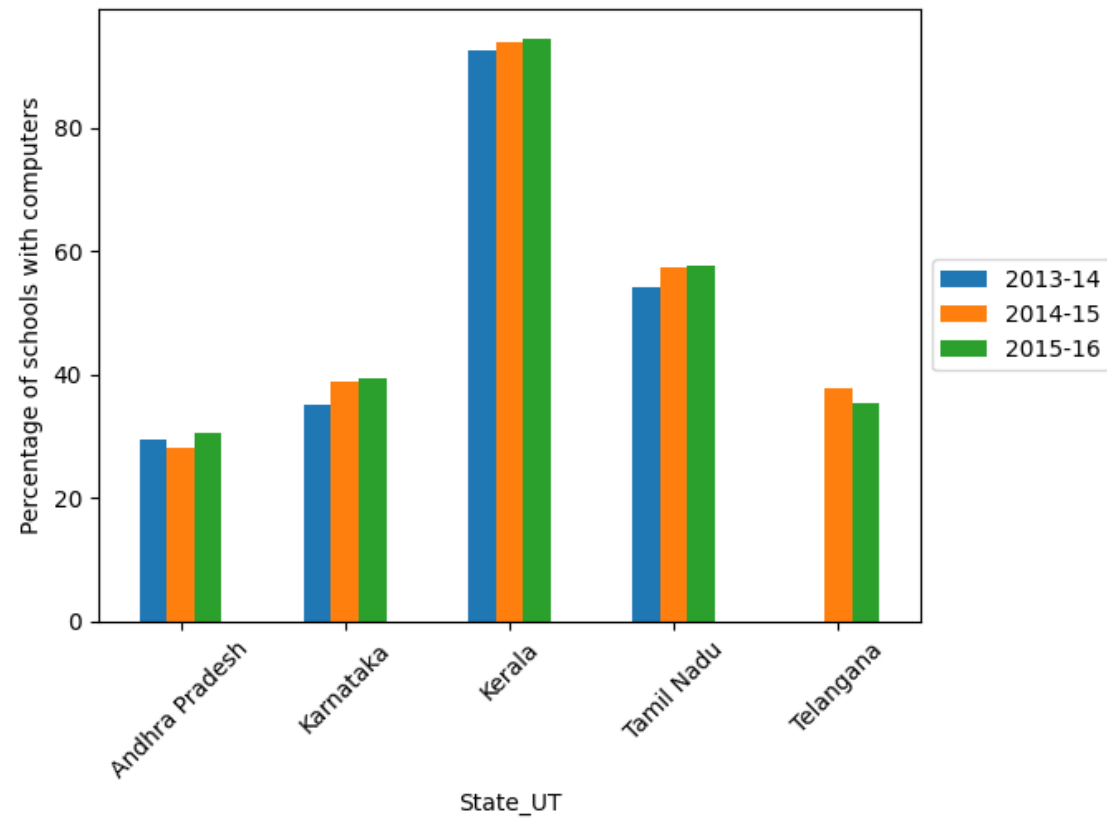


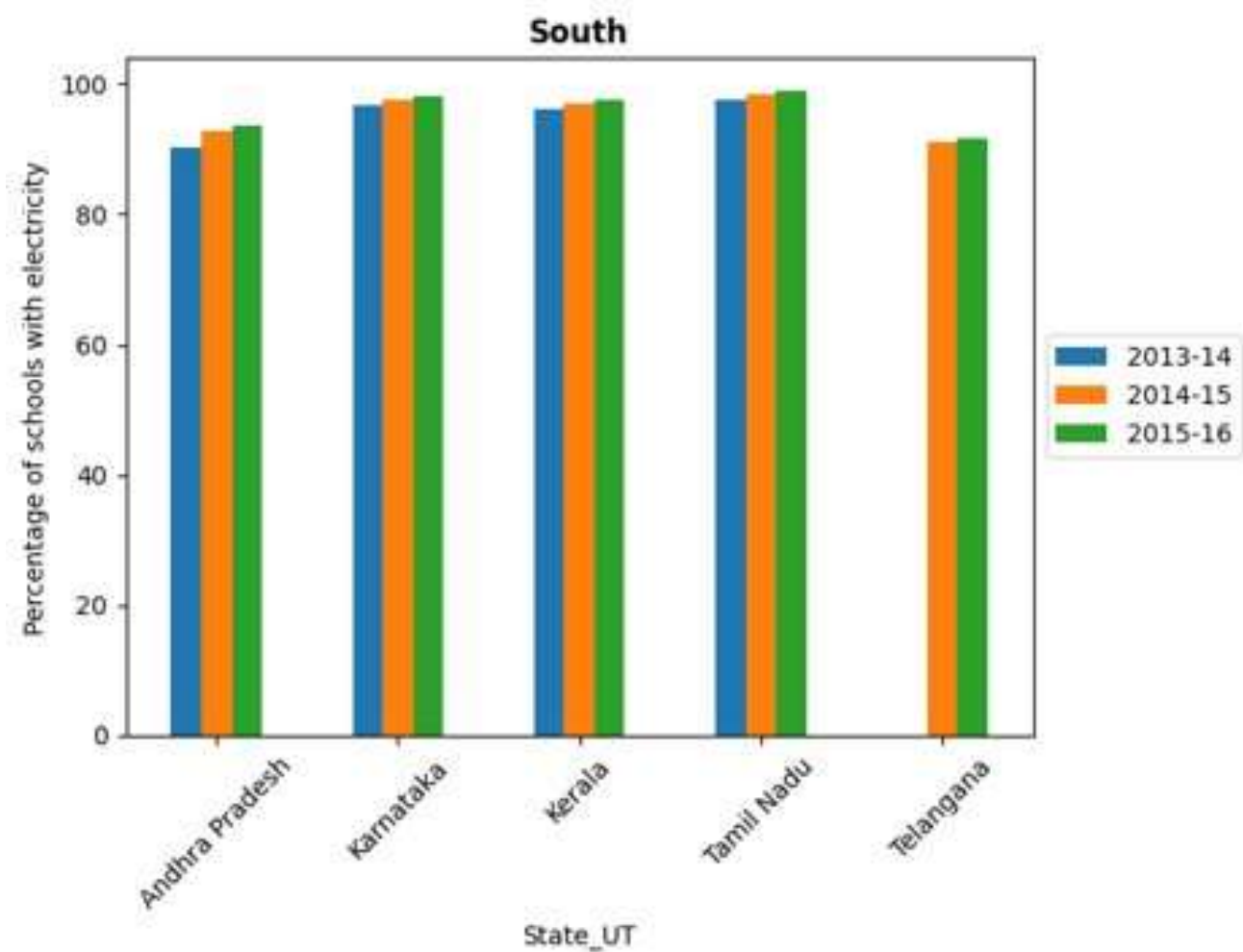


South

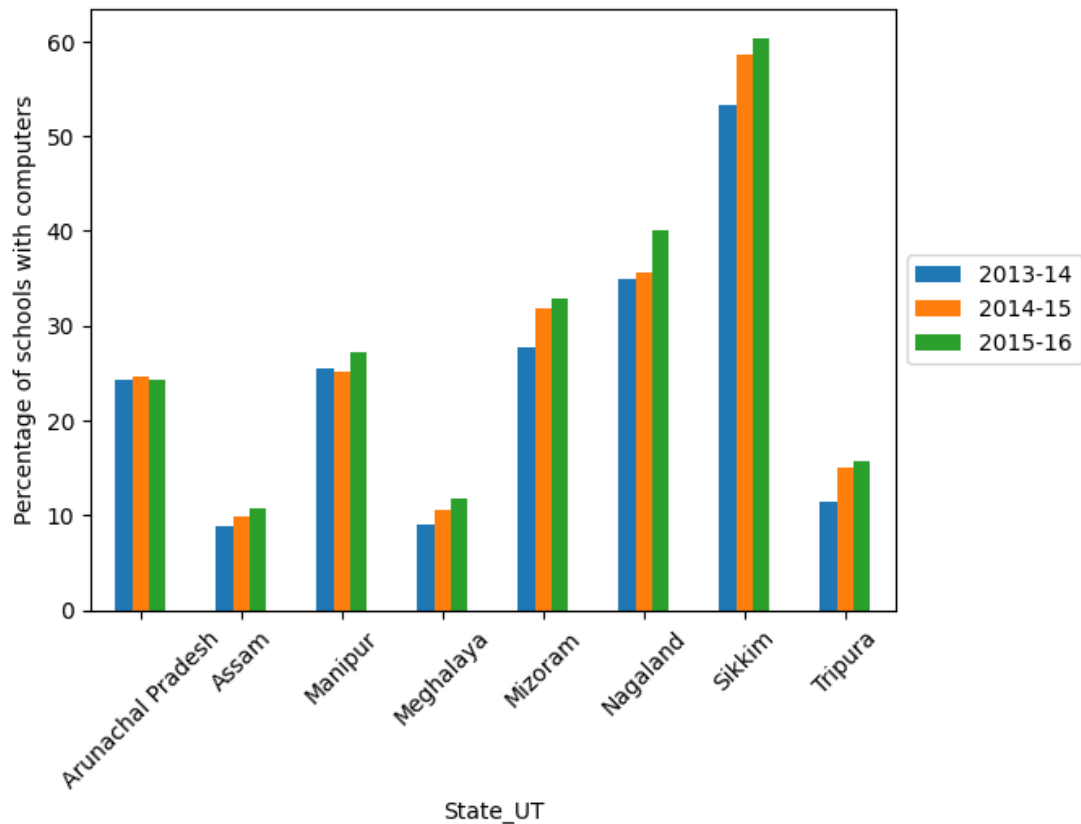


South

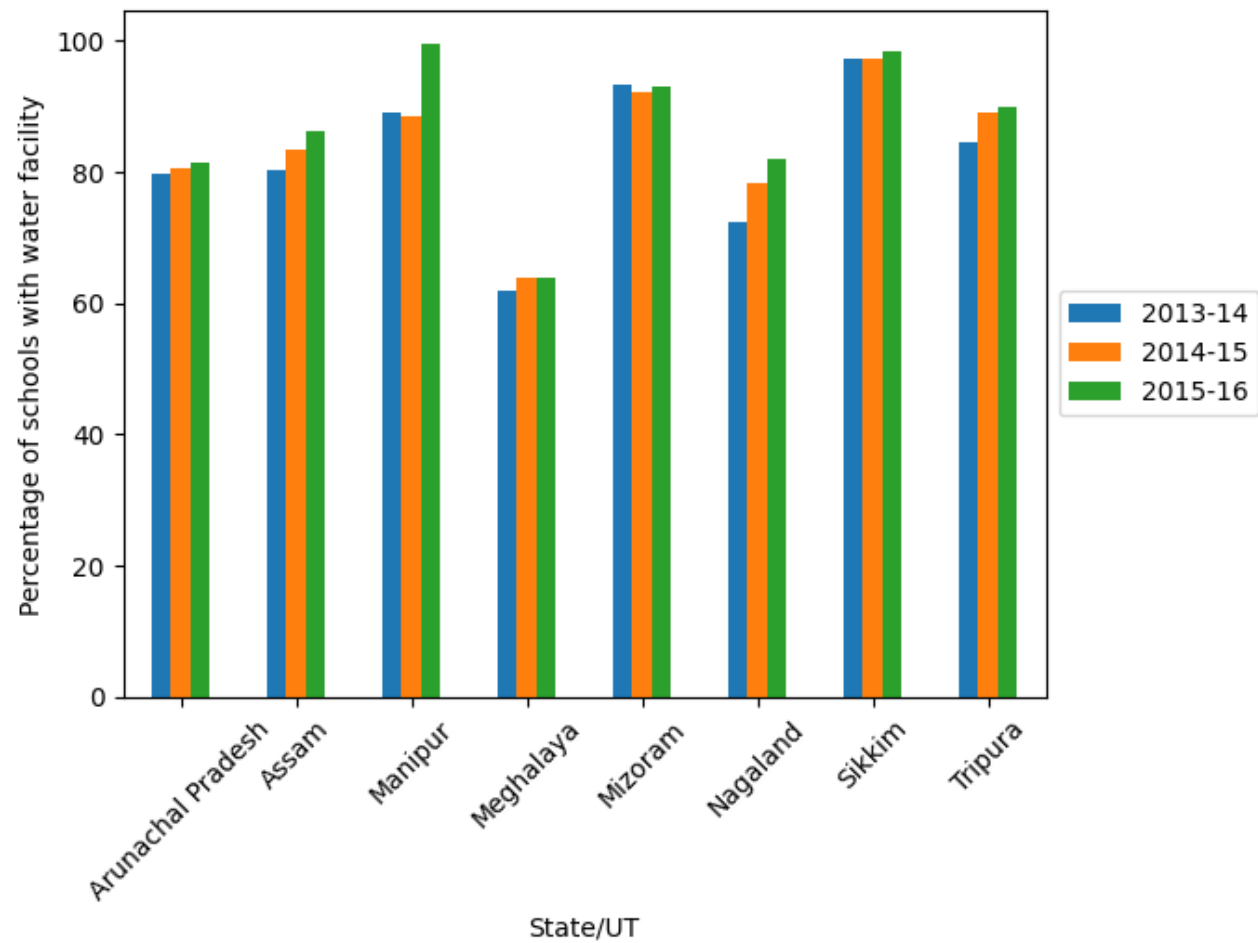


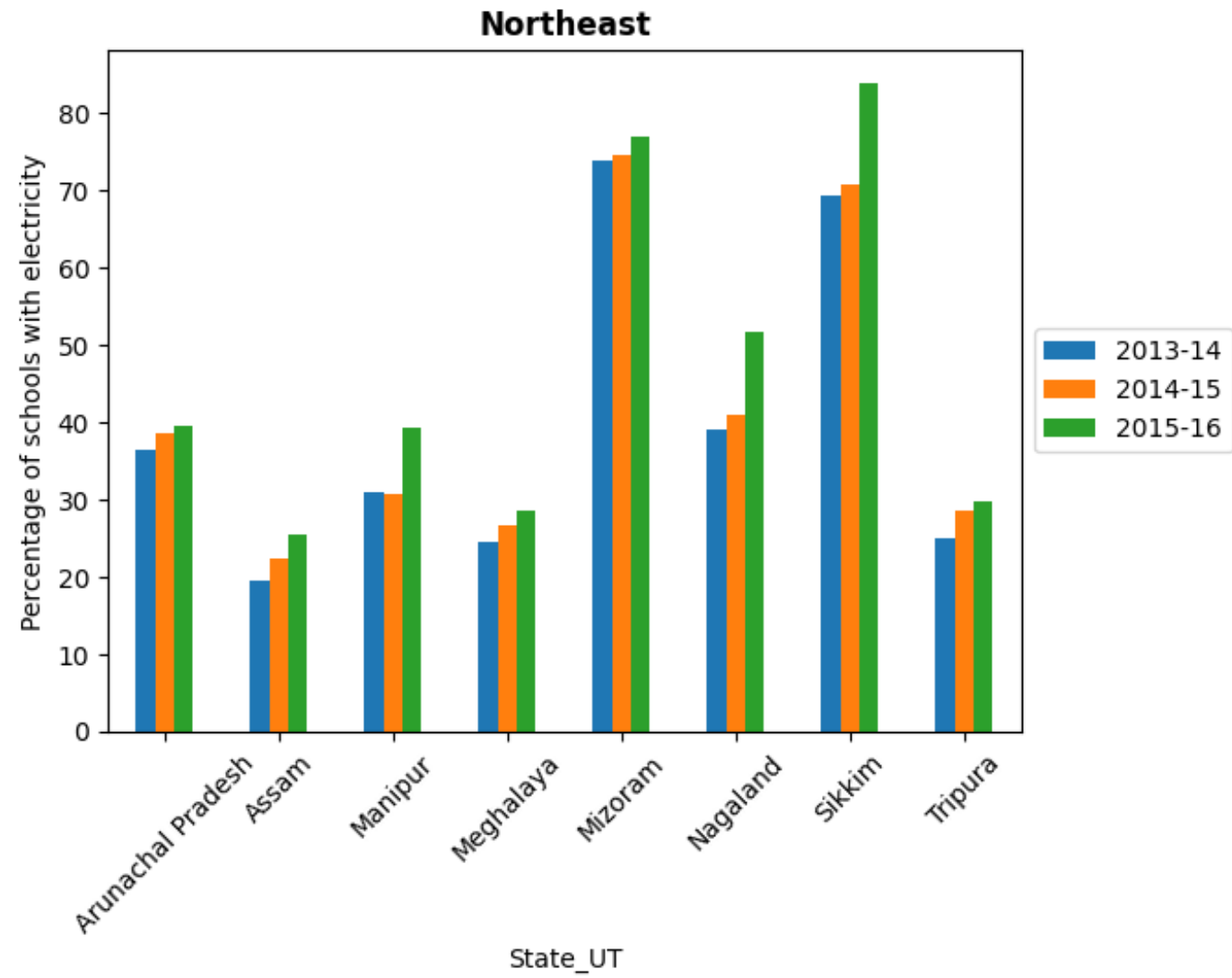


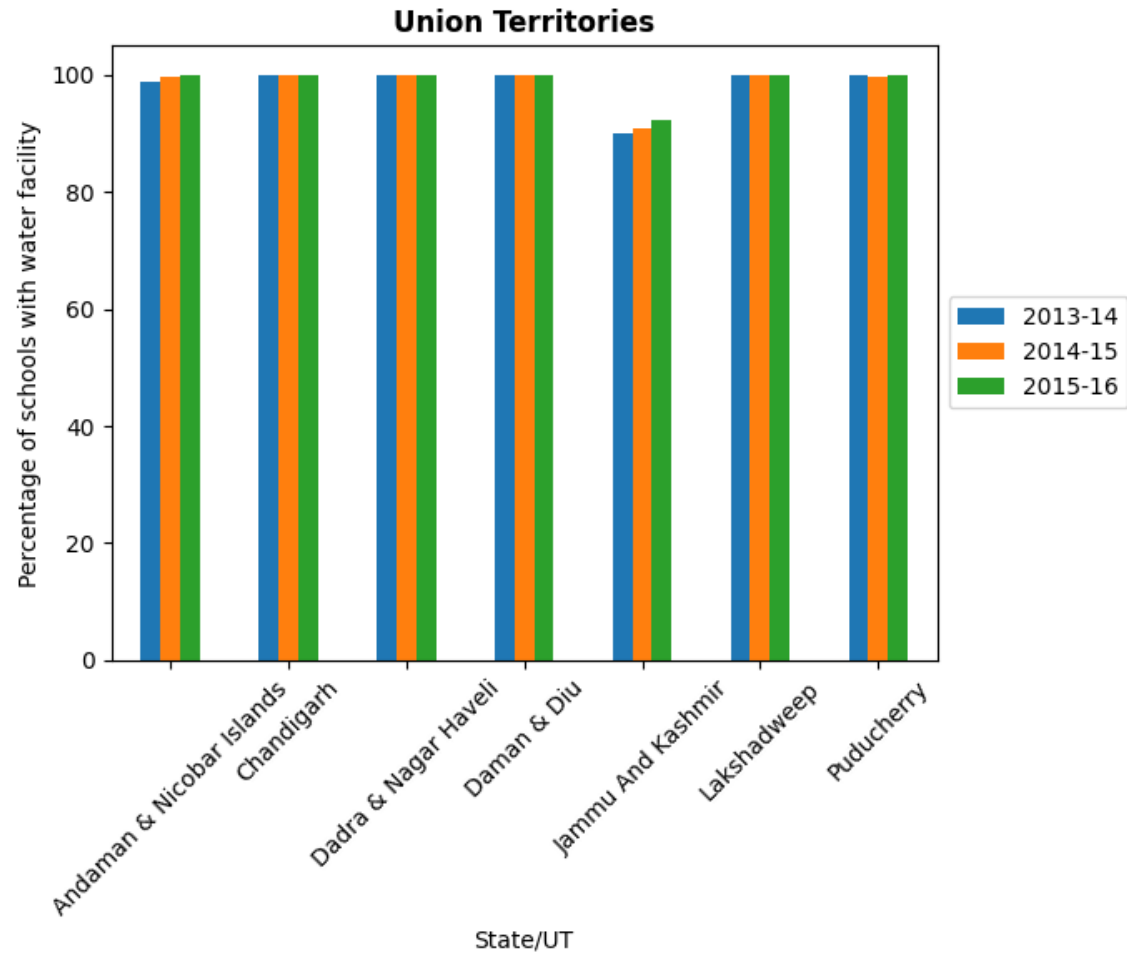
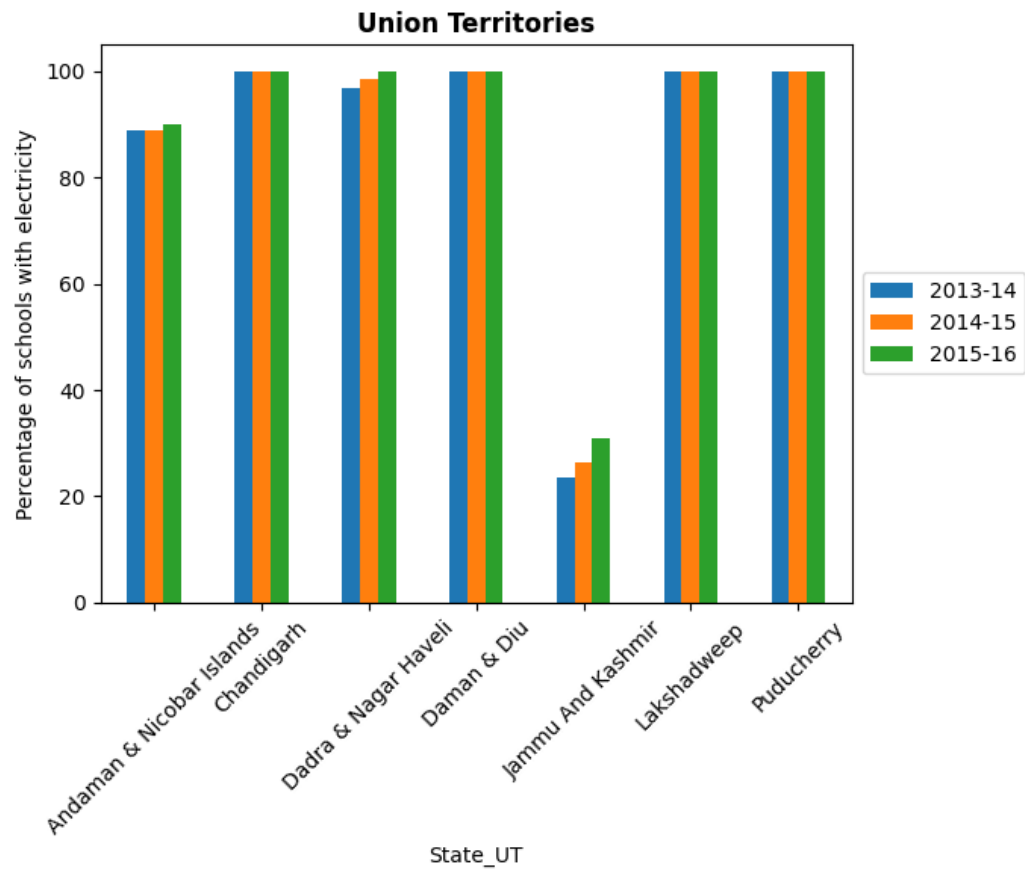
Northeast

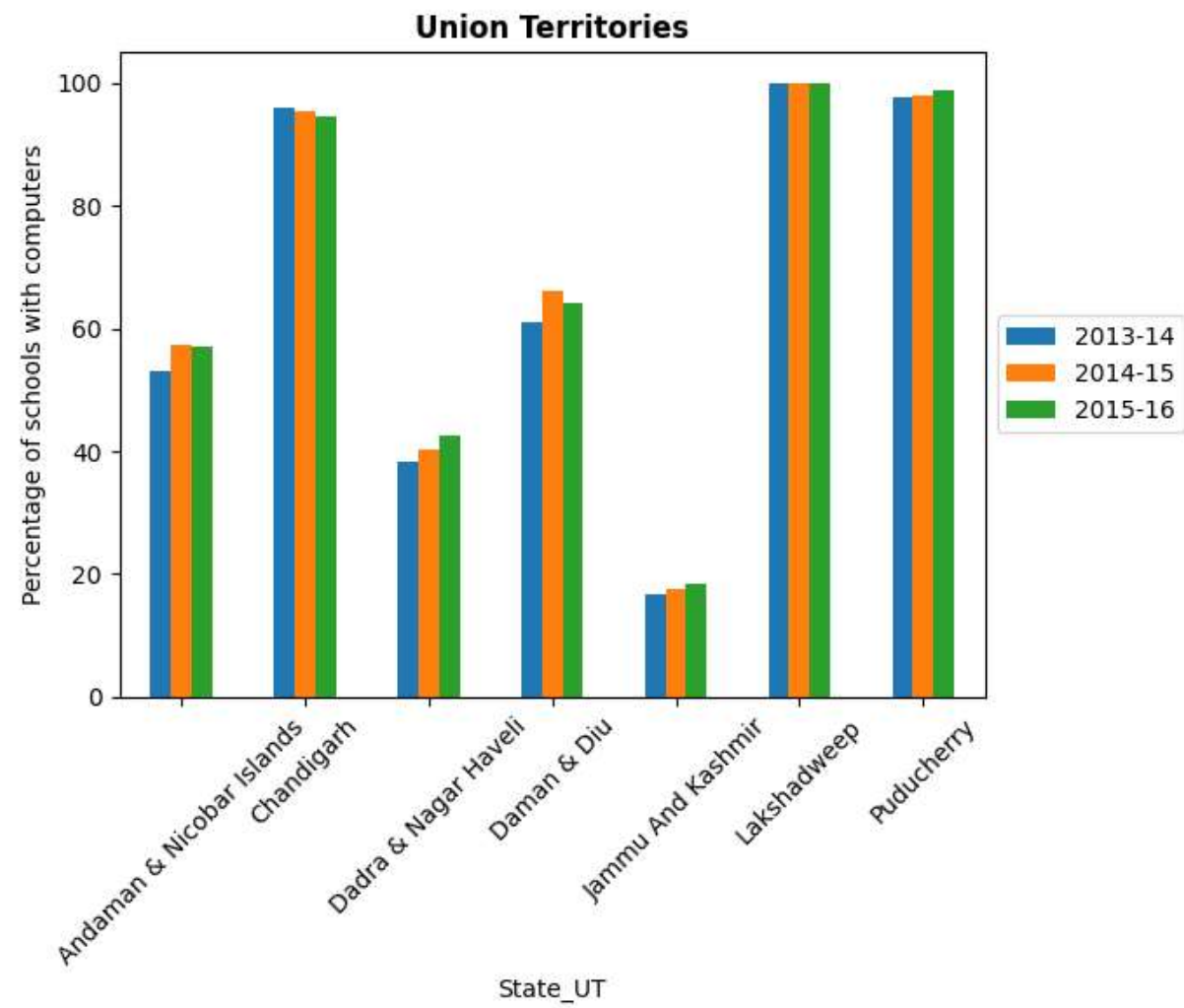


Northeast



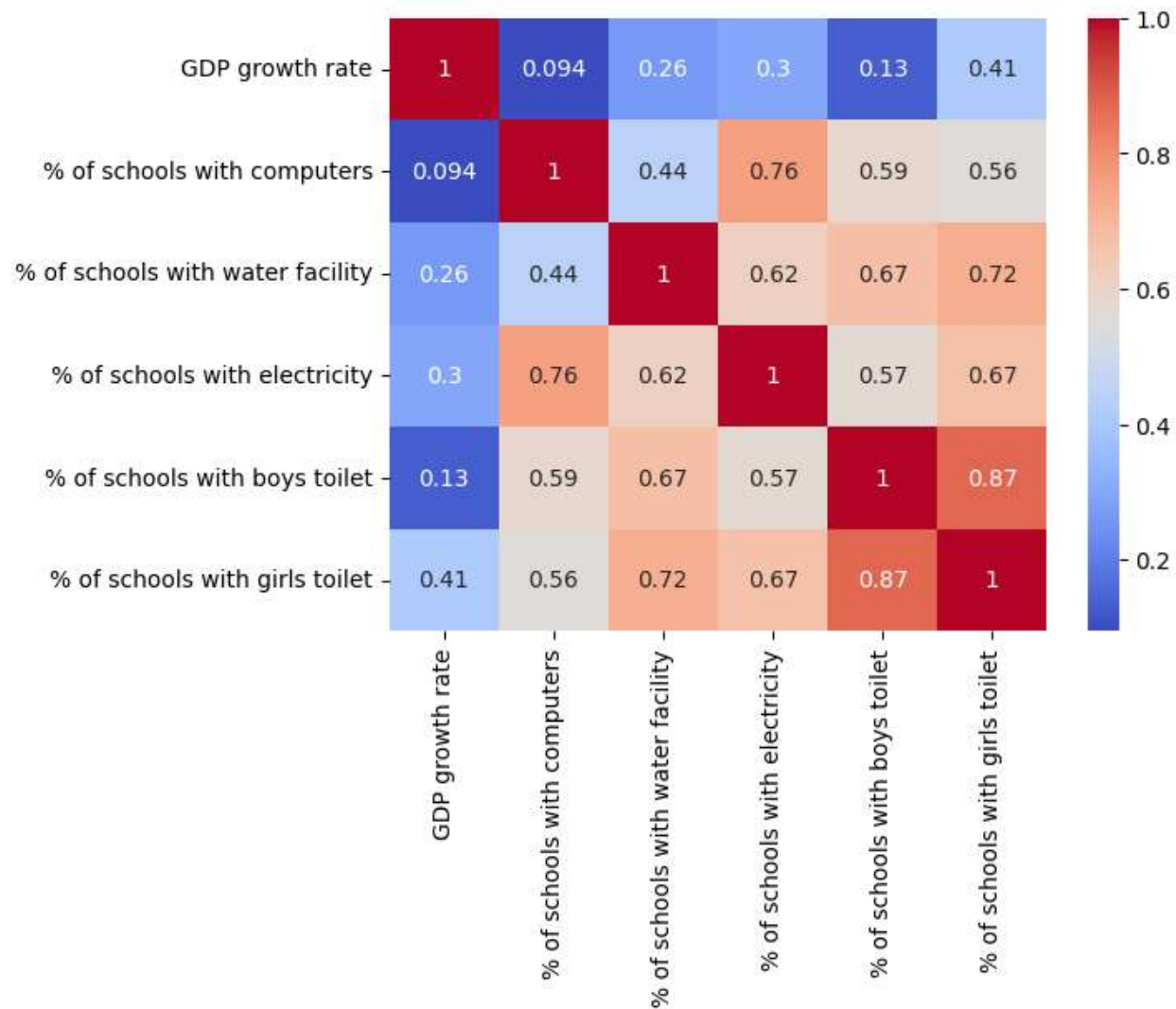




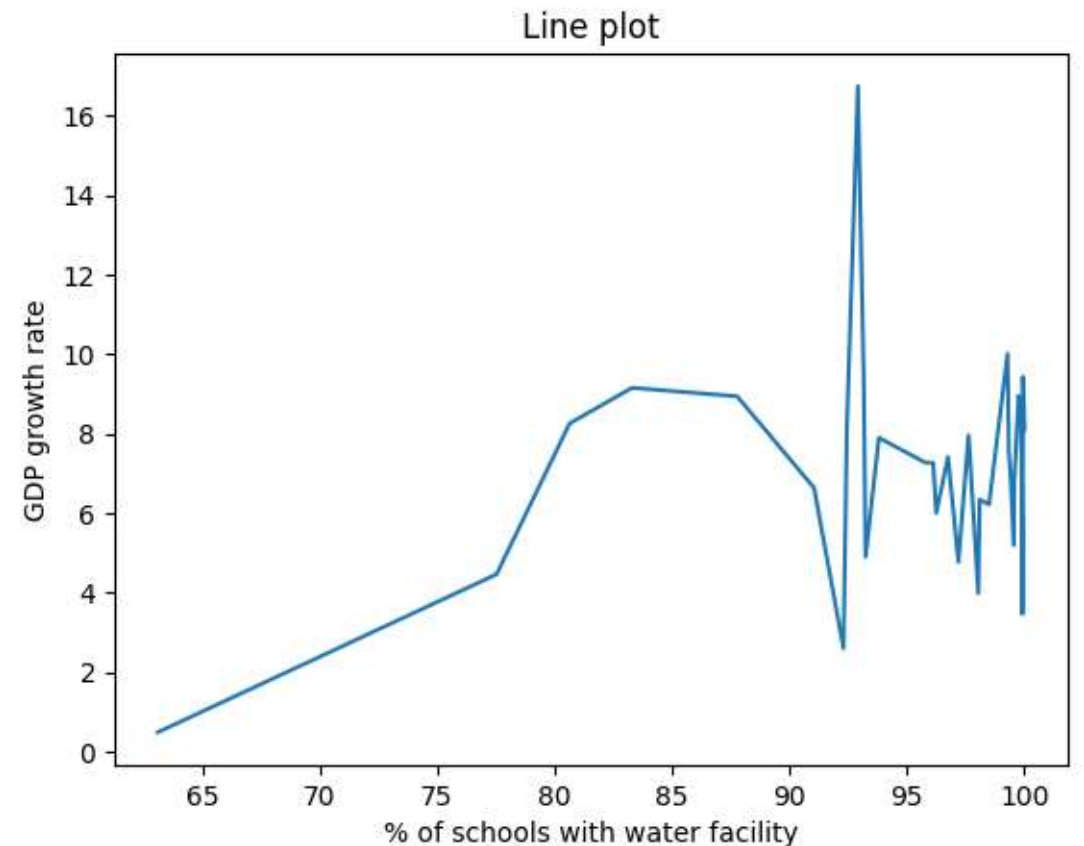


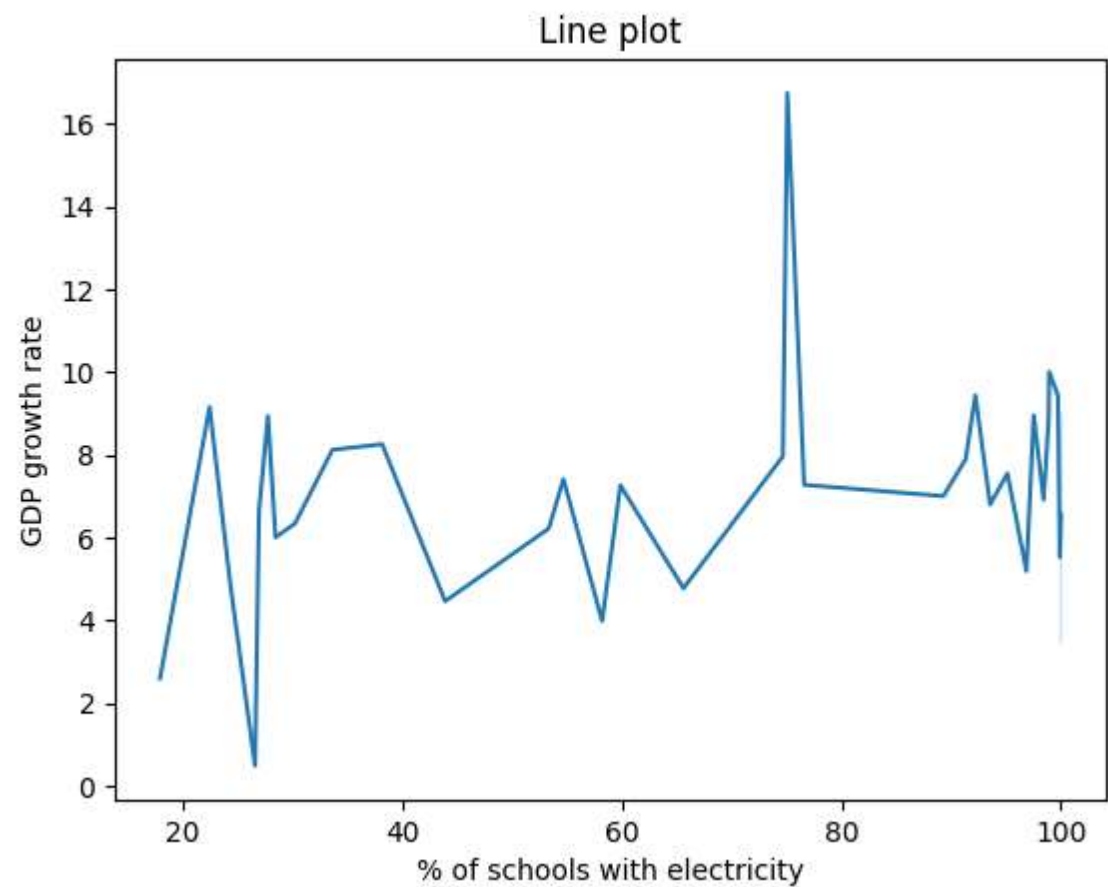
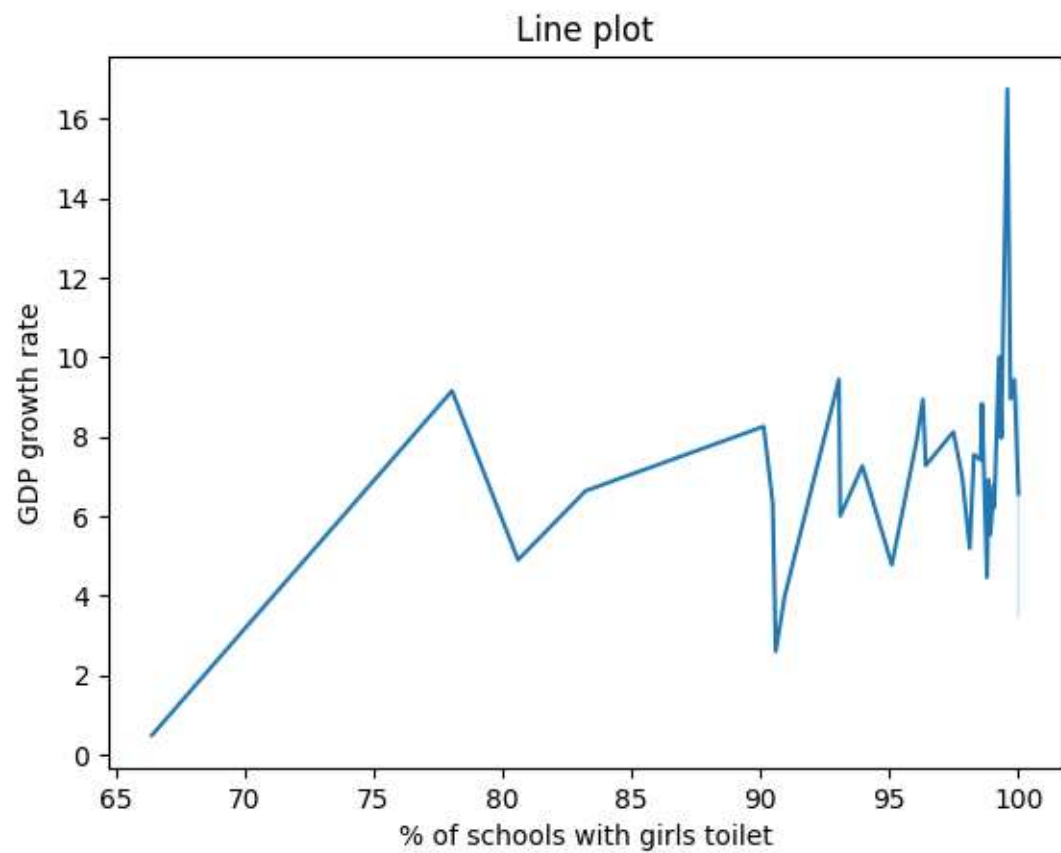
Comparison of GDP with all other variables

- ▶ I have collected data of state-wise GDP.
- ▶ Correlation between GDP and all other variables is observed.



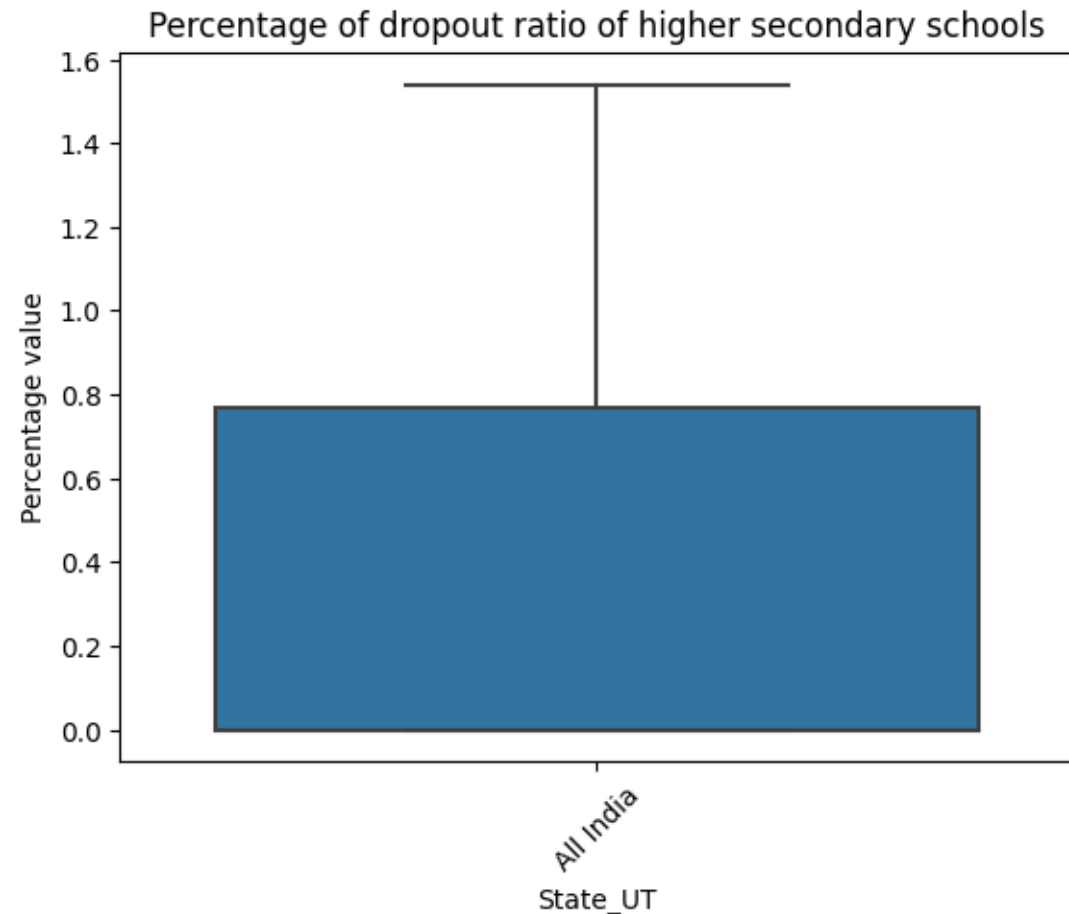
```
GDP growth rate
1.000000
% of schools with computers
0.094310
% of schools with water facility
0.264851
% of schools with electricity
0.297926
% of schools with boys toilet
0.130247
% of schools with girls toilet
0.409690
Name: GDP growth rate, dtype: float64
```

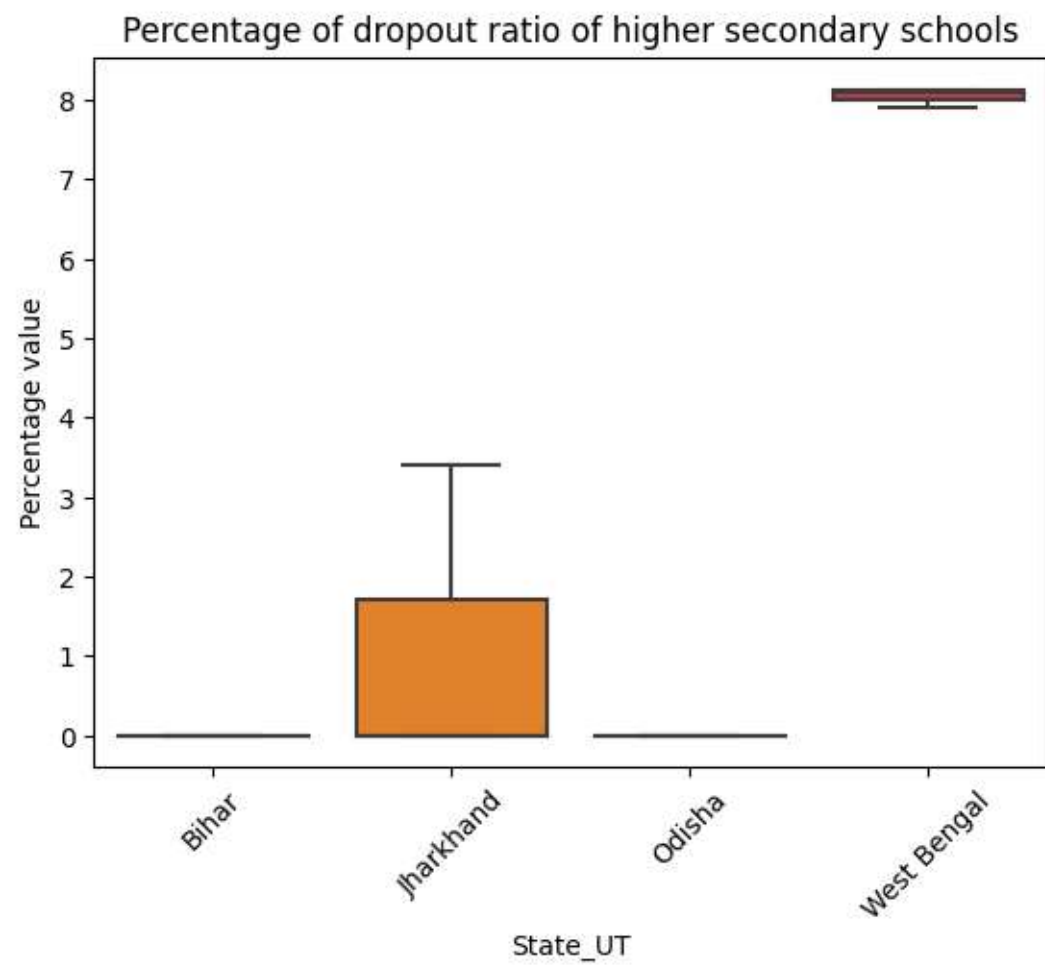
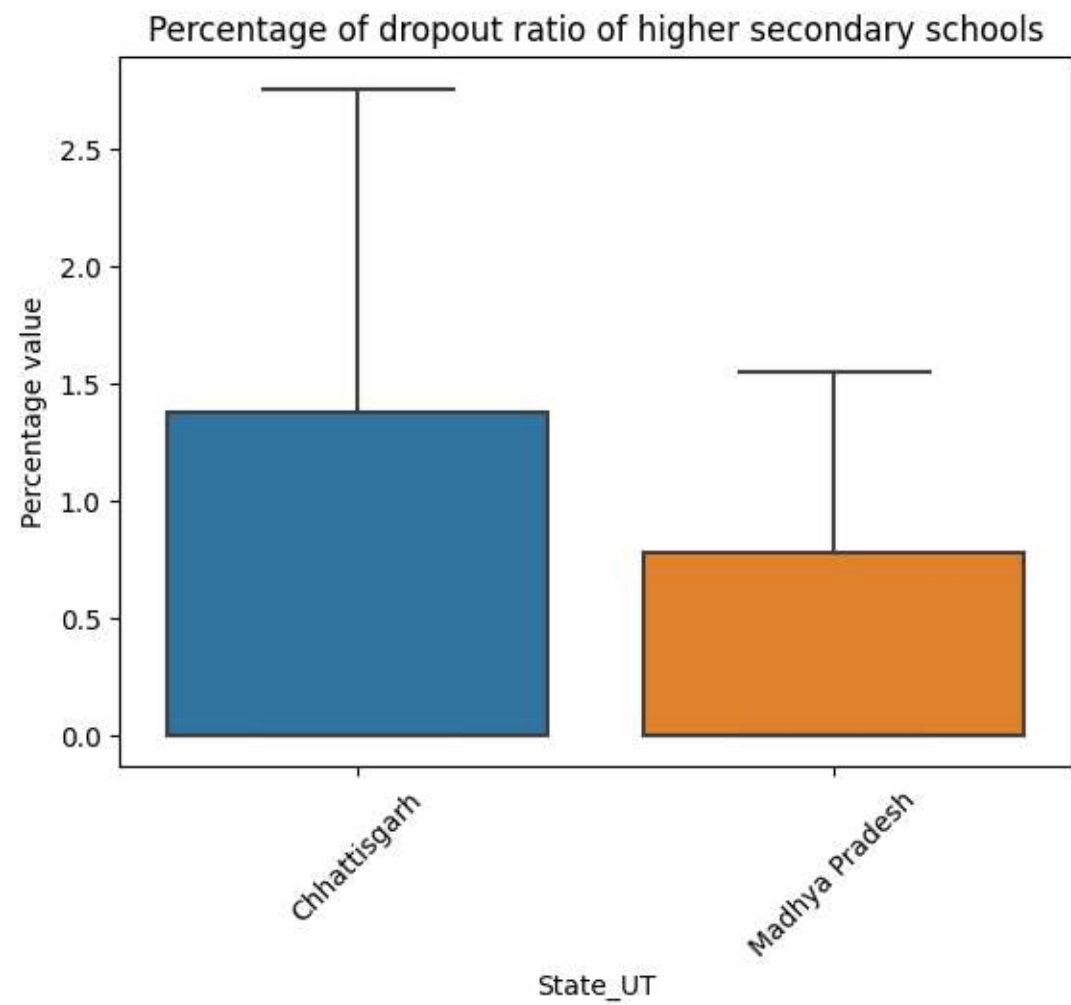




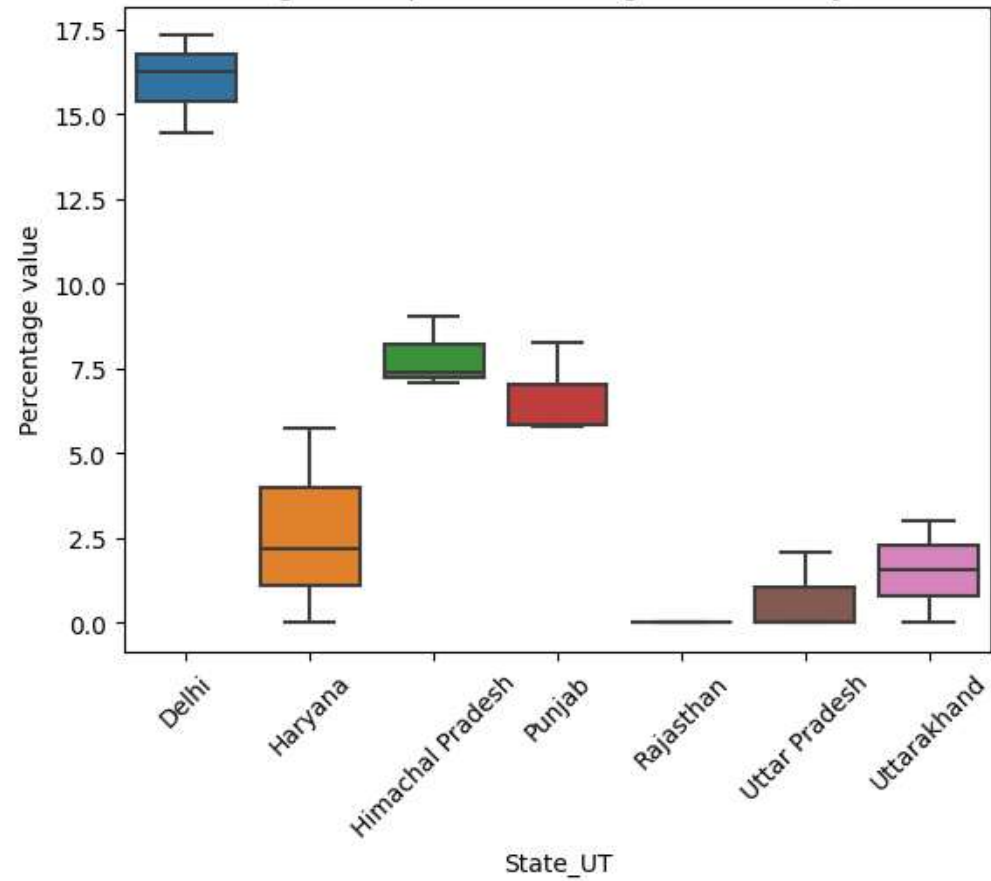
% Gross Enrollment & Dropout ratio variation & comparison for different levels of schools

- I have used Box plot for variation & Bubble plot for comparison.

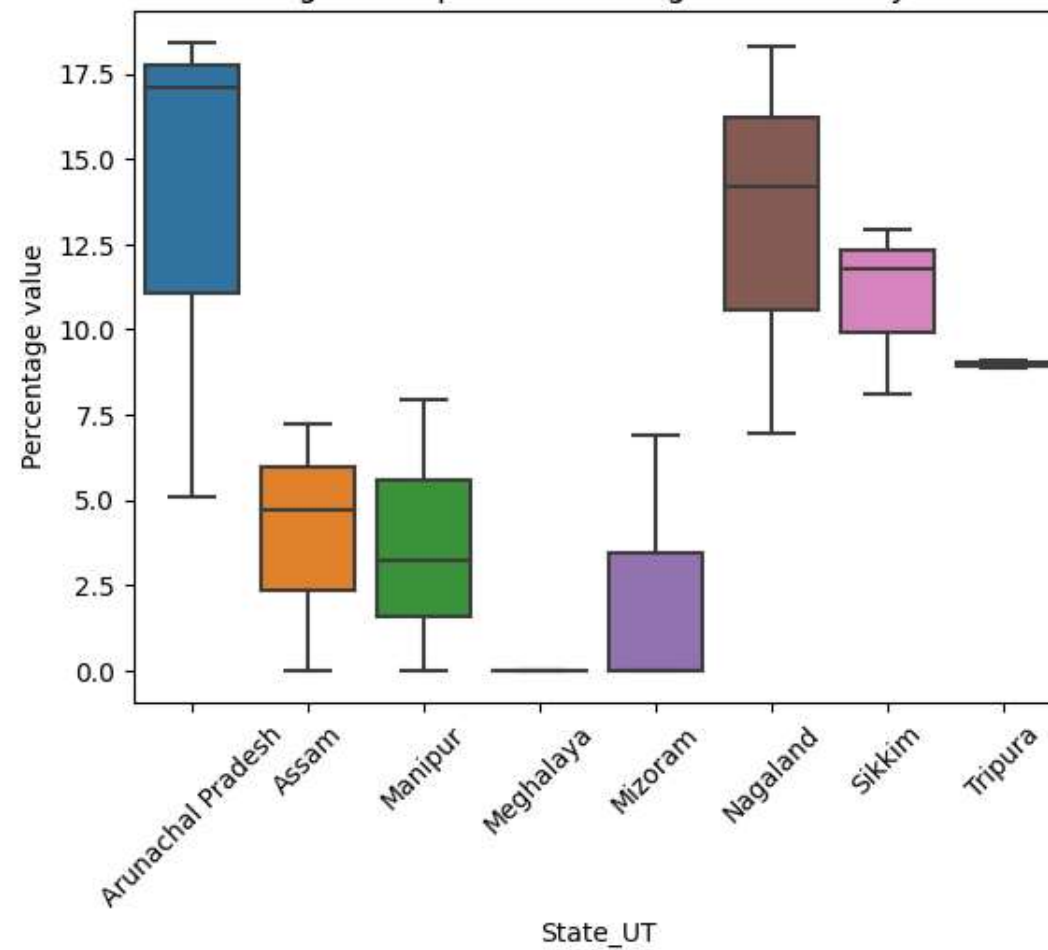


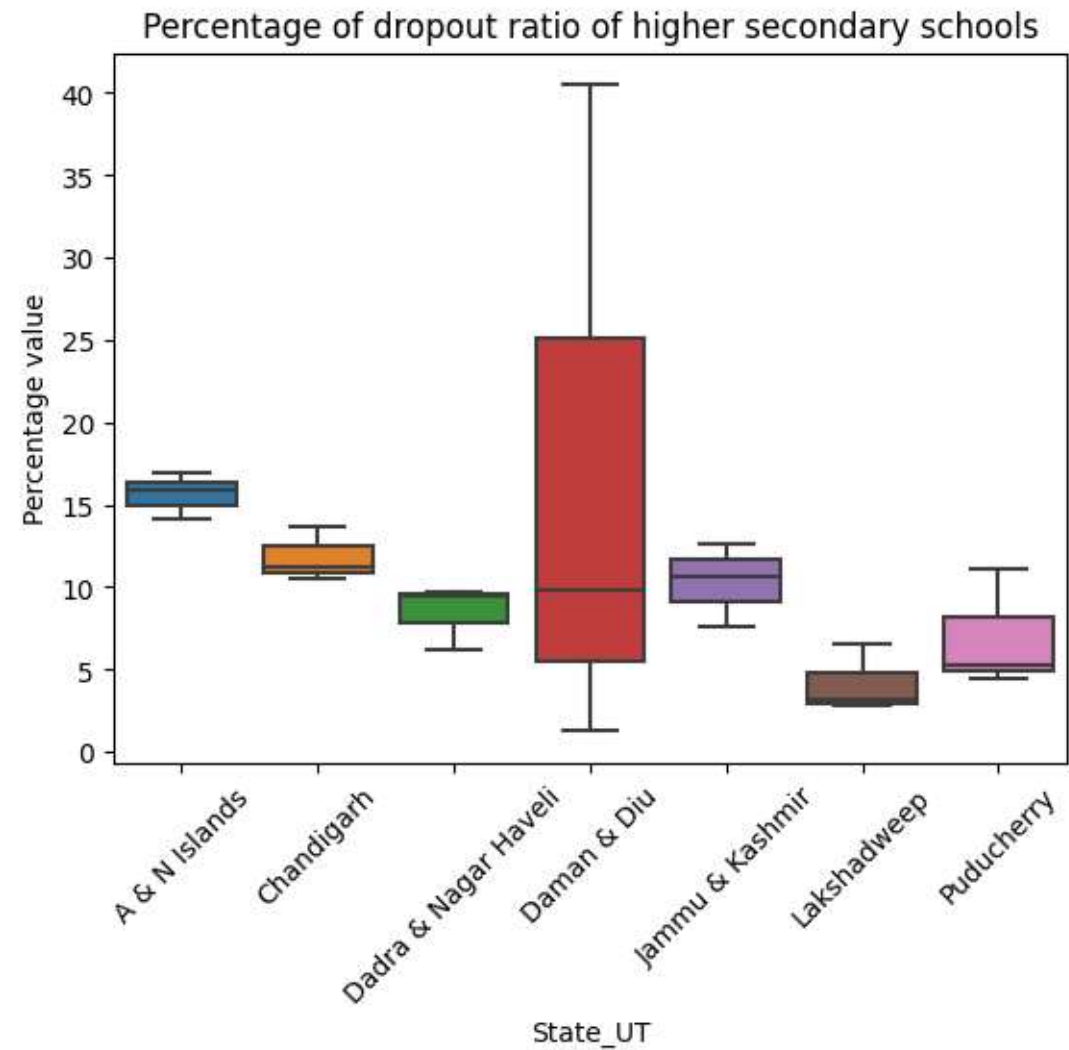
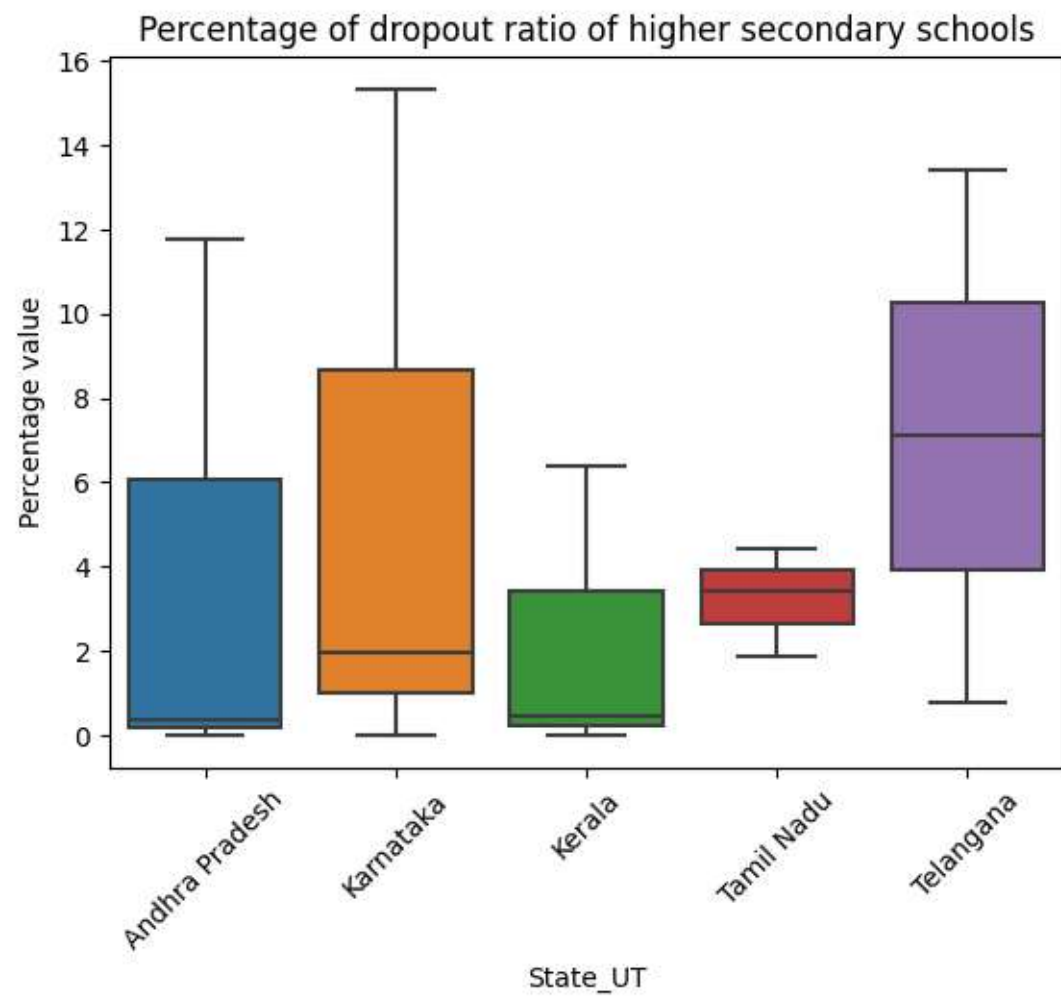


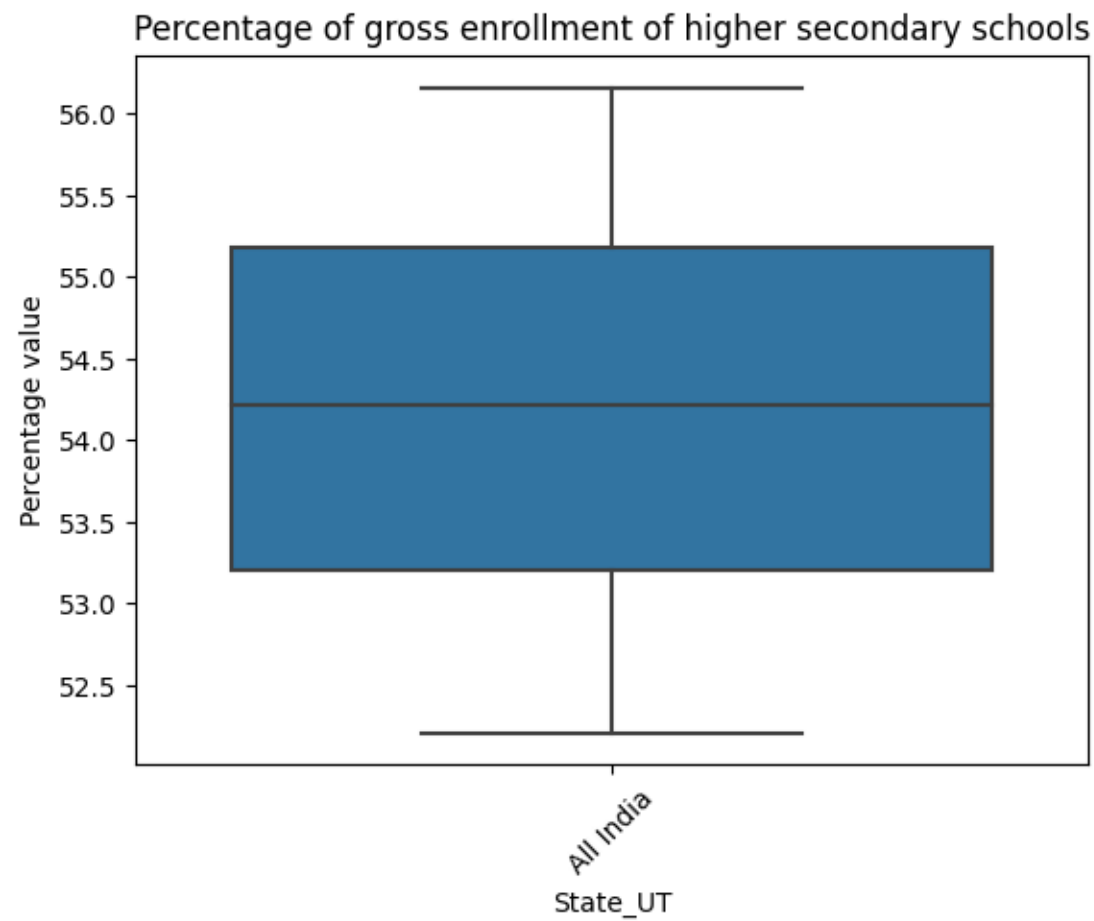
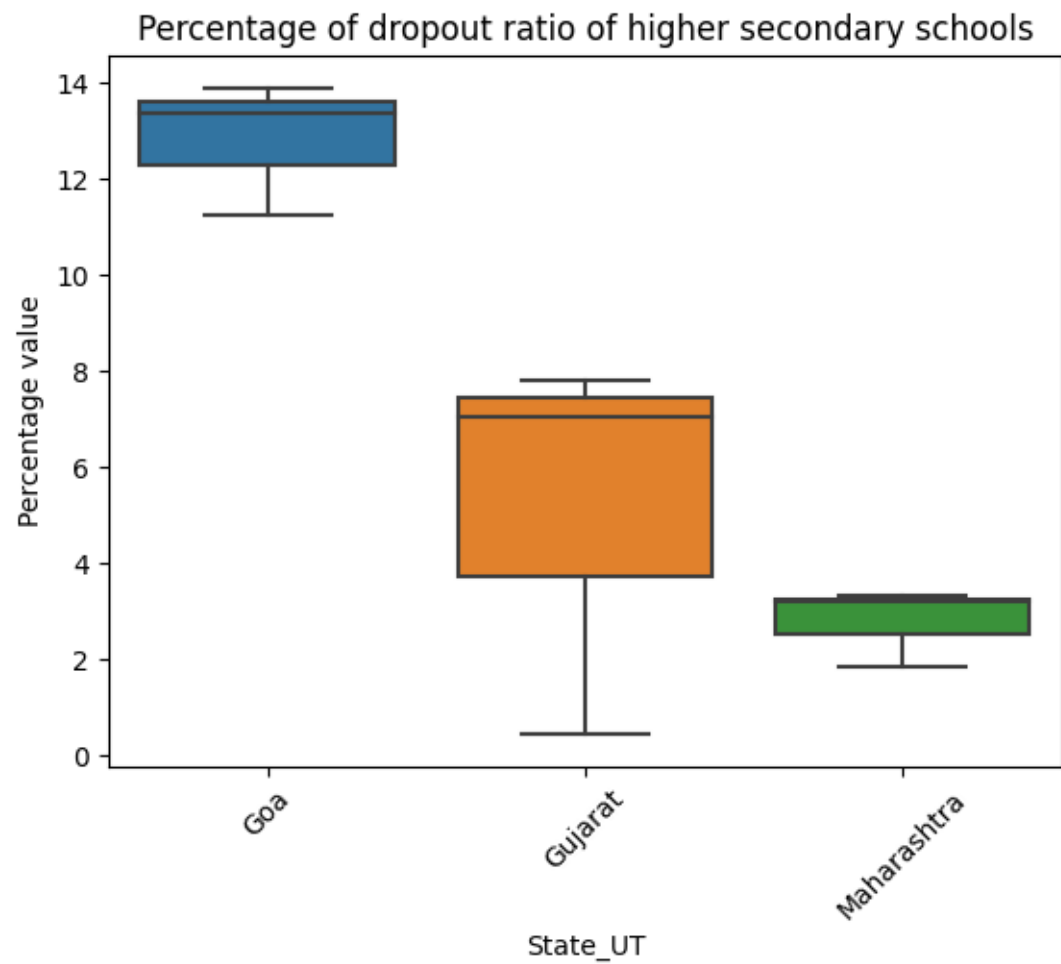
Percentage of dropout ratio of higher secondary schools

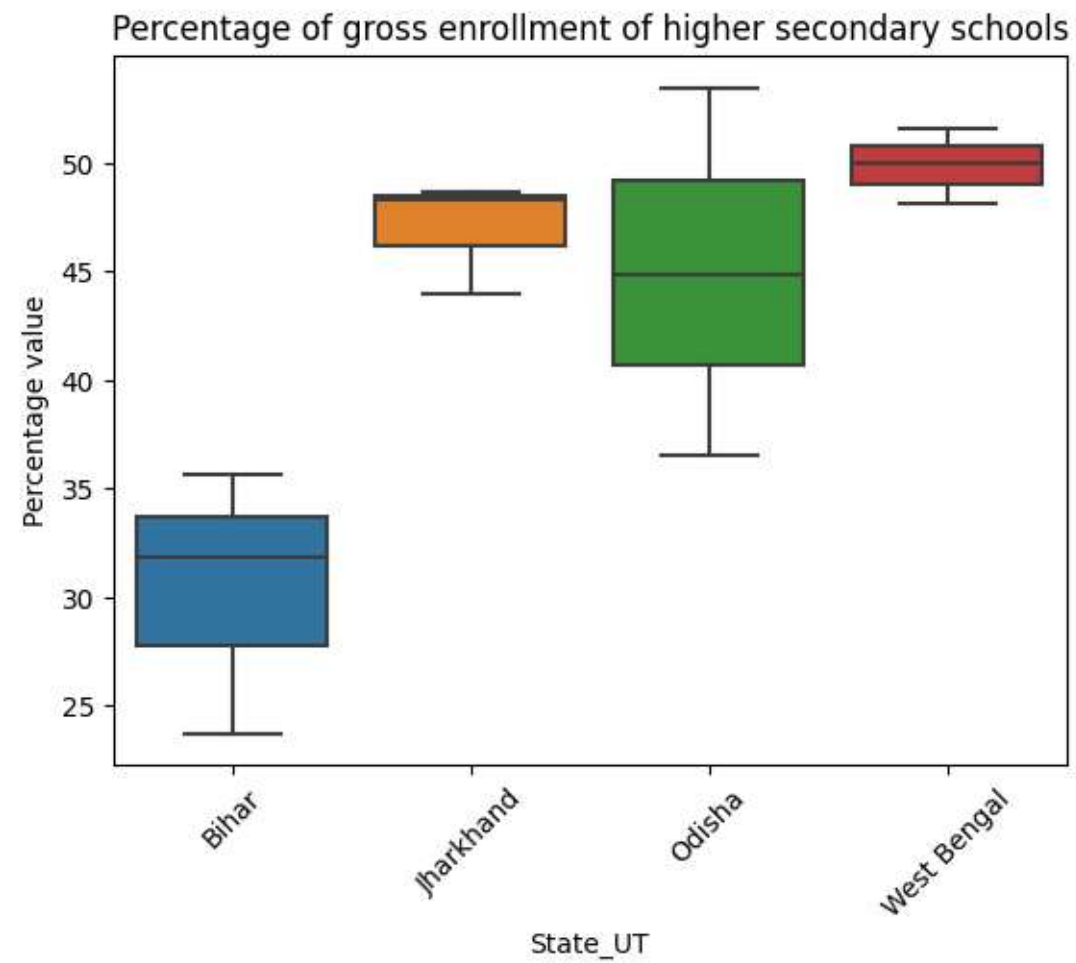
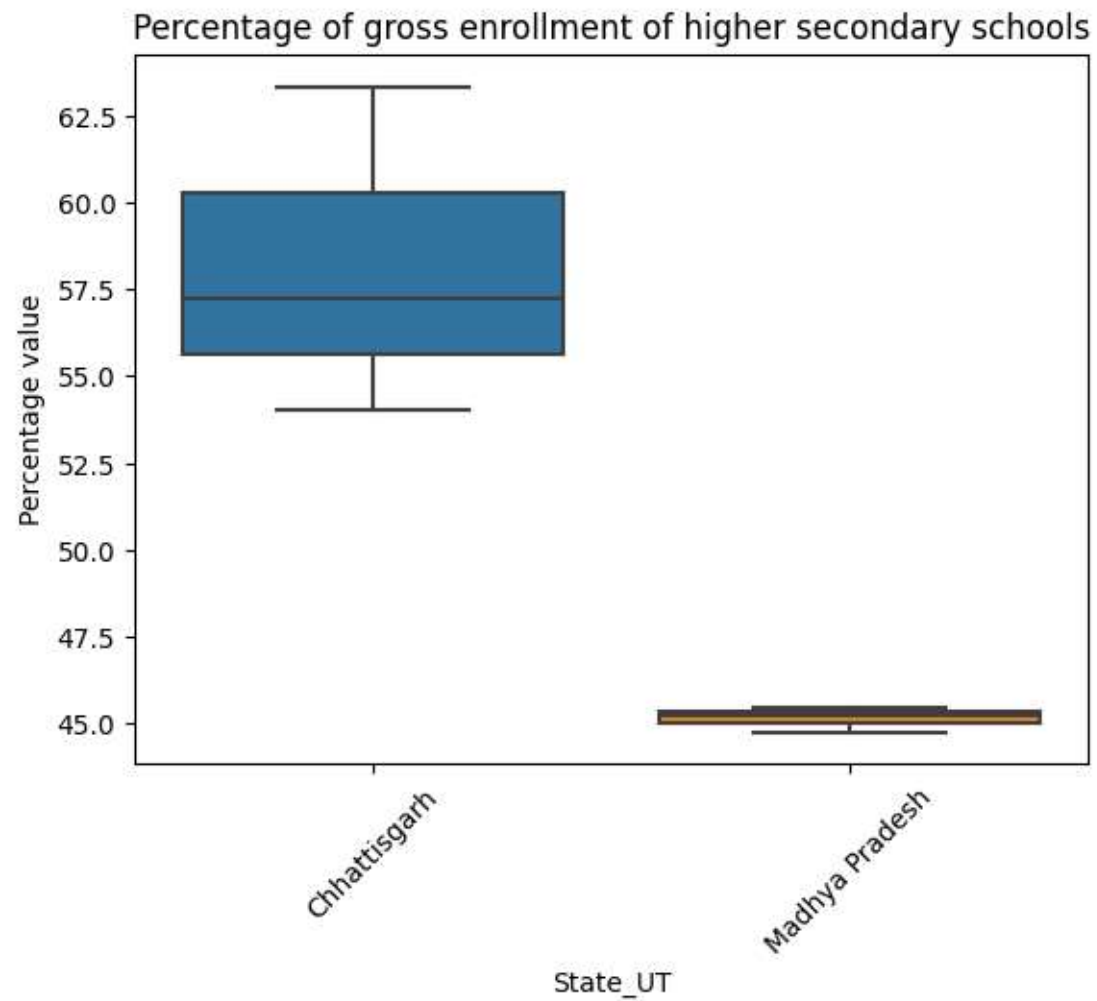


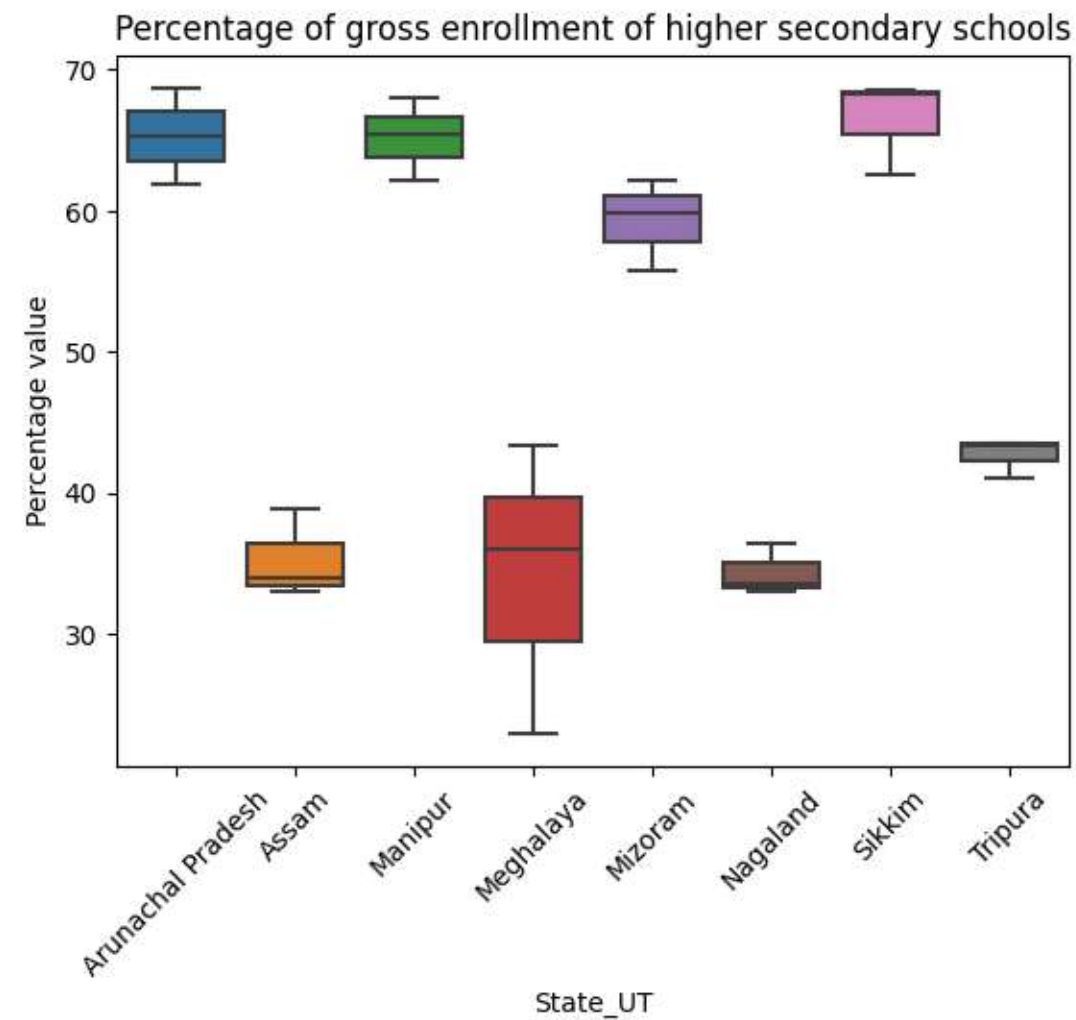
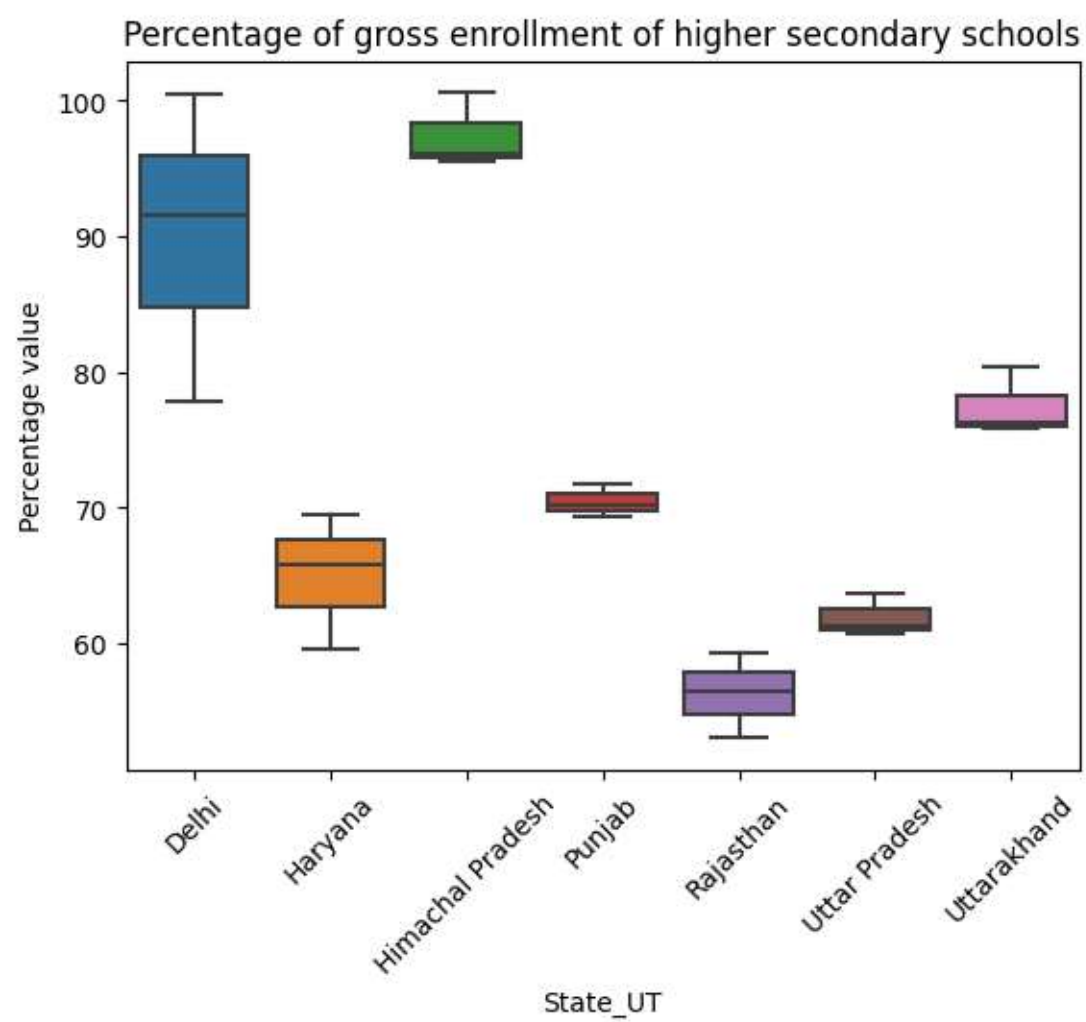
Percentage of dropout ratio of higher secondary schools

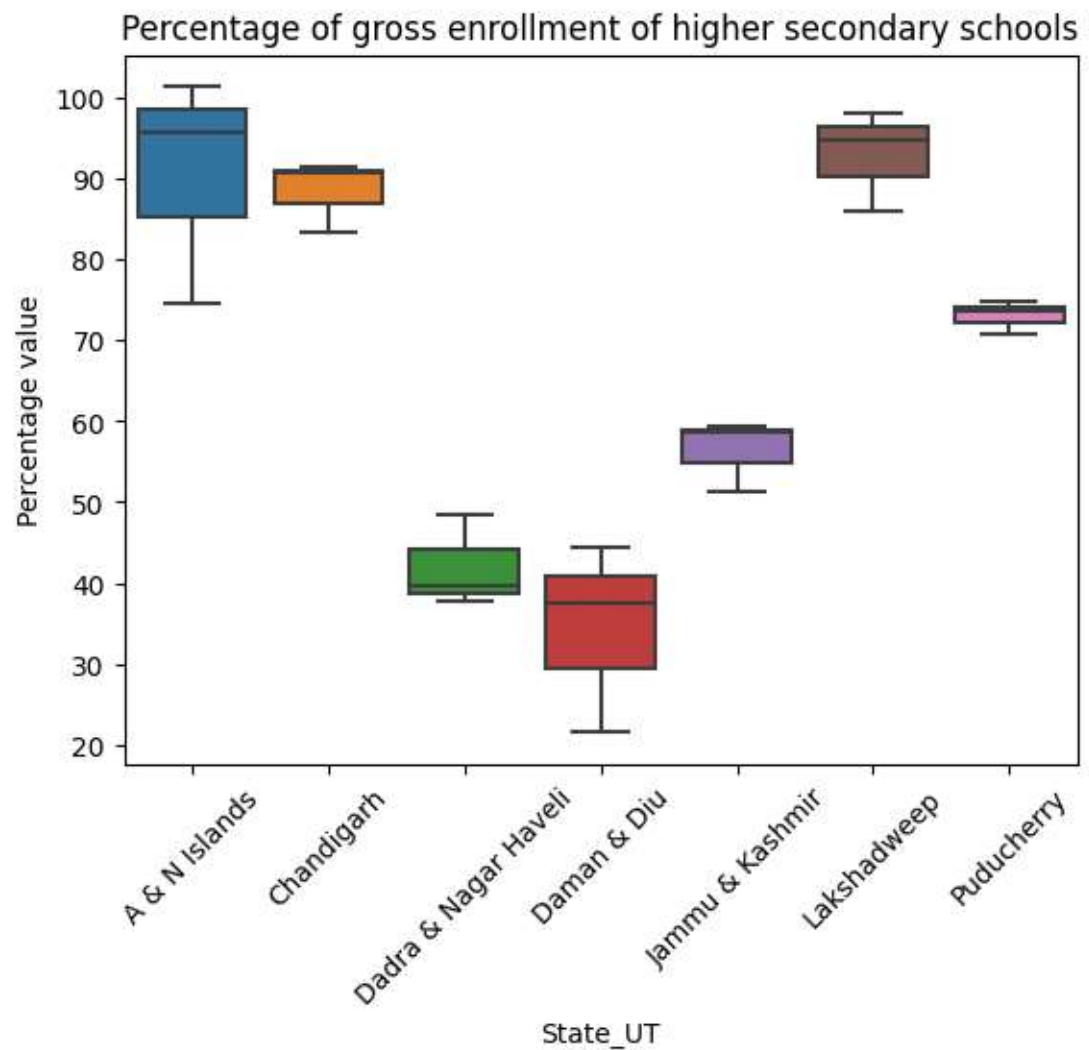
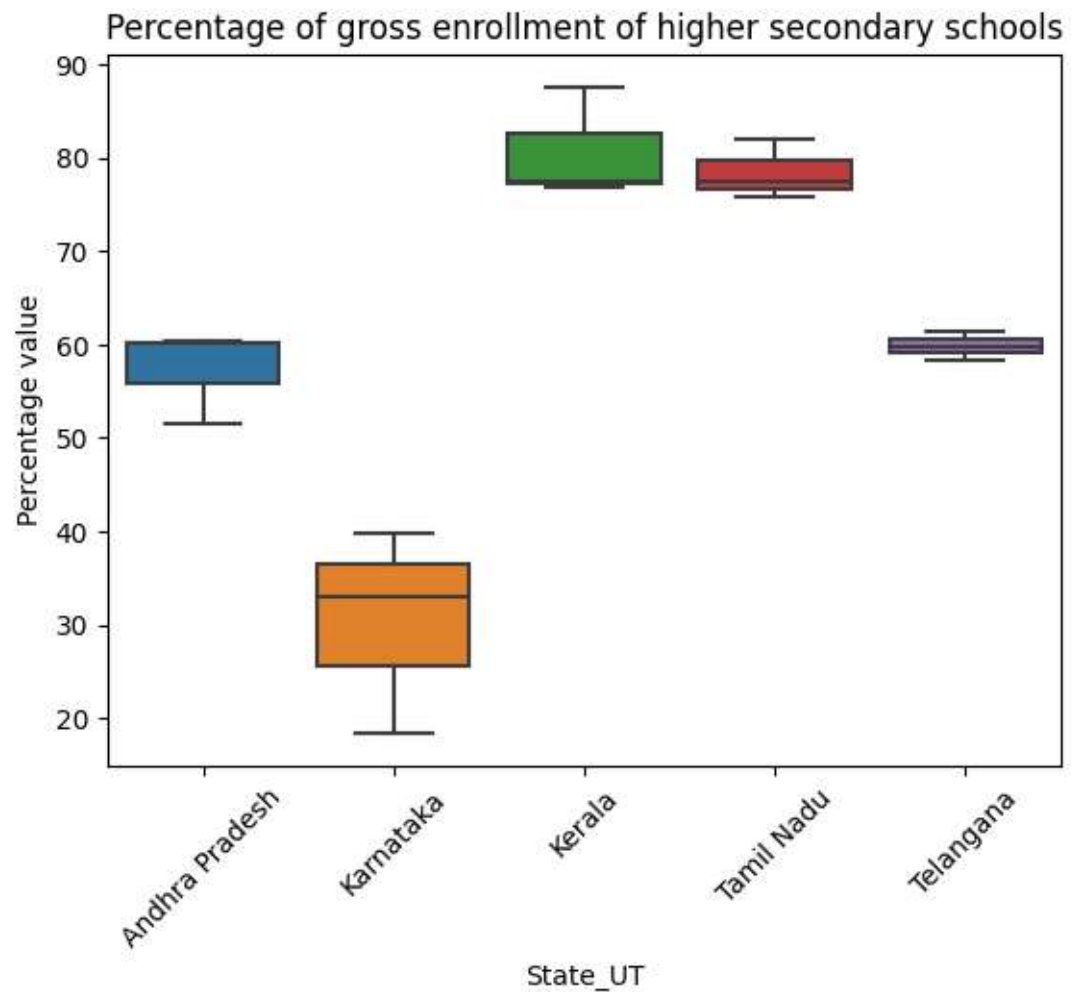




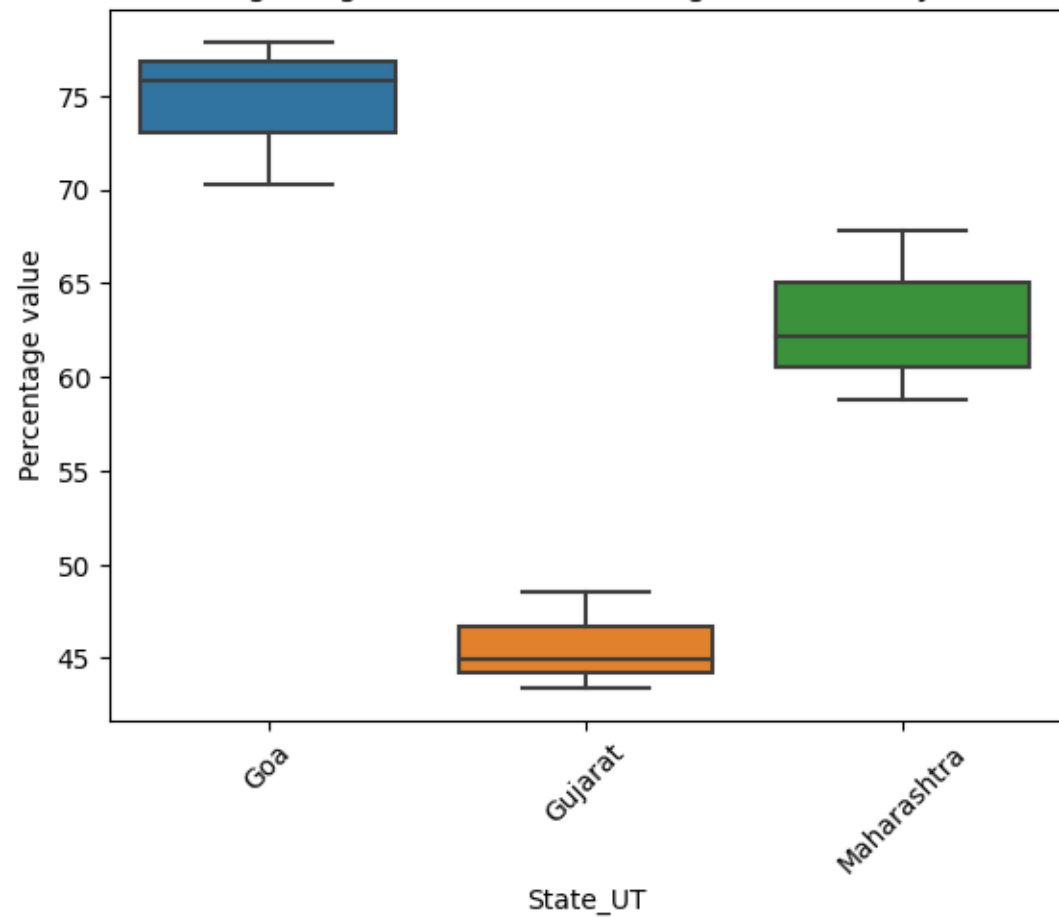




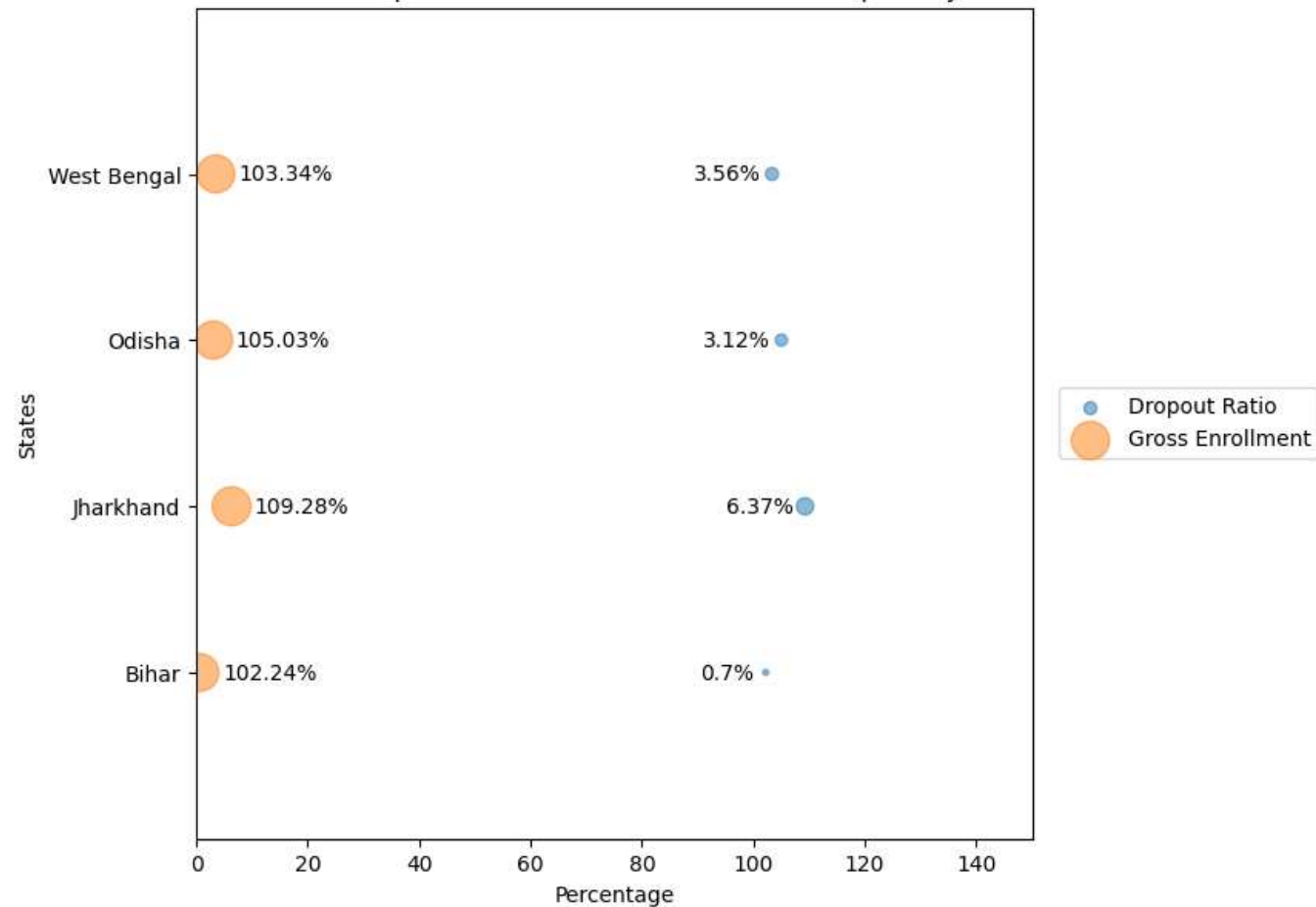




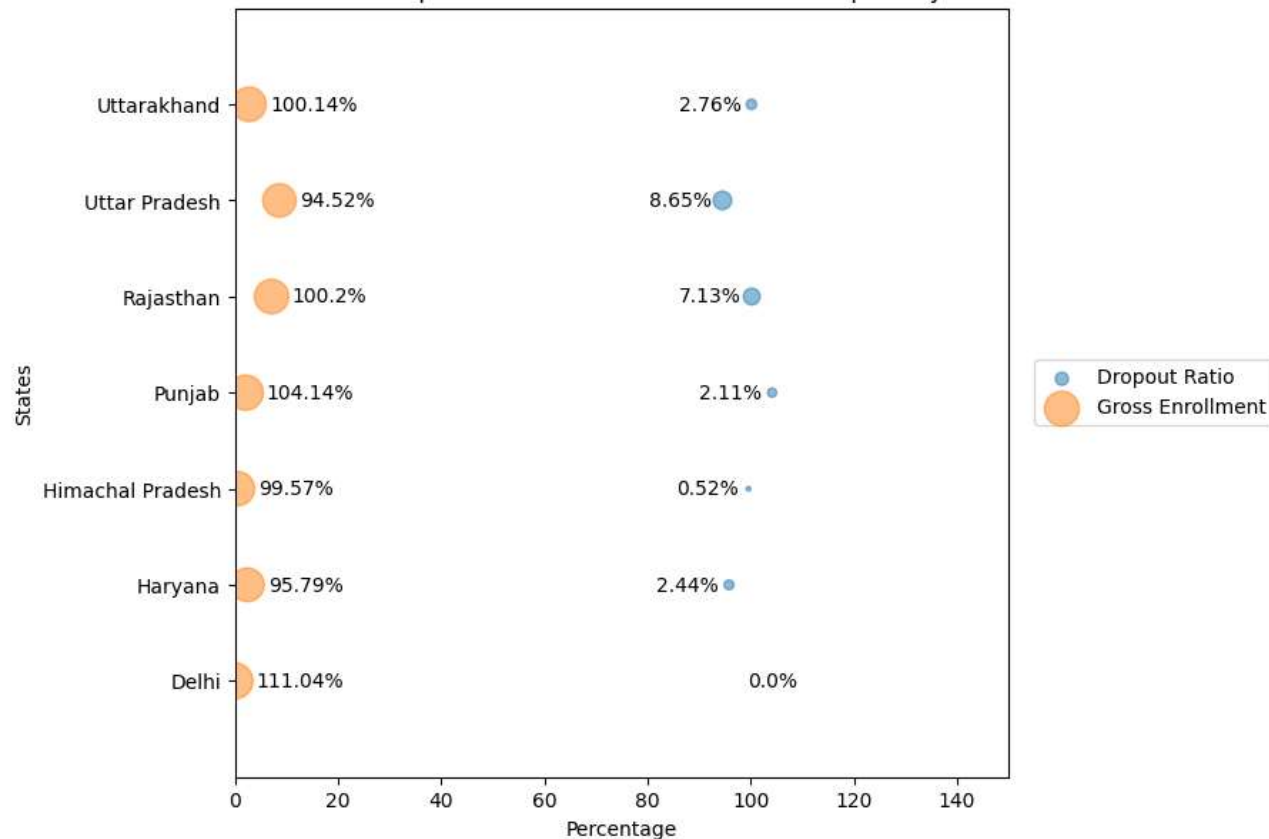
Percentage of gross enrollment of higher secondary schools



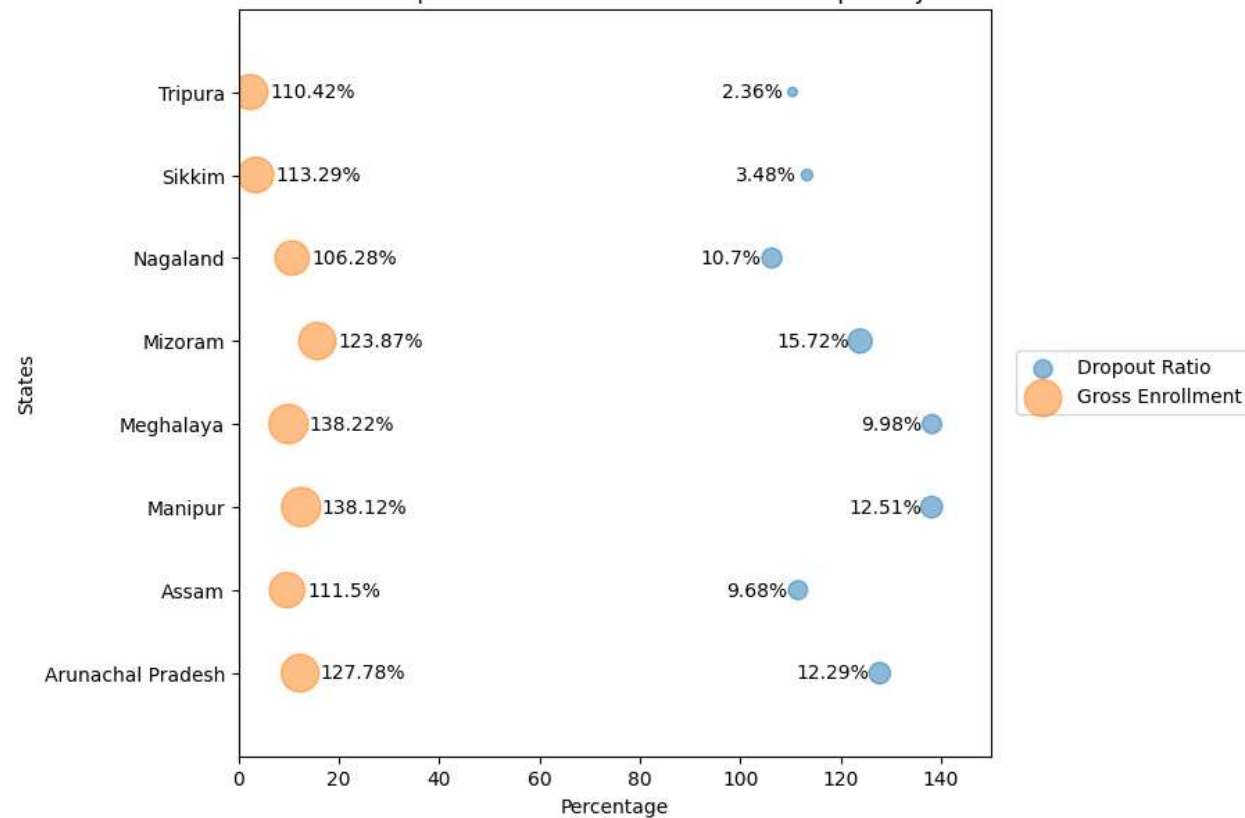
Bubble Plot of Dropout Ratio and Gross Enrollment for primary schools



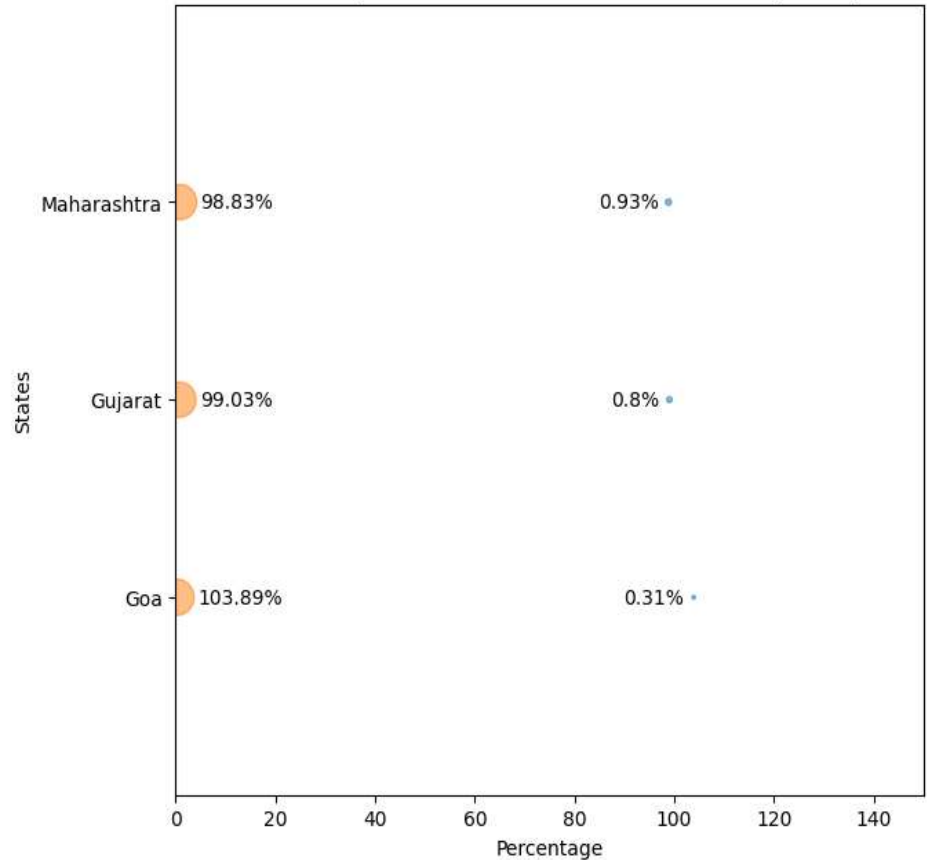
Bubble Plot of Dropout Ratio and Gross Enrollment for primary schools



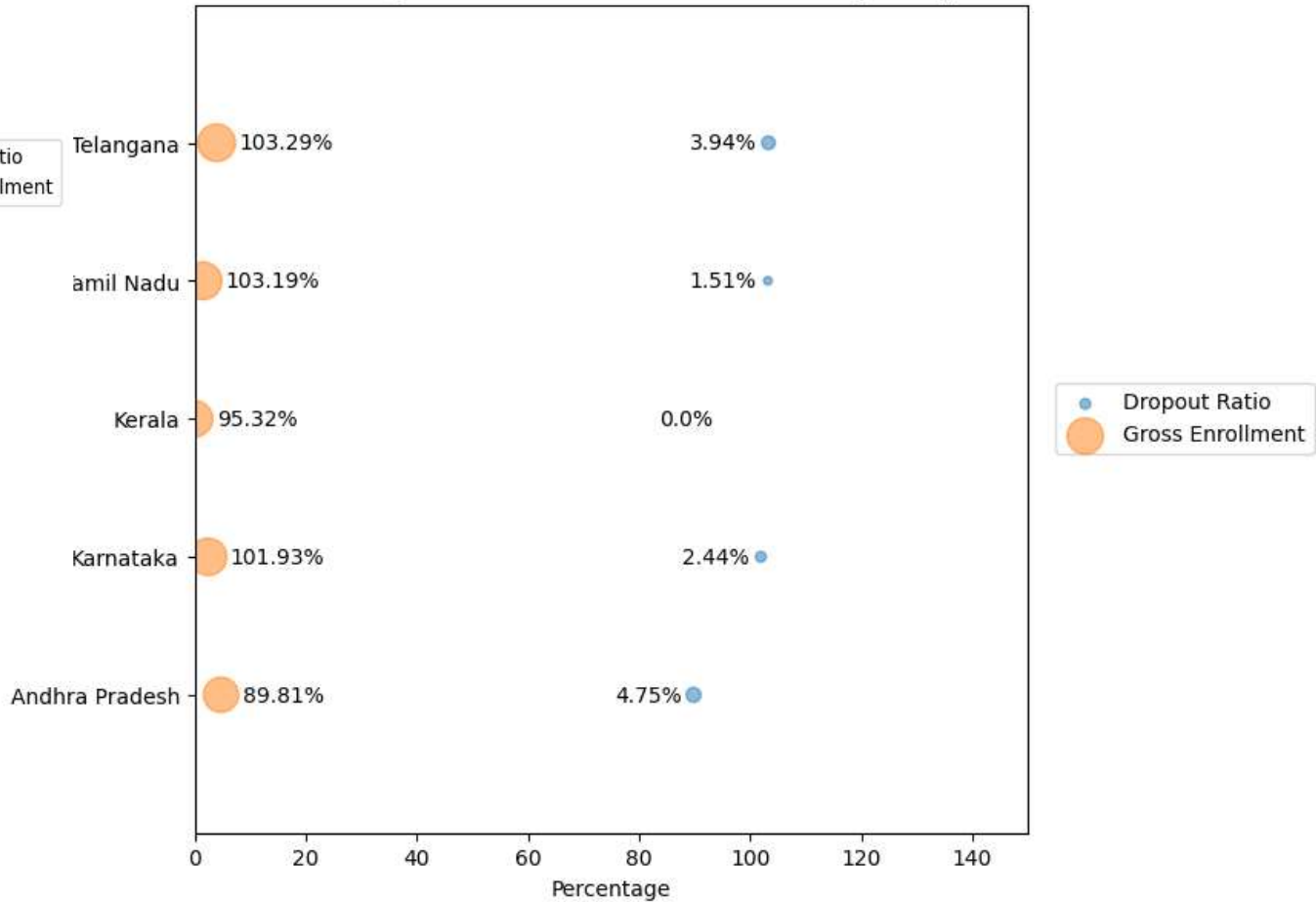
Bubble Plot of Dropout Ratio and Gross Enrollment for primary schools



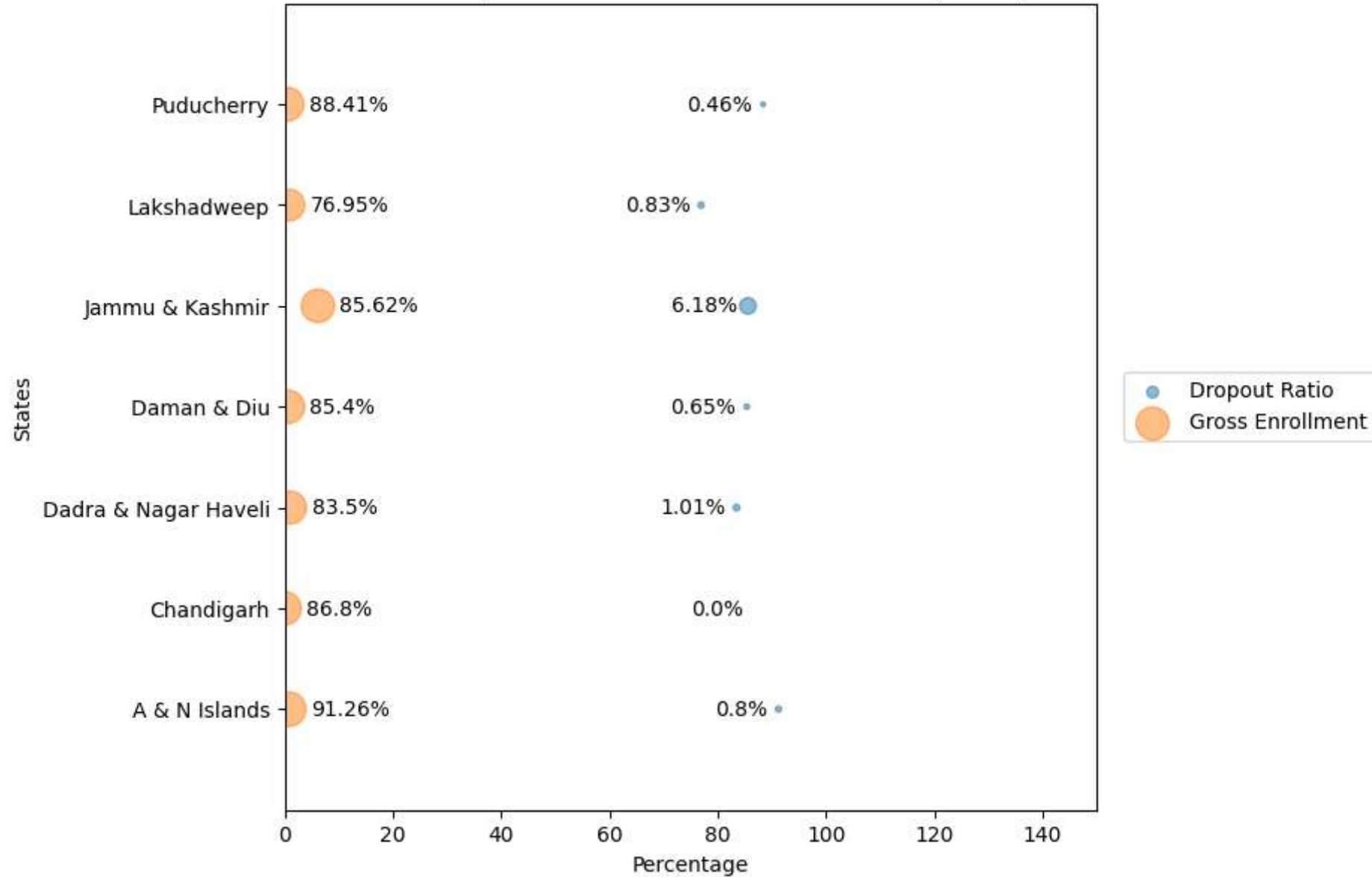
Bubble Plot of Dropout Ratio and Gross Enrollment for primary schools



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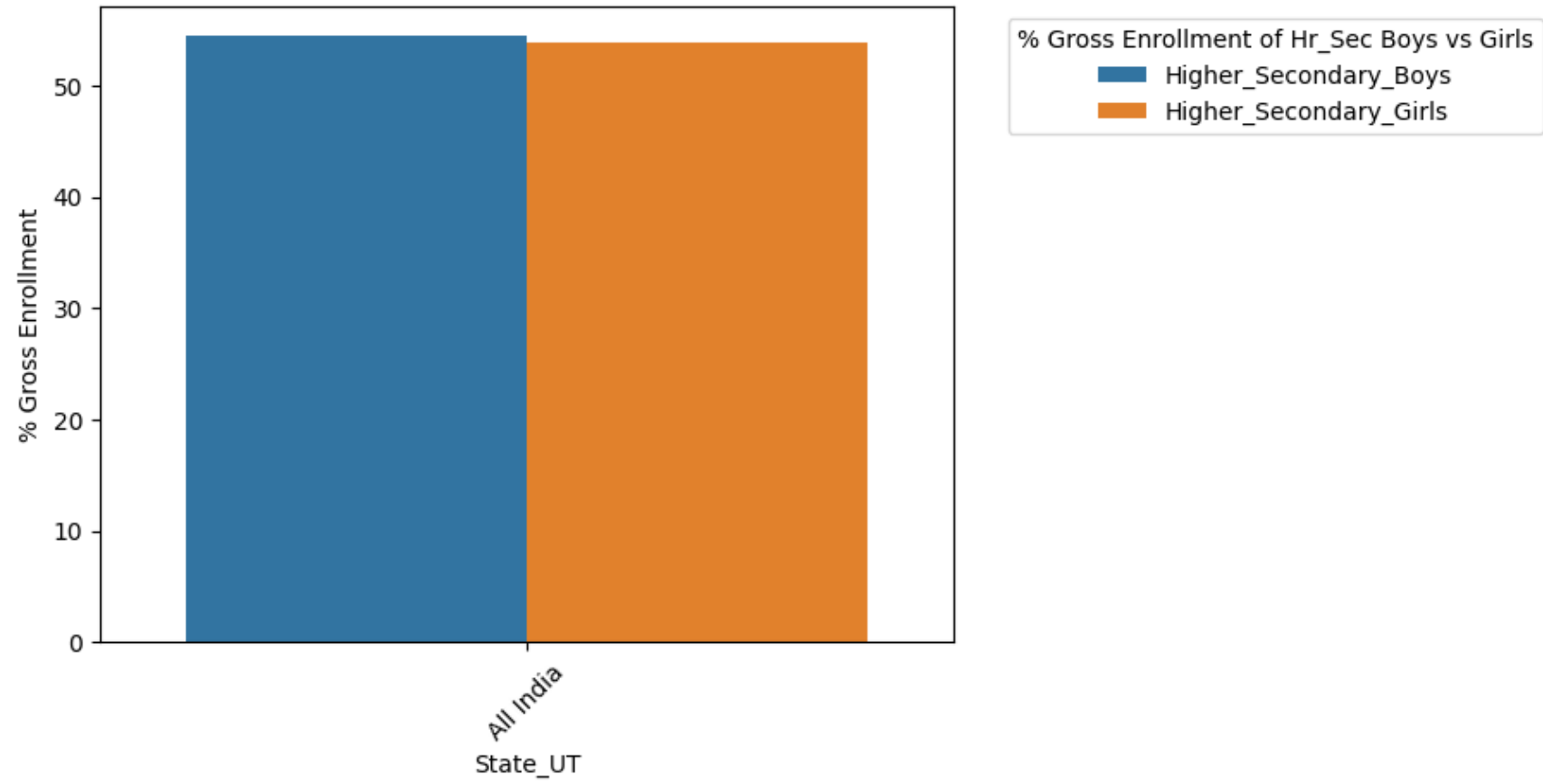


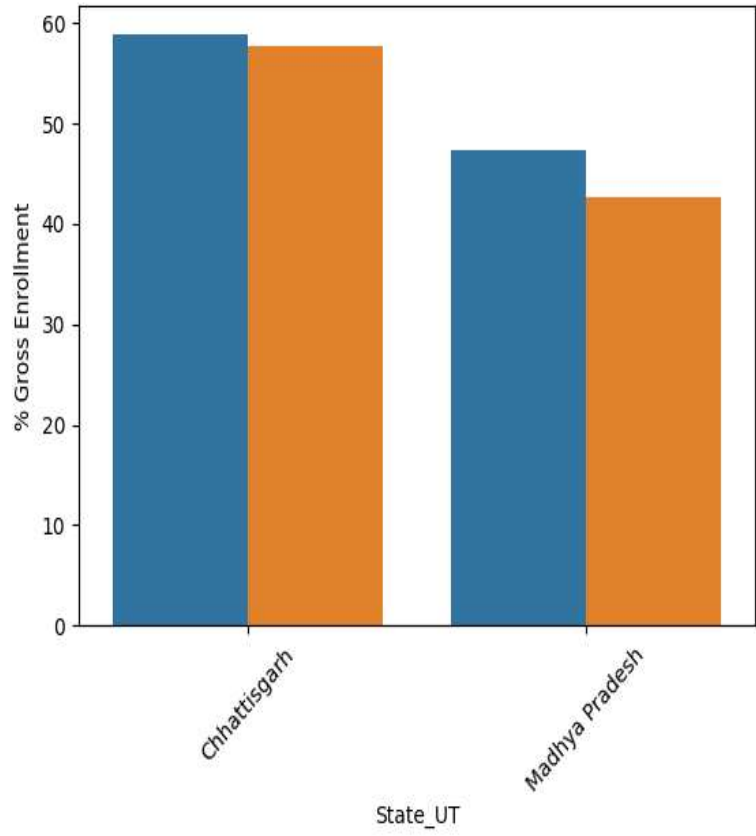
Bubble Plot of Dropout Ratio and Gross Enrollment for primary schools



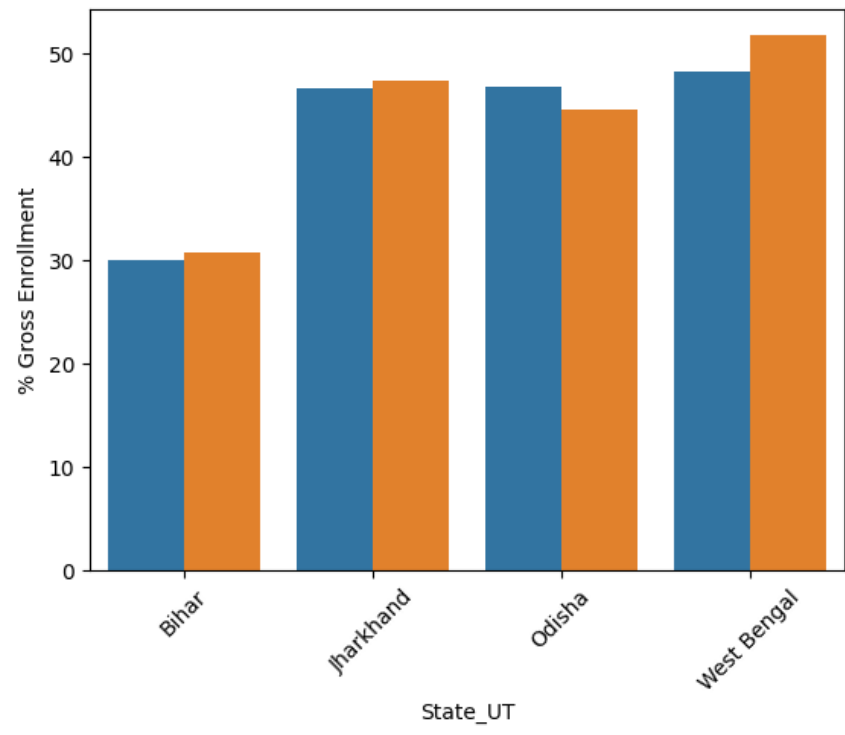
% of Gross Enrollment of Boys vs Girls at various levels of schools

- ▶ Bar plot are used to show results.

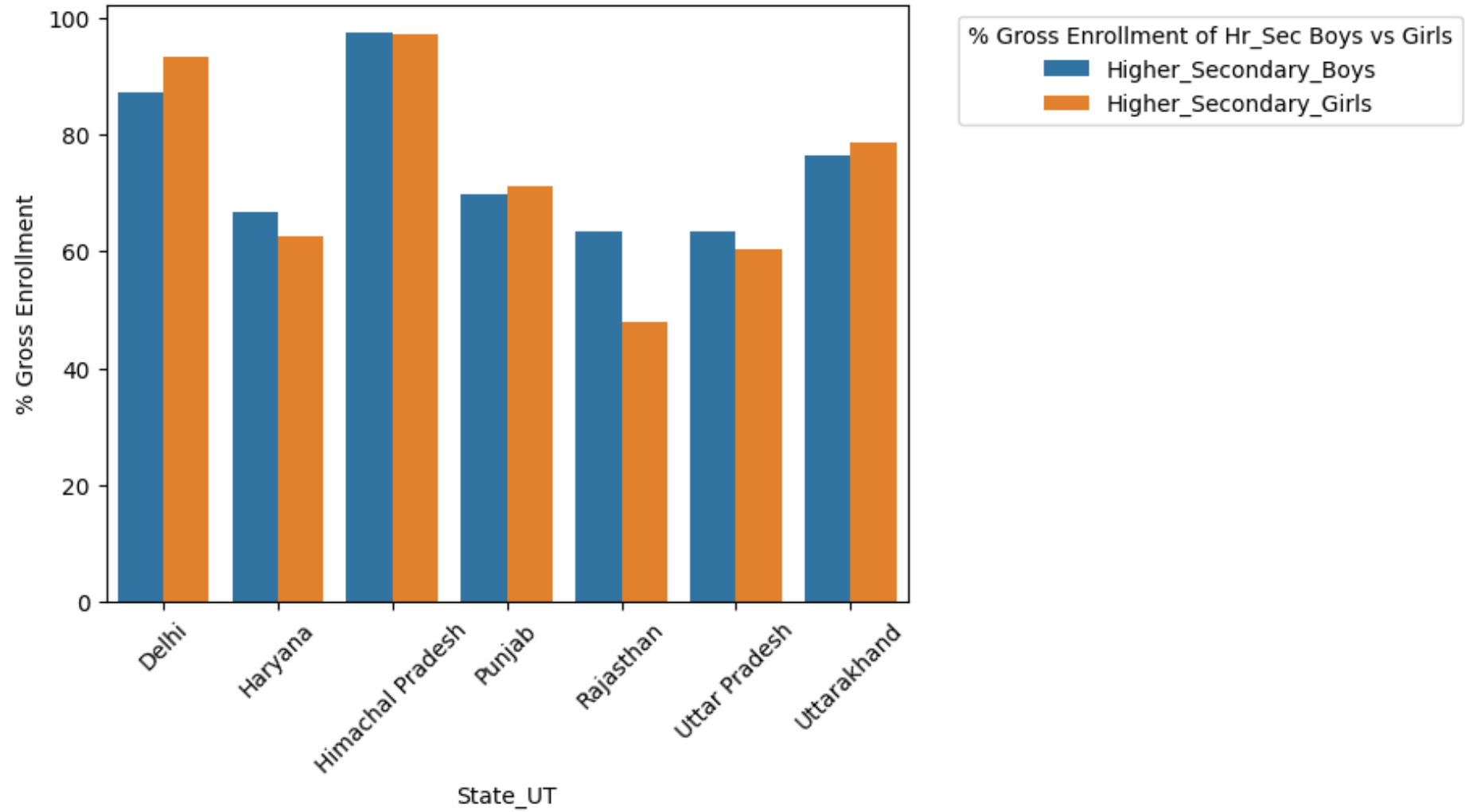


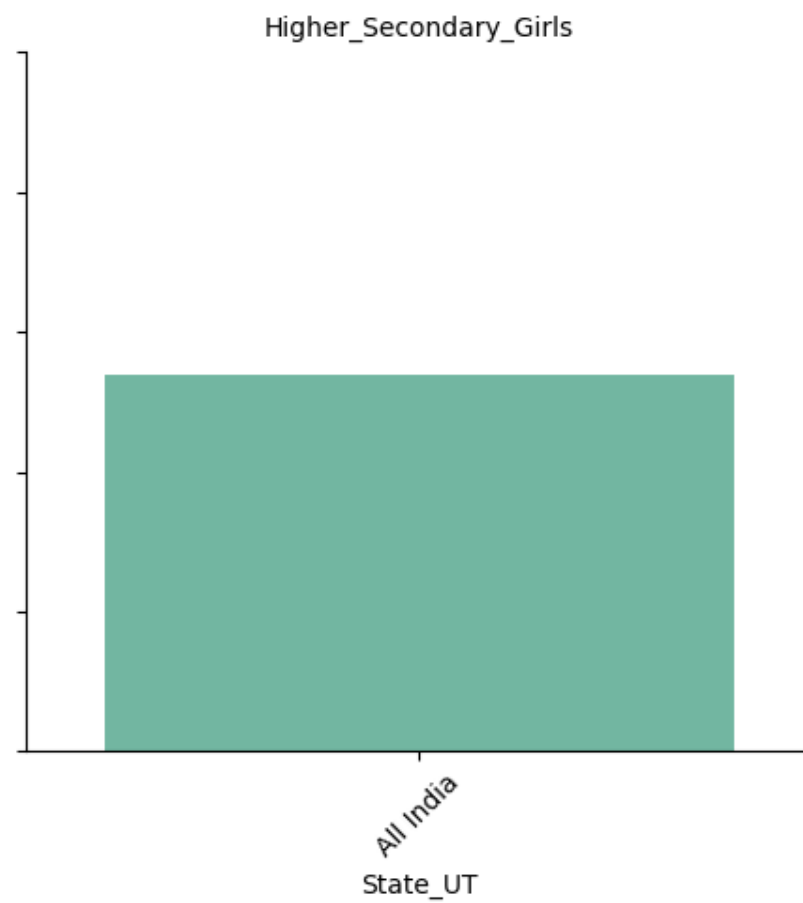
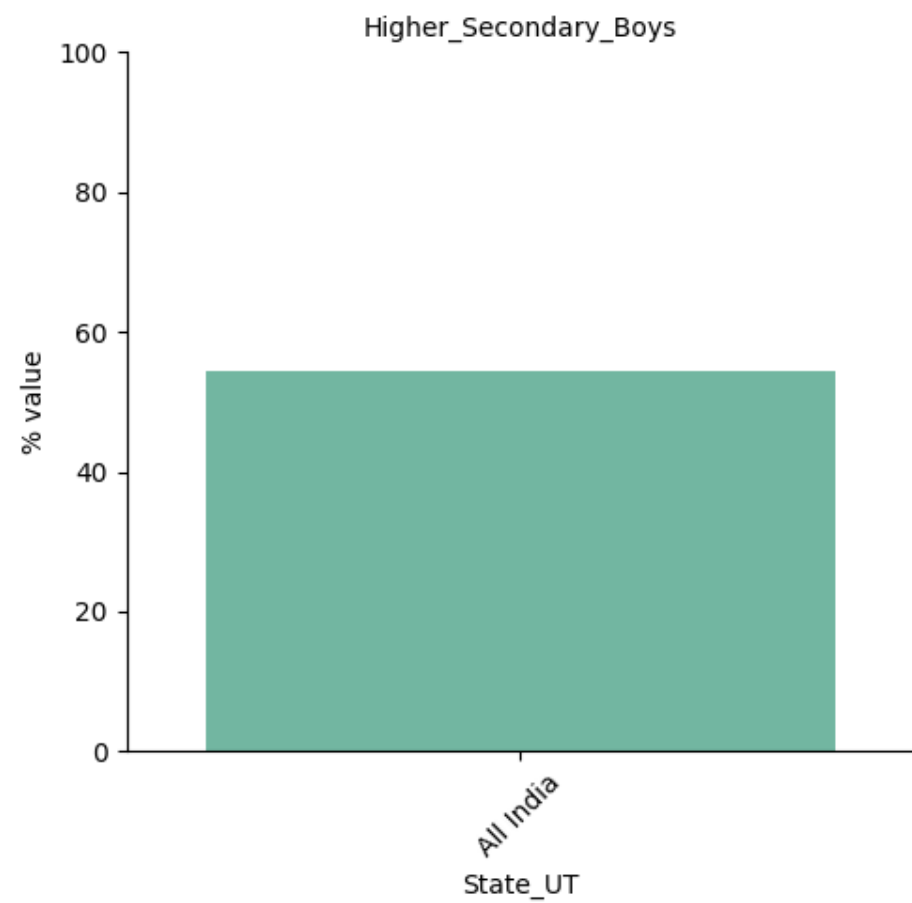


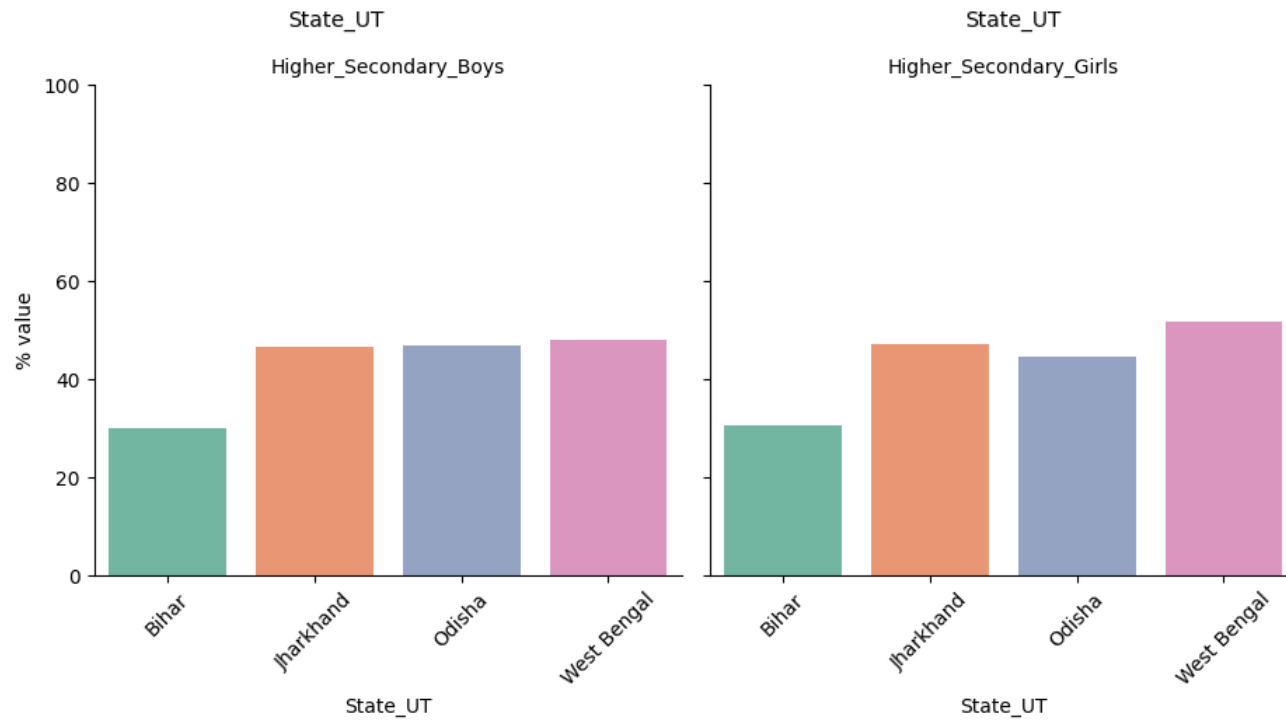
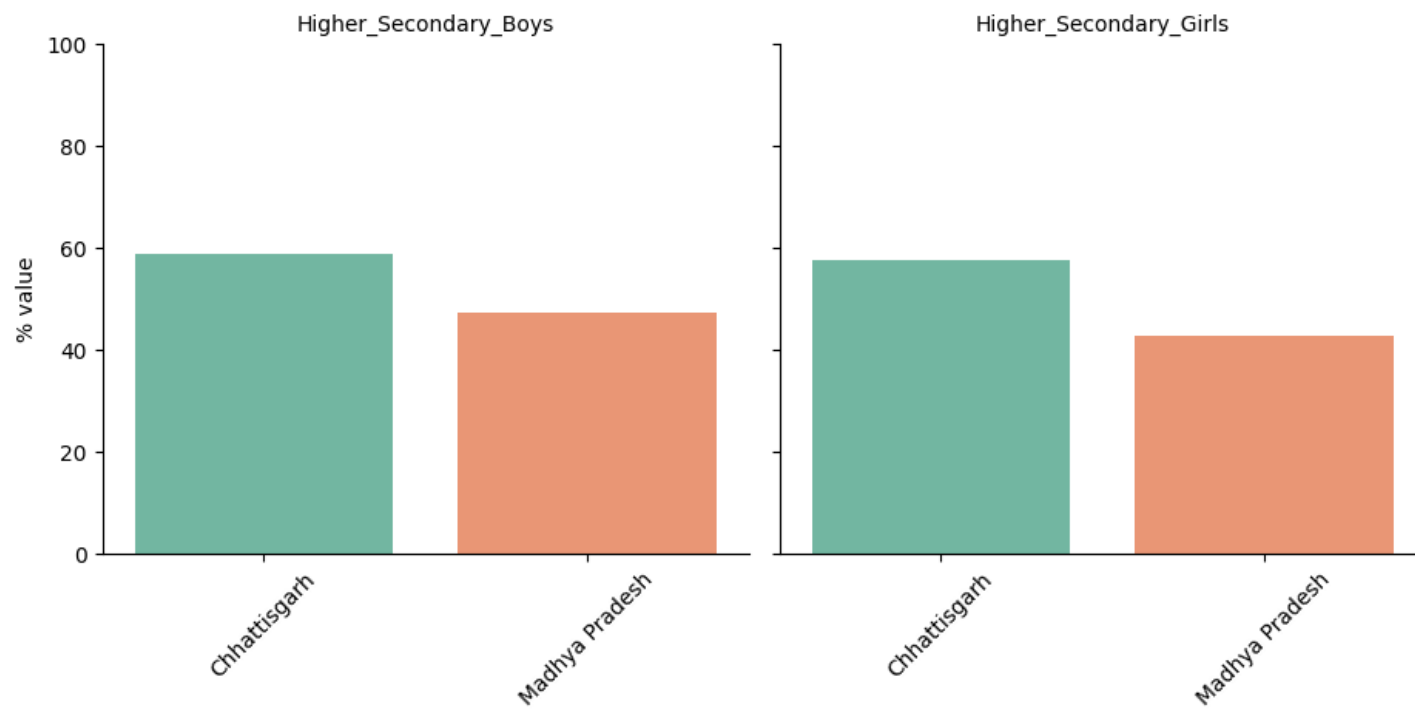
% Gross Enrollment of Hr_Sec Boys vs Girls

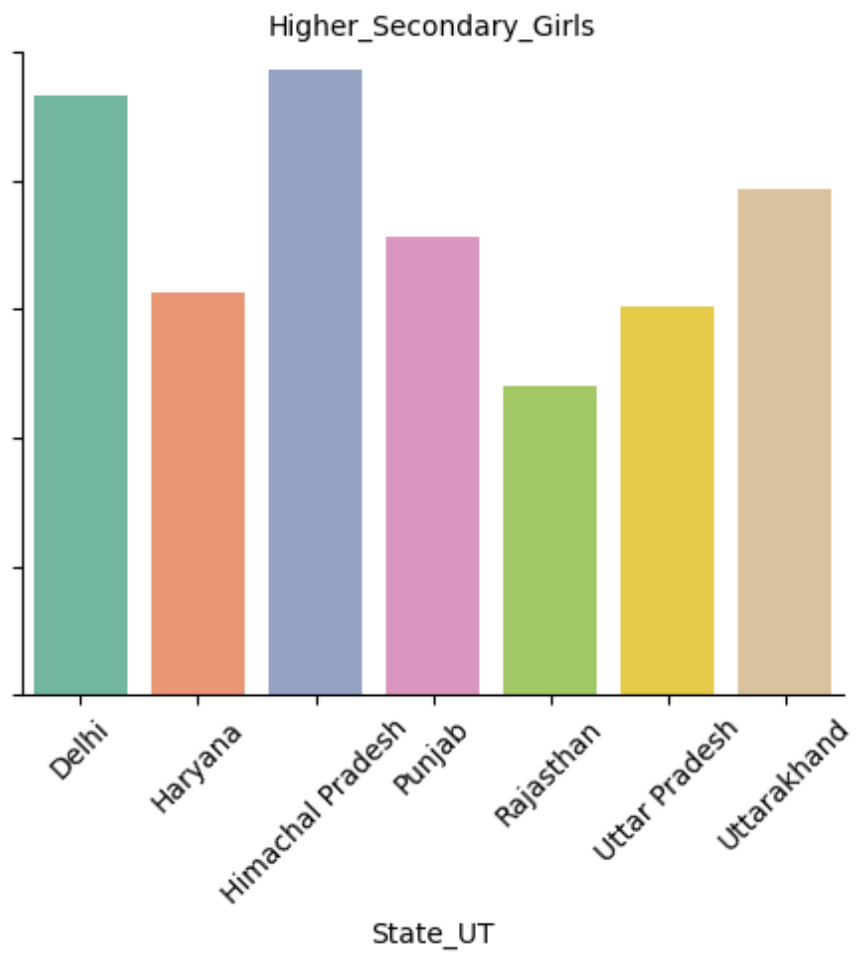
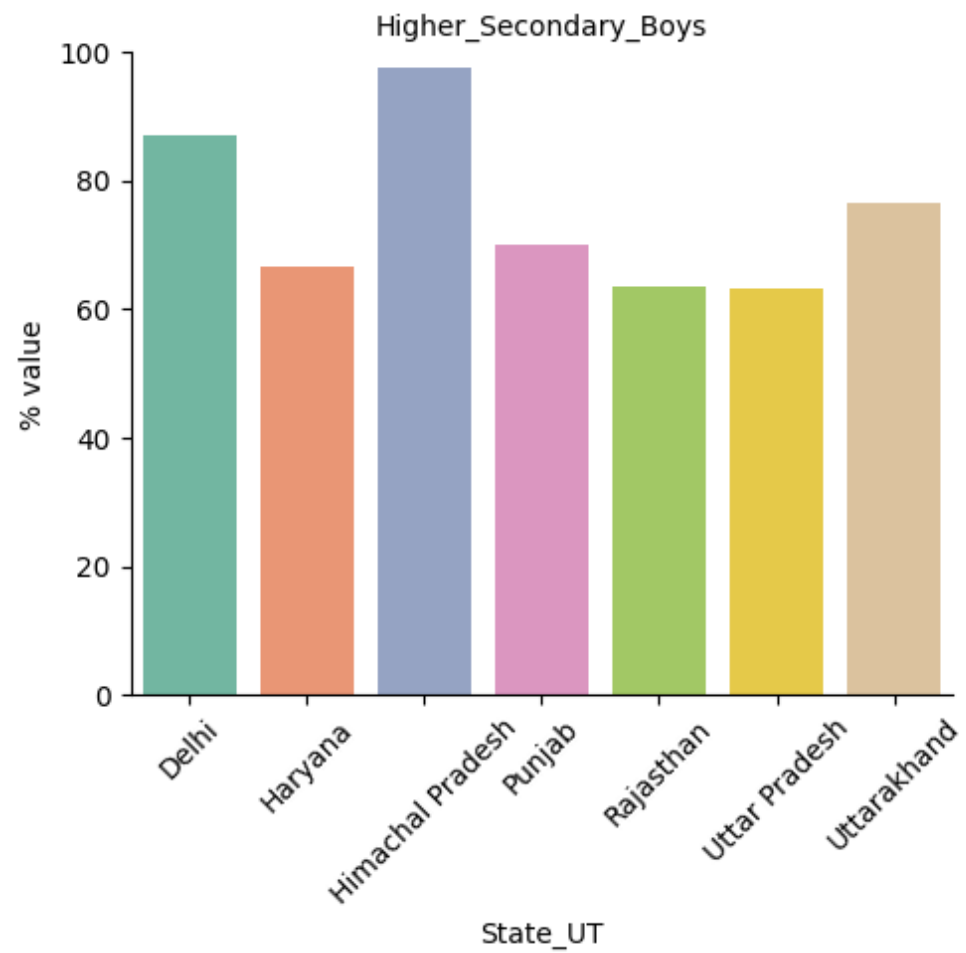


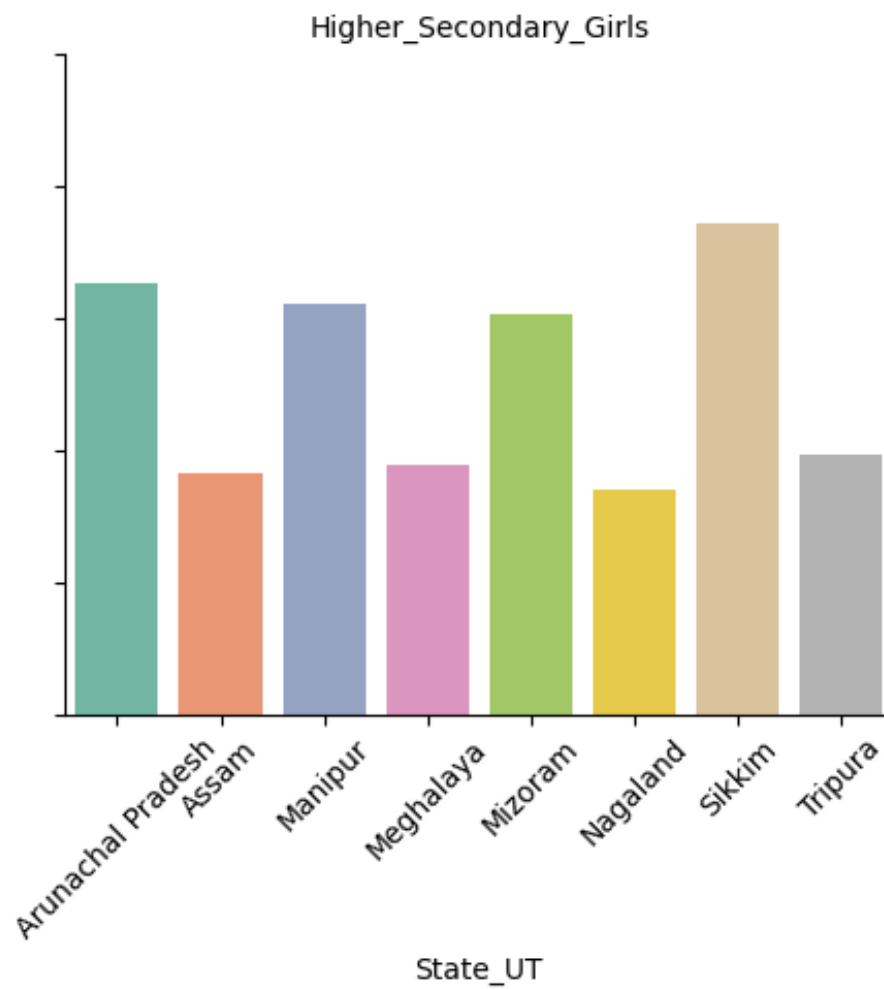
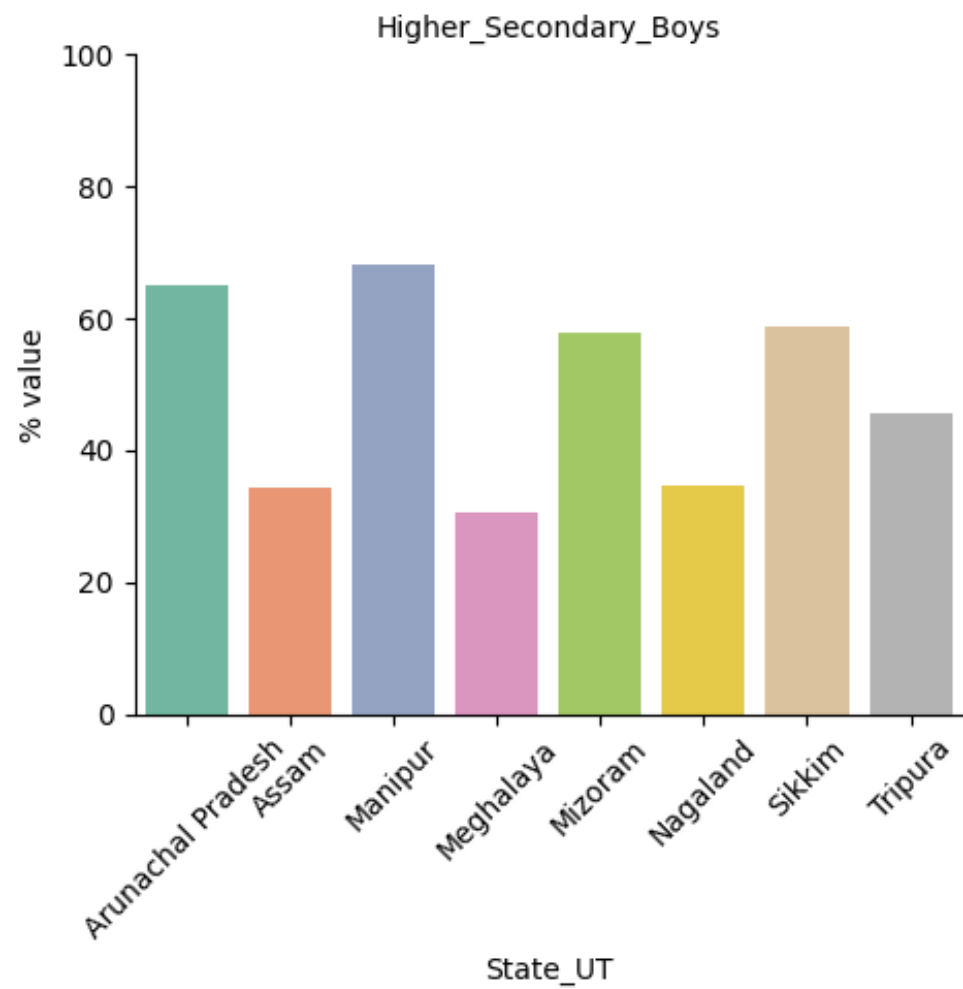
% Gross Enrollment of Hr_Sec Boys vs Girls

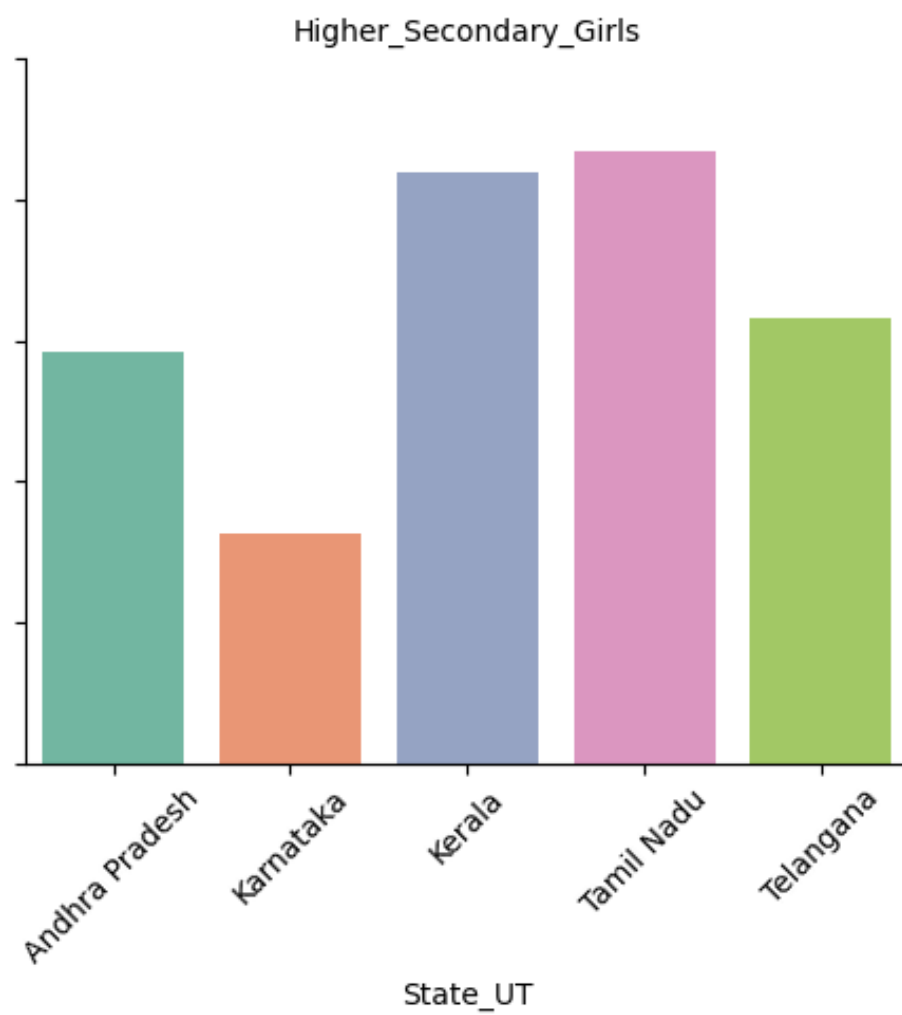
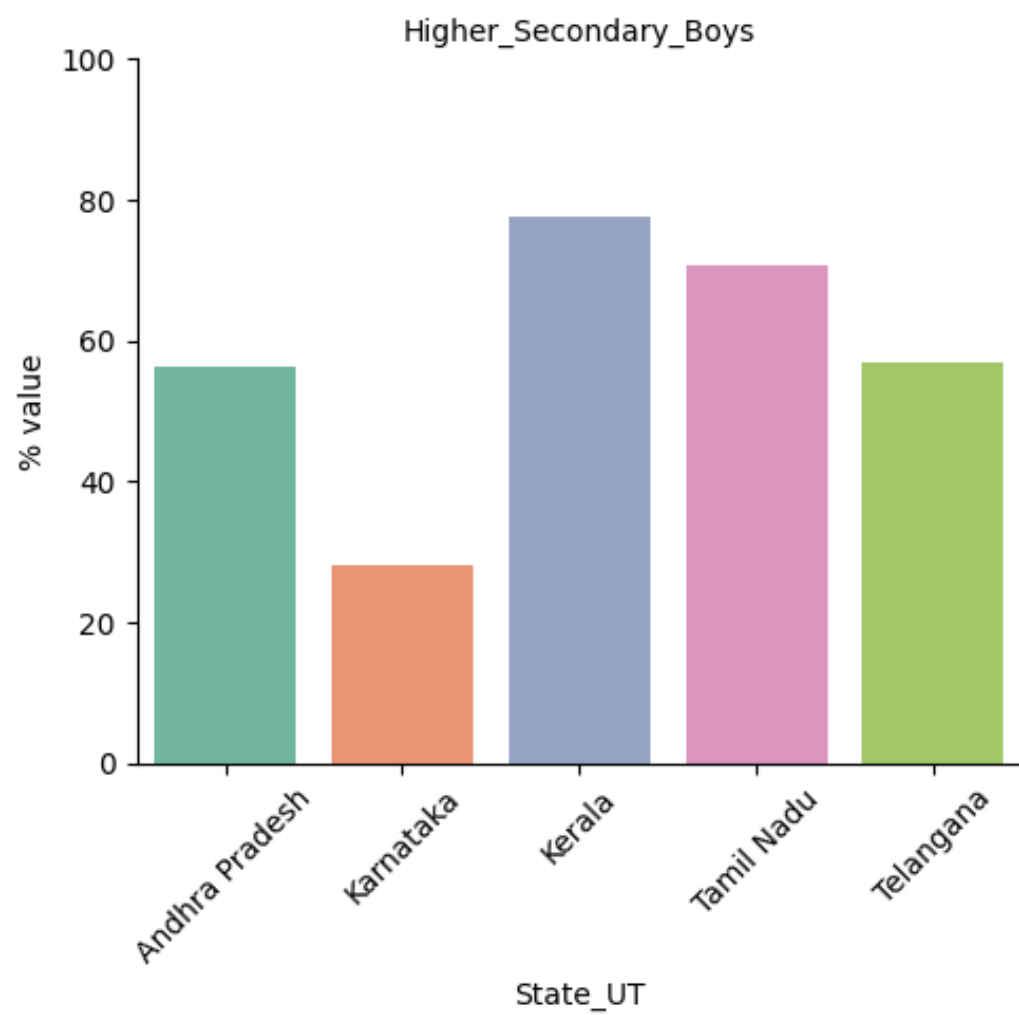


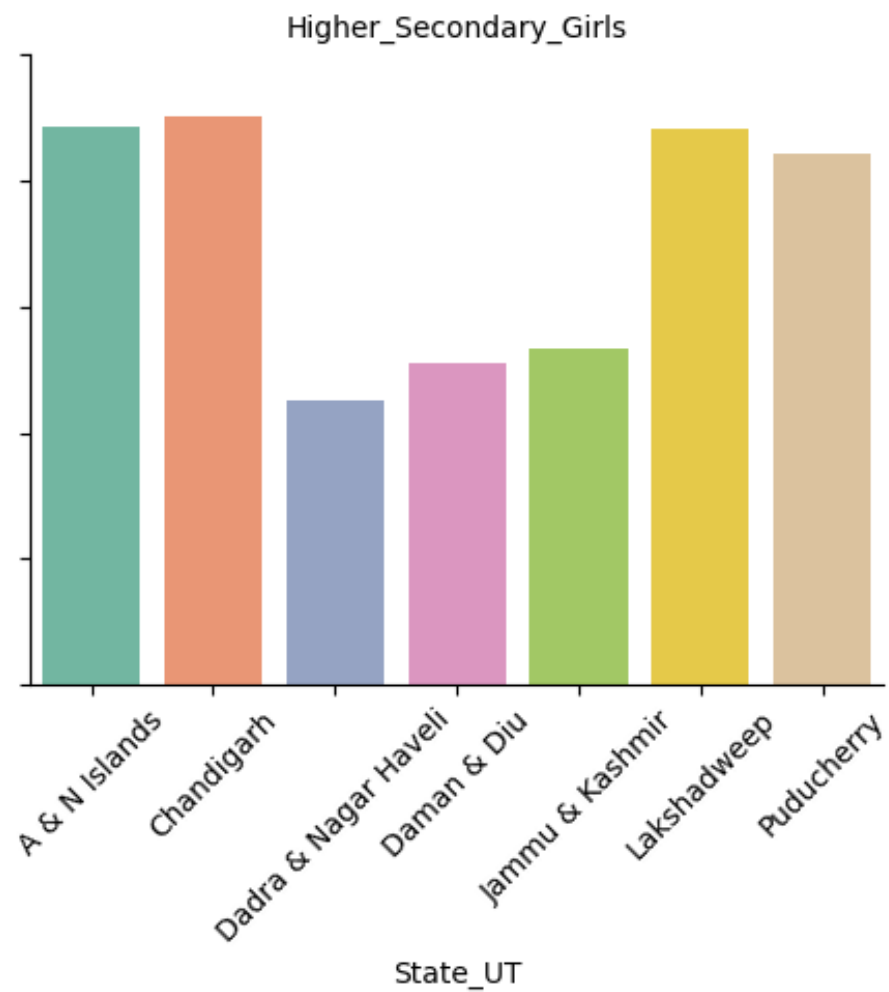
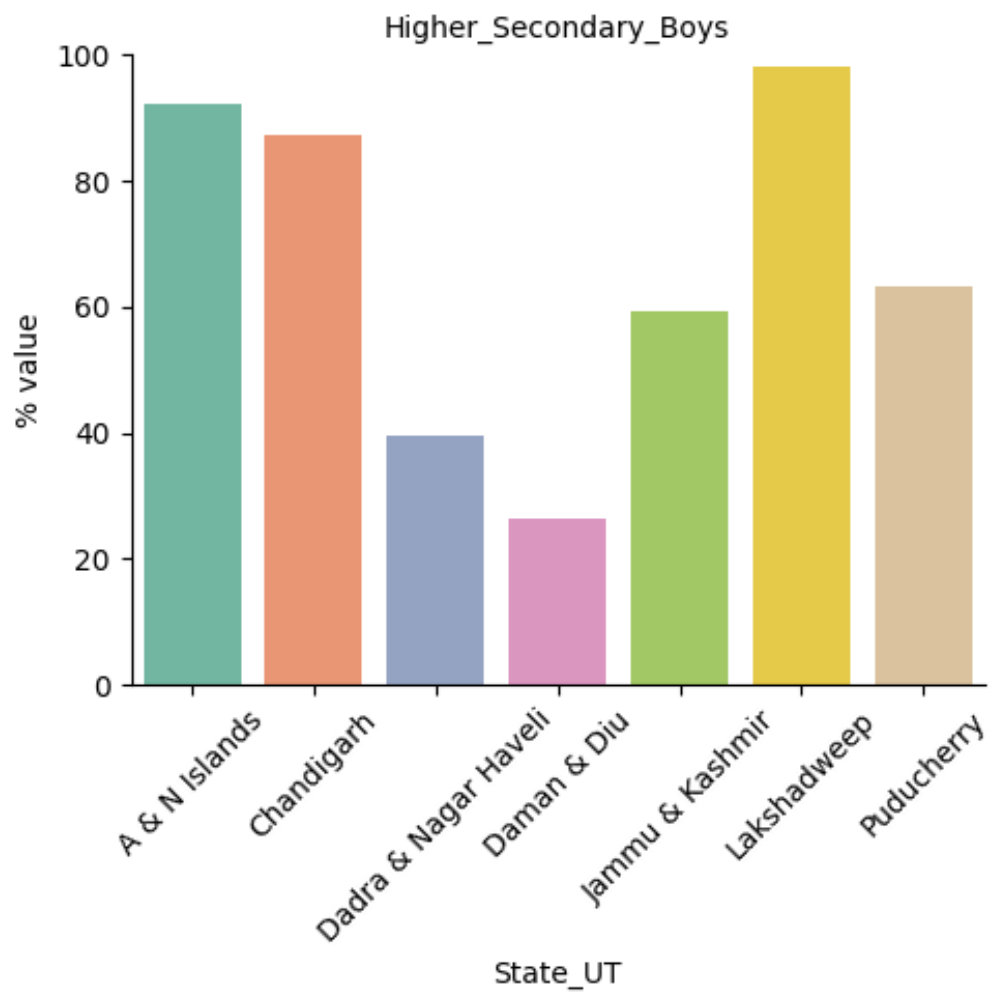


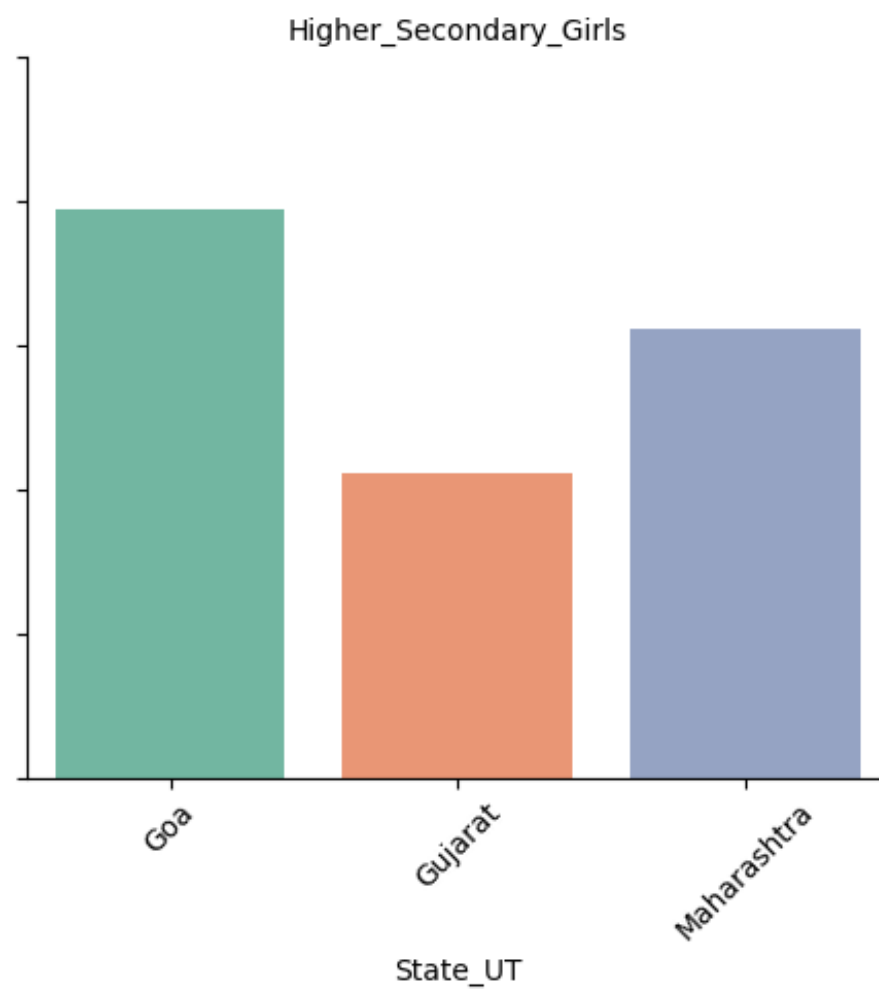
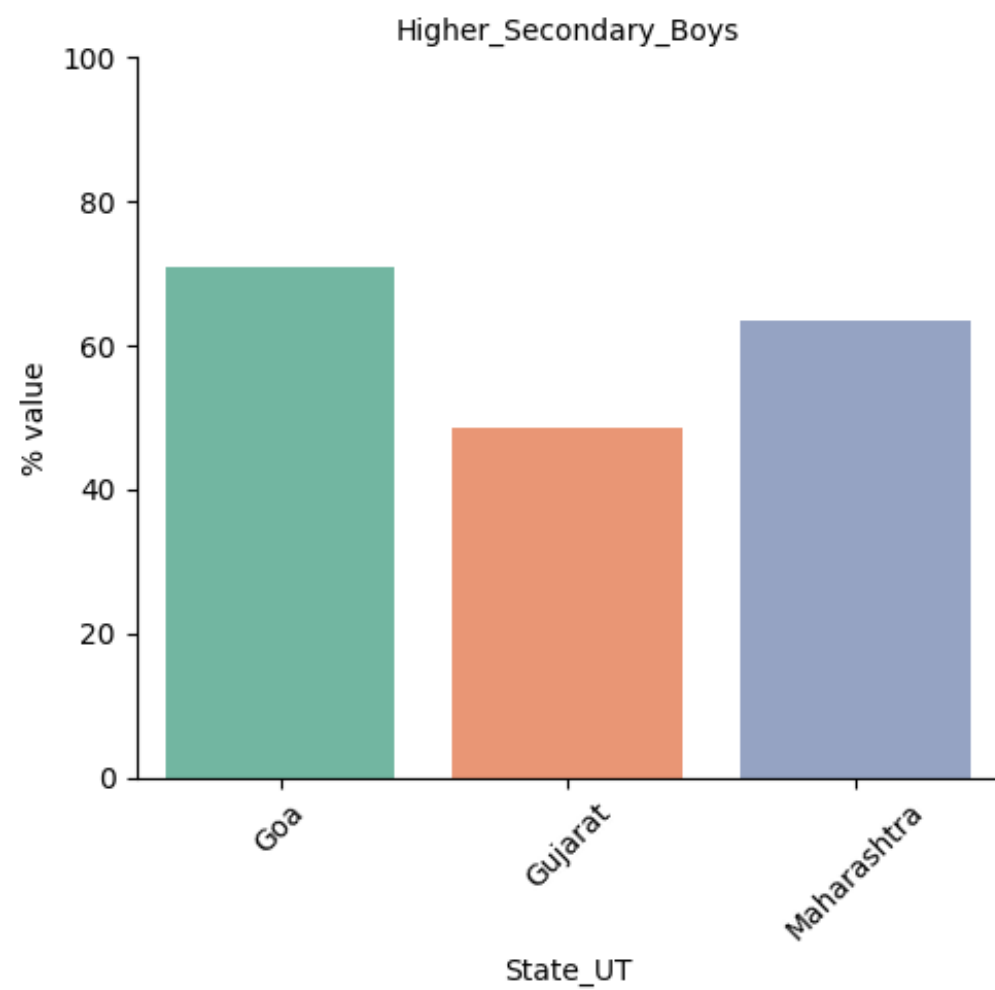






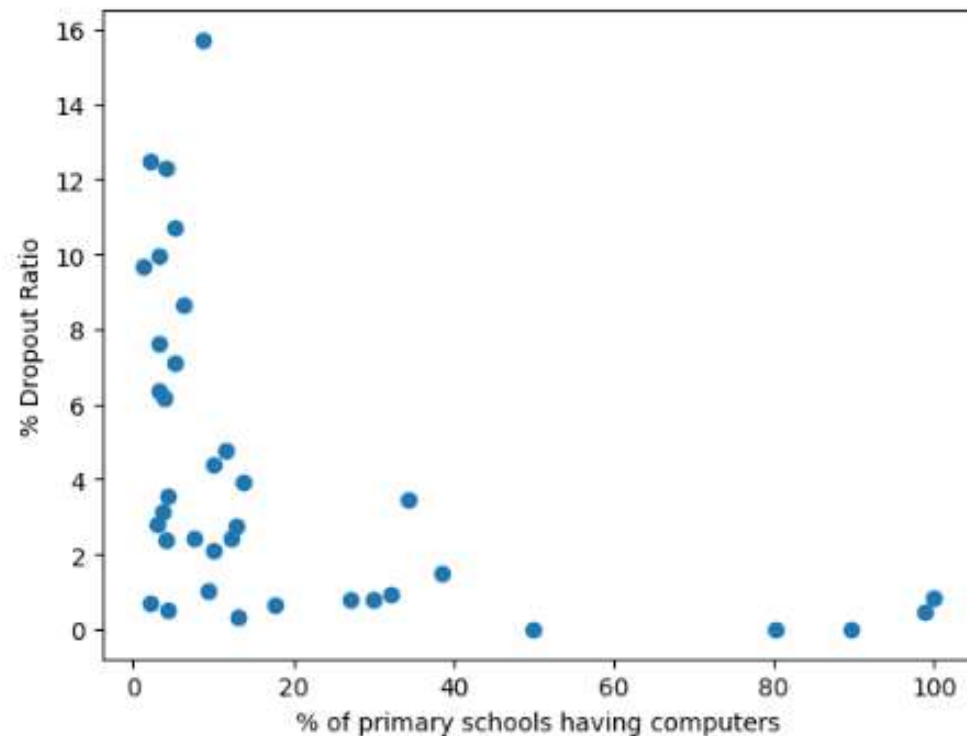


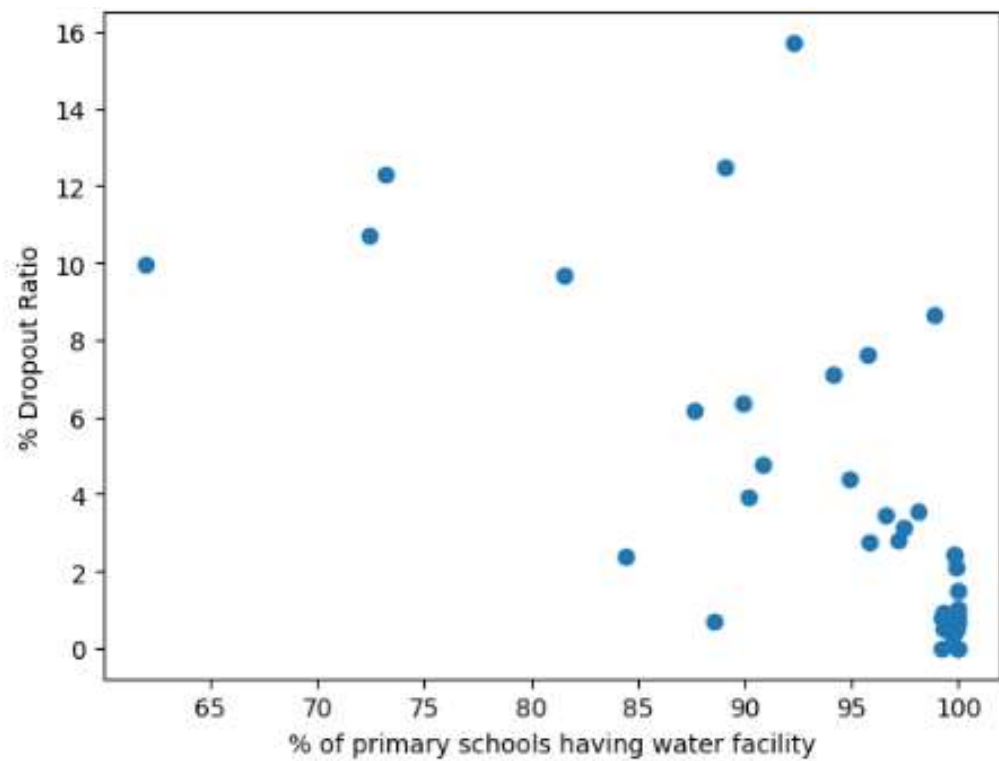




Relation of Gross Enrollment & Dropout Ratio with all other variables

- correlation as a measure is used & also scatter plot or line plot is shown

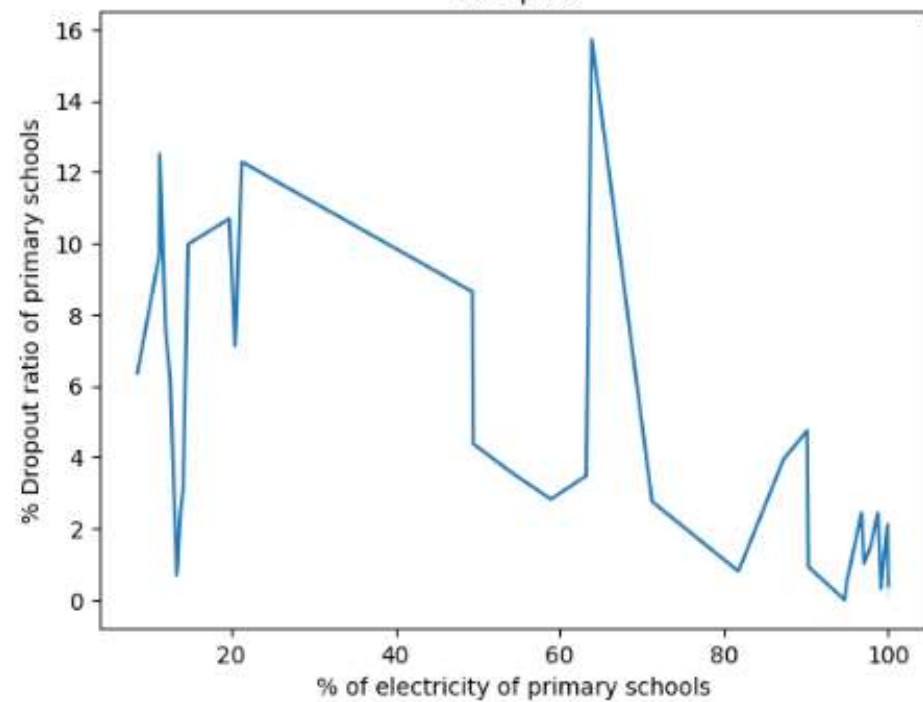


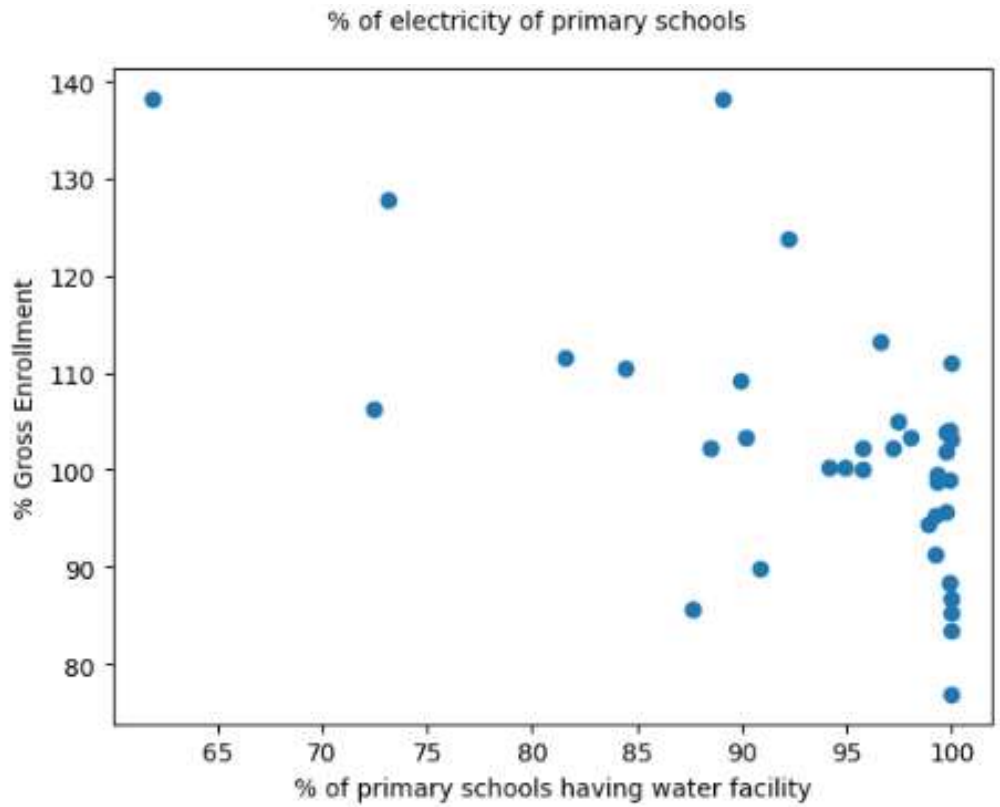


Primary_Only 1.000000
Primary_Total -0.664359

Primary_Only 1.000000
Primary_Total -0.655658
Name: Primary_Only, dtype: float64

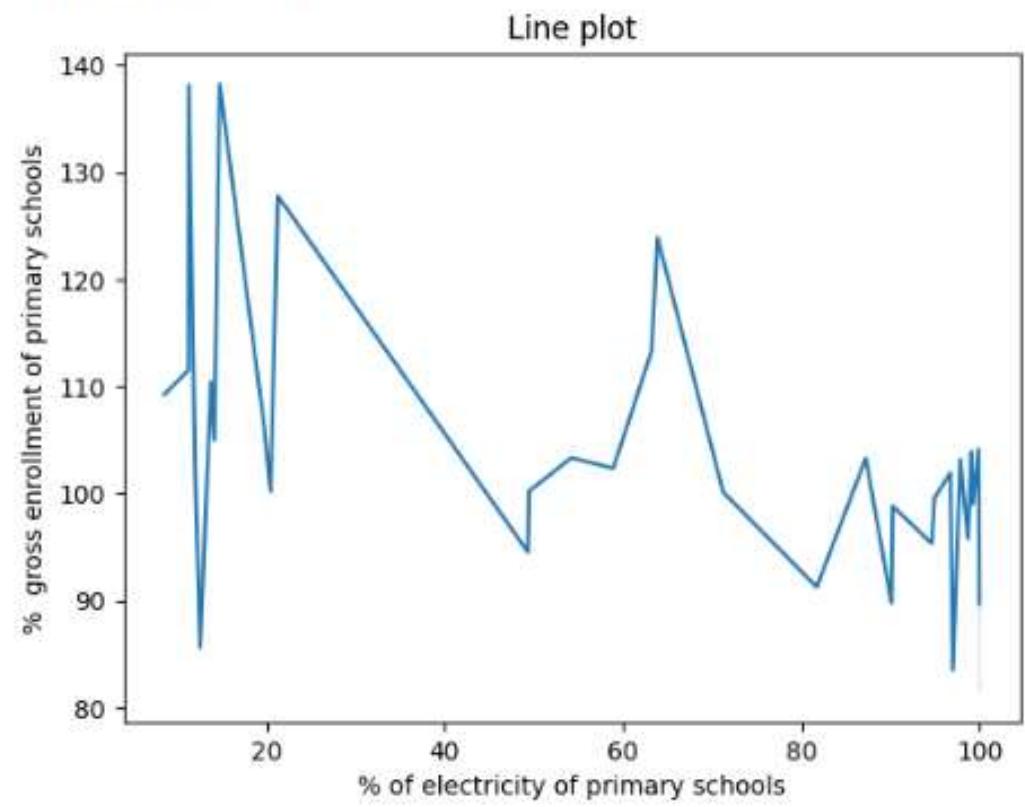
Line plot





Primary_Only 1.000000
 Primary_Total -0.618668

Primary_Only 1.000000
 Primary_Total -0.514481
 Name: Primary_Only, dtype: float64



Water facility and Electricity at different levels of schools

- For all 4 different levels of schools, water facility and electricity variation is shown using Box plot & Line plot

