ANALYZING DROP OUT RATES IN INDIA

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CMSE 201 002

BACKGROUND AND MOTIVATION

- Indian primary and secondary schools face a long surviving problem of drop-out students. With a literacy rate of about 74%, India has the largest population of illiterate adults and school drop-outs are a serious concern, especially among females, where the literacy rate stands at about only 65%.
- This project is an attempt to look at and analyze some of the factors that affect drop-out rates across Indian schools. It also looks at how these factors affect a particular sex, since there seems to be a very distinct disparity between male and female literacy rates.

This project aims to answer the following questions:

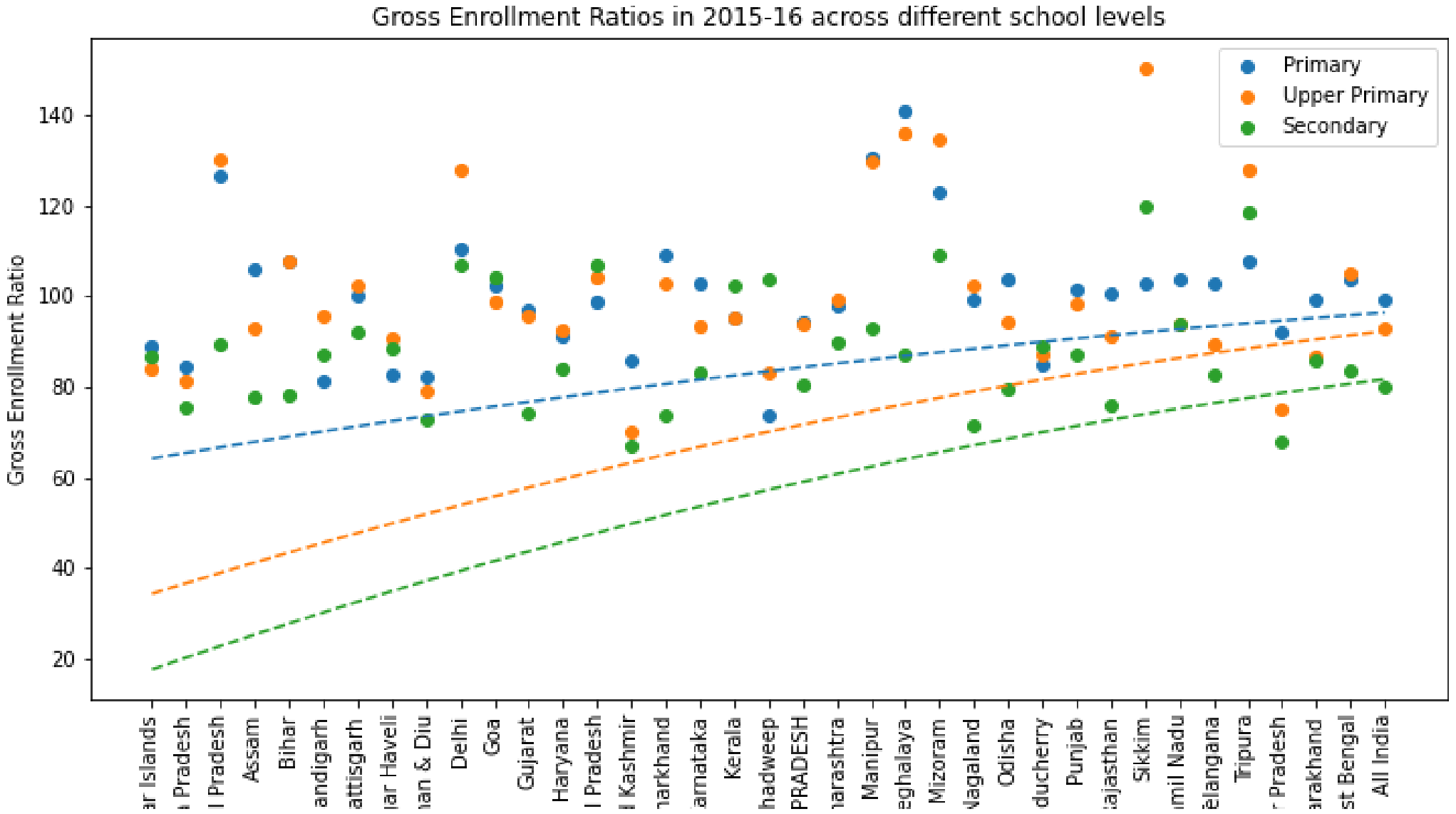
- **Which factors have a steady and significant effect on school drop-out rates and how have they changed over time?**
- **How do the drop-out rates and gross enrollment ratios vary across males and females?**

METHODOLOGY

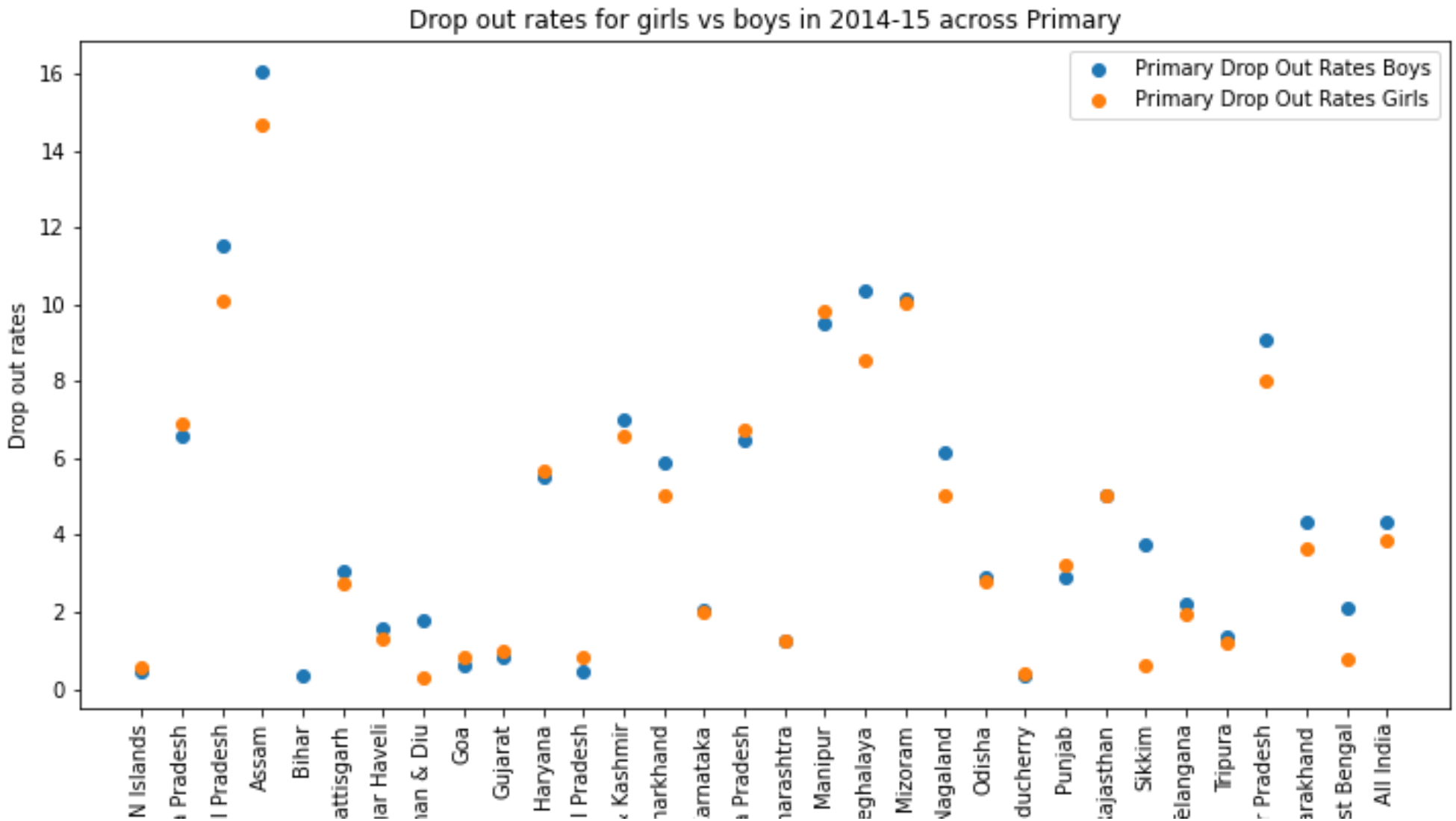
- This project uses Python with Jupyter notebooks to analyse data (in form of csv files, sourced from Kaggle.com) with the help of libraries like numpy, pandas and matplotlib
- The data was cleaned to exclude outliers and invalid data
- The gross enrolment rates and drop-out rates for different years and states for different school levels like primary, secondary and higher secondary have been compared with the help of various graphs
- The effect of different factors and their gradual change over years have been determined from the various graphs

RESULTS

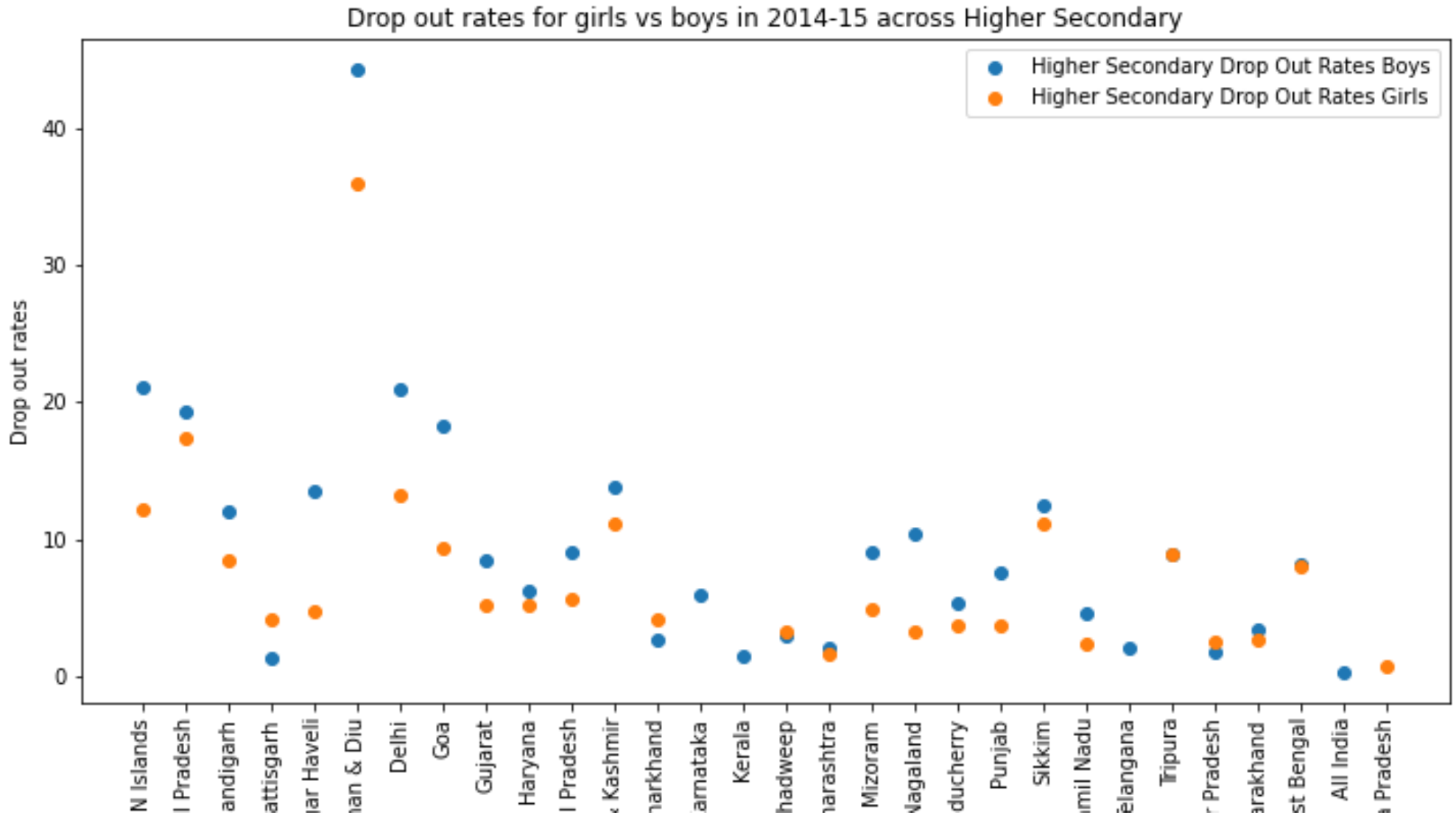
- **Gross enrolment ratios keep decreasing with increasing level of schooling**

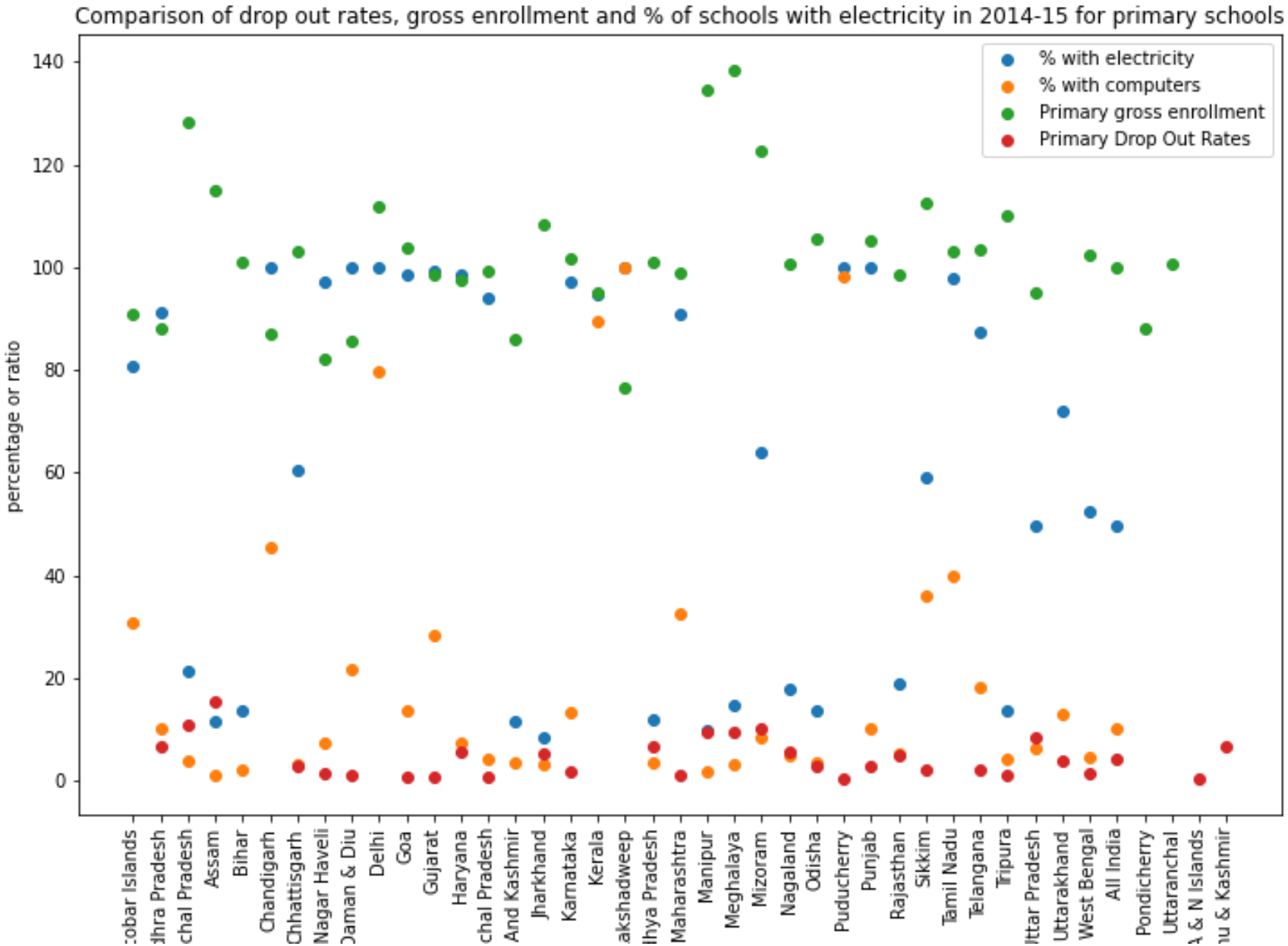


- **Drop-out rates for girls was lower by an average of 3-5% in most states at primary school level**



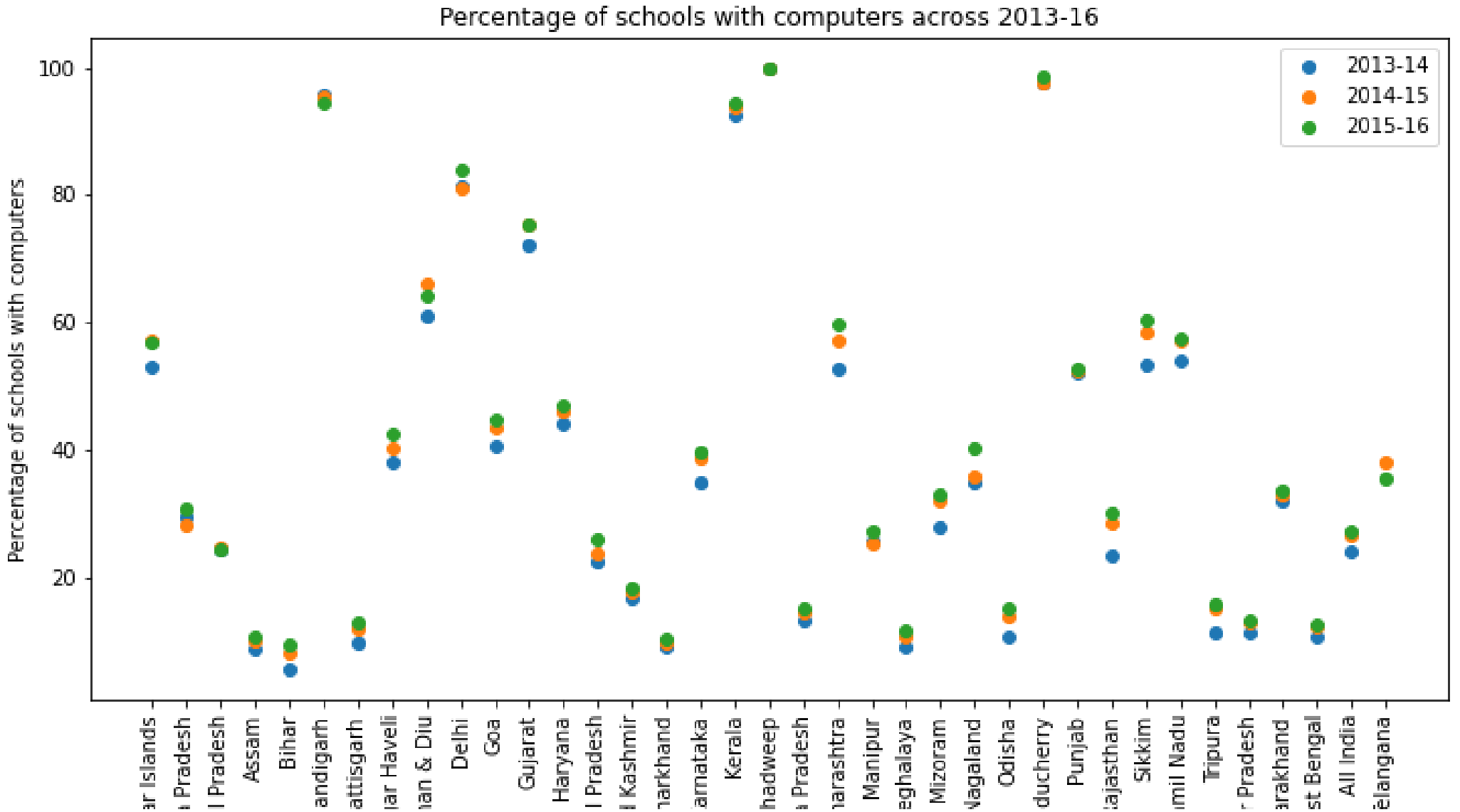
- **Drop-out rates for girls was also lower by an average of 3-5% in most states at higher secondary school level**





- **States with more % of schools with electricity have higher gross enrolment rates and/or lower drop-out rates**

- **Percentage of schools with computers had an increase of about 3-5% in almost all states**



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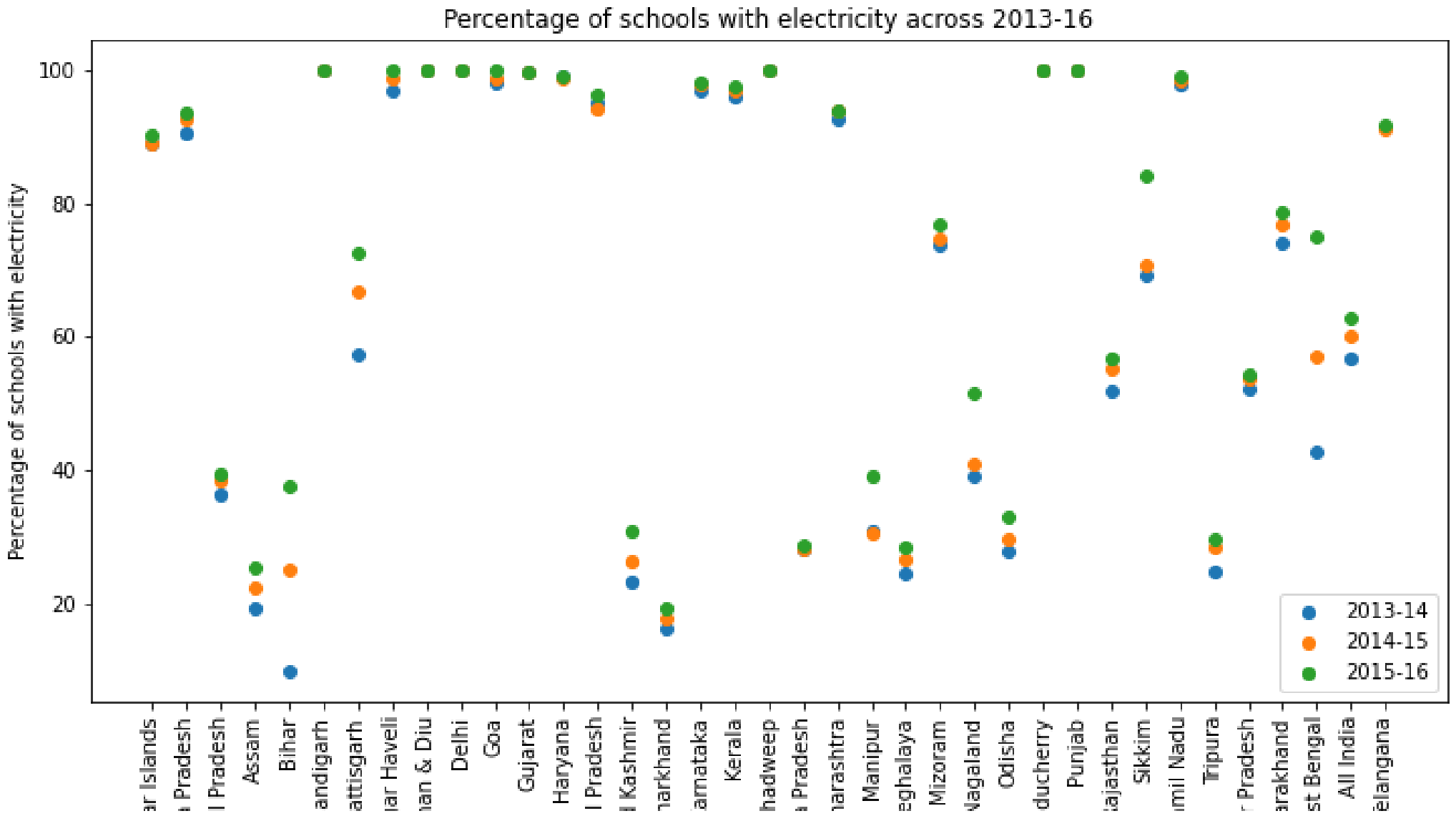

CONCLUSIONS

- Gross enrolment ratios in schools decrease with increasing school level. Thus, people progressively stop pursuing education or are less likely to start pursuing it
- Drop-out rates for girls are lower than that of boys by an average of about 3-5% in most states
- Schools having electricity and computers are likely to have better enrolment rates and less drop-out rates
- Percentage of schools with electricity and computers have been increasing over the years for most states in India, barring a few such as Jharkhand, Assam, etc that have been stagnant in this aspect (around 3-5% over the course of 3 years for most states and even as high as 15-20% in states like Bihar and West Bengal)

PROBLEMS ENCOUNTERED

Trend lines for some data could not be plotted because there is no specific pattern

Some data has been recorded as a string instead of a numeric data type which needed cleaning to be utilized

Some statistics cannot be conveniently analyzed due to lack of data for certain states

REFERENCE

- Nagar, Subham. "Dropout and Gross Enrollment Analysis." *Kaggle*, Kaggle, 7 Aug. 2020, https://www.kaggle.com/subham07/dropout-and-gross-enrollment-analysis/data.