



Education Data and Trends

Ironhack Data Analytics Bootcamp - Ceci

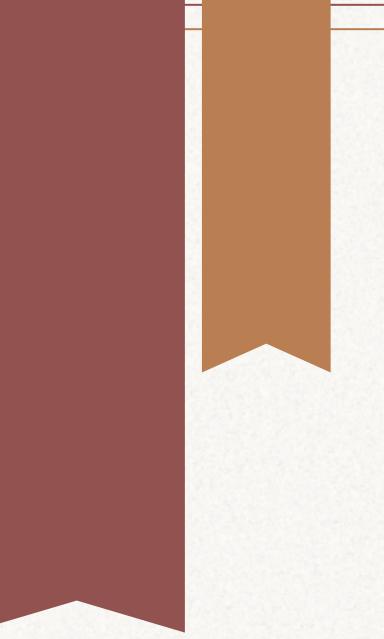




The Objective

Present a statistical analysis overview of Education and factors that influence it in diverse areas of the world is one part of this project.

Present a small machine learning model study using models learnt in class.



The Questions



- What are the observable enrollment trends?
- How does the government expenditure in education look across the world?
- Are there enough teachers? And do all of them have the minimum necessary qualifications?
- Does the Capital Expenditure in Education influence the Overall enrollment ratios?
- What policy recommendations can be made?



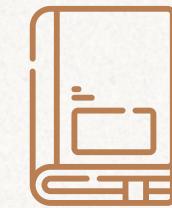
01

The Data

Where it came from and the processes it went through

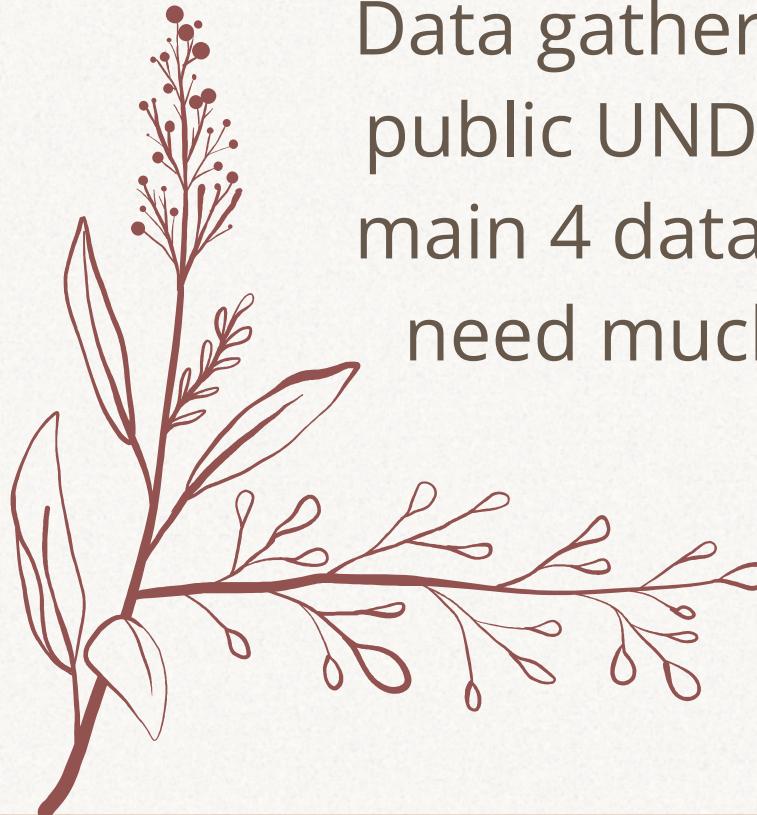


Data Handling Process



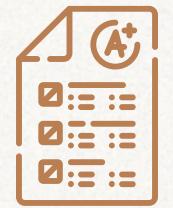
Gathering and Cleaning

Data gathered from the public UNData site, the main 4 datasets did not need much cleaning.



Handling

Data handled through normalizing columns, filling missing values and dropping non-needed columns



Filtering

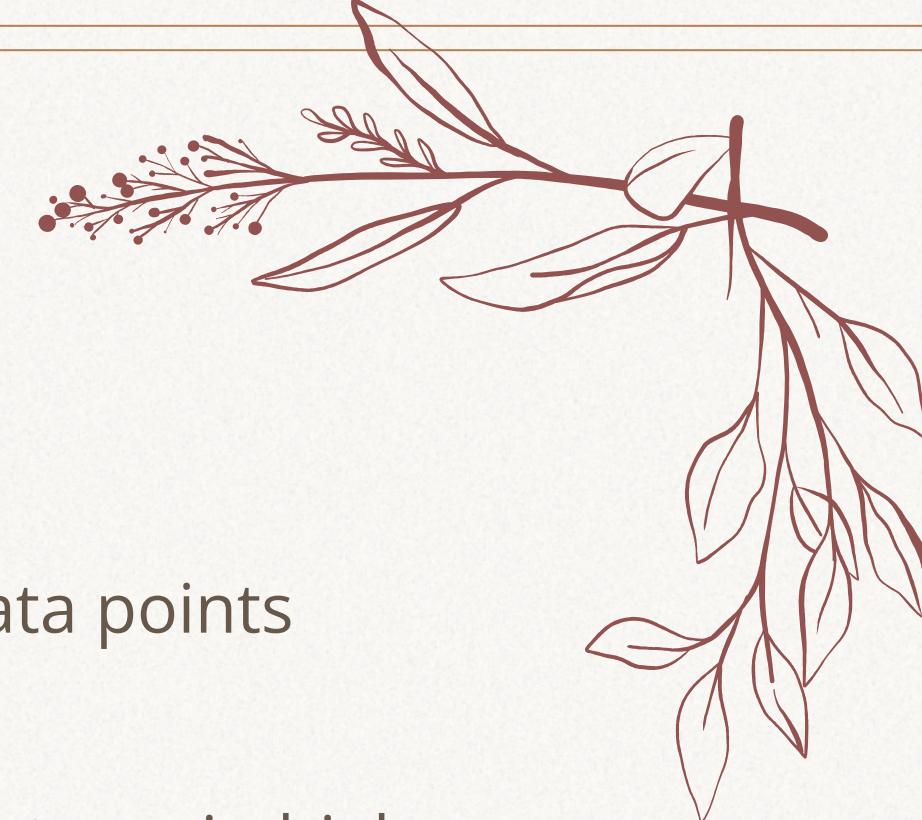
Filtered data into respective needed countries to proceed with analysis, EDA and ML testing and implementation

Caveats

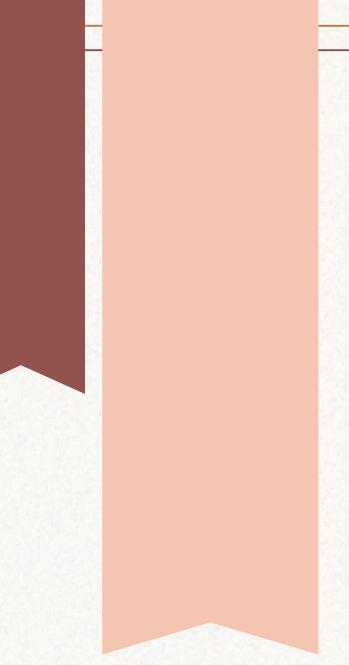
As not all the years in the Datasets were reflected for the whole list of countries being used. They were filtered in a way that kept the years that had the most amount of data for the largest number of countries.



Final Country Based Dataset



- Spans from 2005 to 2022, with most data points concentrated around the early 2010s.
- Primarily reflects stable educational systems in high-income countries, capturing trends during a dynamic period, including the effects of events like the global financial crisis.
- Mainly includes high-income countries from Europe, advanced Asian economies and the US.
- Countries like Albania, Gibraltar, Montenegro, and Moldova have fewer data points.
- Countries such as China, Russia, India, and the US appear more often.

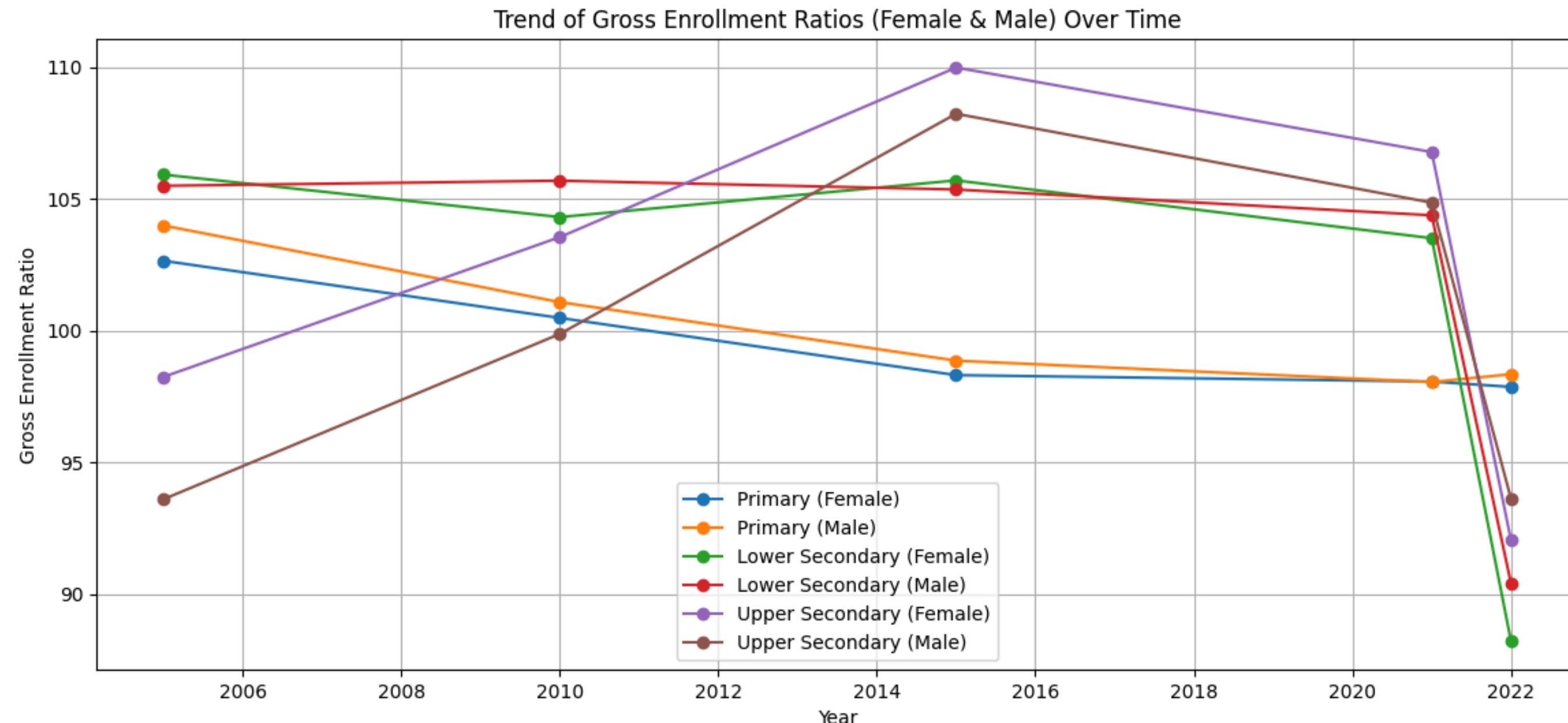


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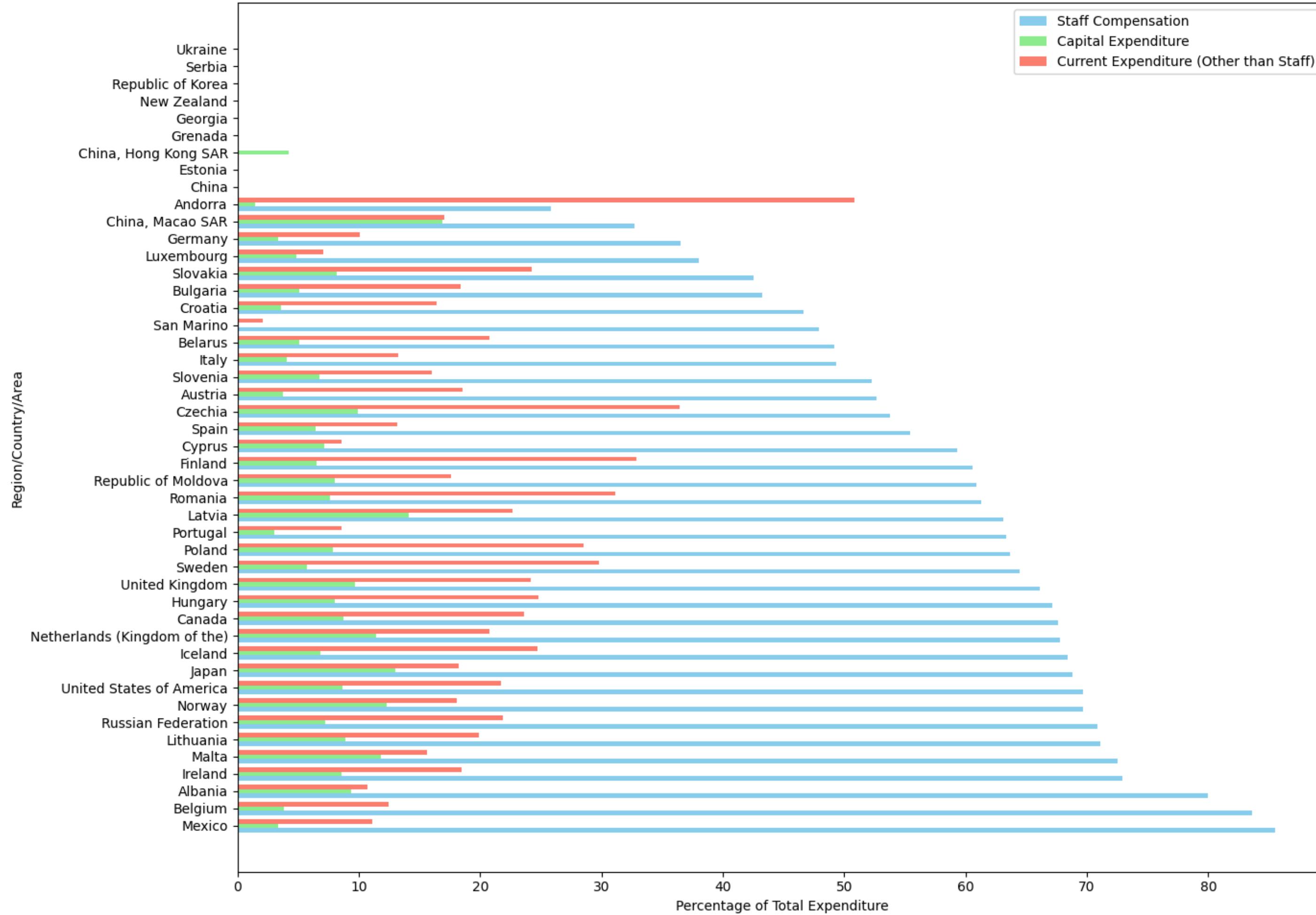
EDA

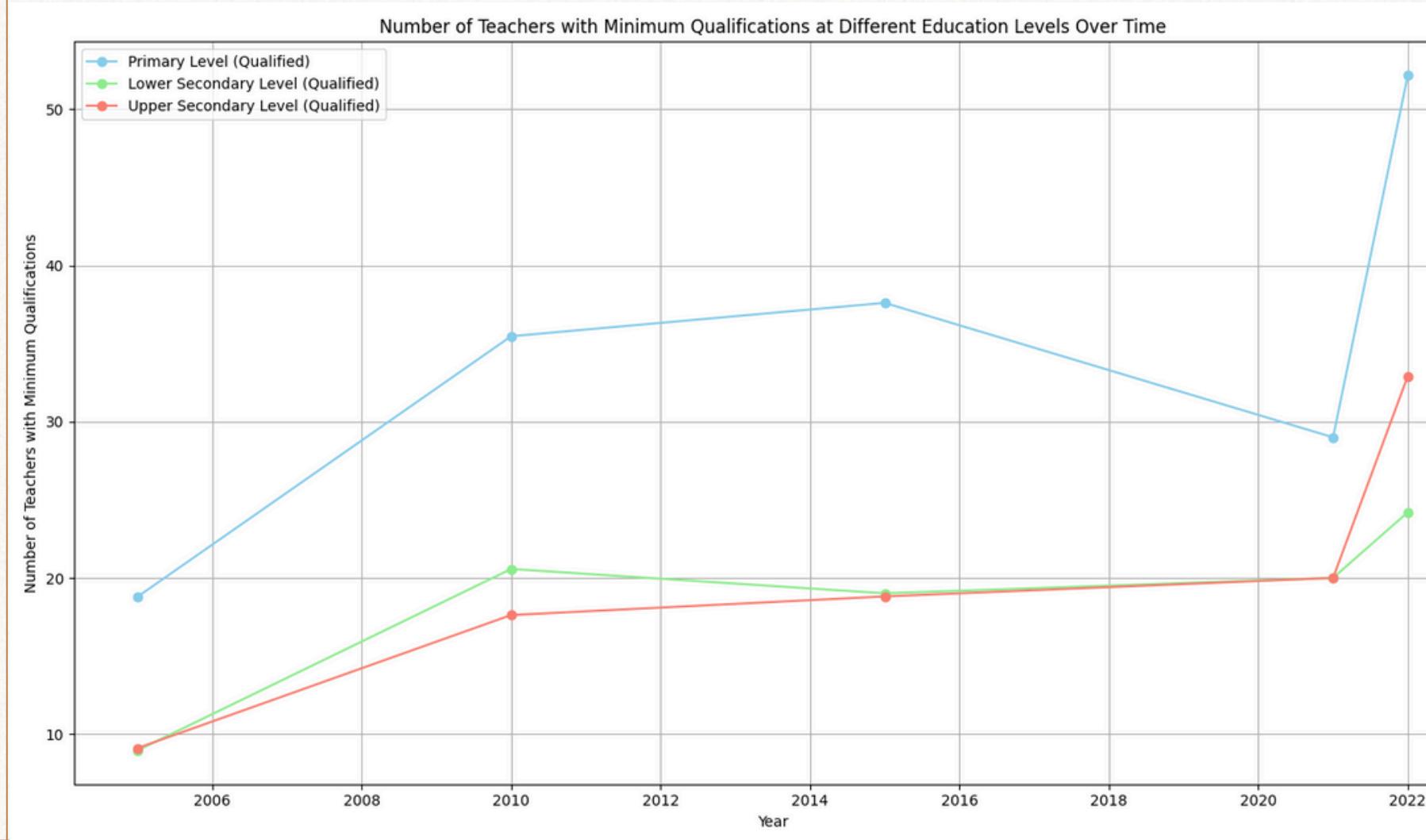
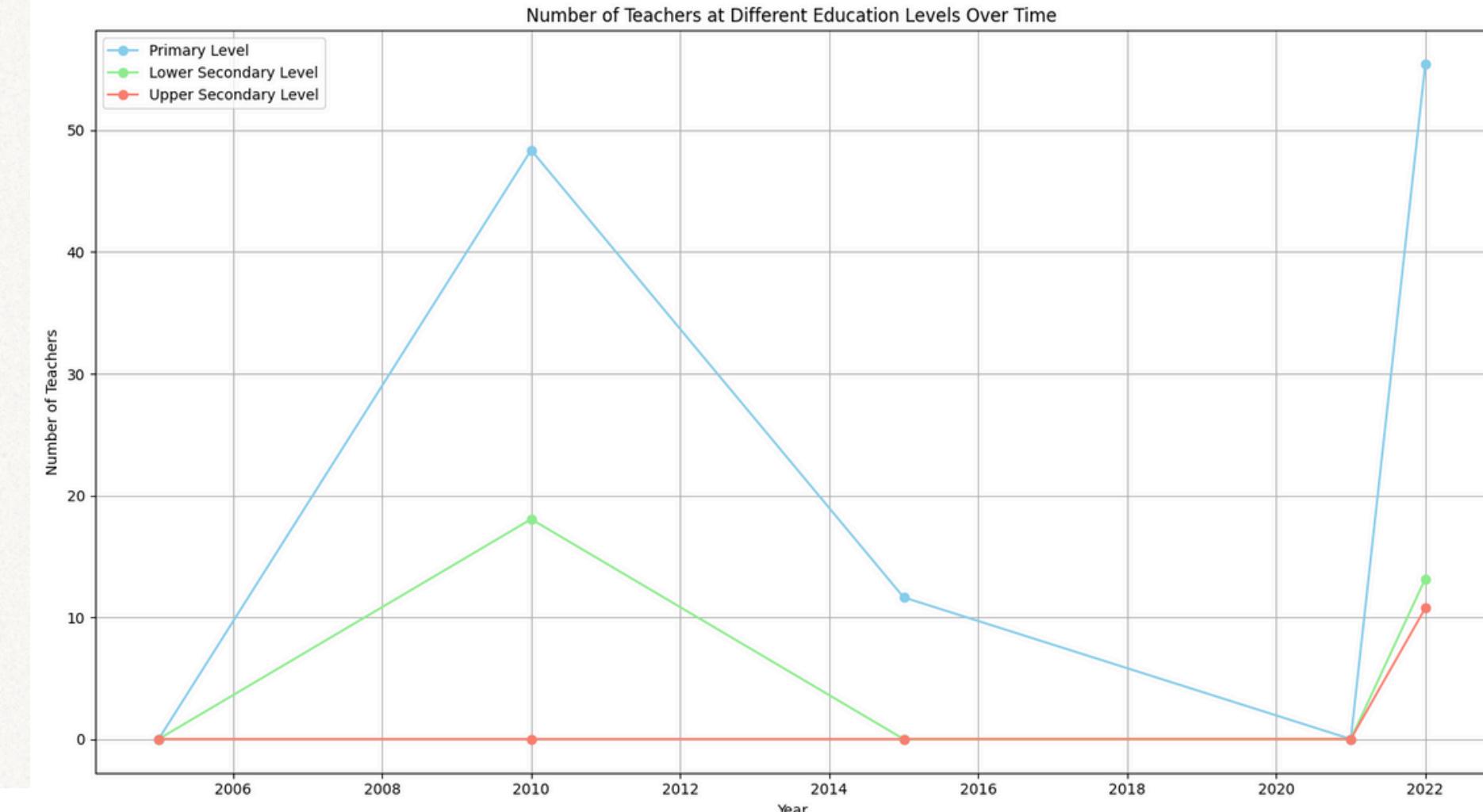
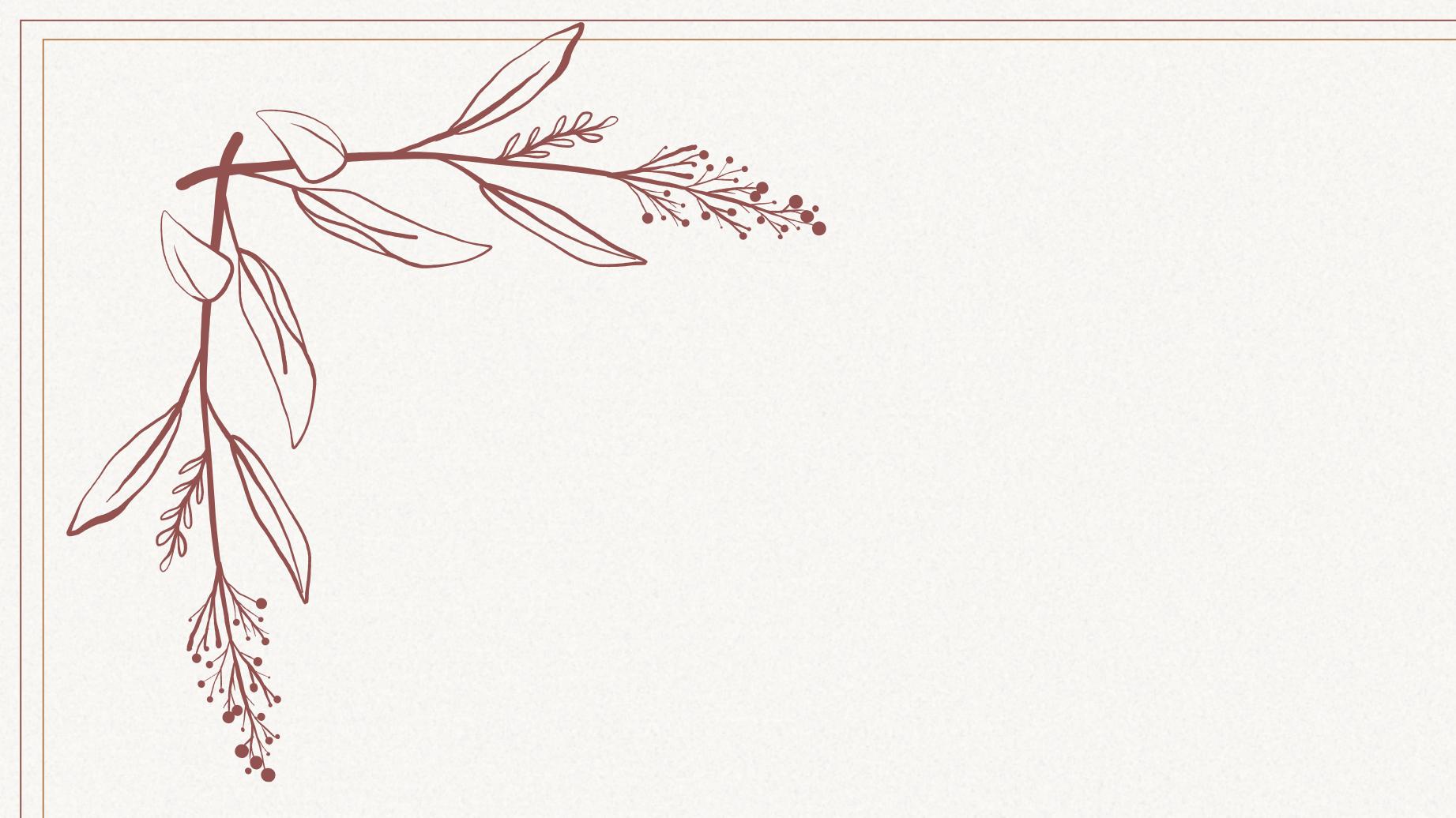


Comparing Enrollment Ratios

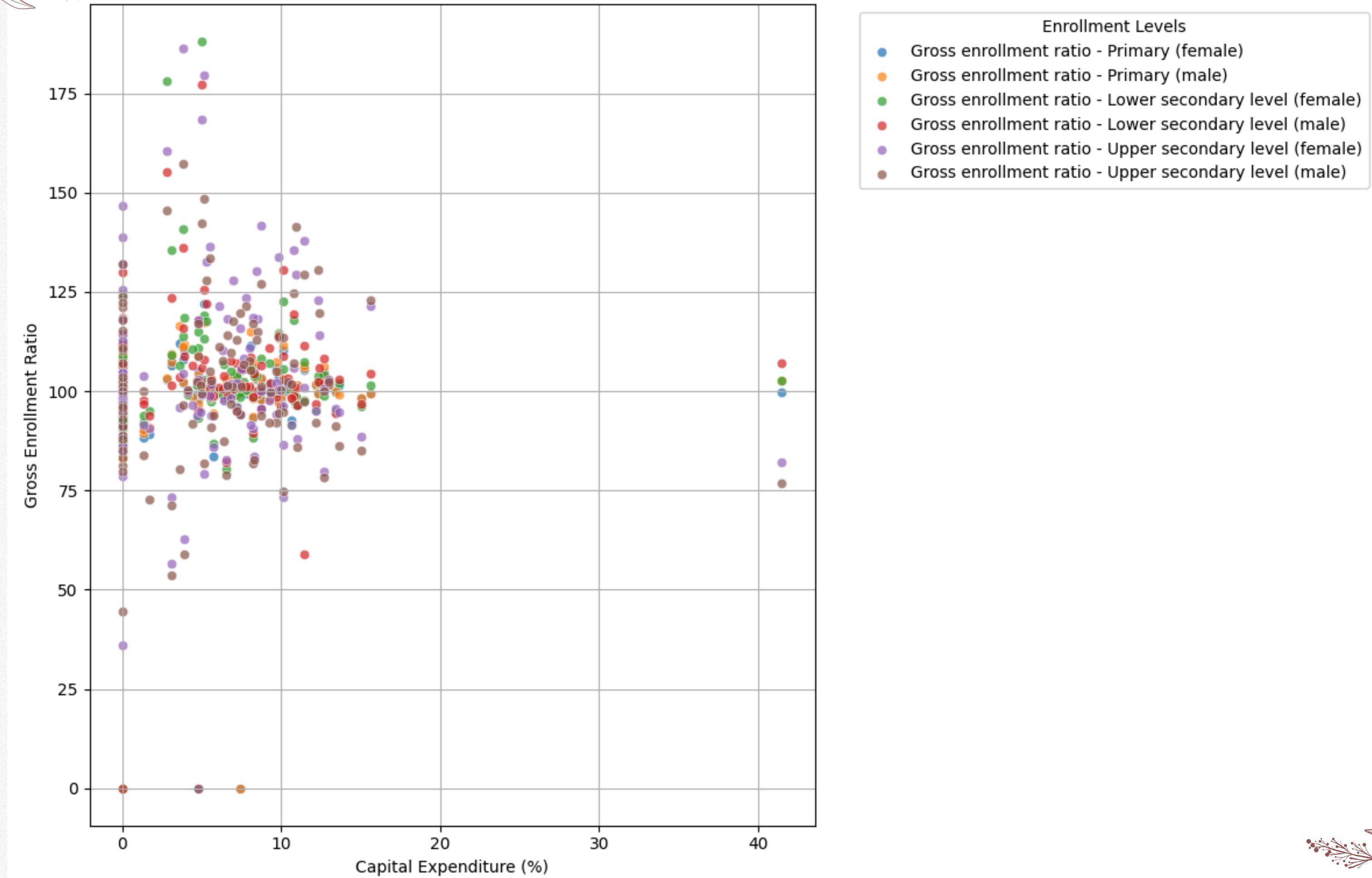


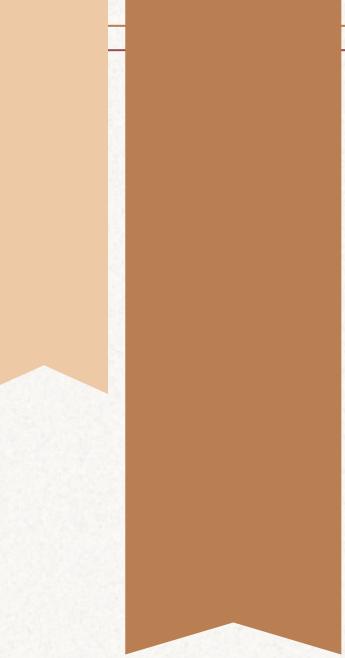
Comparison of Expenditures as % of Total Expenditure in Public Institutions





Capital Expenditure vs Gross Enrollment Ratios at Different Levels

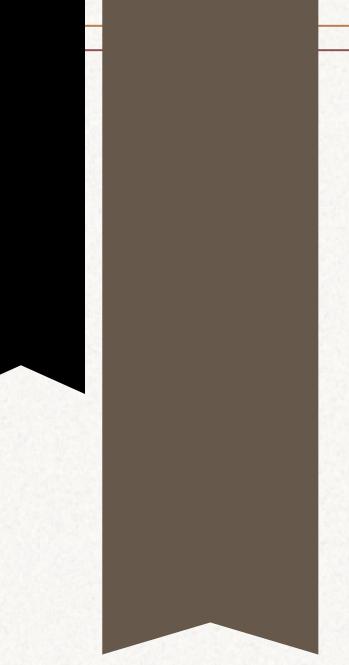




03

Machine Learning





04

Conclusions



05

Policy Recomendations



Learnings and Challenges

Finding rewards in unexpected places

Being glad when things work

Realizing I'm more capable than I think

Taking off pressure because I CAN do it - I AM DOING IT

Choosing a theme

Setting an Objective

Deciding what to keep and what to drop

Making Choices

Time Management

Pressure



Thank You!

Any questions?

Comments?

Concerns?