When Women Talk About the Environment: MPs' Characteristics and Time Trends in Italian Legislative Speeches (1948-2020)

Silvia Decadri & Fedra Negri

Appendix

A Determinants of legislators' environmental attention

TAB. 1. *Demographic and ideological determinants of legislators' environmental attention*

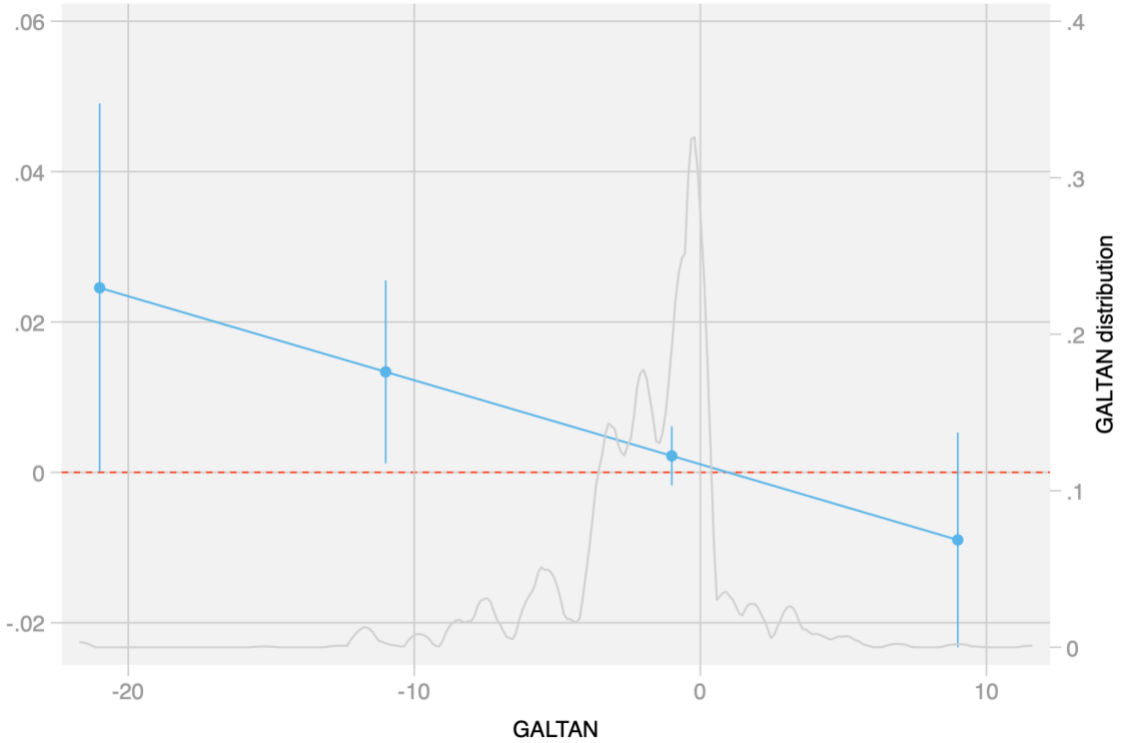
	Environment's Saliency
Female	0.00298*
	(0.00149)
Women Prop. Parl.	0.0247
	(0.0216)
Age: 45-65 years	-0.0122***
	(0.00102)
Age: over 65 years	-0.0416***
	(0.00208)
Centre district	0.00743***
	(0.00120)
Abroad district	-0.0808***
	(0.00856)
North district	0.00561***
	(0.00112)
National District	0.00746

	(0.00549)
Agriculture activities	-0.00451
	(0.00748)
Engineers	-0.00294
	(0.00377)
Armed Forces Occupations	-0.0284***
	(0.00621)
Doctors and apothecary	0.00591
	(0.00321)
Journalist	-0.00785***
	(0.00236)
Labour union	-0.0103***
	(0.00289)
Lawyer	-0.0272***
	(0.00220)
Other	-0.00597*
	(0.00233)
Other professional	-0.00349
	(0.00261)
Private sector employee or free-lance	-0.00300
	(0.00248)
Private sector employer	0.00351
	(0.00273)
Profession of education	-0.0151***
	(0.00222)
Public bureaucrat	-0.0114***
	(0.00285)
Student	-0.00335
	(0.00818)
Unemployed	0.111***
	(0.0320)
2nd Republic	-0.00238
	(0.00336)

RILE	-0.0000455
	(0.0000396)
Decade: 1950	0.00143
	(0.00346)
Decade: 1960	0.00245
	(0.00502)
Decade: 1970	0.00403
	(0.00682)
Decade: 1980	0.00298
	(0.00819)
Decade: 1990	0.00516
	(0.00916)
Decade: 2000	0.00846
	(0.0105)
Decade: 2010	0.00465
	(0.0115)
Decade: 2020	0.00316
	(0.0131)
Year	-0.000130
	(0.000240)
Environment Talk Proportion	0.994***
	(0.0378)
Environment Commission	0.0143***
	(0.00132)
Observations	29,289
R^2	0.772

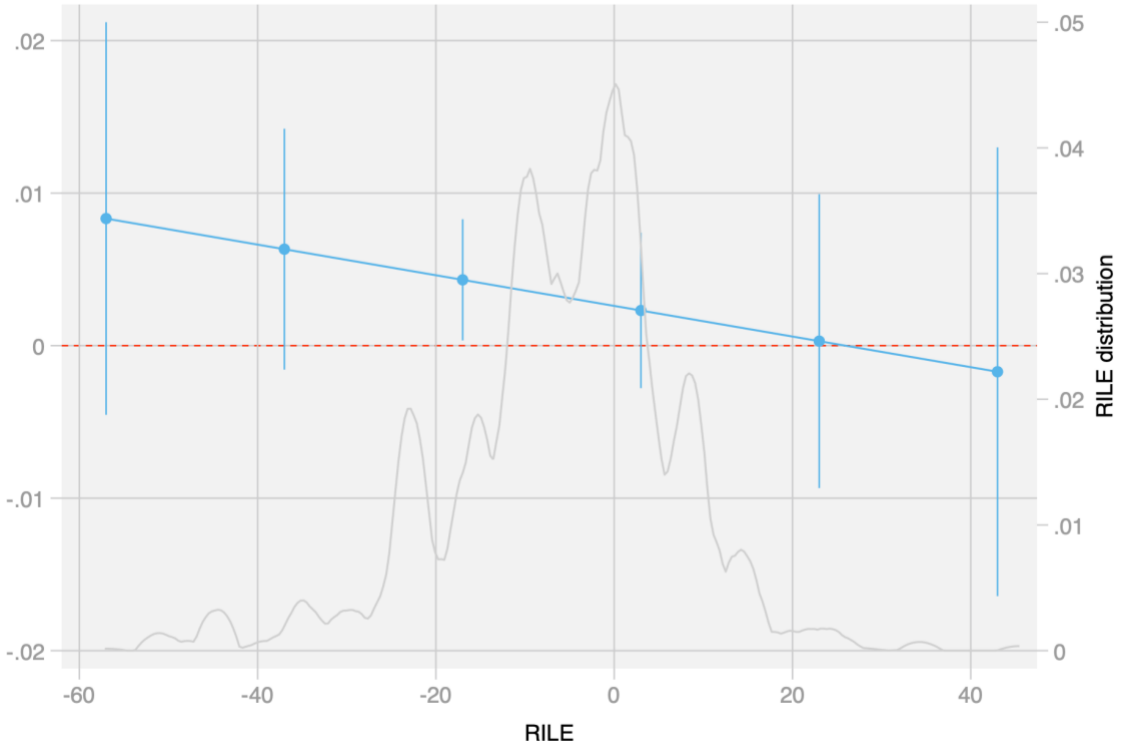
Standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

FIG.1. *Ideological determinants of MPs' environmental attention mediated by gender*



Note: Marginsplots representing the effect of GALTAN on the environment topic's saliency, conditional on *Female*. Marginal effects with 95% confidence interval in light blue, kernel distribution in gray.

FIG.2. *Ideological determinants of MPs' environmental attention mediated by gender*



Note: Marginsplots representing the effect of RILE on the environment topic's saliency, conditional on *Female*. Marginal effects with 95% confidence interval in light blue, kernel distribution in gray.

FIG.3. *Demographic determinants of MPs' environmental attention mediated by gender*

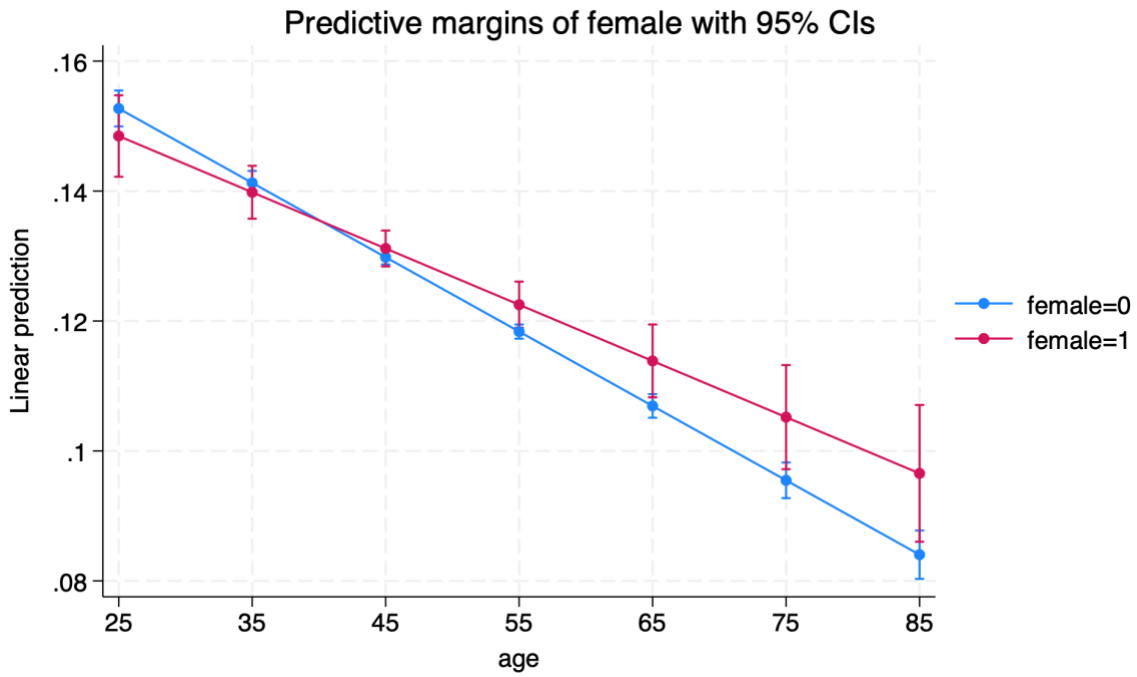


FIG.4. *Demographic determinants of MPs' environmental attention mediated by gender*

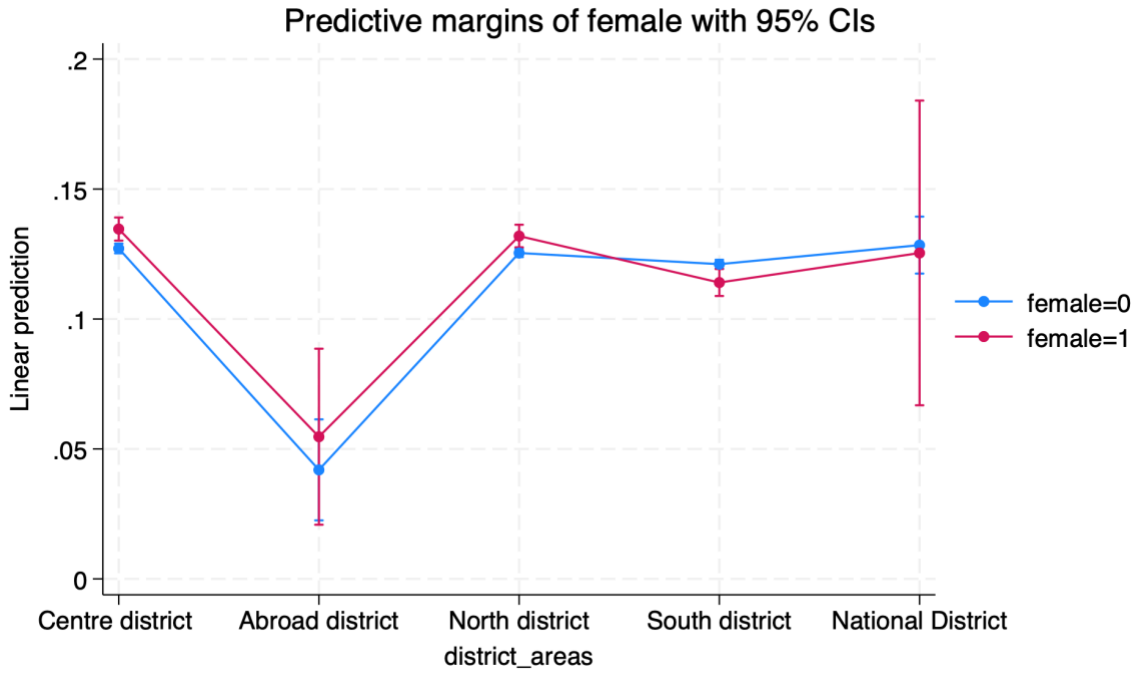
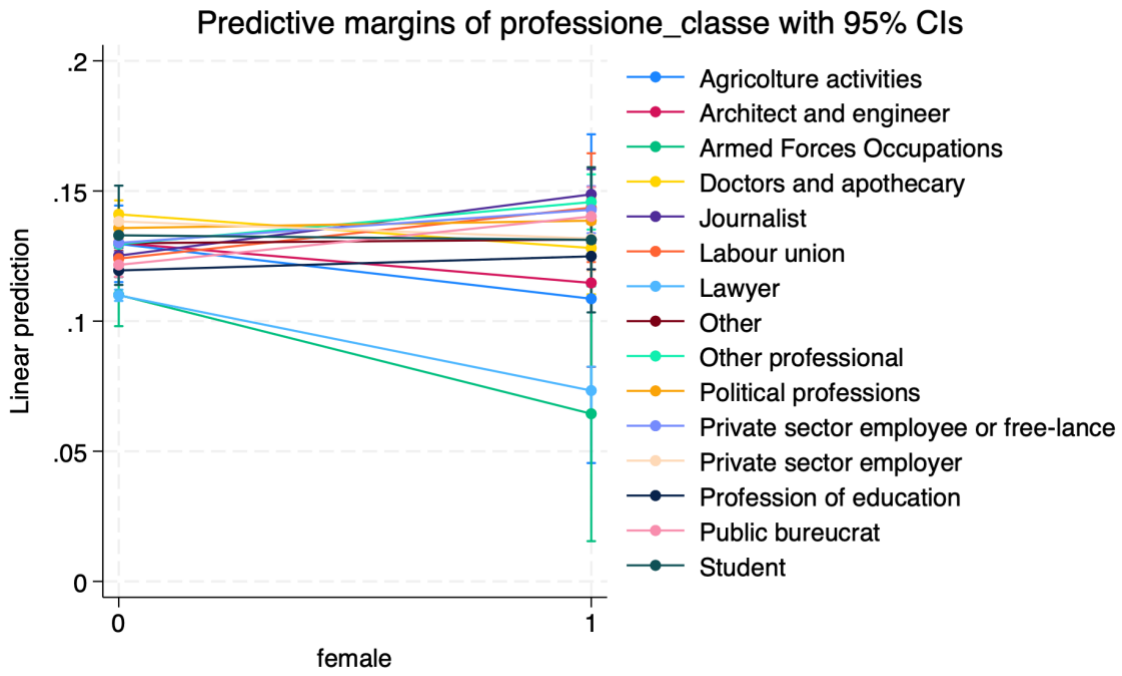


FIG.5. *Demographic determinants of MPs' environmental attention mediated by gender*



B Female representation and legislators' environmental attention

TAB. 2. *Marginal effect of Female on legislators' environmental attention*

	Environment
Female	0.0124***
	(0.00280)
Women Prop. Parl.	0.0379
	(0.0219)
Women Prop. Parl.#Female	-0.0594***
	(0.0149)
Age: 45-65 years	-0.0122***
	(0.00102)
Age: over 65 years	-0.0416***
	(0.00208)
Centre district	0.00728***
	(0.00120)
Abroad district	-0.0809***
	(0.00855)
North district	0.00551***
	(0.00112)
National District	0.00759
	(0.00549)
Agriculture activities	-0.00424
	(0.00748)
Engineers	-0.00256
	(0.00377)
Armed Forces Occupations	-0.0279***
	(0.00621)
Doctors and apothecary	0.00642*
	(0.00321)
Journalist	-0.00739**

	(0.00237)
Labour union	-0.00966***
	(0.00289)
Lawyer	-0.0266***
	(0.00220)
Other	-0.00571*
	(0.00233)
Other professional	-0.00300
	(0.00261)
Private sector employee or free-lance	-0.00265
	(0.00248)
Private sector employer	0.00379
	(0.00273)
Profession of education	-0.0150***
	(0.00222)
Public bureaucrat	-0.0109***
	(0.00285)
Student	-0.00207
	(0.00819)
Unemployed	0.114***
	(0.0320)
2nd Republic	-0.00262
	(0.00336)
RILE	-0.0000440
	(0.0000396)
Decade: 1950	0.00149
	(0.00346)
Decade: 1960	0.00274
	(0.00502)
Decade: 1970	0.00403
	(0.00682)
Decade: 1980	0.00243
	(0.00819)

Decade: 1990	0.00437
	(0.00916)
Decade: 2000	0.00743
	(0.0105)
Decade: 2010	0.00406
	(0.0115)
Decade: 2020	0.00284
	(0.0131)
Year	-0.000122
	(0.000240)
Environment Talk Proportion	0.995***
	(0.0378)
Environment Commission	0.0143***
	(0.00132)
Observations	29,289
R^2	0.773

Standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

C Structural Topic Models

Number of Topics Choice

We estimate our topic model using the STM package in R (Roberts et al., 2019), after having applied a pretty standard pre-processing to our corpus. For each time-frame considered, we evaluated 13 models, varying the number of topics k from 3 to 15, and found that models with relatively many topics performed better in terms of held-out likelihood. After a qualitative inspection of the most representative words and documents for each topic in this range, we thus selected k=14. Note that when STM models include a content covariate, in our case *Gender*, it is not possible to calculate the model's exclusivity. Given that evaluating semantic coherence is useful only when in combination with semantic exclusivity (Roberts et al. 2019), we opted for using only held-out likelihood (and its opposite, the model's residuals). Figures 6-8 show the levels of held-out likelihood for models with k=3 to 15, for the three time-frames 1948-1973, 1974-1999, and 2000-2020). Held-out likelihood (residuals) increases (decrease) steadily until k=14, and it flattens afterwords. For a similar approach, please see Decadri and Negri (2024).

FIG.6. *STM Main Diagnostics – Time-frame* 1948-1973

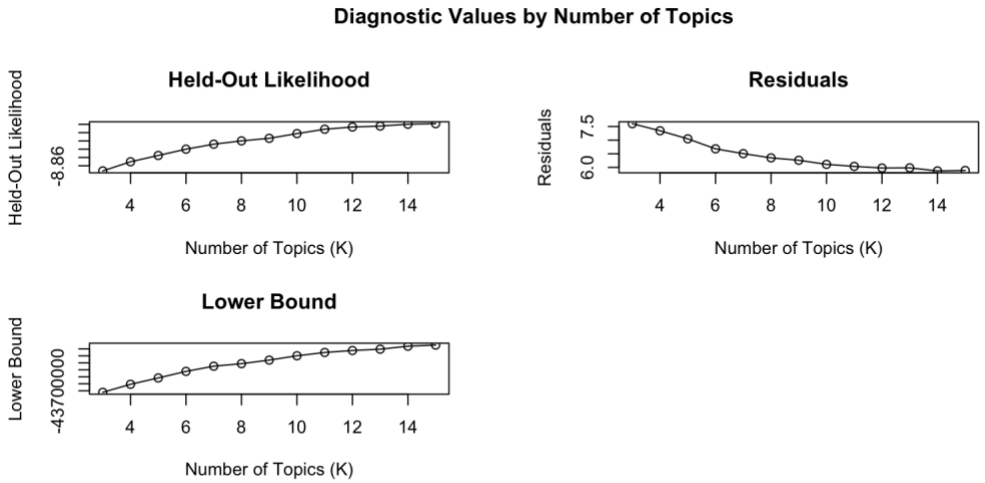


FIG.7. *STM Main Diagnostics – Time-frame* 1974-1999

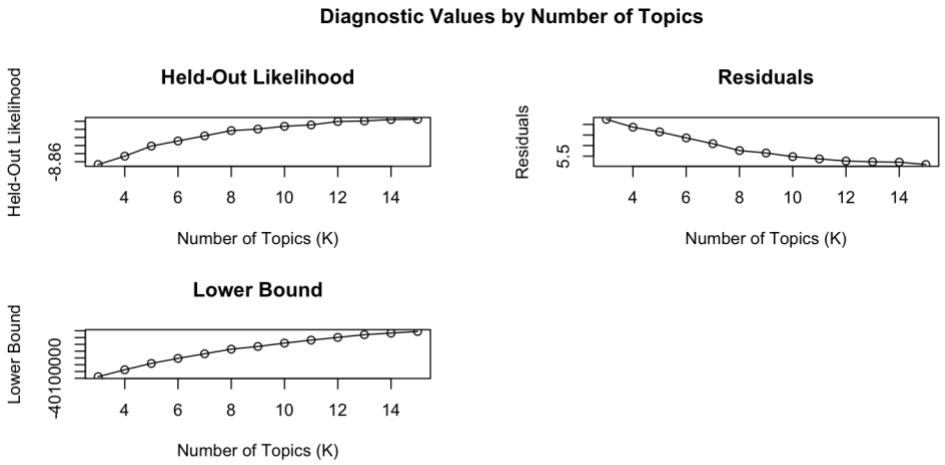
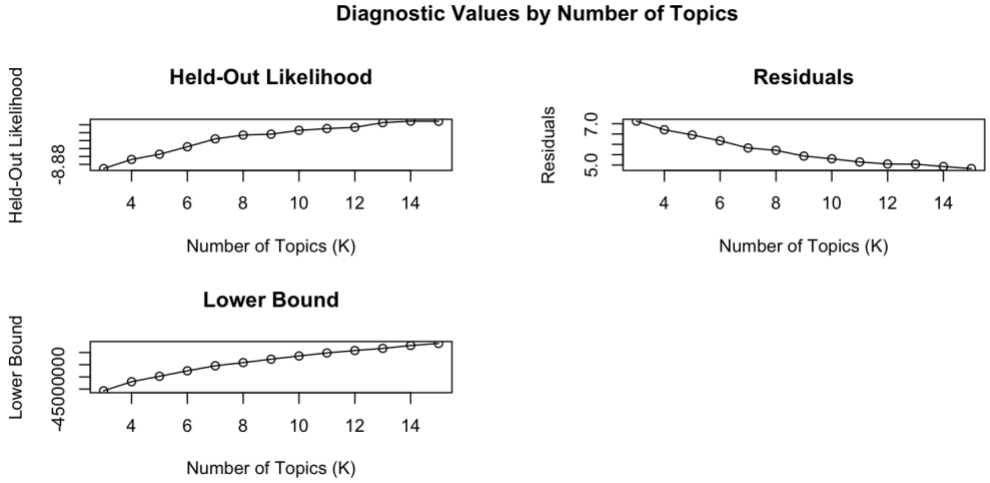


FIG.8. *STM Main Diagnostics – Time-frame* 2000-2020



References

Decadri, S., & Negri, F. (2024). Gender roles, perspectives, and issue attention in the Italian political twitterverse. An analysis of politicians' network and top-down communication. Journal of Information Technology & Politics, 21(4), 528–546.

Roberts, Margaret E., Brandon M. Stewart, and Dustin Tingley, 2019. Stm: An R package for structural topic models. Journal of Statistical Software 91: 1-40.