

Women Working Outside The Home

A state-of-the-art extension



Our Great Team



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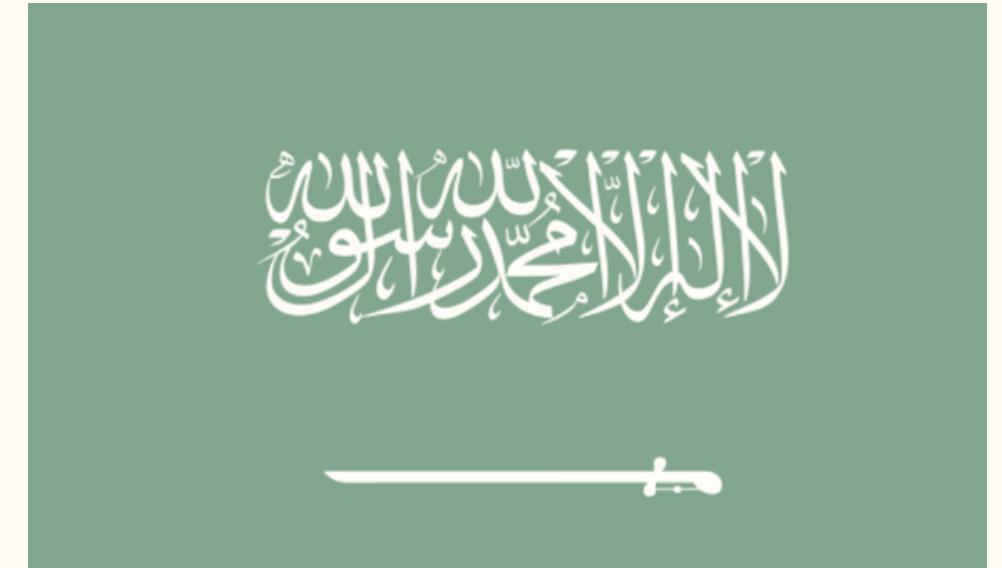
RESEARCH PAPER

Paper Objectives

- **Investigate misperceptions** of social norms regarding women working outside the home (WWOH) in Saudi Arabia.
- **Assess the impact** of correcting these **misperceptions** on husbands' support for **wives seeking jobs**.
- Explore how **communication between men** and **women** frequency influences social norm perceptions.
- Propose **policy interventions** to address misperceptions and **boost female workforce participation**.



Saudi Arabia



Why Saudi Arabia?

- **Low Female Employment:** Among the lowest globally, highlighting barriers to women's work.
- **Social Norms:** Strong norms, like male guardianship, heavily impact labor decisions.
- **Pluralistic Ignorance:** Misperceptions about peer support for WWOH create a unique case.
- **Policy Impact:** Findings can guide interventions in similar cultural contexts.

Experiment design



Participants

- 500 married Saudi men (18-35) from Riyadh, grouped by neighborhoods.

Survey Structure

- Anonymous online survey measuring personal views and perceived social norms about WWOH.

Intervention

- Treatment Group: Informed of actual high support for WWOH among peers.
- Control Group: Participants received no additional information about peer support for women working outside the home (WWOH).
- Outcome: Participants chose between a gift card or signing wives up for a job-matching service.

Follow-up

- Assessed wives' job applications, interviews, and employment 3-5 months later.

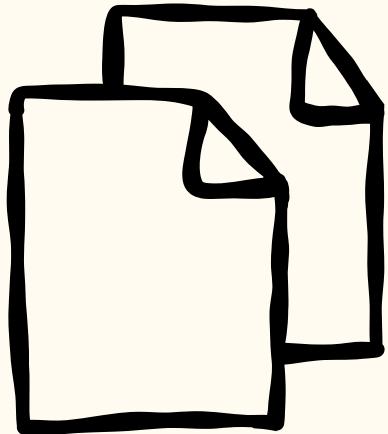
Natural Experiment

Tested women's job choices (home vs. outside) with/without social norm information.

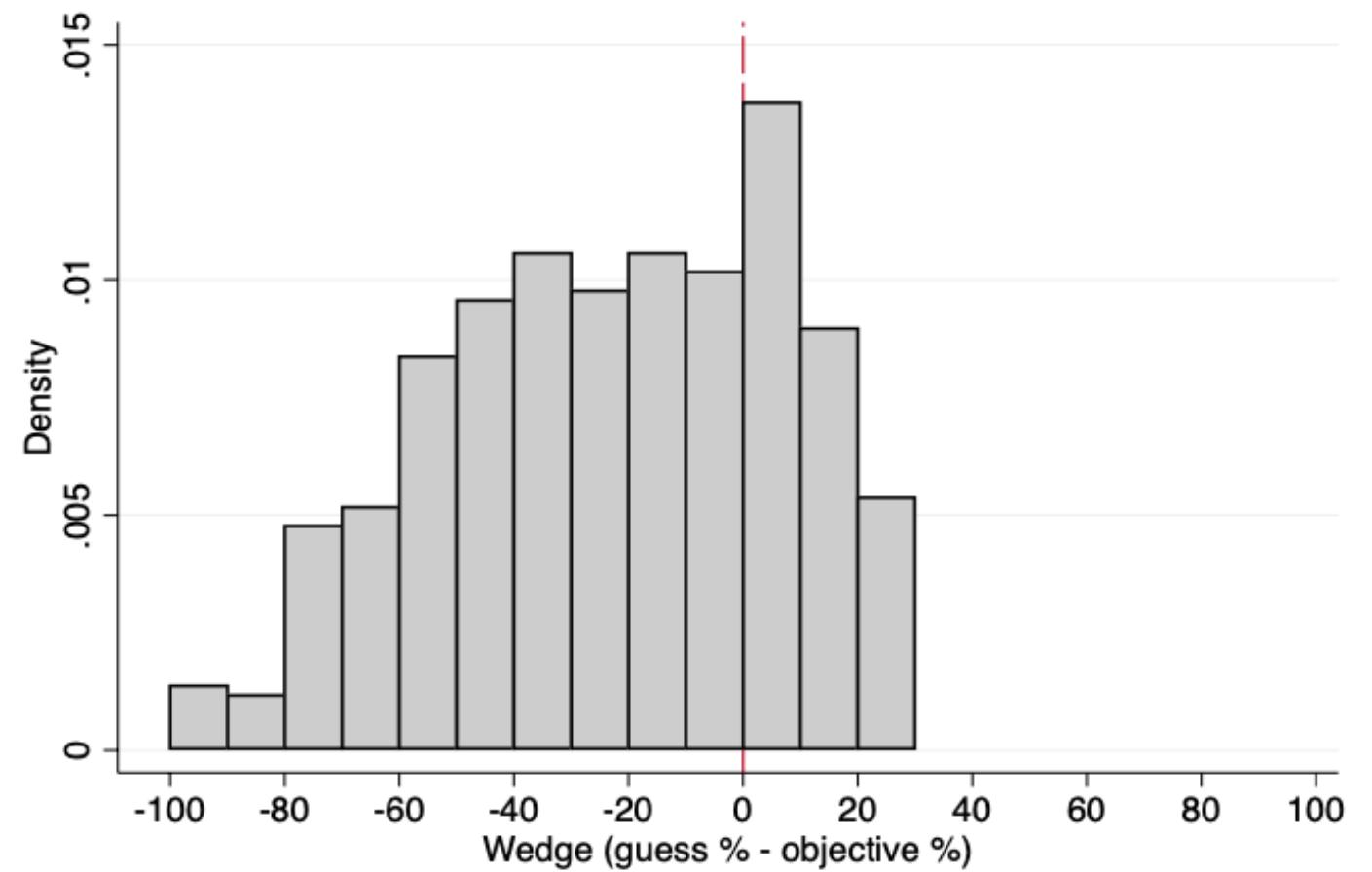
Experiment design



Replication



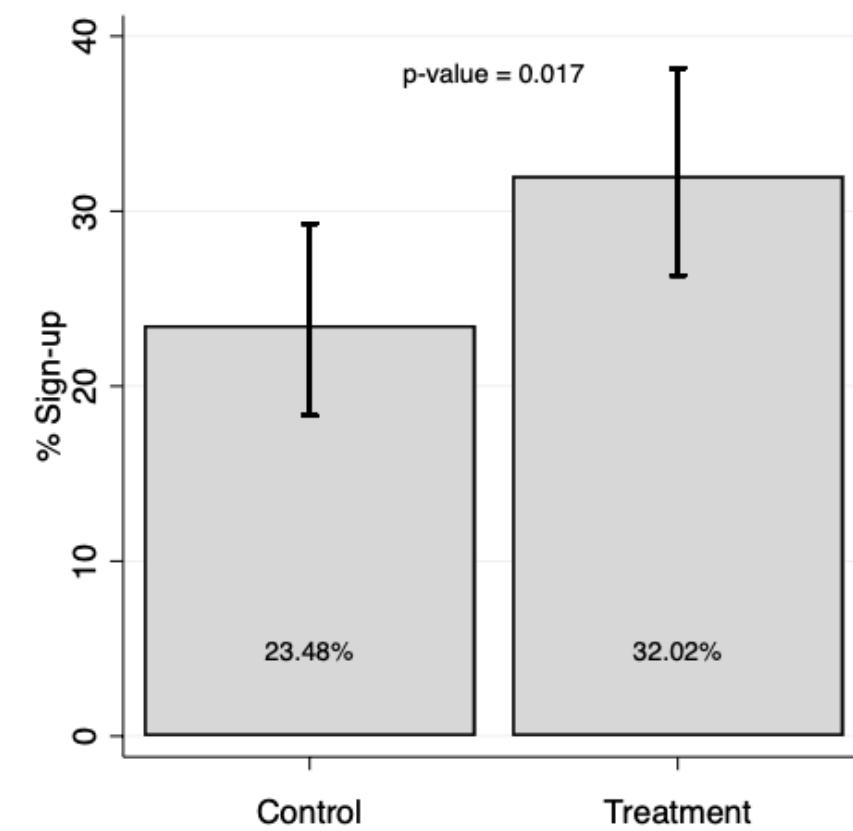
Replication



- **Purpose:** Shows misperceptions of social norms regarding WWOH among Saudi men.
- **Wedge:** Difference between respondents' guess of peer support and actual peer support for WWOH.
- **Key Finding:** Most respondents underestimate peer support (72%) (majority of values < 0).
- **Peak:** Most guesses are 20-40 percentage points below the true support level.
- **Relevance:** Highlights pluralistic ignorance as a barrier to increasing female labor force participation.

Notes: The distribution of wedges in perceptions about the beliefs of others regarding whether women should be able to work outside the home. Wedges calculated as $(\text{the respondent's guess about the \% of session participants agreeing with the statement}) - (\text{the true \% of session participants agreeing with the statement})$.

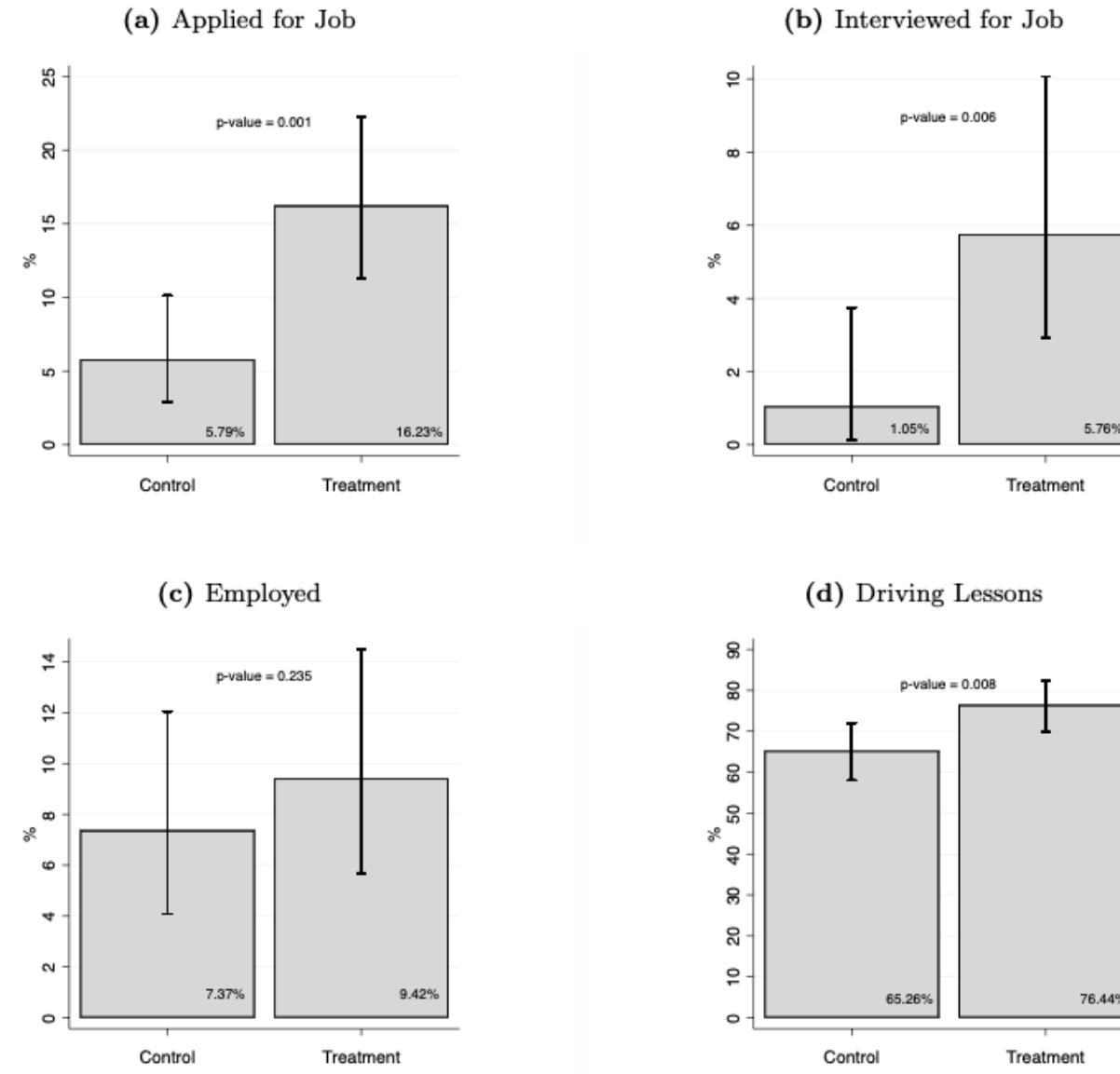
Replication



- **Purpose:** Show job matching service sign up of control group versus treatment group.
- **Result:** Difference between sign-up percentage for control group versus treatment group.
- **Key Finding:** The sign up rates were higher for the treatment group than for the control group.
- **Relevance:** Highlights the positive effect of informing men about societal support and their wife's job application.

Notes: Job-Matching Service sign-up rates for respondents in the main experiment. 95% binomial proportion confidence intervals. *p*-value calculated from testing for equality of proportions.

Replication

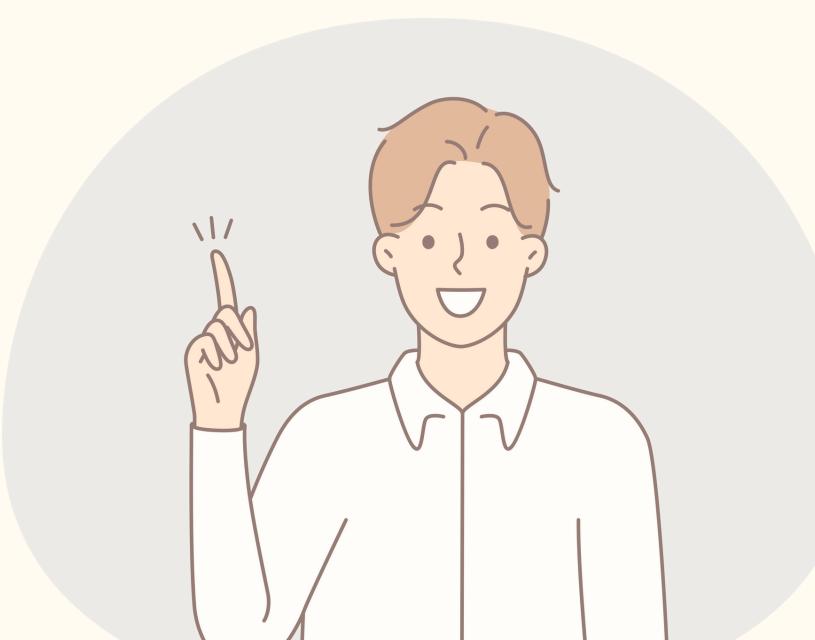


- **(a) Applied for Job:**
Treatment group (16.23%) significantly more likely to apply for jobs outside the home compared to the control group (5.79%).
p-value = 0.001 indicates a highly significant difference.
- **(b) Interviewed for Job:**
Treatment group (5.76%) also significantly more likely to attend job interviews than the control group (1.05%).
p-value = 0.006 confirms statistical significance.
- **(c) Employed:**
Employment rates outside the home increased in the treatment group (9.42%) compared to the control group (7.37%), but the difference is not statistically significant (p-value = 0.235).
- **(d) Driving Lessons:**
Willingness to sign wives up for driving lessons was higher in the treatment group (76.44%) than in the control group (65.26%).
p-value = 0.008 confirms this behavior change is significant.

Notes: Self-reported labor supply outcomes of participants' wives in the follow-up survey. 95% binomial proportion confidence intervals. p-value calculated from testing for equality of proportions. Panels (a) - (c) refer exclusively to job opportunities outside the home.

Main findings

- Men's belief shifts toward gender equality lead to increased women's labor market participation.
- Over time, more progressive beliefs among men improve women's employment rates, pay, and access to leadership.
- Effects vary by culture and region, with stronger impact in areas with fewer traditional gender norms.
- Positive labor market outcomes for women reinforce belief changes in men.



Conclusion

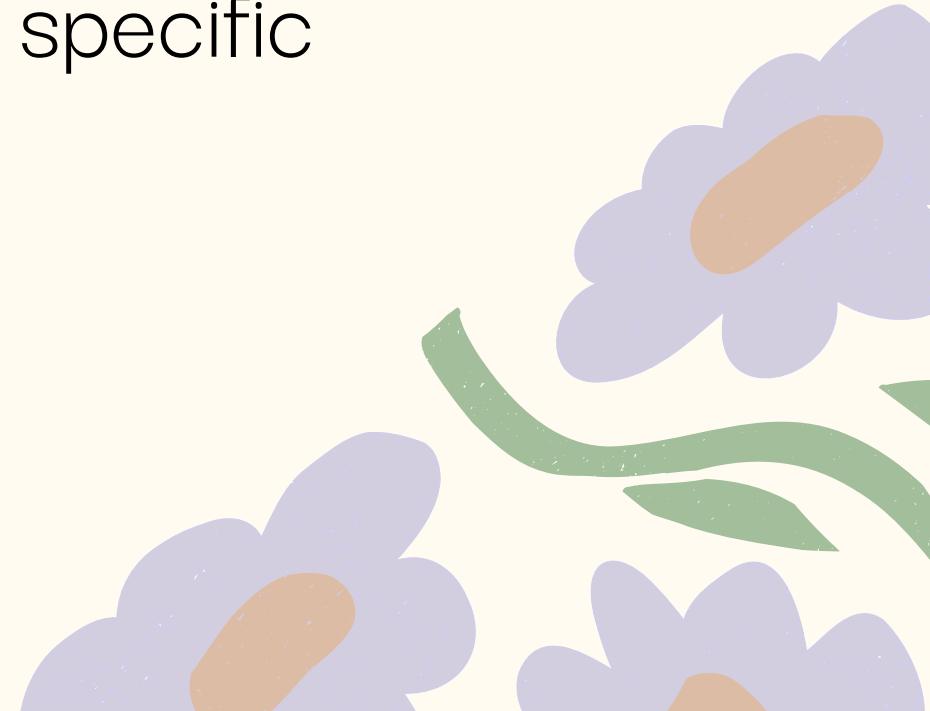
- Men's evolving **beliefs** are **key drivers of women's** long-term **labor market participation**.
- Policies should focus on **shifting gender norms** and engaging men in equality initiatives.
- **More research** is needed on belief changes across different contexts.



Limitations



- The study is **limited** to Saudi Arabia, making it challenging to apply these results globally.
- The follow-up period is relatively **short**.
- The study primarily focuses on **men's decisions** and **perceptions**.
- **Limited** to **actions** like signing up for a job service or applying for specific types of jobs.

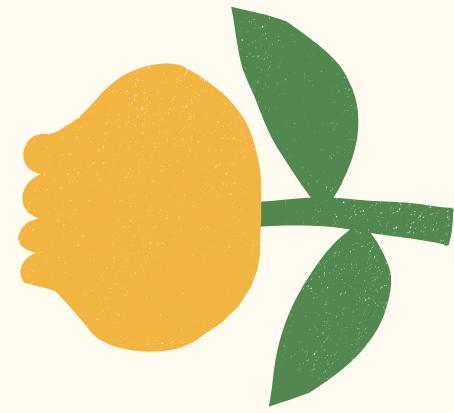
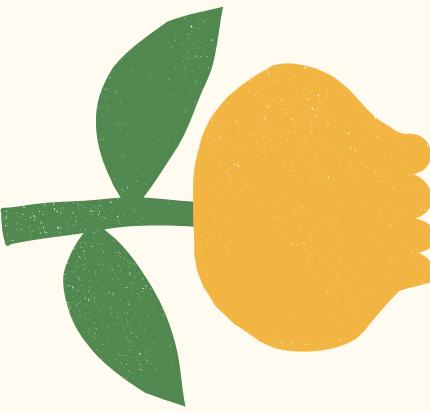


PAPER EXTENSION

Methodology

- 1 Extend the **research objective**
- 2 Find appropriate **data**
- 3 **Cleaning & Transformation**
- 4 Statistical **analysis**
- 5 Main **findings & Limitations**





Research Objective

“

Examine the **influence** of **societal attitudes** and **predispositions** toward women on the percentage of **women participating** in the **workforce**

”



WorldWide Analysis



Time Period
1997 - 2022



Gender-related
indexes



Specific and
measurable outcome

The Ingredients

Gender Inequality Index

Reflects inequality in achievements between women and men in three dimensions: reproductive health, empowerment and the labour market.

Seats held by Women in National Parliament

Reflects women's political empowerment and societal progress toward gender equality.

The Outcome

Female Labour Force Per Country

Proportion of women participating in the labor force, including those employed or actively seeking work, reflecting gender equality and economic empowerment.



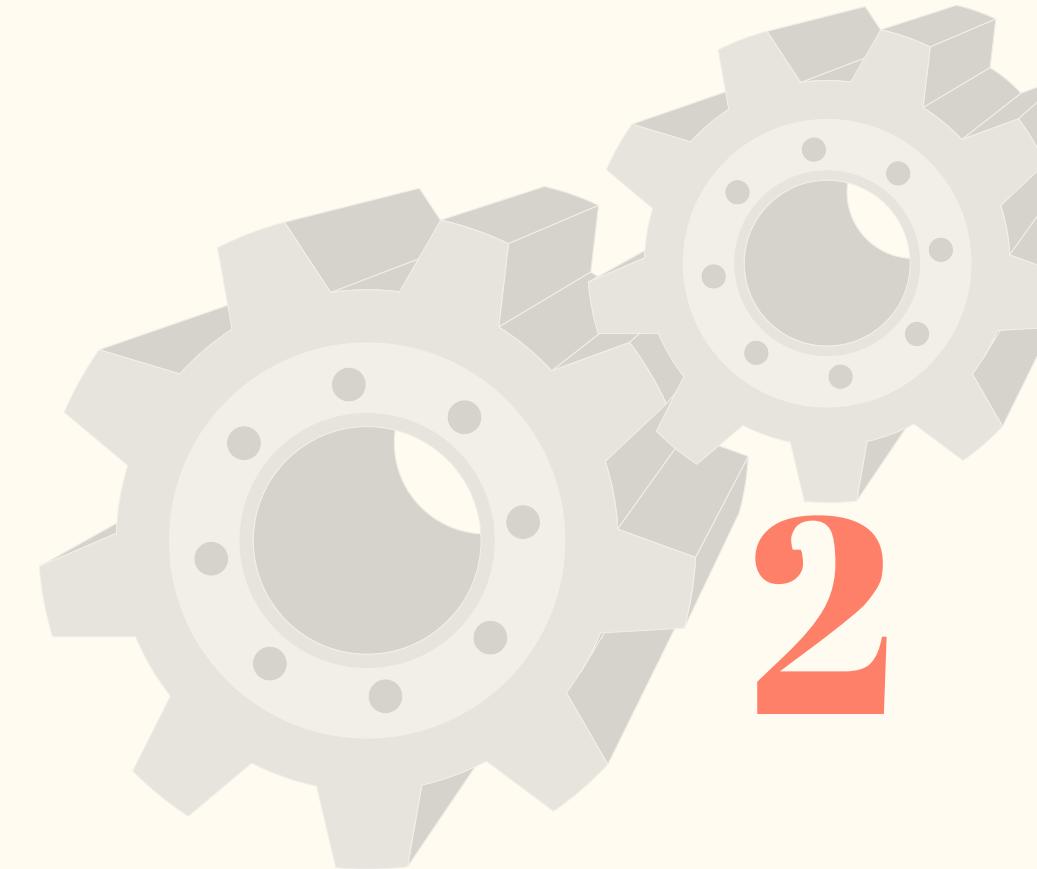
The Mechanism

Gender Inequality Index

- Fewer structural and social barriers, such as discriminatory laws or cultural norms, can encourage women from working.
- Better access to education and skill-building opportunities for women, enable them to enter and remain in the labor market.

Seats held by Women in National Parliament

- Women in parliament are more likely to advocate for gender-sensitive policies.
- The percentage of women in parliament often indicates that the population has a favorable perspective toward women's capabilities and roles in society.



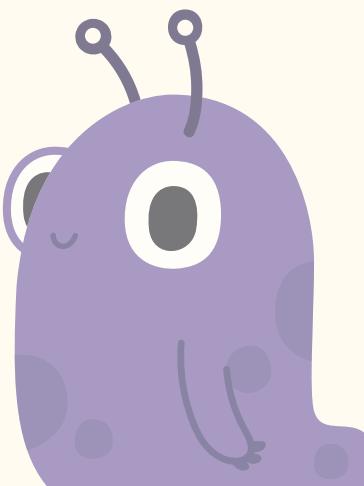
Data Cleaning

BEFORE

Unnamed: 0	"Country Name"	Country Code	Indicator Name	Indicator Code	1960	1961	1962	1963	1964	...
0	0	Aruba,ABW"	Labor force participation rate, female (% of f...	SL.TLF.CACT.FE.ZS	NaN	NaN	NaN	NaN	NaN	...
1	2	Afghanistan,AFG"	Labor force participation rate, female (% of f...	SL.TLF.CACT.FE.ZS	NaN	NaN	NaN	NaN	NaN	...
2	4	Angola,AGO"	Labor force participation rate, female (% of f...	SL.TLF.CACT.FE.ZS	NaN	NaN	NaN	NaN	NaN	...
3	5	Albania,ALB"	Labor force participation rate, female (% of f...	SL.TLF.CACT.FE.ZS	NaN	NaN	NaN	NaN	NaN	...

AFTER

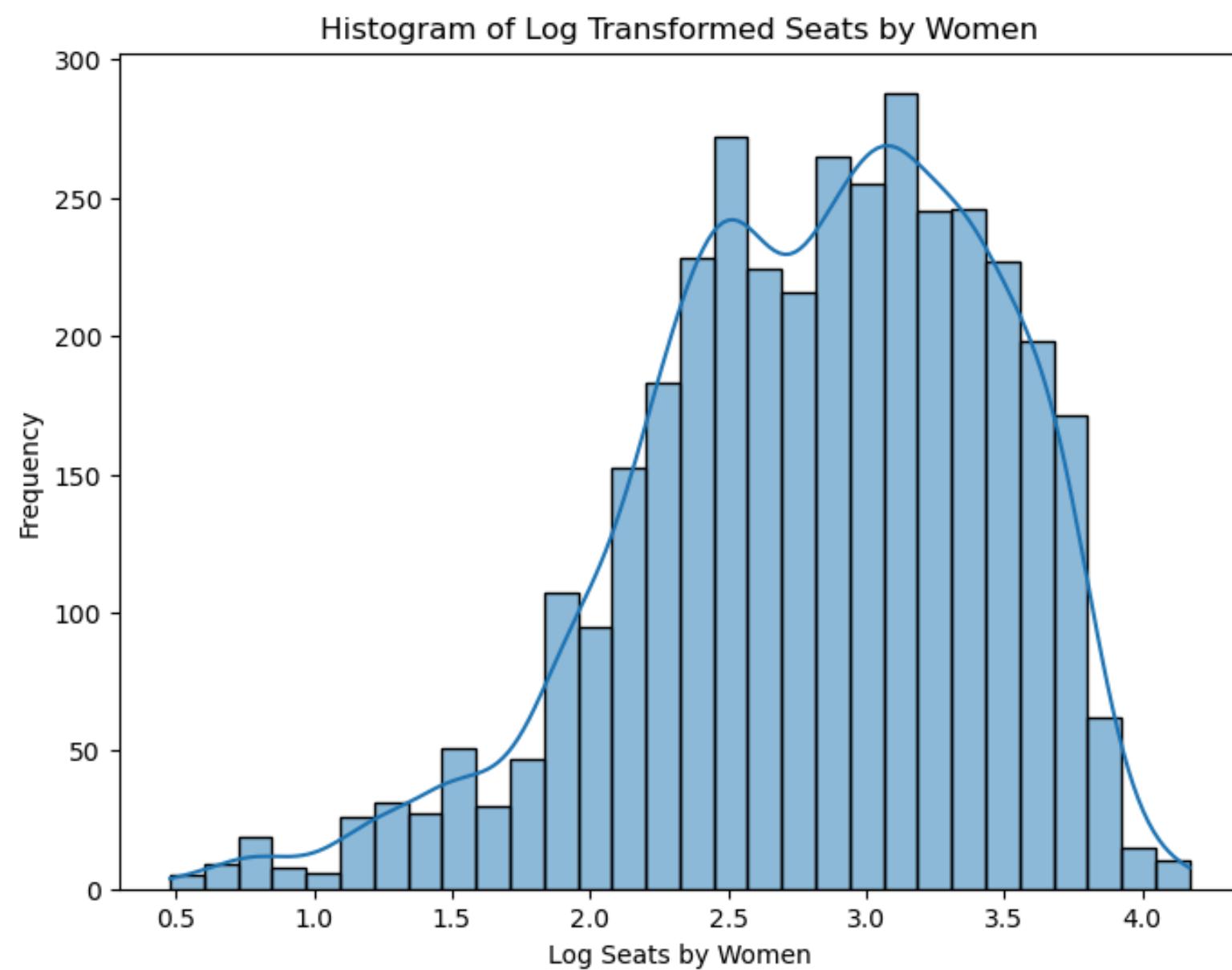
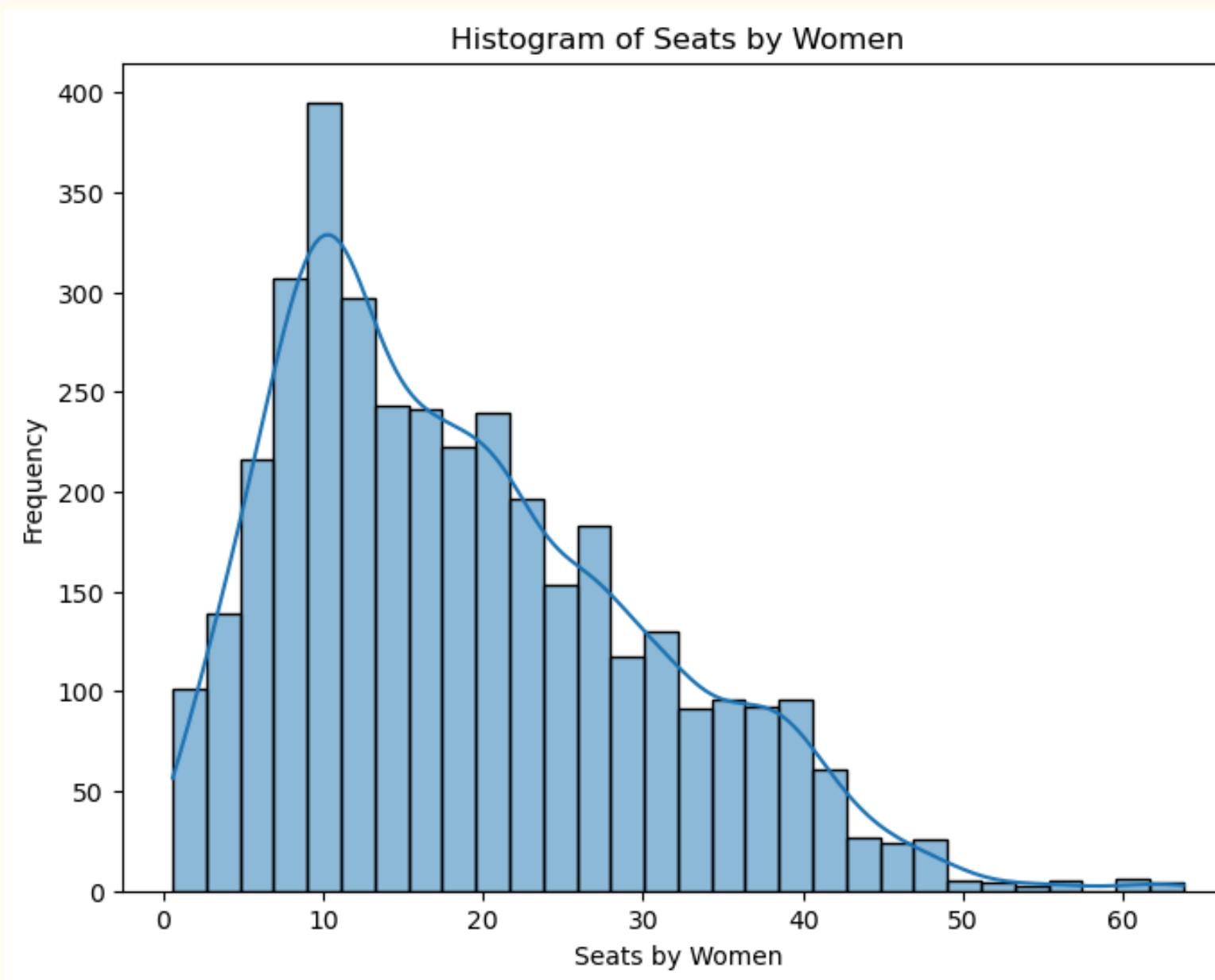
Country Name	Country Code	1990	1991	1992	1993	1994	1995	1996	1997	1998	...
Afghanistan	AFG	15.635	15.698	15.715	15.726	15.796	15.634	15.479	15.363	15.286	...
Angola	AGO	75.489	75.481	75.485	75.499	75.520	75.515	75.522	75.540	75.566	...
Albania	ALB	53.130	53.737	52.962	52.316	51.374	50.760	51.553	50.943	50.132	...
Argentina	ARG	46.494	47.634	48.844	49.664	48.938	49.718	50.951	51.462	50.666	...
Armenia	ARM	58.428	58.150	57.687	57.243	56.879	56.615	56.406	56.237	56.077	...
...



3

Data Transformation

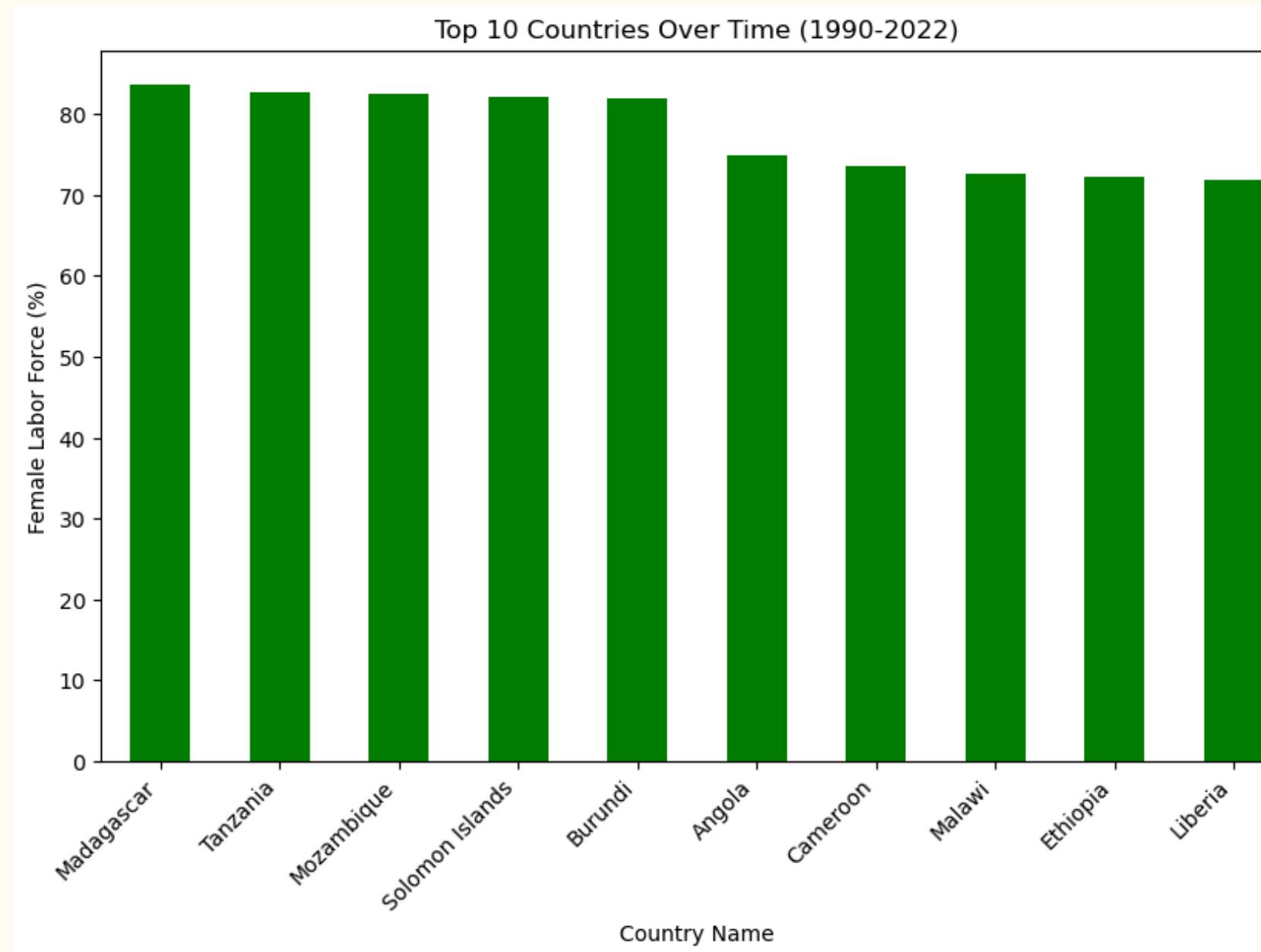
Data transformation focused on addressing skewness to ensure meaningful and interpretable results for regression analysis.



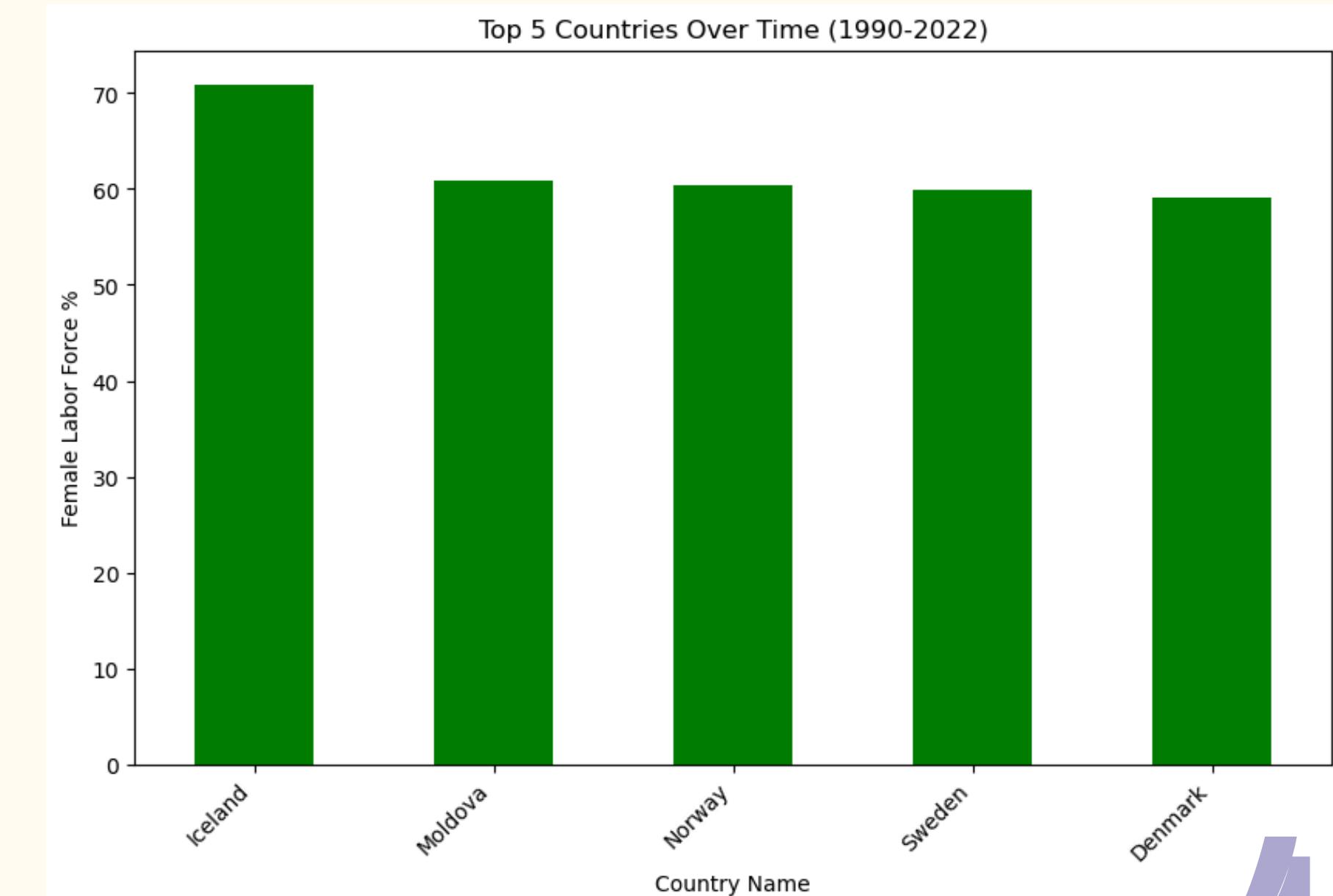
Top Performers

FEMALE LABOR FORCE (%)

WORLD



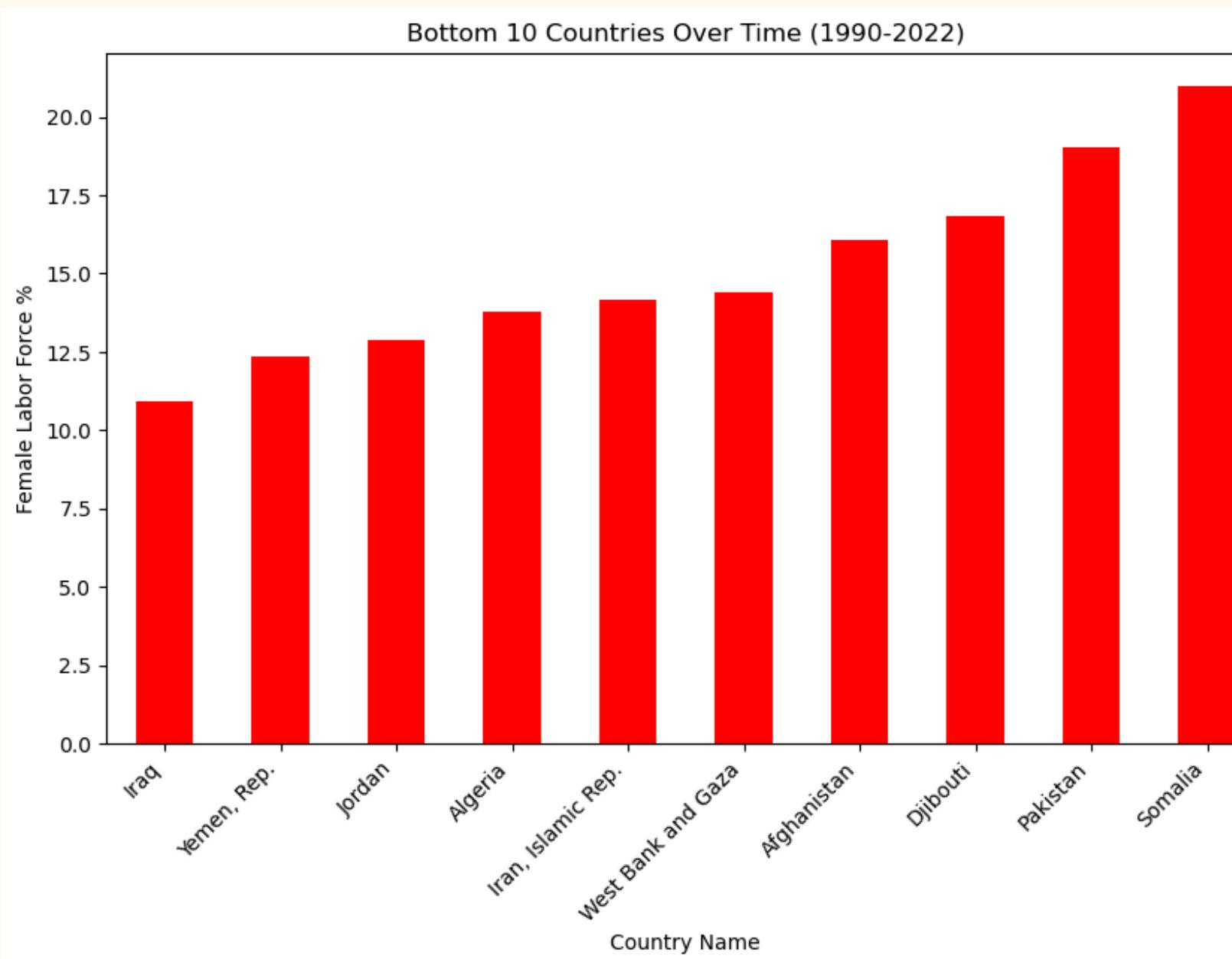
EUROPE



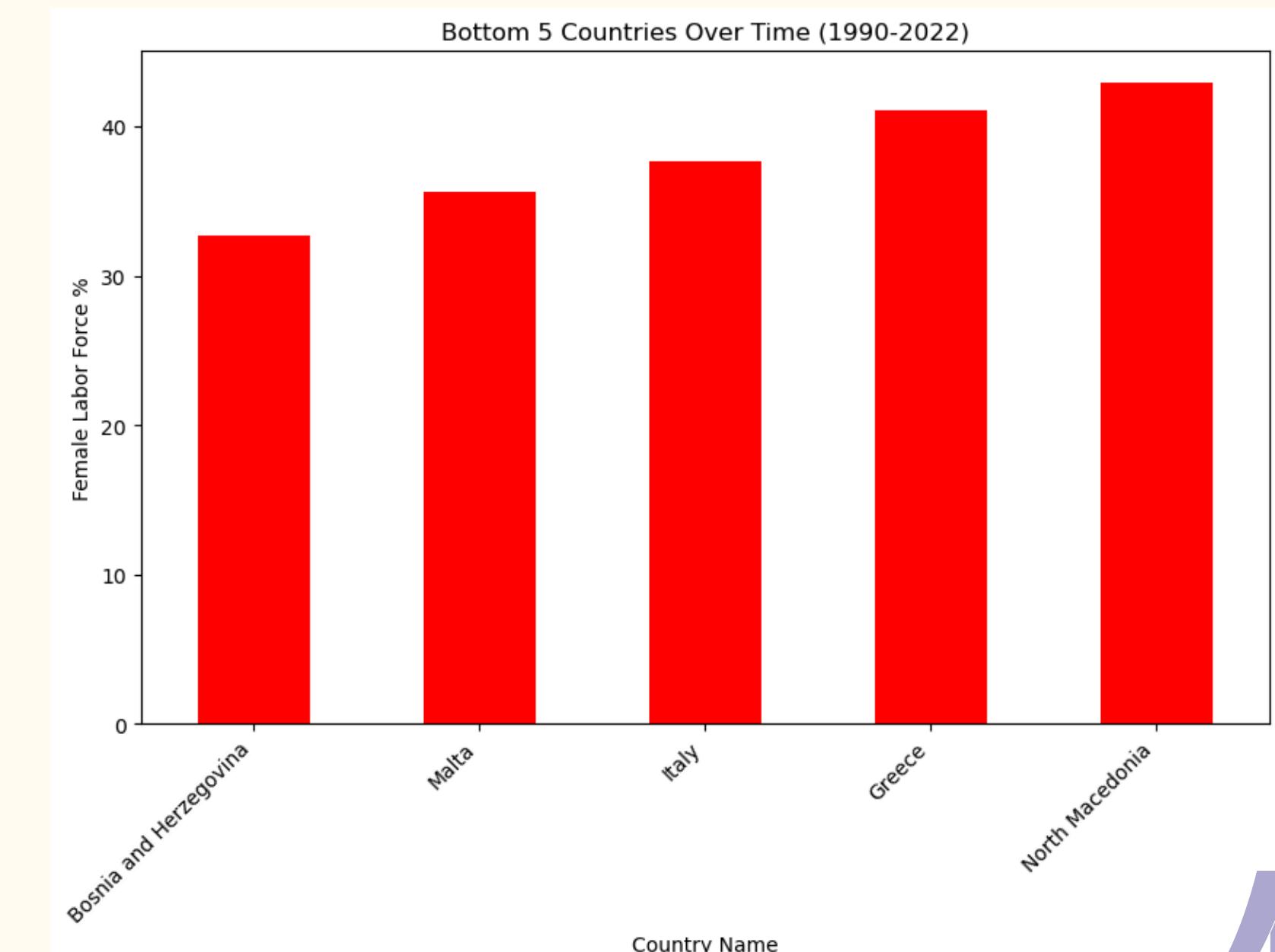
Bottom Performers

FEMALE LABOR FORCE (%)

WORLD

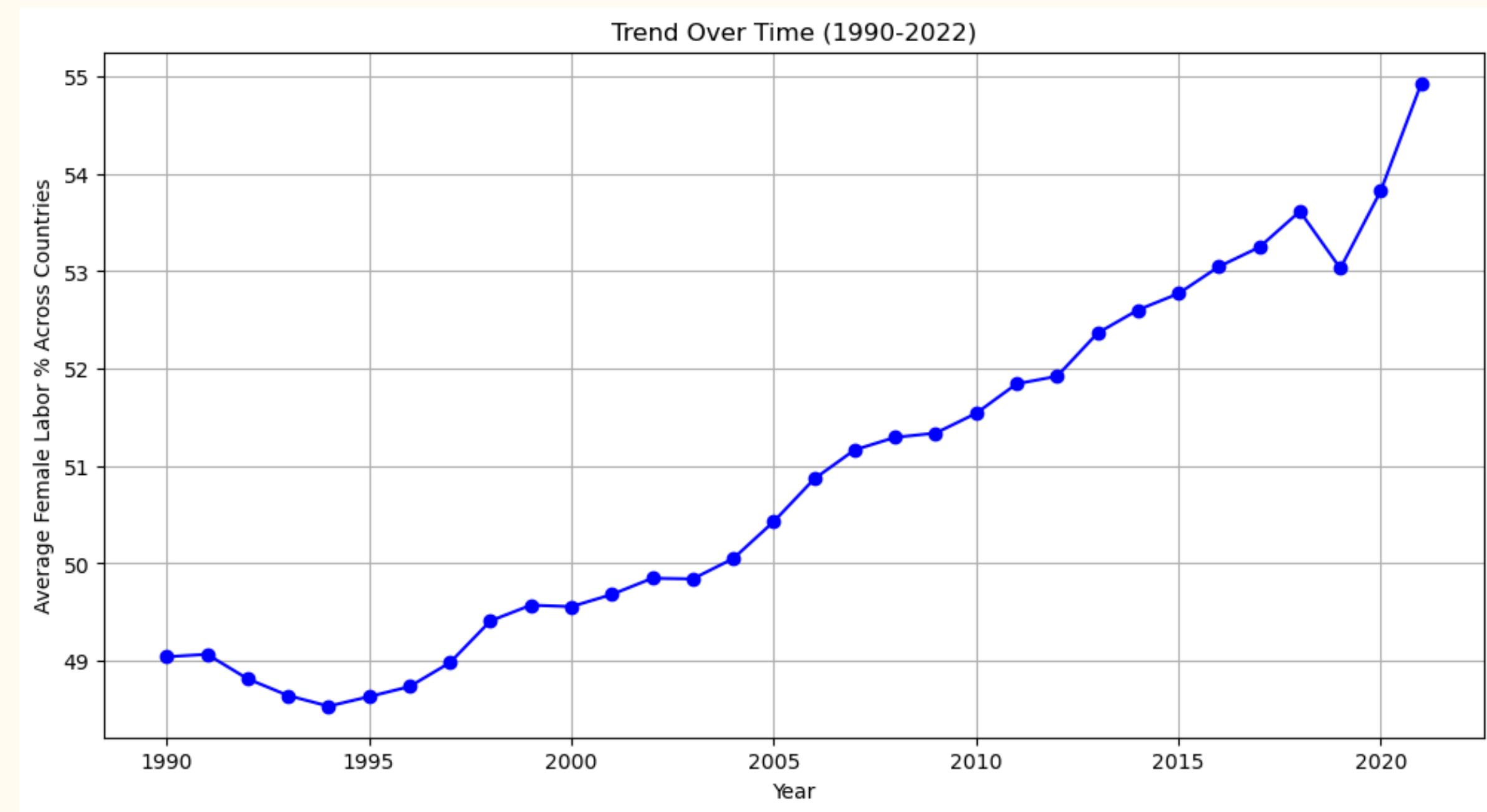


EUROPE



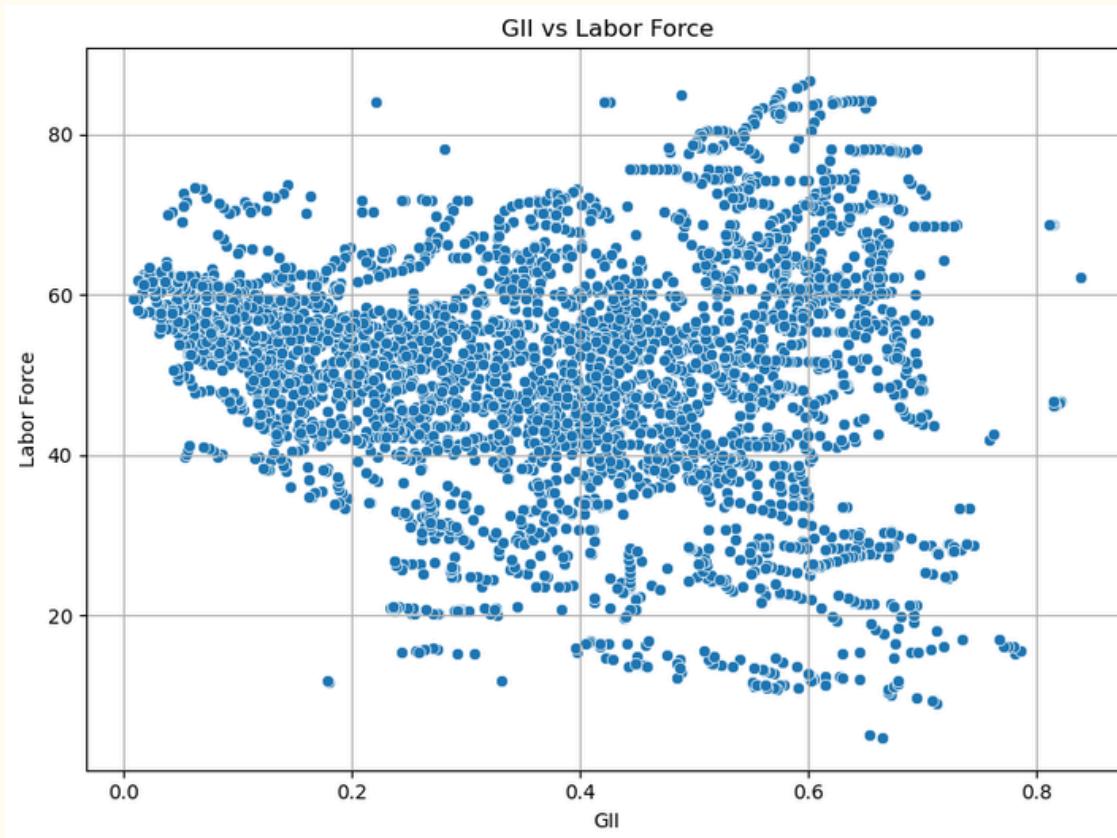
Trend Over Time

FEMALE LABOR FORCE (%)

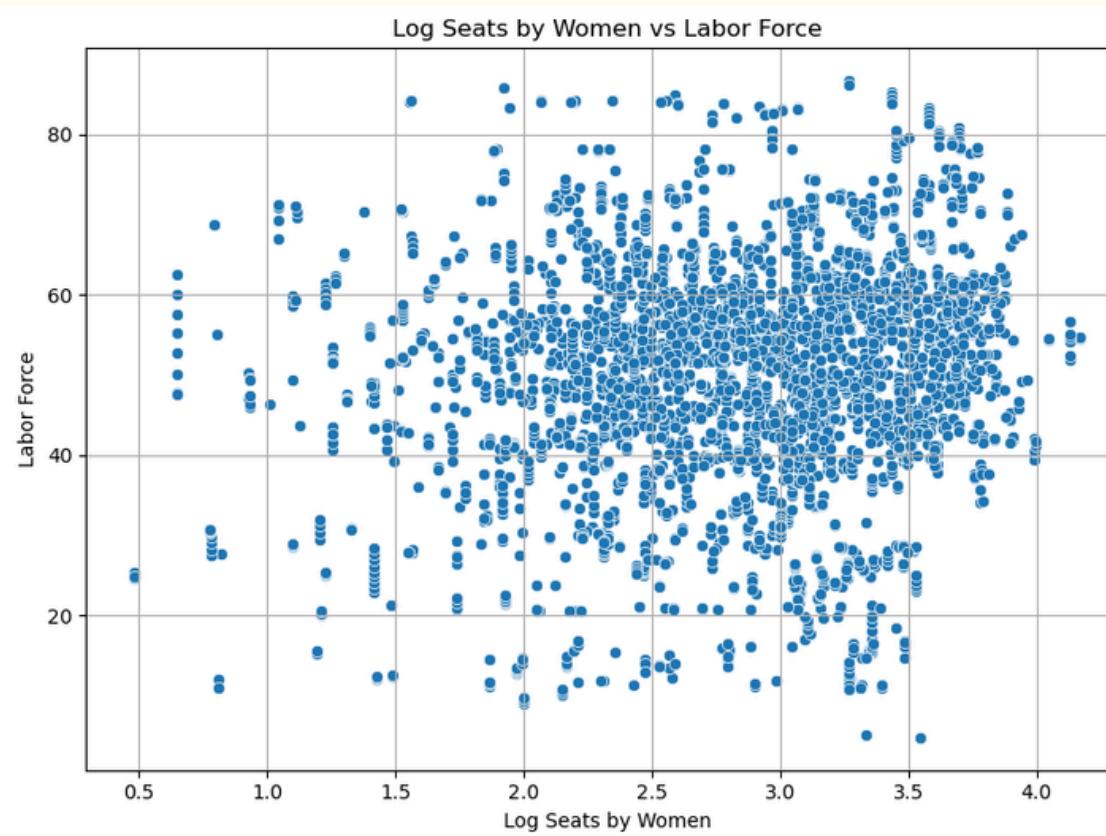


Scatter Plot

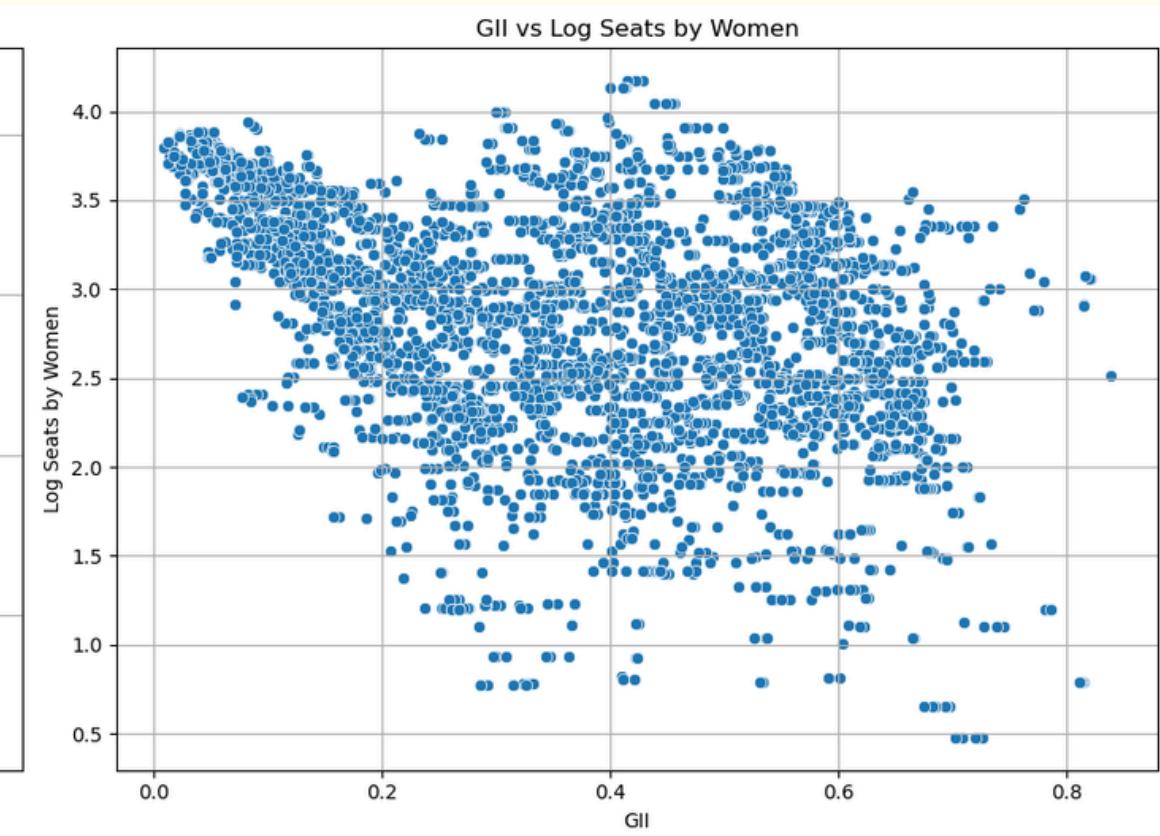
**WEAK NEGATIVE
CORRELATION**



**WEAK POSITIVE
CORRELATION**



**WEAK NEGATIVE
CORRELATION**





Hypothesis Test

- Median value chosen as threshold to split the DataFrame into Treatment and Control group
- Women's parliamentary representation can promote higher female labor
- Gender inequality impacts labor force participation

Variable	Median Value	T-test Statistic	P-value	Significance
GII	0.383000	1.987067	0.047001	Significant
Log Seats by Women	2.878187	-3.930507	0.000086	Significant

Ordinary Least Squares

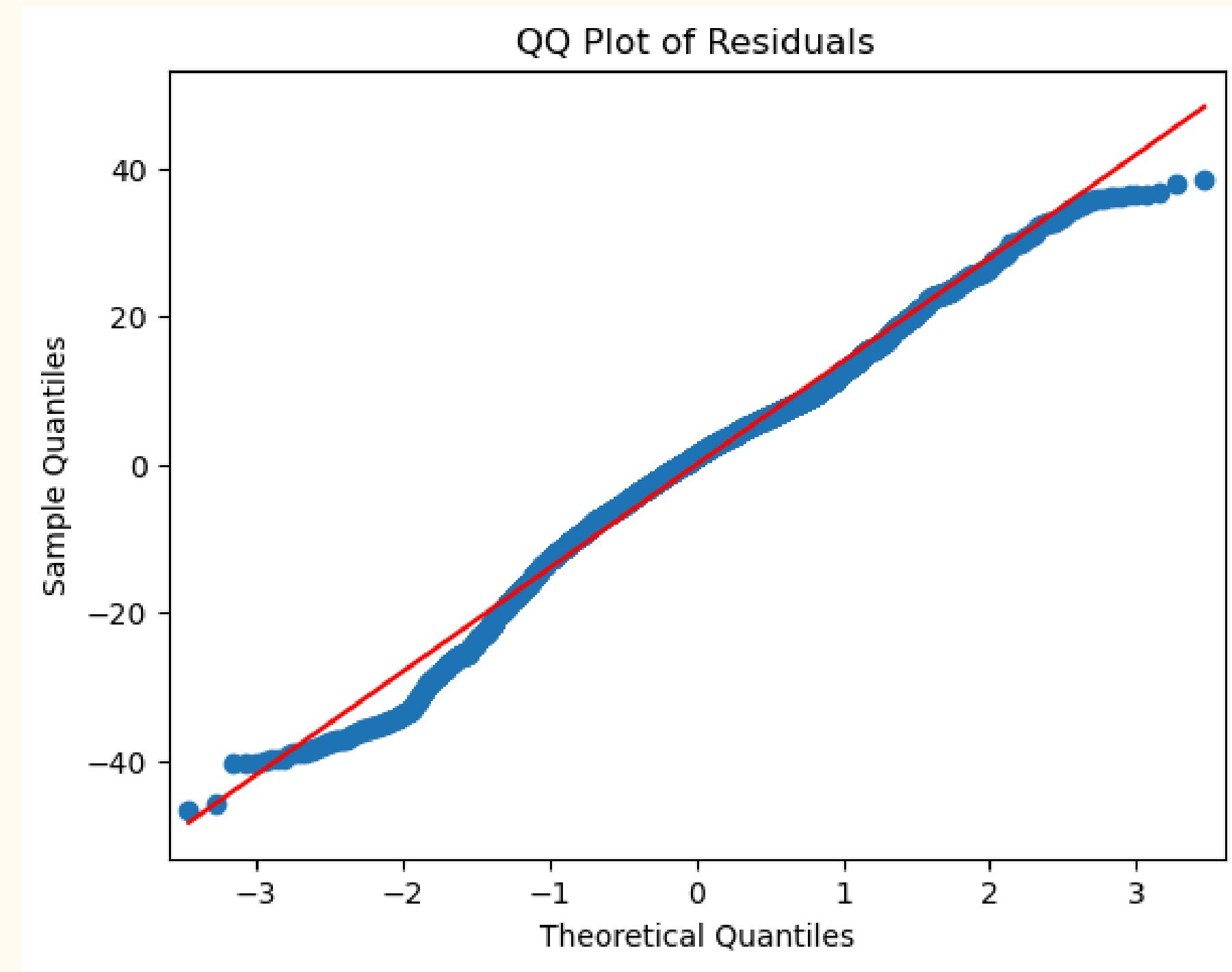
- **Key Findings:**

- Increasing women's parliamentary representation has a statistically significant positive effect on female labor participation
- GII does not show a significant effect on female labor participation in this model
- The model explains a small proportion of the variation

	R-squared: 0.019					
	coef	std err	t	P> t	[0.025	0.975]

const	43.3319	1.354	32.009	0.000	40.678	45.986
GII	-2.1546	1.310	-1.644	0.100	-4.724	0.415
Log Seats by Women	2.7370	0.381	7.175	0.000	1.989	3.485

Residuals Normality



Fixed Effect By Entity

- **Key Findings:**

- Increasing women's parliamentary representation has a statistically significant positive effect on female labor participation
- GII shows a significant effect on female labor participation in this model
- The model explains a small proportion of the variation

R-squared: 0.0628						
	Parameter	Std. Err.	T-stat	P-value	Lower CI	Upper CI
const	52.693	0.3400	154.96	0.0000	52.026	53.369
GII	-8.5412	0.7005	-12.193	0.0000	-9.9146	-7.1678
Seats by Women	0.0373	0.0075	4.9477	0.0000	0.0225	0.0520

Main Findings

- **Seats Held in Parliament** can **promote** an increase in the **Female Labor Force Participation**
- **Gender Inequality Index** seems having an **impact** on the Female Labor Force Participation if taking in account the country
- Model **explains only 6.3%** of the variation in Female Labor Force, highlighting the need for additional factors.

Limitations



- **Causality vs. Correlation**

The study does not establish causation. For example, higher female labor force participation might influence GII or political representation, rather than the other way around.

- **Cultural Factors Exclusion**

The study does not directly account for cultural or religious factors, which may heavily influence both gender inequality and female labor force participation in certain regions.

- **Other Potential Covariates**

Factors such as economic development, education levels, and availability of childcare services are not included, which might limit the comprehensiveness of the analysis.



CONCLUSION

Next Steps

- **Incorporate Additional Variables**

Expand the analysis to include other relevant covariates to better understand the drivers of female labor force participation.

- **Include Informal Labor**

Include data on informal or unpaid labor, especially in regions where women's contributions are underrepresented in formal labor statistics.

- **Causality**

Use causal inference methods, such as instrumental variable regression or difference-in-differences analysis, to better understand the directional relationship between these variables.

Q & A