

Name:	Chaitya Arun Dobariya
UID:	2021600017
Course:	Advanced Data Visualization

Experiment 9

Aim:	<p>Design Big Data Dashboards using Tableau on the dataset - Women empowerment / Gender participation</p> <p>Basic - Bar chart, Pie chart, Histogram, Time line chart, Scatter plot, Bubble plot</p> <p>Advanced - Word chart, Box and whisker plot, Violin plot, Regression plot (linear and nonlinear), 3D chart, Jitter</p> <p>Write observations from each chart</p>
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1. Dataset

You can find the dataset [here](#).

Description

Gender Inequality Index:

A composite measure reflecting inequality in achievement between women and men in three dimensions: reproductive health, empowerment and the labour market. See Technical note 4 at http://hdr.undp.org/sites/default/files/hdr2022_technical_notes.pdf for details on how the Gender Inequality Index is calculated.

Maternal mortality ratio:

Number of deaths due to pregnancy-related causes per 100,000 live births.

Adolescent birth rate:

Number of births to women ages 15–19 per 1,000 women ages 15–19.

Share of seats in parliament:

Proportion of seats held by women in the national parliament expressed as a percentage of total seats

For countries with a bicameral legislative system, the share of seats is calculated based on both houses.

Population with at least some secondary education:

Percentage of the population ages 25 and older that has reached (but not necessarily completed) a secondary level of education.

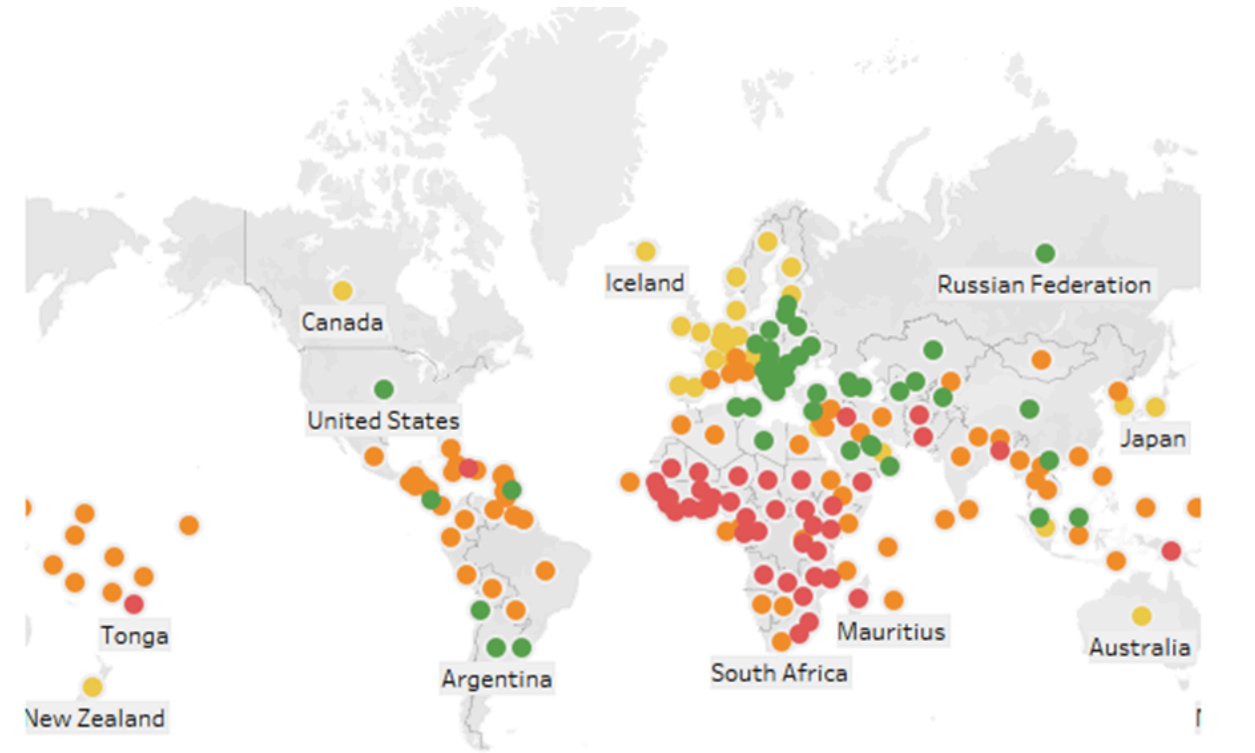
1. Country: Name of each country in the dataset.
2. GII (Gender Inequality Index): A composite measure reflecting inequality in achievement between women and men in three areas: reproductive health, empowerment, and labor market participation. Higher values indicate more inequality.
3. Empowerment_Score: A measure of women's empowerment based on educational attainment and parliamentary representation.
4. F_secondary_educ / M_secondary_educ: Percentage of females and males with at least secondary education. Highlights education disparity between genders.
5. Labor_Force_Gap: The difference in labor force participation rates between men and women, showing economic engagement inequality.
6. Seats_parliament: Percentage of seats in national parliaments held by women, indicating female political representation.
7. Human_development: A classification based on the Human Development Index (HDI), grouping countries by development levels (e.g., high, medium, low).
8. GII_Category: Categorizes countries based on GII, typically into groups like high, medium, and low inequality.
9. Maternal_mortality: The rate of maternal deaths per 100,000 live births, reflecting maternal health and healthcare quality.
10. Adolescent_birth_rate: The number of births per 1,000 women aged 15-19, showing early pregnancy prevalence.
11. F_Labour_force: Female labor force participation rate, representing the percentage of working-age women who are economically active.

Gender Inequality Index.csv

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	HDI rank	Country	HUMAN DEVELOPMENT INDEX	GII VALUE	GII RANK	Maternal_Mortality_Ratio	Adolescent_Fertility_Rate	Seats_in_Parliament	Female_Secondary_Enrollment	Male_Secondary_Enrollment	Female_Labour_Force_Participation	Male_Labour_Force_Participation	
2	1	Switzerland	VERY HIGH	0.018	3	5	2.2	39.8	96.9	97.5	61.7	72.7	
3	2	Norway	VERY HIGH	0.016	2	2	2.3	45	99.1	99.3	60.3	72	
4	3	Iceland	VERY HIGH	0.043	8	4	5.4	47.6	99.8	99.7	61.7	70.5	
5	5	Australia	VERY HIGH	0.073	19	6	8.1	37.9	94.6	94.4	61.1	70.5	
6	6	Denmark	VERY HIGH	0.013	1	4	1.9	39.7	95.1	95.2	57.7	66.7	
7	7	Sweden	VERY HIGH	0.023	4	4	3.3	47	91.8	92.2	61.7	68	
8	8	Ireland	VERY HIGH	0.074	21	5	5.9	27.3	88.1	86	56.5	68.6	
9	9	Germany	VERY HIGH	0.073	19	7	7.5	34.8	96.1	96.5	56.8	66	
10	10	Netherlands	VERY HIGH	0.025	5	5	2.8	39.1	89.8	92.7	62.4	71.3	

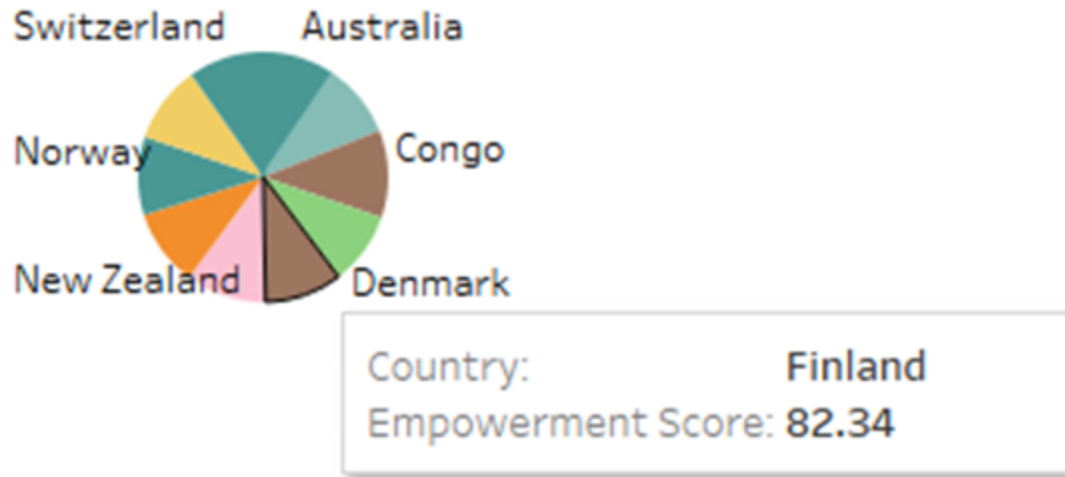
2. Charts & Plots

World Map



Displays countries colored by GII, using a sequential color palette to highlight equality levels—easier for spotting regional disparities.

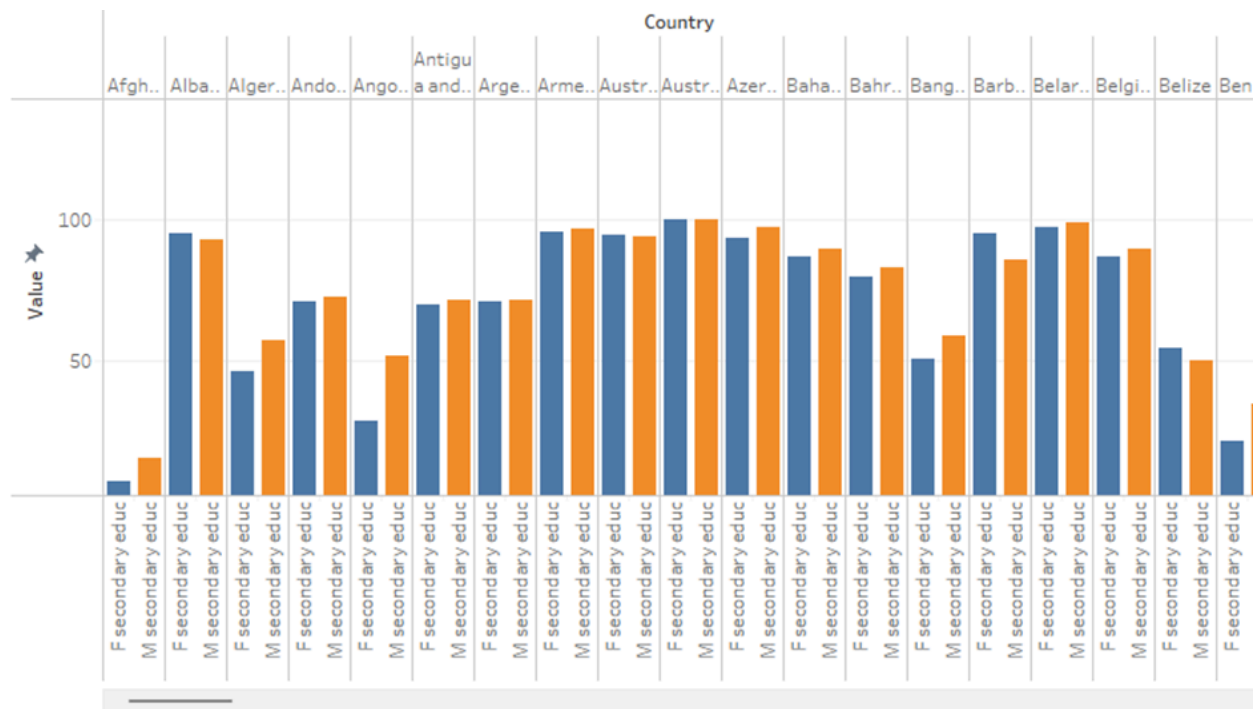
Visualizes the Global Inequality Index (GII) across countries. Color intensity indicates equality levels, with lighter shades suggesting higher equality.



Observation:

KPI (Top/Bottom Performers): Highlights the top countries by empowerment score to quickly identify leaders and laggards in gender equality.

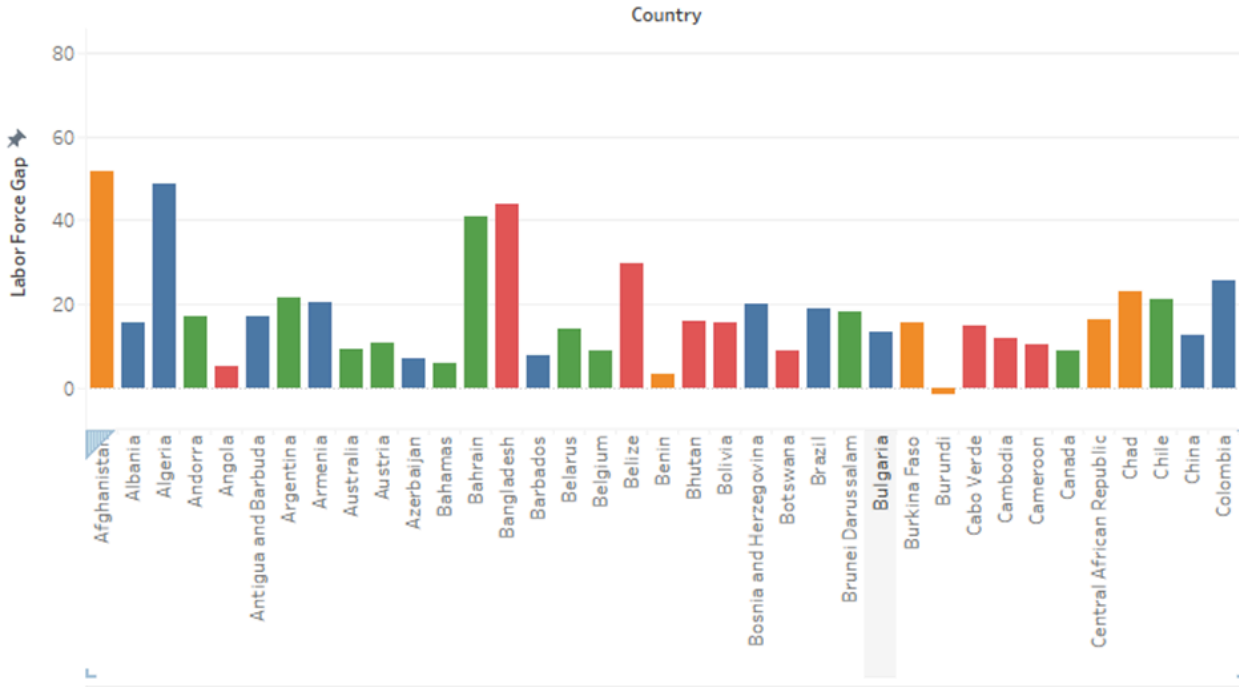
Shows countries with the highest scores, spotlighting leaders and laggards in gender equality.



Observation:

Education Gap Analysis: Bar chart compares male vs. female secondary education rates by country, making gender-based education gaps obvious.

Compares male and female secondary education rates across countries, highlighting the education gap between genders in each country.

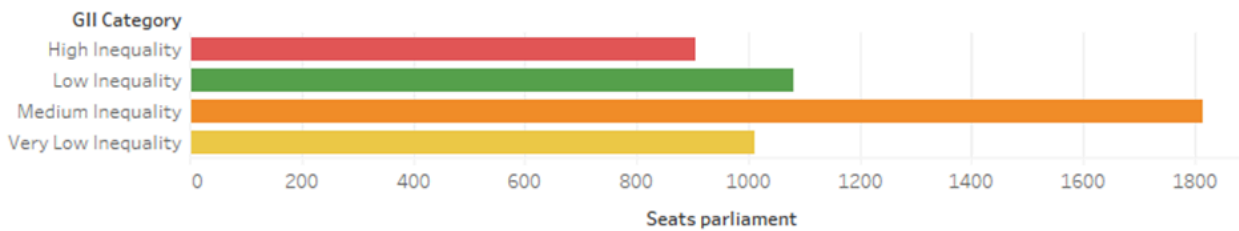


Observation:

Labor Force Participation: Labor Force Participation: Bar chart shows the labor force participation gap, colored by human development level—useful to see if development influences workforce equality.

Displays the gap in labor force participation between genders, with color indicating a country's human development level to see if higher development links with smaller gaps.

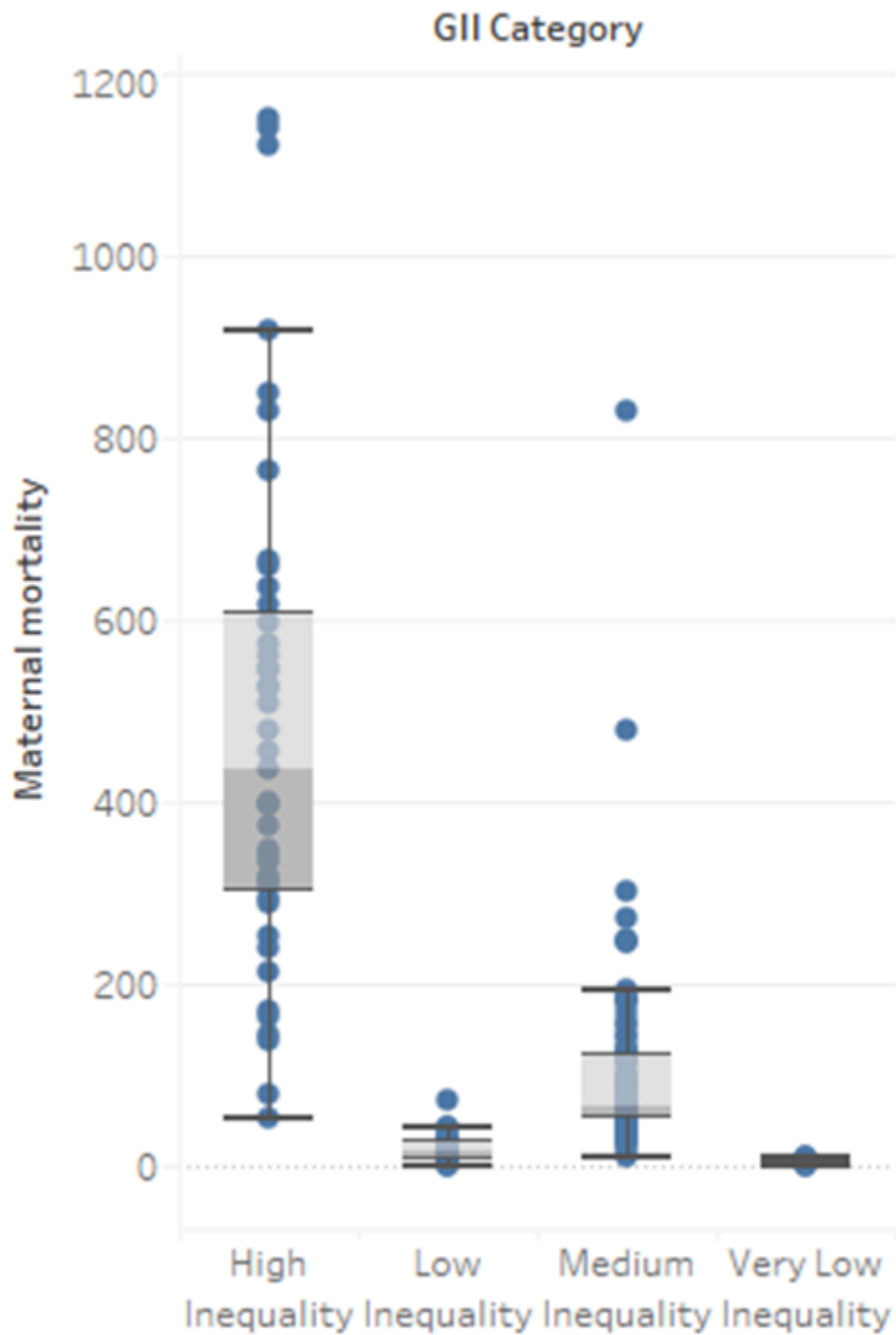
Sheet 5



Observation:

Parliament Representation: Depicts seats in parliament by country with colors for GII categories, revealing political representation inequalities.

Shows the percentage of parliamentary seats held by women by country, with colors to distinguish GII categories, helping identify gaps in political representation.



Observation:

Regional Analysis (Box Plot): Displays the spread of GII across development categories, helping to identify regions with greater gender inequality variance.

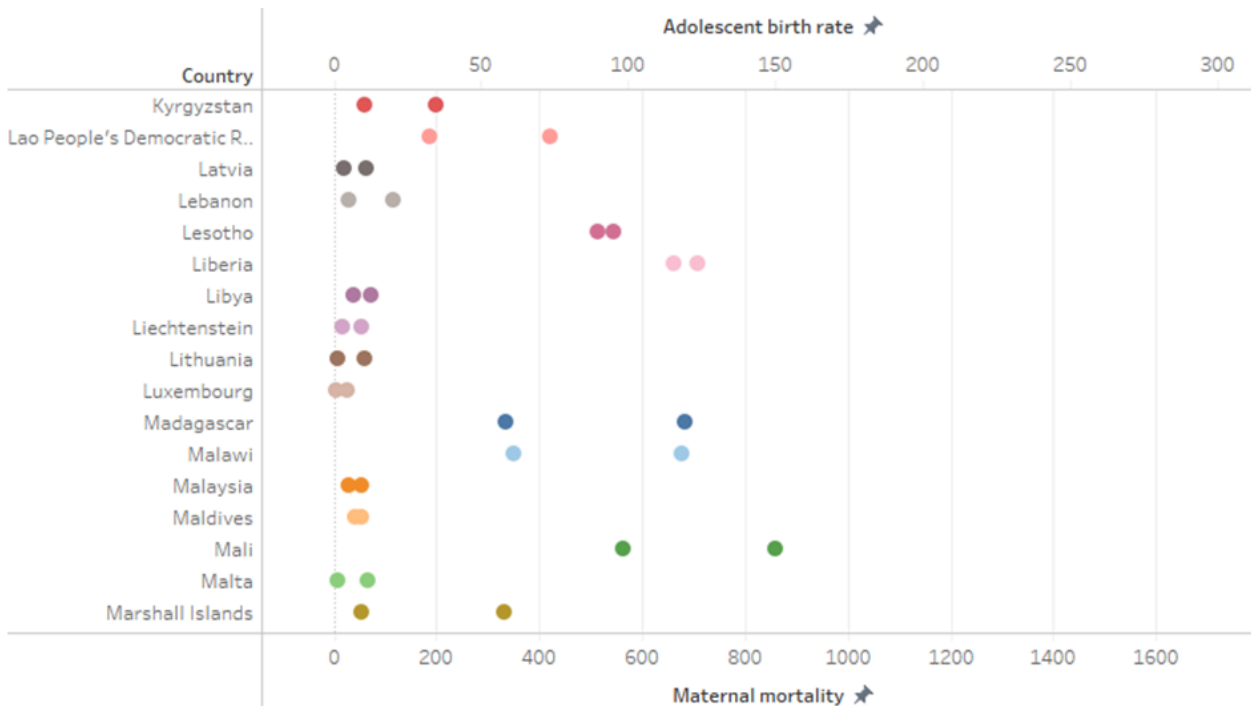
Illustrates the distribution of GII within human development levels across regions, showing regional variations and extremes in gender inequality.



Observation:

Correlation Analysis (Scatter Plot): Visualizes the relationship between female education and labor force participation, colored by GII, to find correlations.

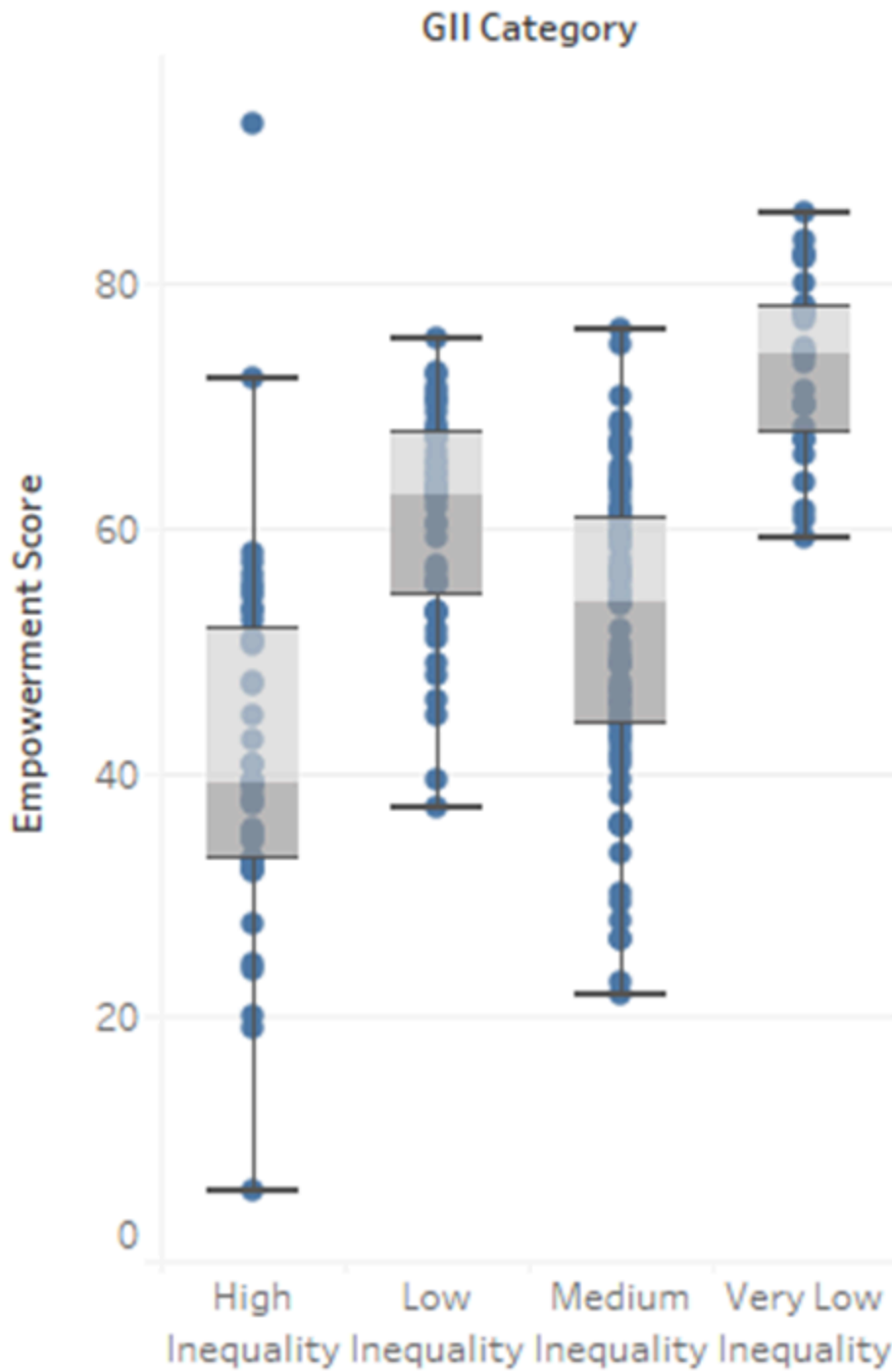
Shows the relationship between female secondary education and female labor force participation by country, to assess if education influences workforce participation.



Observation:

Maternal Health Analysis: Dual-axis chart shows maternal mortality vs. adolescent birth rates by country, for quick comparison of maternal health indicators.

Compares maternal mortality rates and adolescent birth rates by country, showing maternal health challenges side by side.



Observation:

Regional Analysis (Box Plot): Displays the spread of GII across empowerment scores, helping to identify regions with greater gender inequality variance.

Illustrates the distribution of GII with empowerment scores across regions, showing regional variations and extremes in gender inequality.

Conclusion

The dataset reveals that gender inequality is higher in less developed regions, impacting education, workforce participation, and political representation. Stronger human development is linked to better gender equality. Key focus areas for improvement include education access, healthcare, and increasing female representation in politics and the workforce for balanced societal progress.