WORLD DEVELOPMENT INDICATORS

DATASCI 200

UNIVERSITY OF CALIFORNIA, BERKELEY

SECTION 2, 2PM PT
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AGENDA

01 BACKGROUND
- About the dataset
- Audience
- Why it matters
- Our research question

02 THE DATA PROCESS
- Data Cleaning
- Variable Selection
- Visualizations
- Challenges & Mitigations

03 RESEARCH FINDINGS
- Answers to our key questions
- Challenges & Mitigations
- Visualizations

04 CLOSING
- Conclusions
- Lessons Learned for the research & data process
- Questions
- Thank You

CONTEXT

About the Data

The World Bank is a global development organization that finds solutions to multifaceted social development issues. The indicators are a repository of key development indicators collected by internationally recognized sources to form one of the most comprehensive and accurate global development databases.

Our Research Question:

Is primary school enrollment linked to labor force participation and unemployment in low-, middle-, and high-income countries across genders?

Why it matters:

- Highlighting the Interdependence of Key Development Indicators
- Addressing Gender Disparities Across Income Levels
- Informing Policy and Program Design Through Nuanced Analysis

PREPARING THE DATA

The data process aims to reduce inconsistencies, focus on relevant trends, and create a robust foundation for meaningful insights.

Step 1

Feature selection
Selection of WDI indicators: labor force participation, unemployment, & school enrollment

Step 2

Data consolidation
Integration of updated dataset with income classification data

Step 3

Date filtration
Removal of records before 2017 to prioritize more recent years: 2017-2023

Step 4

Data completeness
Exclusion of records with < 5+ values to ensure robustness; exclusion of records with 6+ zeros

Step 5

Data transformation
Reshaping of data for flexible manipulation and aggregation

SELECTING THE VARIABLES

Education

1 | School enrollment, primary and secondary, male and female (gross %)
Why: Highest count of countries with school enrollment data

2 | School Enrollment Gender Parity Index (GPI)
Why: Initial observations & research question was more focused on the gap between genders in enrollment

Labor Force & Unemployment

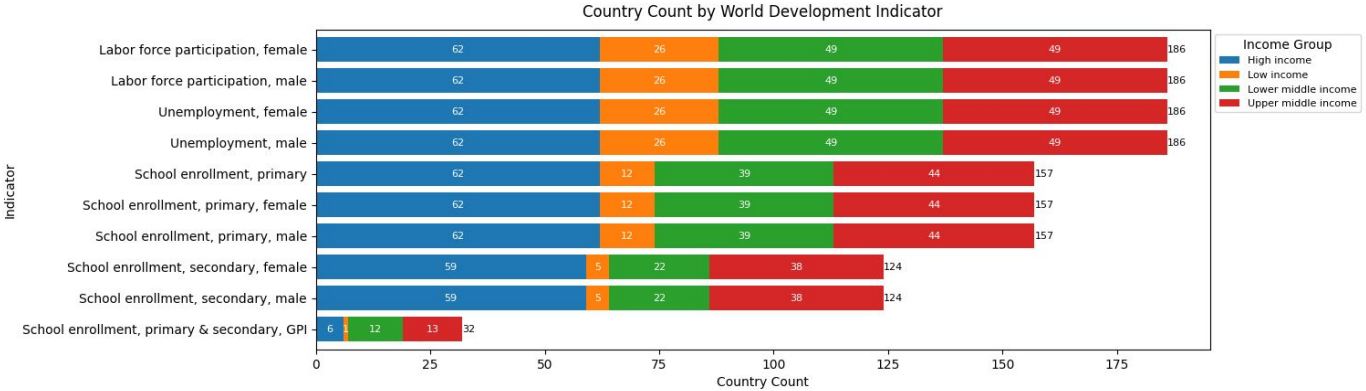
1 | Labor force participation rate, male and female (% of population ages 15+)
Why: Insights into a country's workforce and economic health

2 | Unemployment, male and female (% of labor force)
Why: To explore the intersection between unemployment and education access

Income Groupings

The World Bank's classification of economies into four income groups—low, lower-middle, upper-middle, and high income—using gross national income (GNI) per capita in USD:

- *Low:* ≤ $1,145
- *Lower-middle:* $1,146 - $4,515
- Upper-middle: $4,516 - $14,005
- High: > $14,005



EDUCATION

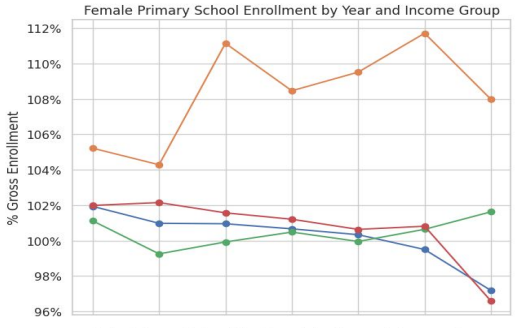
High income
Low Income
Lower Middle Income
Upper Middle Income

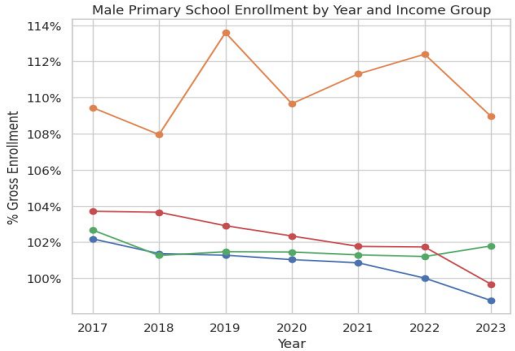
Simplified Data Process

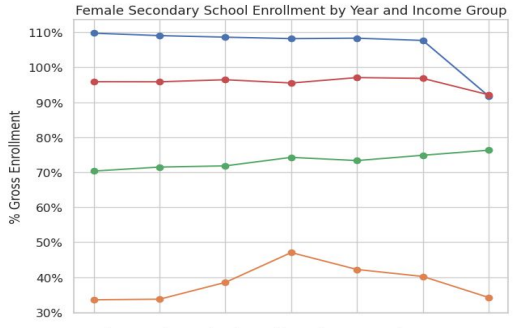
Grouped variables → Extracted Means → Plotted Data

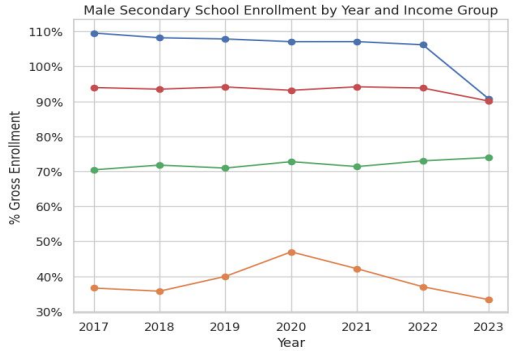
Primary & secondary school enrollment[1]

% gross, calculated as total enrollments / population of corresponding age group









Challenges: Data scarcity in school enrollment variables of interest, primarily due to limited reporting and technological access in low-income countries.

Findings

Primary school enrollment is strong in low-income countries, but secondary school rates remain low.

High income countries exhibit the highest secondary school enrollment, followed by upper middle-, lower middle-, and low.

Percentages > 100% is due to the inclusion of over-aged and under-aged students because of early or late school entrance and grade repetition.

1) Note: Ranges of y-axes differ to highlight patterns, differences, and trends.

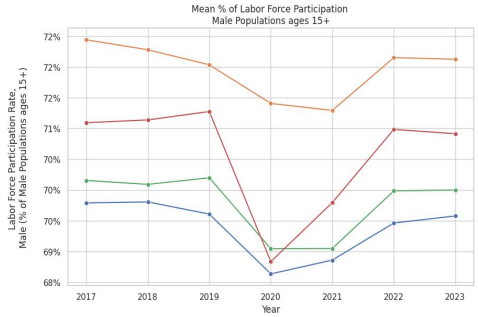
LABOR FORCE & UNEMPLOYMENT[1]

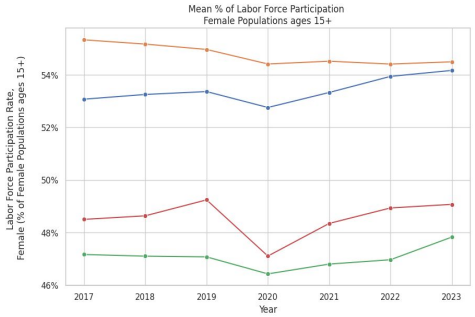
High income
Low Income
Lower Middle Income
Upper Middle Income

Simplified Data Process

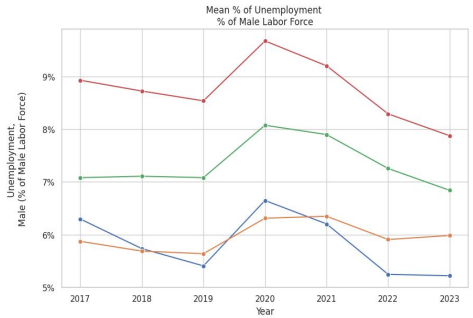
Grouped variables → Extracted Means → Plotted Data

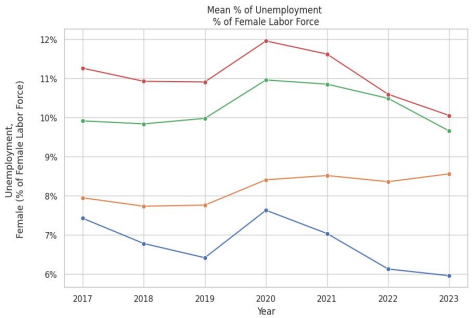
Labor Force[2]
Proportion of the population ages 15+ that is economically active who supply labor for the production of goods and services





Unemployment
Unemployment refers to the share of the labor force that is without work but available for and seeking employment.[2]





Findings

In all income country groupings, males typically have less unemployment that females

High-income countries have the lowest male labor force compared to other income groups.

Females in high-income countries represent a smaller share of the unemployed, possibly due to the requirement of "actively seeking work," which may exclude those from more privileged backgrounds

1) Note: Ranges of y-axes differ to highlight patterns, differences, and trends.
2) Definitions of labor force and unemployment differ by country.

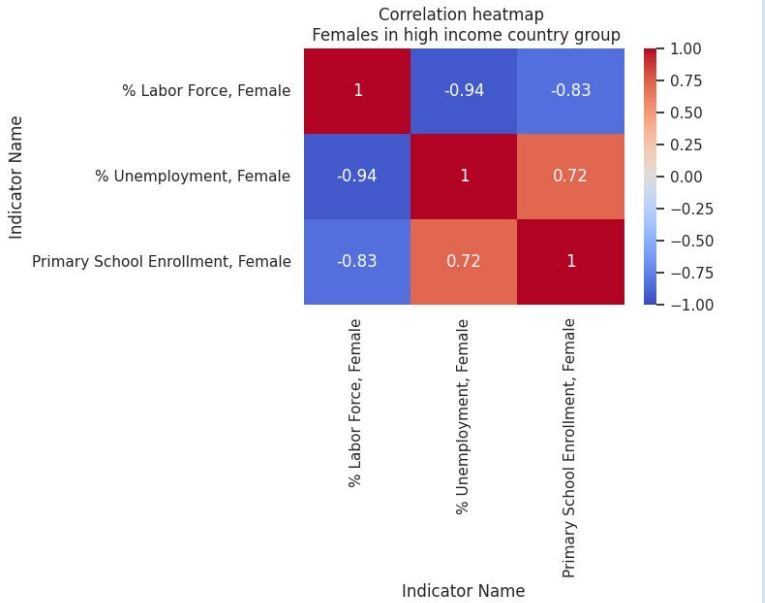
OUR RESEARCH CONCLUSIONS

Is primary school enrollment linked to labor force participation and unemployment in low-, middle-, and high-income countries across genders?

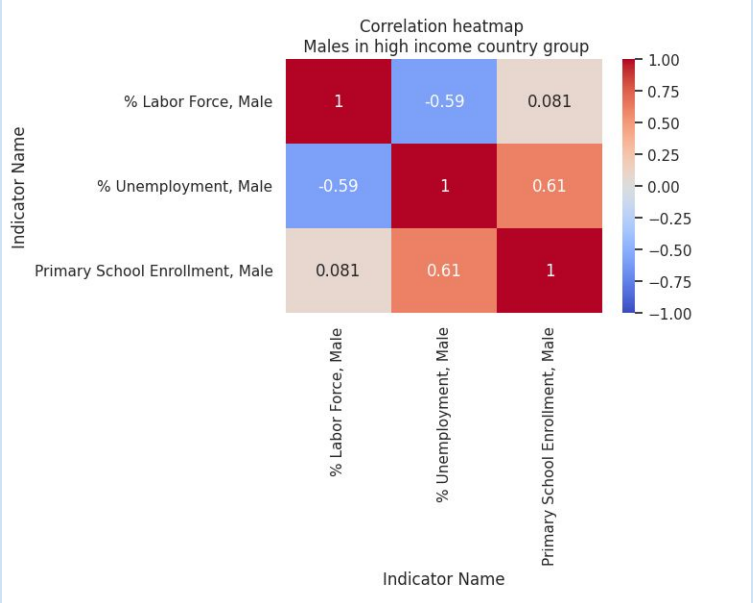
Approach: We selected the relevant variables and conducted a **correlation analysis** between male and female data, measuring the strength of their relationships (from -1 to +1) and taking the means of each of the income countries within each group.
Disclaimer: This analysis only shows correlation and is no way making causal claims on an outcome variable.

Income Group	Gender	Higher primary school enrollment in s correlated with...
High Income	Female	• Lower labor force participation • Higher unemployment
	Male	• Nearly the same labor force participation • Higher unemployment
Low Income	Female	• Lower labor force participation • Higher unemployment
	Male	• Lower (minimal) labor force participation • Nearly the same unemployment
Lower-Middle-Income	Female	• Higher labor force participation • Lower unemployment
	Male	• Higher labor force participation • Lower unemployment
Upper-Middle-Income	Female	• Lower labor force participation • Higher unemployment
	Male	• Higher labor force participation • Higher unemployment

Correlation Heatmap for Females in High Income Groups



Correlation Heatmap for Males in High Income Groups



OUR RESEARCH CONCLUSIONS

Conclusion: *The relationship between primary school enrollment and labor force participation varies by income level, with higher enrollment linked to higher unemployment for upper-middle and high income groups for both males and females. The relationship between enrollment and labor force participation is negative for most female groups and neutral to positive for most male groups. School enrollment generally has a stronger correlation with labor force participation for females than males, regardless of direction. These trends highlight the complex interaction between education, labor markets, and economic development across different income groups.*

LESSONS LEARNED

On data cleaning	• Handling empty data through filtering and dropping • Reshaped data to simplify trend analysis over time • Ensured timeliness and data validity through date filtration
On variable selection	• Observed data availability by examining value counts upfront • Considered practical applications of variable examination
On defining our research	• Think big first, then scope down • Refine research question after selecting variables
On visualizations	• Consider readability for the audience • Simplify axes and titles • Standardize colors to reinforce consistency

QUESTIONS

SECTION 2, 2PM PT:
JORDAN ANDERSEN, COURTNEY CHEN, MAIA KENNEDY

An International Perspective on Primary Education, Gender, and the Labor Market

University of California, Berkeley | DATASCI 200
Jordan Andersen, Courtney Chen, Maia Kennedy
Github repository: https://github.com/UC-Berkeley-I-School/Project2_Andersen_Chen_Kennedy

Abstract
Our study explores data from the World Bank's World Development Indicators[1] on Social Development to uncover relationships between primary education and the labor market on an international scale. Specifically, our analysis explores whether primary school enrollment is linked to labor force participation and unemployment between genders across countries in different income groups. We leveraged primary school enrollment data (gross %), labor force participation rates, and unemployment proportions over 7 years to compare with country income groups collected from a supplemental World Bank data repository.[2]

Our study reveals a complex interaction between primary school enrollment and labor market data across genders in all country income groups. For females, the correlation between school enrollment and labor force participation is generally negative, while for males it is neutral to positive. Overall, the relationships between the variables is stronger for females than for males, regardless of direction. However, countries in the lower-middle-income group show the same correlation directions for both genders in all three variables, where primary school enrollment is positively correlated with higher labor force participation and lower unemployment. For upper-middle and high-income groups, higher enrollment is linked to higher unemployment. It is essential to note that these findings do not imply causation.

This report expands on some key findings within each of our variable indicators and their results by providing context on the background and intended audience. It details our steps for data preparation and cleaning and features explorative analysis on each variable indicator. The study concludes with key takeaways on the research question, as well as lessons learned in the process and considerations for future research.

Context & Background

The World Bank is a global development organization that finds solutions to multifaceted social development issues. The indicators are a repository of key development indicators collected by internationally recognized sources to form one of the most comprehensive and accurate global development databases. This project investigates the connections between two critical development indicators tracked by the World Bank: school enrollment rates and labor force participation. With our analysis, we aim to answer the question:

Is primary school enrollment linked to labor force participation and unemployment in low-, middle-, and high-income countries across genders?

These indicators serve as fundamental benchmarks for understanding economic development and social progress across nations. Education is widely regarded as a key driver of economic mobility and social equity, while labor force participation reflects the health and inclusivity of a country's economy.

[1] https://www.google.com/url?q=https://databank.worldbank.org/data/download/WDI_CSV.zip&sa=D&source=docs&ust=1733992545635313&usg=AOvVaw0A9ZOrTZiIf9w0GzJSbxk_1
[2] https://datacatalogapi.worldbank.org/ddhxext/ResourceDownload?resource_unique_id=DR0090755

The motivation for this analysis stems from the recognition that these factors are often studied in isolation, despite their potential interdependence. For example, higher school enrollment rates may lead to a more skilled labor force, while greater labor market opportunities can incentivize families to invest in education. By examining these links, this project aims to uncover patterns that could begin to inform policy and program design efforts.
Additionally, income classification data from the World Bank was used to categorize countries into four groups based on gross national income (GNI) per capita in USD: low-income (≤ $1,145), lower-middle-income ($1,146 - $4,515), upper-middle-income ($4,516 - $14,005), and high-income (> $14,005). This stratification enables a nuanced analysis that considers the economic context of each country, providing insights that are globally relevant.

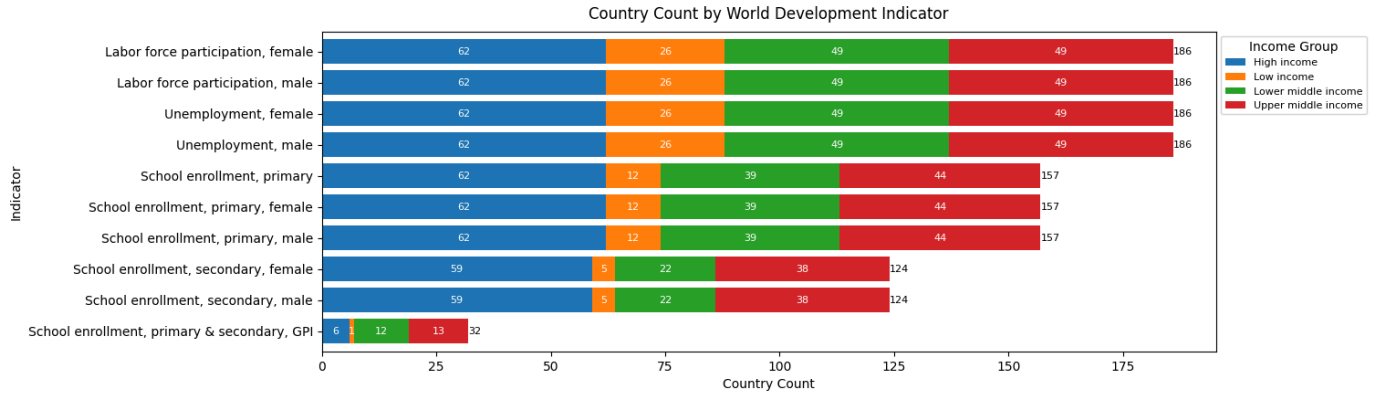
Intended Audience
Institutions like the World Bank, International Monetary Fund, or regional development banks could leverage these insights to design and fund projects that bridge the gap between educational attainment and labor market readiness. This analysis could also serve as the foundation for pitching new initiatives that holistically address both areas, challenging the traditional focus on isolated interventions.
Additionally, the results of these insights could encourage larger organizations, such as the World Bank, to work with **o**n-the-ground organizations working to improve education access and employment opportunities.

Data Cleaning
Effective data cleaning is crucial to ensure the reliability and accuracy of an analysis, particularly when working with large, diverse datasets like the World Development Indicators. By systematically refining the dataset, we aimed to eliminate inconsistencies, focus on relevant trends, and create a robust foundation for meaningful insights. The original World Development Indicators dataset spans from 1960 to 2023, with entries organized by country and feature. To tailor the analysis, we filtered the data to include only rows corresponding to our 10 features of interest:

- School enrollment, primary (% gross)
- School enrollment, primary, female (% gross)
- School enrollment, primary, male (% gross)
- School enrollment, primary and secondary (gross), gender parity index (GPI)
- School enrollment, secondary, female (% gross)
- School enrollment, secondary, male (% gross)
- Labor force participation rate, female (% of female population ages 15+)
- Labor force participation rate, male (% of male population ages 15+)
- Unemployment, female (% of female labor force)
- Unemployment, male (% of male labor force)

Next, we merged this refined dataset with a separate income classification dataset, excluding countries absent from either dataset. To focus on recent trends, we narrowed the timeframe to the years 2017–2023, discarding earlier entries. To ensure completeness of the data, we retained only rows with at least five data points per country and feature across the selected years. During further exploration, we identified rows with numerous zero values, likely indicating incomplete data or reporting inconsistencies. To address this, we excluded rows with six or more zero

entries. Then, we reshaped the data by "melting" it, consolidating the multiple year-specific columns into a single column representing years, and moving the corresponding values into a new column. This transformation simplifies the data structure, making it easier to analyze trends over time. After filtering based on an empty value condition and reshaping, we dropped rows containing missing values. The resulting number of countries represented for each feature is summarized below:



As seen in the visualization, labor force participation and unemployment are fairly sufficient, containing 186 countries out of the total 193 UN-recognized countries. In contrast, the school enrollment variables exhibit greater data limitations, particularly among low- and lower-middle-income countries, reflecting challenges in data collection and reporting in these regions.

Research Findings by Indicator

School Enrollment

We observed several primary school enrollment variables for 157 unique countries.

Assumptions:

- The average enrollment ages for primary school are between 7-12 years old.
- The gross enrollment % includes all children enrolled in either primary or secondary school, regardless of whether their age fits within the average enrollment age. Since the % is a ratio of enrollees to the total population of that age group, there may be percents over 100 due to children outside of the age group being counted in the enrollees number.

Limitations:

- Data is not separated by age of the students.
- GPI indicator lacks sufficient reporting from countries for a robust analysis.
- Data is not inclusive of families who may send their children out of the country for educational purposes.

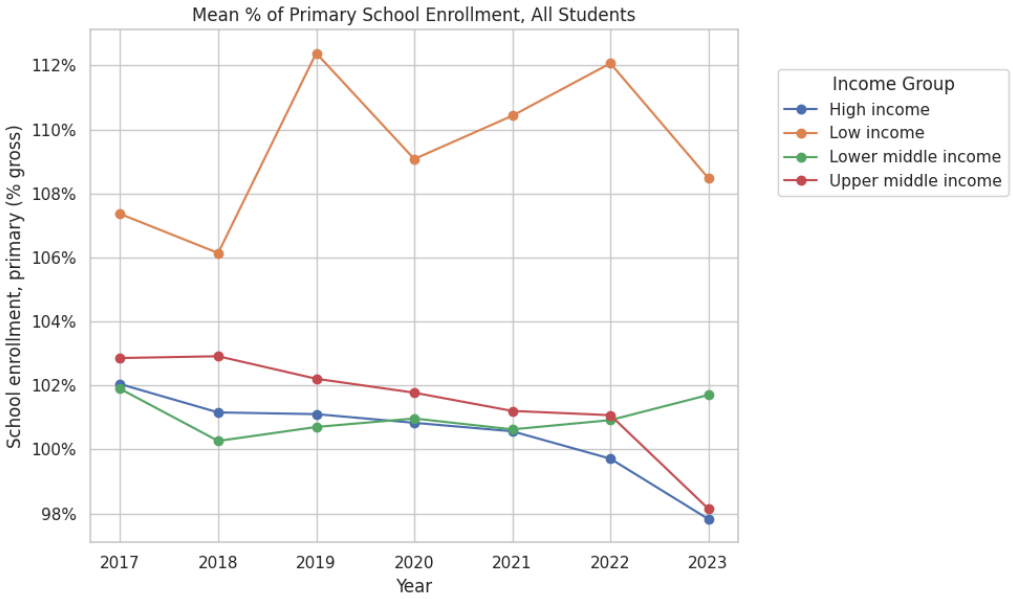
Primary School Enrollment, Gender Parity Index (GPI): The ratio of girls to boys enrolled at primary and secondary levels in public and private schools.

At first we began analyzing the Gender Parity Index for school enrollment. This index is a ratio to measure the relative access to education for each group (female gross enrollment / male gross enrollment). Upon our analysis, we found that the data had an insufficient number of countries

represented in order to do the robust analysis we were looking for. Because of this, we moved on to using Primary School Enrollment (gross %) indicators, which will be further explained below. For a summary on the Gender Parity Index analysis, please see Appendix A.

Primary School Enrollment (gross %): The gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to primary school education.

Taking our learnings from the GPI analysis, we then began our analysis of Primary School Enrollment (gross %). This is defined as the ratio of total enrollments to the population of the primary school age group. First, we regrouped the data to see how many countries were represented in each income group. We found that the year 2023 contained the most NaN values, with 57 total countries showing no data for the year. This could be due to many reasons, one of which may be that the countries report to the World Bank on different schedules, leading to discrepancies in the timeline of data collection.

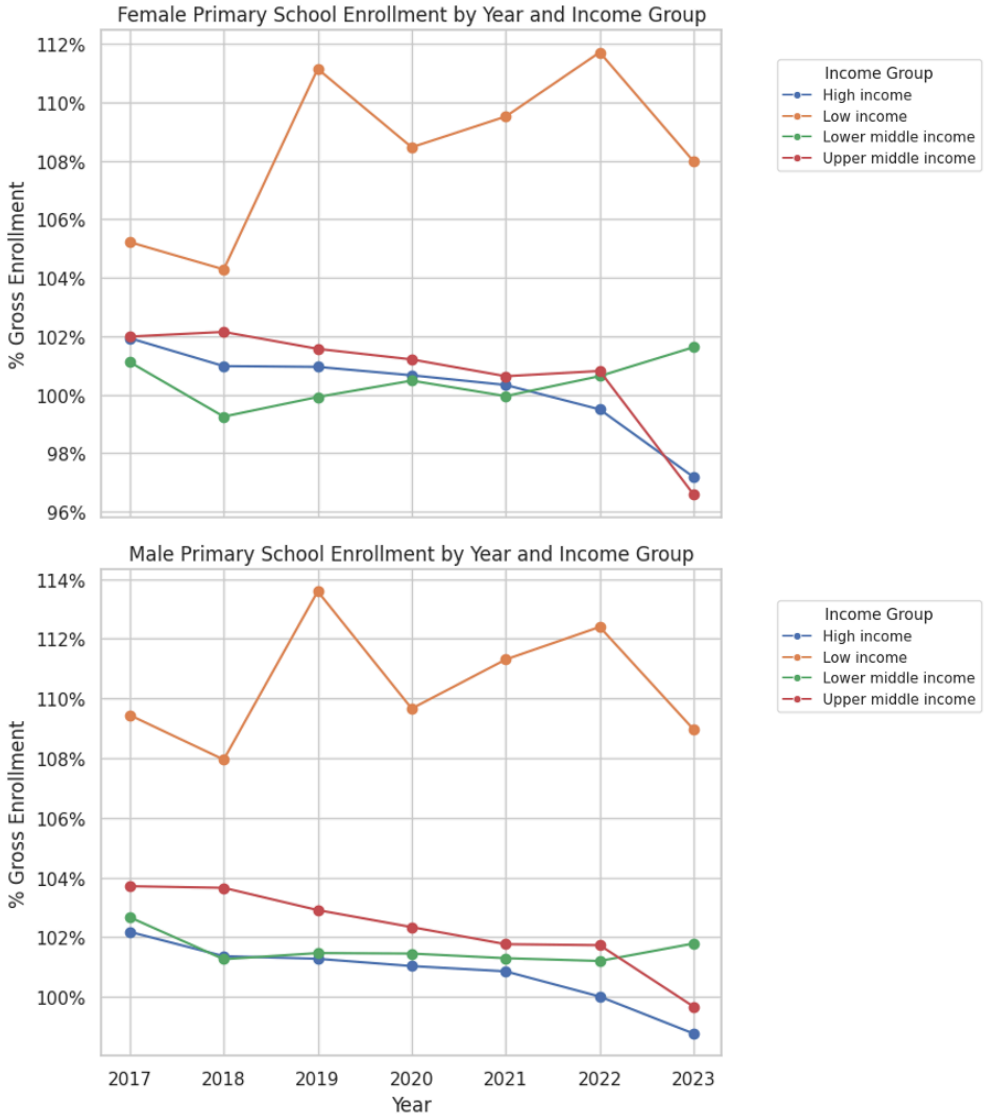


In our analysis, we found that high, upper middle and lower middle income groups all seem to consistently hover around 100% enrollment with a drop in 2023 due to missing data entries. It's interesting that low-income groups show a much higher rate of enrollment, however they also experience much more extreme variability. Because the gross enrollment percentage includes all children enrolled in a primary school, regardless of whether or not they should technically be aged out (either too young or too old) this chart shows us that there may be less consistency in lower income countries with how primary age children are moved throughout the school system based on age. Compared to other income groups, there seems to be a much larger group of children who are enrolled in primary school, but do not necessarily fall into the primary school age group within the low-income group.

Primary School Enrollment, Females and Males, (gross %): The gross enrollment ratio of females and males is the ratio of total enrollment for each gender, regardless of age, to the population of the age group that officially corresponds to primary school education.

Similar to the overall mean primary school enrollment feature, we observed 157 total countries, with the same distribution of low-, lower-middle-, upper-middle-, and high-income countries for

both male and female variables. Before aggregation, female primary school enrollment ranges from 27% - 162%, while male primary school enrollment ranges from 70% - 154%. The average male primary school enrollment is roughly 102.3%, while the average female primary school enrollment is 101.2%. Note that the y-axes ranges vary for a more detailed view of trends.



Our findings show that male and female enrollment follow similar trends. Male and female enrollment in low-income countries spike in 2019 and 2022. Enrollment across all other income groups is significantly more aligned, with high-income and upper middle income groups reflecting a similar gradual decline. Enrollment in lower middle income countries surpasses enrollment in the upper middle income countries in 2022 for both male and female groups. In general, primary school enrollment is still generally very high across income groups, with many values exceeding 100%, suggesting the enrollment of over- and under-age students.

Secondary School Enrollment, Females and Males, (gross %): The gross enrollment ratio is the ratio of total enrollment for females and males, regardless of age, to the population of the age group that officially corresponds to secondary school education.
Additionally, we explored secondary enrollment over time for females and males, by income group. Since we focused on primary school enrollment for our correlation analysis, further information on secondary school enrollment trends over time can be found in Appendix B.

Employment Variables

We observed labor force participation rates and unemployment rates for both male and female populations for the available 186 unique countries we have income category data on.

Assumptions:

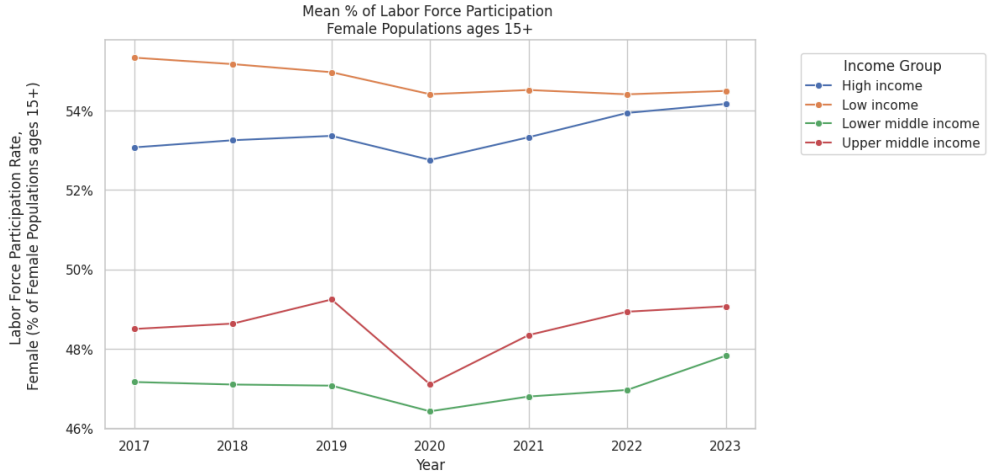
- Definition of labor force and unemployment may vary slightly country by country
- Labor force suggests only 'legal' work, not under-the-table or grey areas

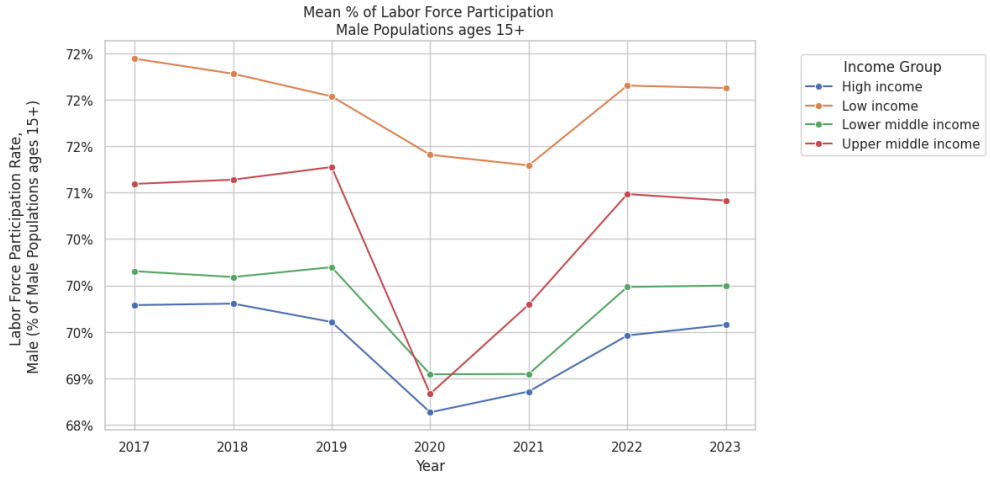
Limitations:

- Lack of data on occupation for labor force participation
- Lack of additional social variables that may influence unemployment
- Generalization across countries for income groupings, not accounting for segments within a country who are high, low or middle income

Labor Force Participation, Females and Males (% of Female and Male Populations ages 15+): Proportion of the population age 15+ that is economically active, who supply labor for the production of goods and services during a specified period
To understand this variable over time, we investigated the mean of male and female labor force participation, aggregated by year and income group. Overall, males make up more of the labor force across countries from all income groups, compared to females. In both males and females, the low-income country grouping leads in labor force participation. However, when considering high-income countries, females are second and close to first in labor force participation, compared to other countries' income groups. For males in high-income countries, they make up the least of labor force participation, compared to the other countries.

Figure 3: Female and Male Labor Force Participation by Year and Income Group

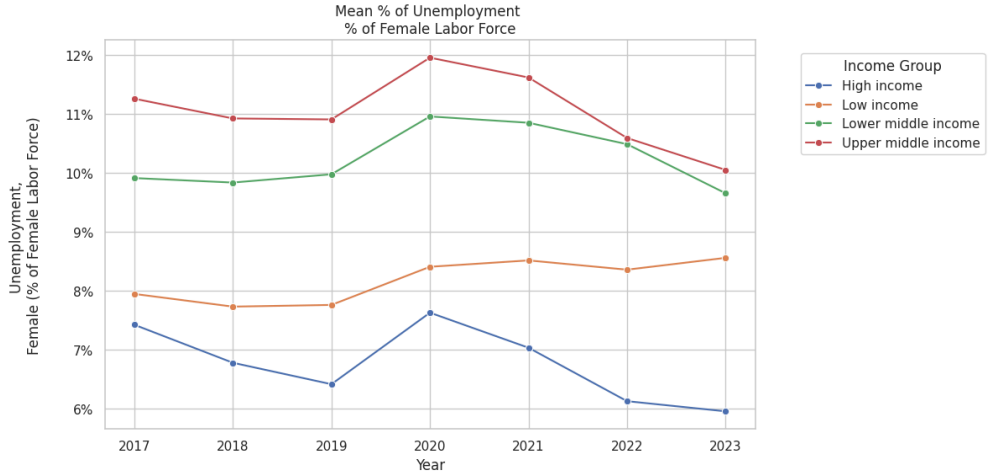


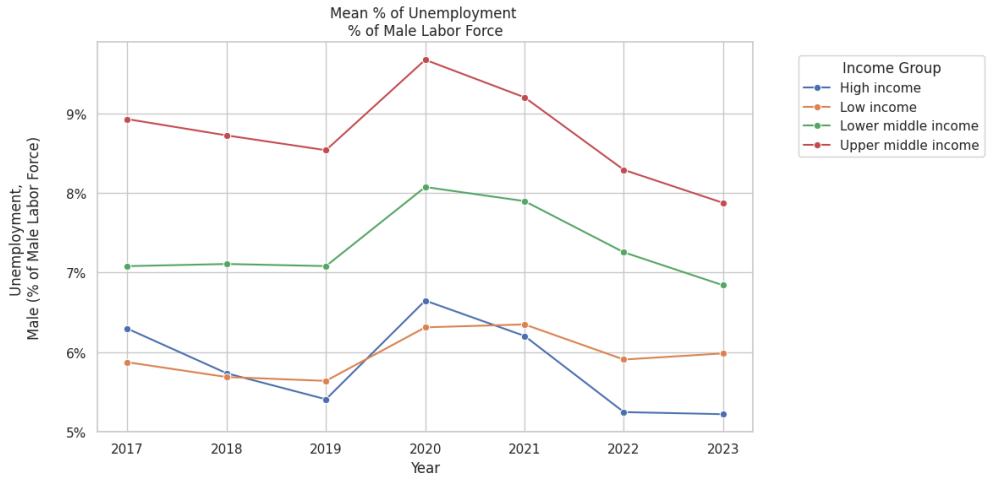


Unemployment, Males and Females (% of Female or Male labor force): The share of the labor force that is without work but available for and seeking employment. Definitions of labor force and unemployment differ by country

To understand this variable over time, we investigated the mean of male and female unemployment percentages, aggregated by year and income group. In nearly every income country grouping, males typically see less unemployment than females. Across both genders, upper middle income countries report the highest percentage of unemployment. For females, high-income countries have the lowest unemployment. However, this may be due to the way the variable is defined, specifically the condition of "those actively seeking work." This may lead that in countries more privileged, there may be less need for certain populations, including women, to seek work. For males, high- and low- income country unemployment rates have crossed in different points in time for the bottom spot.

Figure 4: Female and Male Unemployment by Year and Income Group



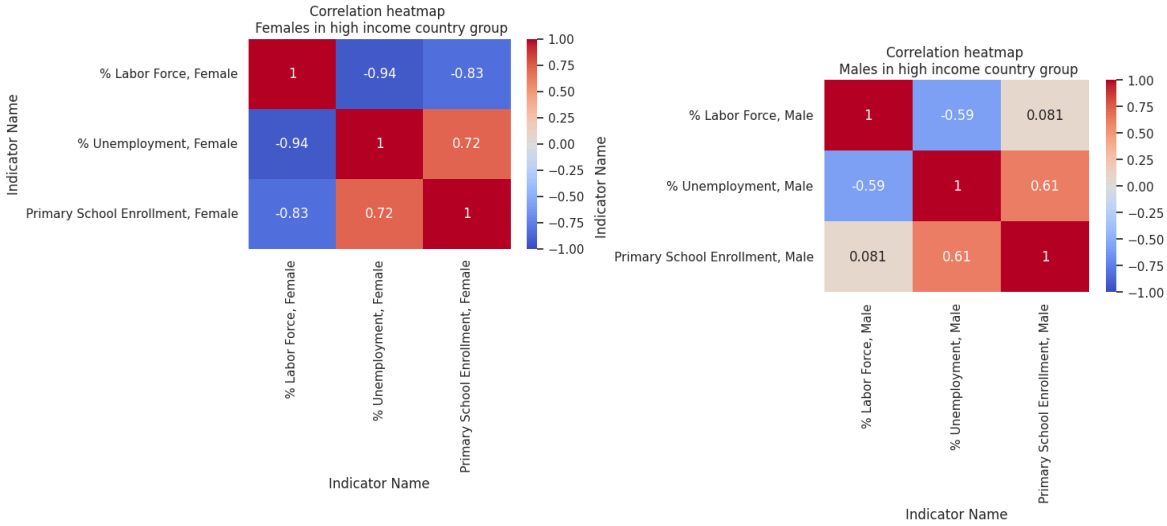


Conclusion on Key Research Question

To determine whether **primary school enrollment is associated with labor force participation and unemployment in low-, middle-, and high-income countries across genders** we compared 3 major variables: labor force participation, unemployment rates,and primary school enrollment. We included all 186 countries for the employment and unemployment variables, and the 157 available countries for the primary school enrollment variable. We felt comfortable including all of the available labor force participation and unemployment rate variables in this analysis as we are using this data to draw descriptive conclusions about the relationships and associations between variables, not any causal or inferential work.

As investigated in the above sections, we selected the mean for each variable within the country income groups to create correlation heatmaps for each gender between primary school enrollment with labor force and unemployment rates across both genders. Figure 6 features an example of female vs. male correlations for high-income countries. See Appendix C for a full comparison list across all countries for further information.

Figure 6: Correlation Heatmap for Males & Females in High-Income Countries



The findings from the heatmaps were used to make descriptive statements on the countries we observed. Some interesting findings include that female populations saw more drastic correlations between variables with a vast majority of correlation being over 0.5 or under -0.5. In contrast, male populations across all country groupings saw weaker correlations, only one correlation was over 0.5. Between males and females, correlation direction within variables in 3 out of the 4 country groupings varied, demonstrating a difference in the observed correlations across genders in labor force participation, unemployment, and primary school enrollment. **The exception is the lower-middle-income country group where the primary school enrollment both positively correlated with labor force participation and lower unemployment within both genders.** The relationship between primary school enrollment and labor force participation varies by income level, with higher enrollment linked to higher unemployment for upper-middle and high-income groups for both males and females. The relationship between enrollment and labor force participation is negative for most female groups and neutral to positive for most male groups. School enrollment generally has a stronger correlation with labor force participation for females than males, regardless of direction. These trends highlight the complex interaction between education, labor markets, and economic development across different income groups.

Figure 6: Correlation findings between income groups and genders

Income Group	Gender	Higher primary school enrollment is correlated with…
High-Income	Female	• Lower labor force participation • Higher unemployment
	Male	• Nearly the same labor force participation • Higher unemployment
Low-Income	Female	• Lower labor force participation • Higher unemployment

	Male	● Lower (minimal) labor force participation ● Nearly the same unemployment
Lower-Middle-Income	Female	● Higher labor force participation ● Lower unemployment
	Male	● Higher labor force participation ● Lower unemployment
Upper-Middle-Income	Female	● Lower labor force participation ● Higher unemployment
	Male	● Higher labor force participation ● Higher unemployment

These trends highlight the complex interaction between education, labor markets, and economic development across different income groups. It is essential to note that these findings do not imply causation; primary school enrollment data pertains to much younger populations than those represented in labor force and unemployment statistics.

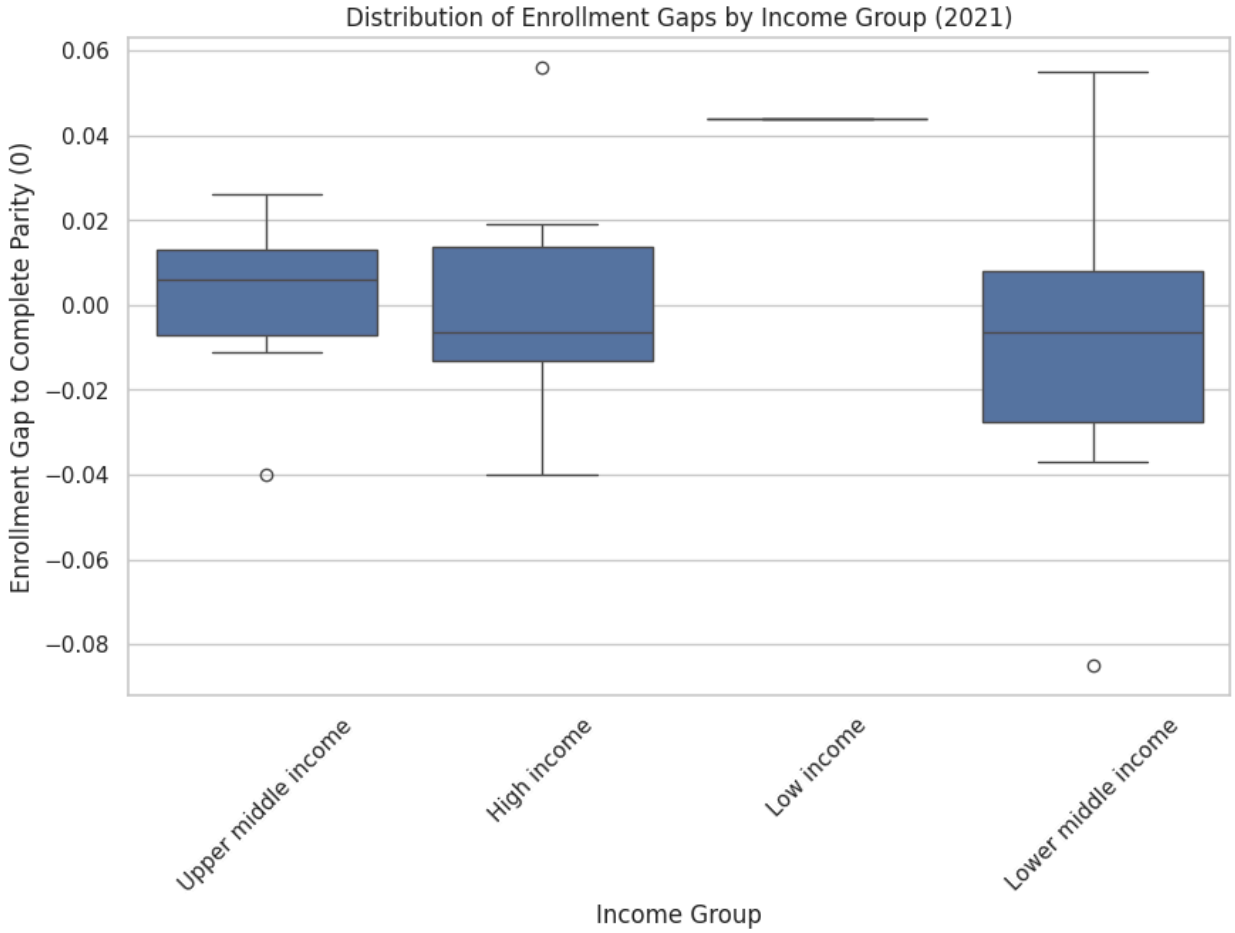
Key Learnings & Considerations for Future Research

Throughout the data processing, we learned the importance of reshaping the dataset to facilitate easier analysis by melting the year columns into a single "Year" feature. This transformation allowed for more streamlined tracking of trends over time. Additionally, handling data scarcity was crucial; we addressed this by carefully checking value counts to identify missing or sparse data, filtering the dataset to retain only the most relevant information, and dropping null values where necessary. To ensure the reliability of our analysis, we set thresholds to guarantee a minimum number of data points for each country-feature combination, helping to maintain a consistent and valid dataset for further insights. For the preparatory process, we learned the value of starting with a broad research question, then continuing to refine it as we explored the variables. At first, we had begun our research with a very narrow question, and upon discovering that the variables we had intended to use were not as robust as we originally thought, we had to pivot our method. In future projects, we can mitigate this roadblock by considering a broader initial approach to our research to provide space for changes.

Appendix A

Primary School Enrollment, Gender Parity Index

A number greater than 1 signifies a higher number of females enrolled in primary or secondary school, while a number below 1 signifies a higher number of males enrolled. To analyze this data, we first took out the most recent year that had the lowest number of NaN values. In this case, 2021 was the most recent year with the most complete data. Next, we calculated the enrollment gap by taking the Gender Parity Index (GPI) and subtracting 1, which represents complete parity. This gave us either a negative or positive number to measure how far the mean value was from total parity. A negative value shows more boys than girls and a positive value shows more girls than boys. We used a box and whiskers plot to visualize the spread of data across the four income groups.



In our analysis, both high-income and upper-middle-income groups exhibited strong gender parity with minimal variability. Lower-middle-income countries remain the most variable, with some countries achieving parity and others showing more significant disparities. The outliers might indicate specific countries struggling to achieve parity, which could be explored further. The low-income group did not show any spread, which led us to further explore the number of countries with data available. We found that only one country in the low-income group had reported data for 2021. We also found that other income groups had significantly lower numbers of countries represented in the GPI variable overall, which led us to pivot our analysis to focus

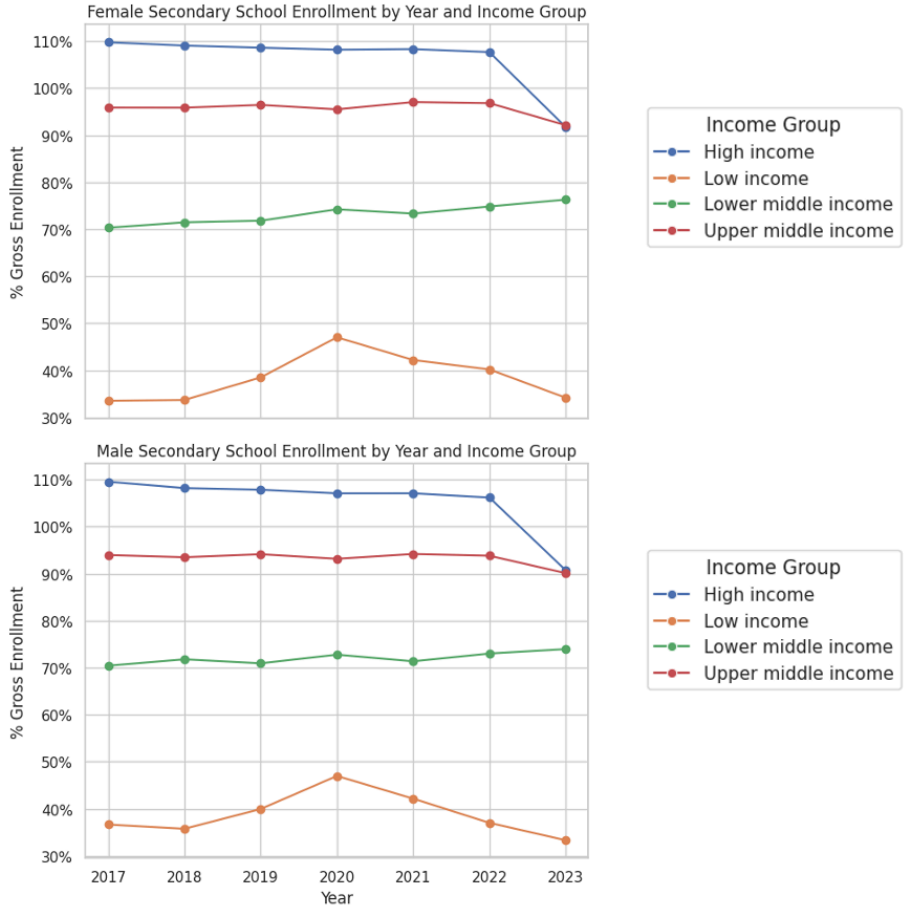
on Primary Enrollment (gross %), which had a more robust collection of countries with available data.

Appendix B

Secondary School Enrollment, Females and Males, (gross %)

In addition to examining primary school enrollment, we extended our analysis to secondary school enrollment for both males and females, aiming to provide a more comprehensive understanding of enrollment trends. As anticipated, secondary school enrollment rates were markedly lower than those for primary school, with averages of 93.8% for males and 95.2% for females. This disparity suggests that a significant portion of students do not pursue education beyond the primary level, potentially due to factors such as limited access to education, economic barriers, or cultural expectations that prioritize other roles or responsibilities over continued schooling. Moreover, the data reveals a broader range of variability compared to primary school enrollment, with rates spanning from 14.4% to 168.2% for females and 26.6% to 162.1% for males.

Figure 2: Female and Male Secondary School Enrollment by Year and Income Group



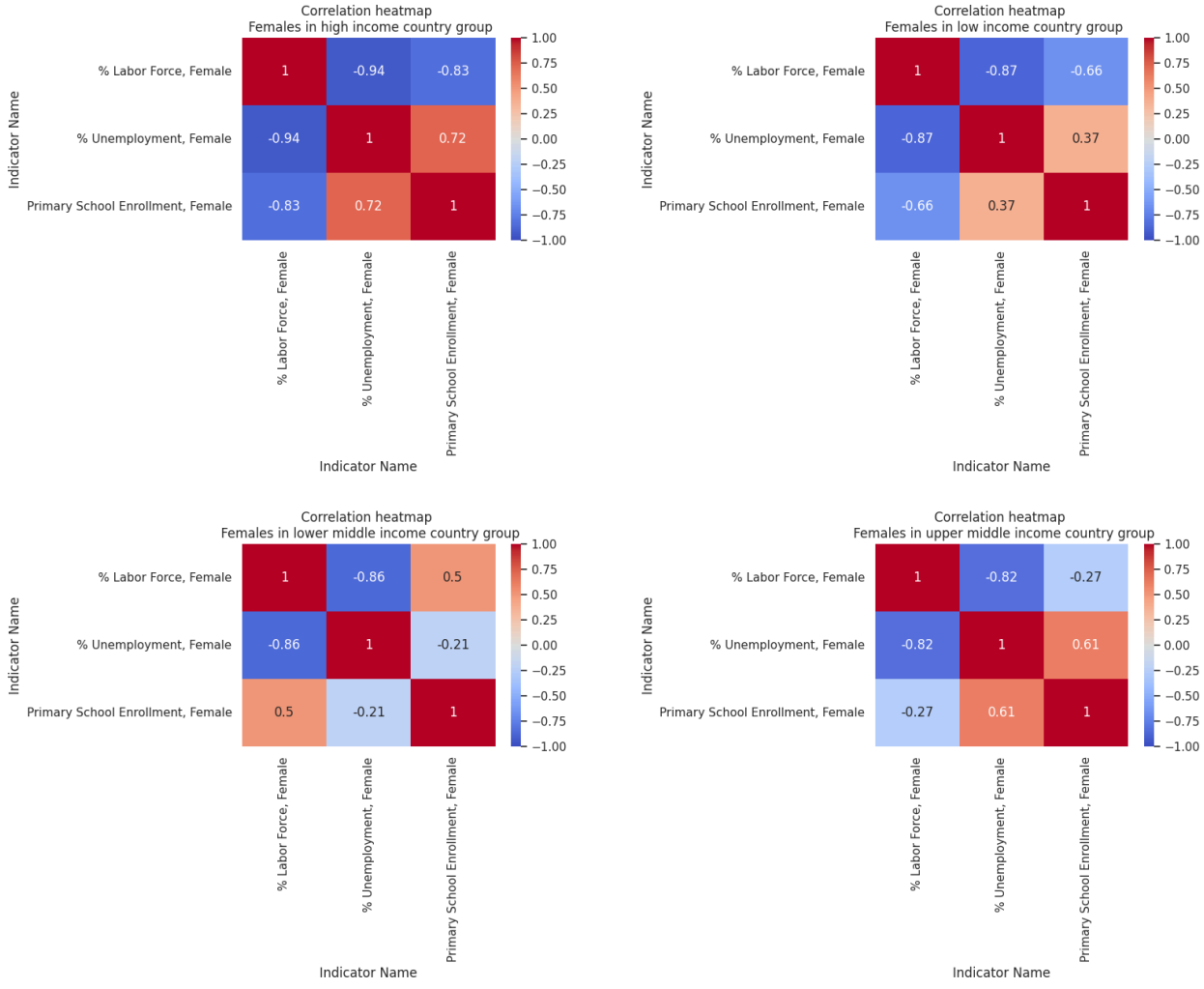
Compared to the patterns observed in primary school enrollment, where enrollment percentages among income groups were tightly clustered, secondary school education reveals a much wider

enrollment disparity between income groups. While the low-income group demonstrates the highest primary school enrollment, it exhibits the lowest secondary school enrollment. This trend continues progressively, with each subsequent income group—lower-middle, upper-middle, and high—showing increased enrollment rates. This pattern suggests a potential positive association between income level and secondary school enrollment, though further statistical analysis is necessary to confirm this relationship.

Appendix C

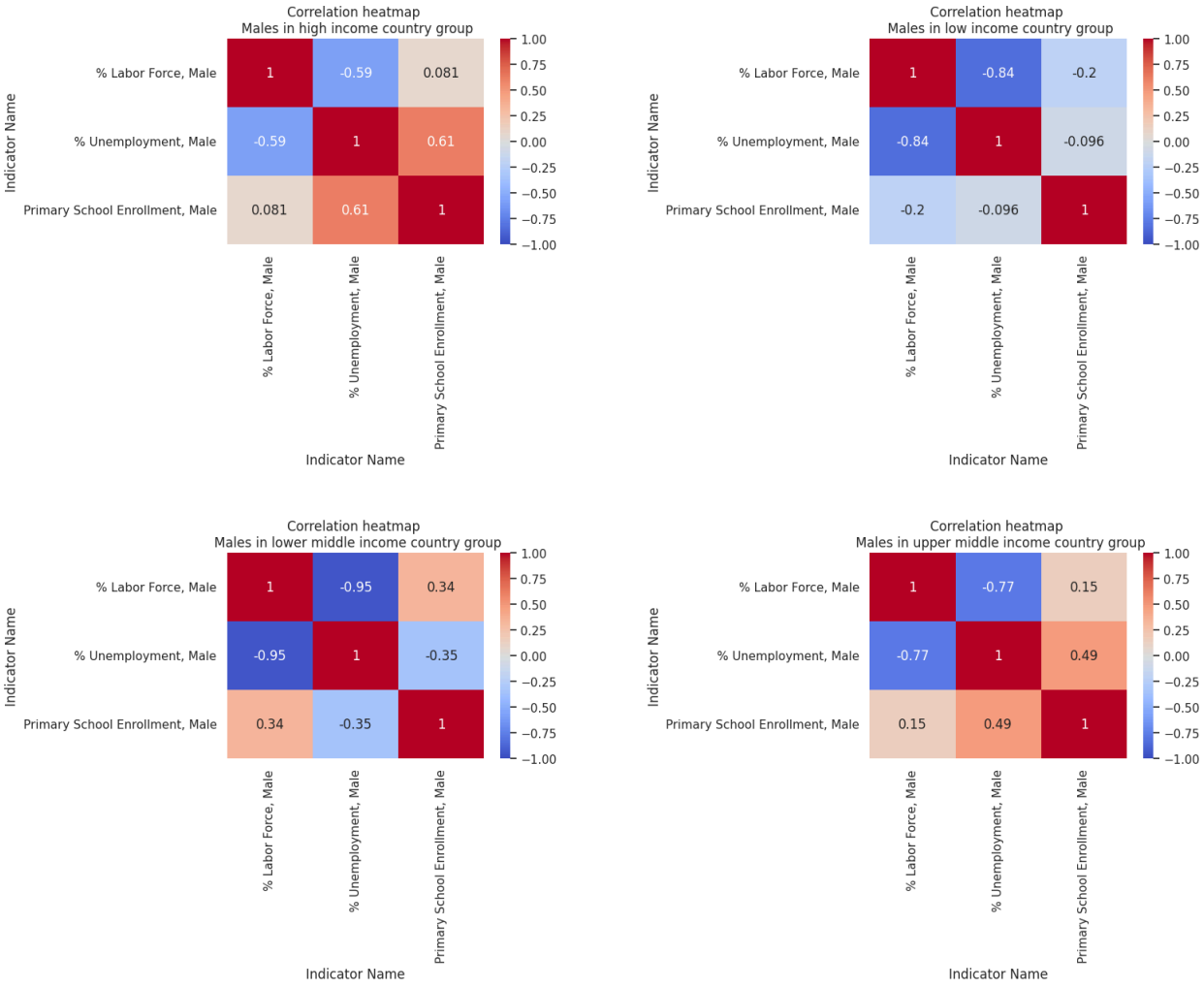
All Female Heat Maps

Correlation heatmaps for females on primary school enrollment, unemployment and labor force participation.

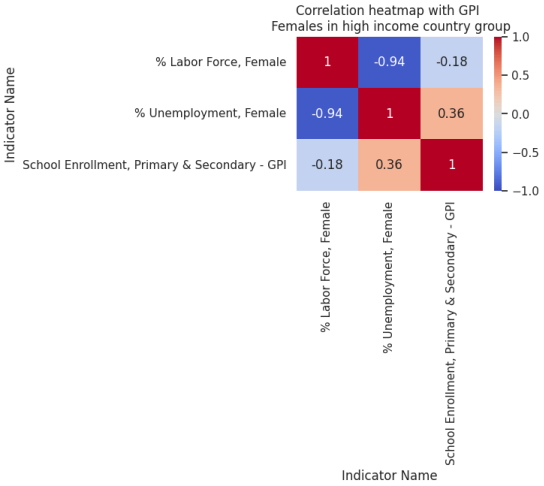


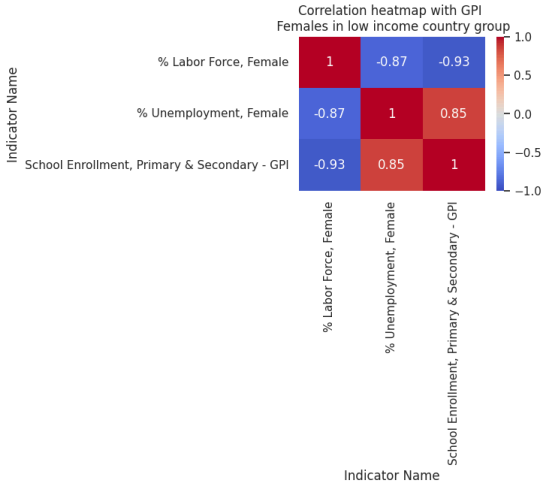
All Male Heat Maps

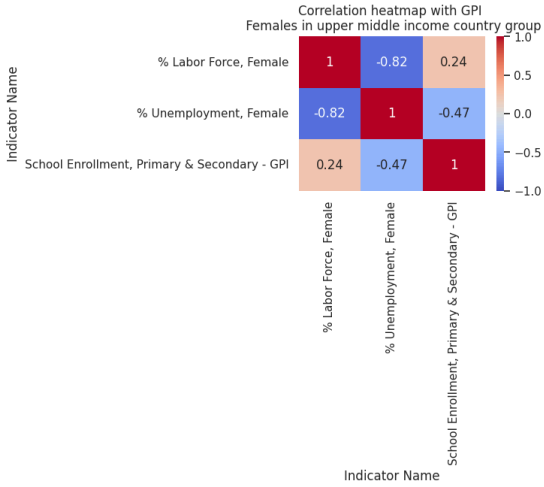
Correlation heatmaps for females on primary school enrollment, unemployment and labor force participation



Gender Parity Index vs Female Labor Force & Unemployment Rates
Correlation heat maps for primary and secondary Gender Parity Index, female labor force participation, and female unemployment

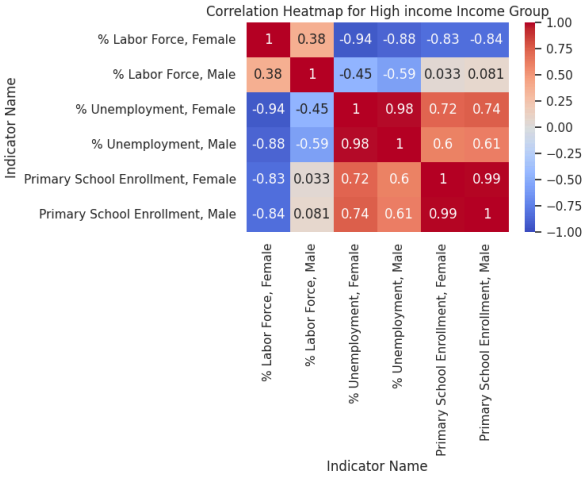


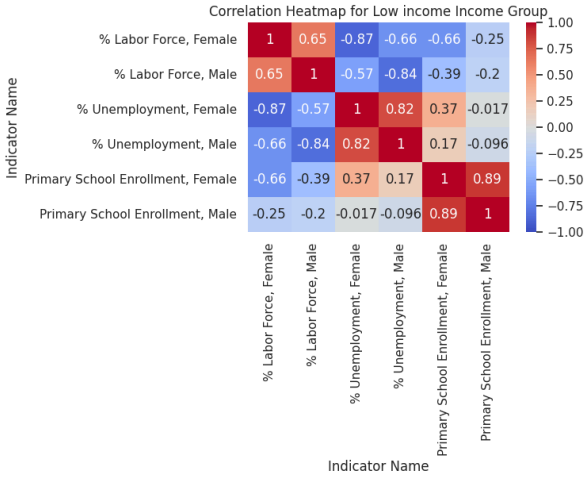


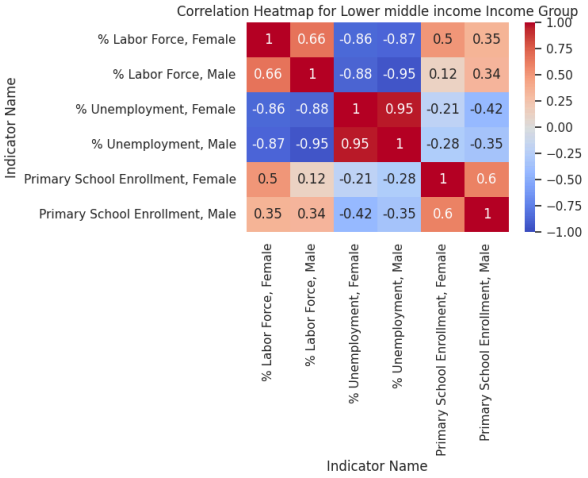


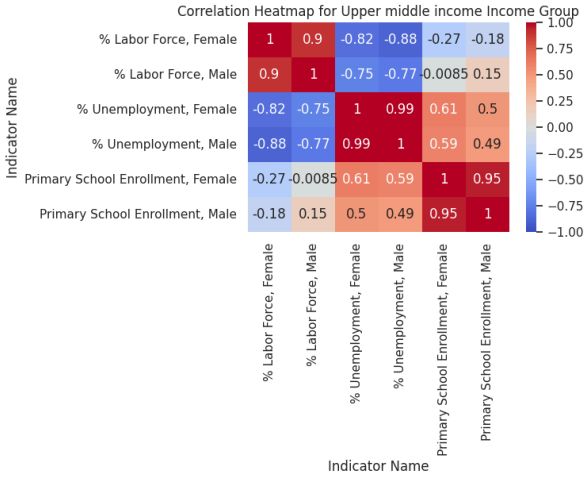
All variable heat maps

Correlation heat maps for labor force participation, unemployment, and primary school enrollment for females and males


Correlation Heatmap for High income Income Group
Indicator Name
% Labor Force, Female
% Labor Force, Male
% Unemployment, Female
% Unemployment, Male
Primary School Enrollment, Female
Primary School Enrollment, Male
1 0.38 -0.94 -0.88 -0.83 -0.84
0.38 1 -0.45 -0.59 0.033 0.081
-0.94 -0.45 1 0.98 0.72 0.74
-0.88 -0.59 0.98 1 0.6 0.61
-0.83 0.033 0.72 0.6 1 0.99
-0.84 0.081 0.74 0.61 0.99 1
1.00 0.75 0.50 0.25 0.00 −0.25 −0.50 −0.75 −1.00


Correlation Heatmap for Low income Income Group
Indicator Name
% Labor Force, Female
% Labor Force, Male
% Unemployment, Female
% Unemployment, Male
Primary School Enrollment, Female
Primary School Enrollment, Male
1 0.65 -0.87 -0.66 -0.66 -0.25
0.65 1 -0.57 -0.84 -0.39 -0.2
-0.87 -0.57 1 0.82 0.37 -0.017
-0.66 -0.84 0.82 1 0.17 -0.096
-0.66 -0.39 0.37 0.17 1 0.89
-0.25 -0.2 -0.017 -0.096 0.89 1
1.00 0.75 0.50 0.25 0.00 −0.25 −0.50 −0.75 −1.00


Correlation Heatmap for Lower middle income Income Group
Indicator Name
% Labor Force, Female
% Labor Force, Male
% Unemployment, Female
% Unemployment, Male
Primary School Enrollment, Female
Primary School Enrollment, Male
1 0.66 -0.86 -0.87 0.5 0.35
0.66 1 -0.88 -0.95 0.12 0.34
-0.86 -0.88 1 0.95 -0.21 -0.42
-0.87 -0.95 0.95 1 -0.28 -0.35
0.5 0.12 -0.21 -0.28 1 0.6
0.35 0.34 -0.42 -0.35 0.6 1
1.00 0.75 0.50 0.25 0.00 −0.25 −0.50 −0.75 −1.00


Correlation Heatmap for Upper middle income Income Group
Indicator Name
% Labor Force, Female
% Labor Force, Male
% Unemployment, Female
% Unemployment, Male
Primary School Enrollment, Female
Primary School Enrollment, Male
1 0.9 -0.82 -0.88 -0.27 -0.18
0.9 1 -0.75 -0.77 -0.0085 0.15
-0.82 -0.75 1 0.99 0.61 0.5
-0.88 -0.77 0.99 1 0.59 0.49
-0.27 -0.0085 0.61 0.59 1 0.95
-0.18 0.15 0.5 0.49 0.95 1
1.00 0.75 0.50 0.25 0.00 −0.25 −0.50 −0.75 −1.00