Women in Parliament and Climate Policy Performance

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Introduction

Climate change is what is commonly referred to as a wicked problem - however a wicked problem the solution of which is arguably of another magnitude. This makes it necessary to rethink society from the bottom up. Feminism is a school of thought that does just this. One approach to think about Gender in climate politics is to look at how well different countries perform in issuing climate change policies dependent on what percentage of women are in positions of power, approximated here in parliament.

To research this issue, the following analysis will assess the following hypotheses.

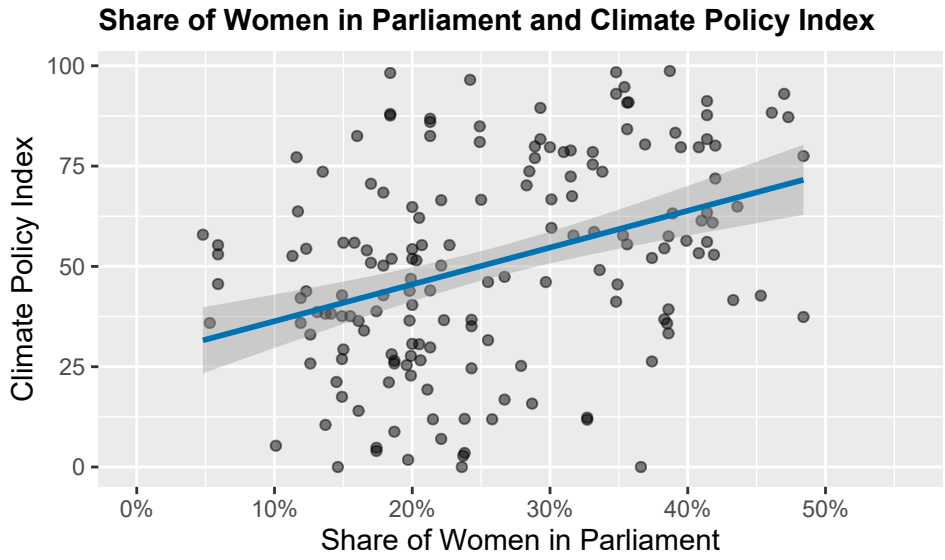
H_0: The share of women in national parliaments has no influence on the climate policy performance of a country.

H_a: The share of women in national parliaments has influence on the climate policy performance of a country.

This analysis combines data from the Inter-Parliamentary Union on women in parliaments (Inter-Parliamentary Union 2021) and data from the Climate Change Performance Index published inter alia by Germanwatch (Burck et al. 2017, 2018, 2019). For the analysis, data for the years 2018 to 2020 was combined and only the Policy Performance part of the Climate Change Performance Index was used, as this is were individual influence is greatest.

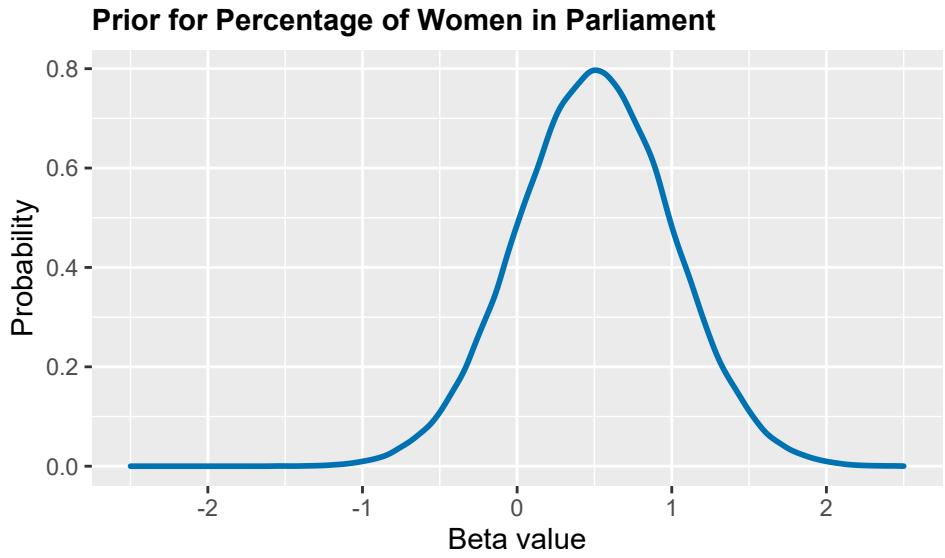
In the analysis, the relationship between the share of women in national parliaments and climate policy performance is additionally corrected for the years 2018, 2019 and 2020 and for world region.

The following diagram shows that from a first visual assessment there seems to be a moderately strong, positive correlation between the percentage of women in parliament and policy performance. However, there also seems to be a considerable error-term, which is why Bayesian regression analysis can help us determine a credible interval of the underlying slope-parameter.



Setting priors

The academic literature has shown on various occasions that "women express slightly greater concern about climate change than do men"(McCright 2010). This is why, we can assume a positive relationship between the percentage of women in parliament and policy performance. This means, we can set our prior to a Normal[0.5, 0.5]-probability distribution as can be seen in the chart below.



When making a comparative study on the international level, it seems to be most natural to control for world region and year. However, despite many of the forerunners being European countries, the academic literature does not seem to suggest a clear tendency what world regions perform worse or better than others.

Likewise, because our data is taken from an Index that informs over the position of countries *relative* to other countries and not in absolute terms with regards to climate policy performance, over the years the mean values of policy performance scores remain stable, despite climate policies becoming more progressive over time.[1]

Thus, the model will assess the influence of female representativity on Climate Policy Performance, without controlling for region or year.

Results

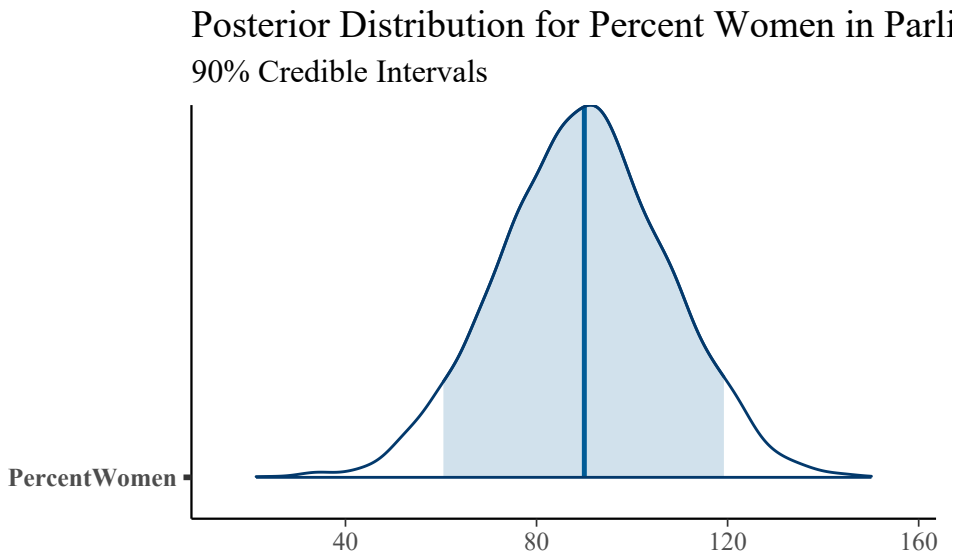
Fitting the model with a Normal[0.5, 0.5]-probability distribution[2] yields the following results. The coefficient is positive, indicating that a one percentage-point increase of women in a given parliament is associated with a predicted 0.89 point increase in the climate policy index. The 90% credible interval for this coefficient extends from 0.61 points to 1.18 points.

Term	Estimate	Standard Deviation	Lower 90% CI	Upper 90% CI
Intercept	27.870	4.781	19.845	35.822
Percentage Women	88.955	17.437	60.631	118.238

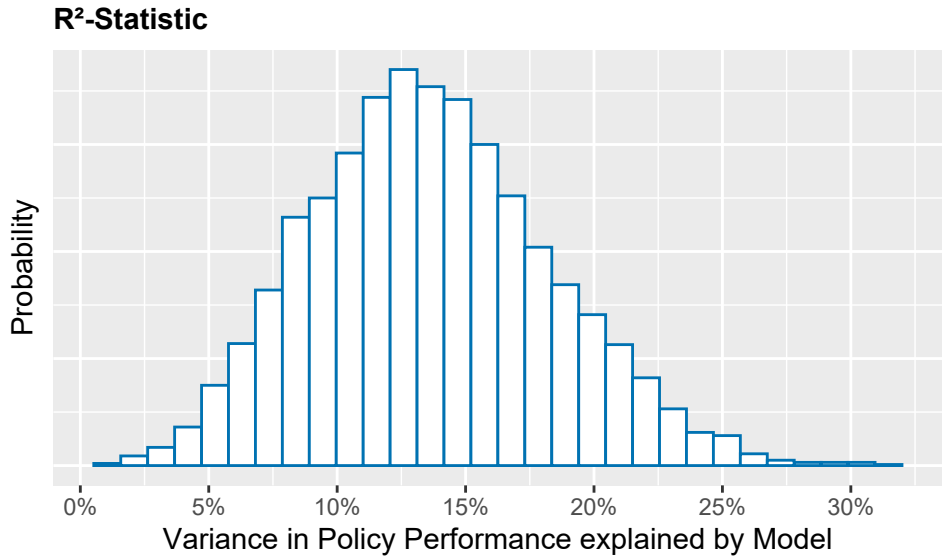
[1] Unfortunately, no index that informed about climate policy performance in a similar manner as the Climate Change Performance Index published by Germanwatch, but in absolute terms, could be found.

[2] The scale is automatically adjusted, so that the adjusted prior is a Normal[0.5, 123].

Additionally, we can visualize the 90% credible interval as a probability distribution.



The R^2-statistic can give us more information on the predictive value of the model. It shows us that the model typically explains between 8% and 18% of the variance in climate policy performance.



Model Predictions

The parliaments of the United Kingdom currently have a share of only 28.9% women.(Inter-Parliamentary Union 2021) We can use our model to calculate a **14.3%-chance** that the United Kingdom - or any other country - would be at the top of the climate policy performance index, if its national parliaments had 50% women.

Conclusion

References

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