

Diagnostics report

2026-06-15

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1 Purpose

The purpose of this report is to provide the appendix-style diagnostics that document how the released party-position estimates are constructed, checked, and validated. The main article reports the central validation evidence; this report keeps the larger technical tables with the release so readers can inspect item coverage, source coverage, coding orientation, harmonization, convergence, posterior uncertainty, and validation details in one reproducible place.

2 Overview

This report follows the structure of the technical appendix material: data and item coverage, coding and scale orientation, party-union harmonization, construct checks, model convergence, and validation. It is generated from the model-ready inputs and completed model outputs; it is not part of the raw-data setup workflow.

3 Data and item coverage

The model combines text-coded item counts, dimension-specific expert placements, and general left-right expert placements. Text items enter as positive/sample counts, expert items enter as aggregated ratings with scale and expert-count information, and general left-right ratings anchor the relationship between the two dimensions.

source_file	dimension	items
expert.csv	cultural cosmopolitan–traditionalist	7
expert.csv	economic left-right	5
lr_data.csv	general left-right	3
text_data.csv	cultural cosmopolitan–traditionalist	11
text_data.csv	economic left-right	6

3.1 Source coverage

source_file	source	items	observations	party_years	parties	countries	min_year	max_year
expert.csv	CHES	2	2639	1320	390	44	1999	2024
expert.csv	GPS	2	538	271	271	62	2019	2019
expert.csv	POPPA	1	413	413	225	31	2018	2023
expert.csv	V-Party	7	21488	3076	589	65	1970	2019
lr_data.csv	CHES	1	1320	1320	390	44	1999	2024
lr_data.csv	Morgan	1	471	471	72	11	1945	1973
lr_data.csv	POPPA	1	416	416	225	31	2018	2023
text_data.csv	Manifesto Project	8	36008	4501	713	65	1920	2025
text_data.csv	PolDem	9	2194	406	93	15	1972	2017

4 Data coding and item orientation

All indicators are oriented toward the two reported dimensions: economic left-right and cultural cosmopolitan–traditionalist. For interpretability, generated diagnostics report whether higher observed values point toward the public high pole or are reversed for reporting. Original source variable names are preserved in the tables.

4.1 Reversed items

item	source	dimension	higher_values_indicate	observed
internationalism_manifesto	Manifesto Project	cultural cosmopolitan–traditionalist	cosmopolitan	
multiculturalism_manifesto	Manifesto Project	cultural cosmopolitan–traditionalist	cosmopolitan	
economic_intervention_manifesto	Manifesto Project	economic left-right	pro_welfare	
social_services_manifesto	Manifesto Project	economic left-right	pro_welfare	
cultlib_poldem	PolDem	cultural cosmopolitan–traditionalist	cosmopolitan	
euro_poldem	PolDem	cultural cosmopolitan–traditionalist	cosmopolitan	
europa_poldem	PolDem	cultural cosmopolitan–traditionalist	cosmopolitan	
immig_poldem	PolDem	cultural cosmopolitan–traditionalist	cosmopolitan	
welfare_poldem	PolDem	economic left-right	pro_welfare	

5 Party unions and electoral coalitions

Alliance and union labels are handled through constituent mappings so the released party identifiers represent individual parties. Shared text evidence can inform constituent parties through the union mapping while expert data continue to constrain individual parties directly.

metric	category	value
constituent_mappings	all	10
unique_union_or_alliance_ids	all	7
unique_constituent_party_ids	all	10
mappings_by_country	AR	
mappings_by_country	AU	
mappings_by_country	BA	
mappings_by_country	BE	
mappings_by_country	BG	
mappings_by_country	BR	
mappings_by_country	CH	
mappings_by_country	CL	
mappings_by_country	CZ	
mappings_by_country	DE	
mappings_by_country	EC	
mappings_by_country	EE	
mappings_by_country	ES	
mappings_by_country	FR	
mappings_by_country	GR	
mappings_by_country	HR	
mappings_by_country	IE	
mappings_by_country	IL	
mappings_by_country	IT	
mappings_by_country	LK	
mappings_by_country	LT	
mappings_by_country	LU	
mappings_by_country	LV	
mappings_by_country	MD	
mappings_by_country	ME	
mappings_by_country	MX	
mappings_by_country	NL	
mappings_by_country	NZ	
mappings_by_country	PE	
mappings_by_country	PL	
mappings_by_country	RO	
mappings_by_country	RS	
mappings_by_country	SK	
mappings_by_country	UY	
mappings_by_relationship	Amaiur (2011) predecessor to EH Bildu; expert data 2014-2024 covers EH Bildu years	
mappings_by_relationship	Arab party coalition (2015-2021); Balad is constituent	
mappings_by_relationship	Arab party coalition (2015-2021); Hadash is core constituent	

6 Party-family and construct coverage

Party-family classifications are used for construct-validity diagnostics and coverage summaries. The table below reports coverage in the completed model output by family code.

family	parties	party_years	countries	min_year	max_year
soc	86	2892	37	1944	2025
con	82	2425	34	1944	2024
lib	81	2063	35	1944	2025

chr	41	1596	24	1945	2025
com	49	1241	27	1944	2025
right	50	975	26	1946	2025
eco	30	723	24	1960	2024
agr	12	592	10	1944	2024
spec	25	520	14	1949	2024
other	2	40	2	1992	2024

6.1 Construct-validity family means

Substantive party-family means provide a construct-validity check: families should follow the expected ordering on the economic left-right and cultural cosmopolitan–traditionalist dimensions.

family_name	n_parties	n_obs	mean_economic	sd_economic	mean_cultural	sd_cultural
Communist/Far Left	49	1241	0.120	0.090	0.383	0.180
Green/Ecological	30	723	0.267	0.115	0.251	0.092
Social Democratic	86	2892	0.331	0.124	0.378	0.138
Christian Democratic	41	1596	0.596	0.119	0.529	0.140
Radical Right	50	975	0.622	0.190	0.720	0.151
Conservative	82	2425	0.652	0.178	0.538	0.143
Liberal	81	2063	0.657	0.152	0.371	0.132

6.2 Temporal-stability flags

The model permits movement through random walks, but unusually large one-year changes are flagged for inspection rather than treated as automatic errors.

party_id	country	dimension	year_from	year_to	val_from	val_to	annual_change
556	LT	cultural cosmopolitan–traditionalist	2019	2020	0.771	0.529	0.242
1663	IL	cultural cosmopolitan–traditionalist	2021	2022	0.142	0.356	0.214
455	IL	cultural cosmopolitan–traditionalist	1997	1998	0.457	0.643	0.186
455	IL	cultural cosmopolitan–traditionalist	1996	1997	0.277	0.457	0.180
8393	LV	cultural cosmopolitan–traditionalist	2018	2019	0.439	0.263	0.176
281	BE	cultural cosmopolitan–traditionalist	1977	1978	0.671	0.843	0.173
556	LT	cultural cosmopolitan–traditionalist	2001	2002	0.319	0.491	0.172
964	IS	economic left-right	2016	2017	0.691	0.521	0.170
298	NL	cultural cosmopolitan–traditionalist	2018	2019	0.761	0.593	0.168
901	FI	economic left-right	1992	1993	0.486	0.647	0.161
467	SI	cultural cosmopolitan–traditionalist	2018	2019	0.564	0.404	0.160
1221	IT	economic left-right	2007	2008	0.560	0.400	0.159
901	FI	economic left-right	1991	1992	0.327	0.486	0.159
455	IL	cultural cosmopolitan–traditionalist	1998	1999	0.643	0.797	0.154
1221	IT	economic left-right	2006	2007	0.709	0.560	0.149
2211	UA	economic left-right	2006	2007	0.417	0.562	0.145
631	CH	economic left-right	2018	2019	0.613	0.757	0.144
298	NL	cultural cosmopolitan–traditionalist	2019	2020	0.593	0.735	0.142
556	LT	cultural cosmopolitan–traditionalist	2000	2001	0.181	0.319	0.138
1417	IL	cultural cosmopolitan–traditionalist	1968	1969	0.498	0.635	0.137

7 Model convergence diagnostics

Convergence is assessed using split R-hat and effective sample size over monitored parameters.

metric	count	percentage
R-hat < 1.01	35258	100.00
R-hat 1.01-1.05	0	0.00
R-hat > 1.05	0	0.00
ESS > 1000	34853	98.85
ESS 400-1000	405	1.15
ESS < 400	0	0.00

7.1 Convergence by parameter group

dimension	parameters	mean_rhat	max_rhat	min_ess_bulk	mean_ess_bulk
cultural cosmopolitan-traditionalist	17585	1.001	1.006	810.509	6889.246
economic left-right	17585	1.000	1.004	670.708	5573.456
lr_country_offset	65	1.001	1.004	1078.198	5434.868
lr_decade_offset	8	1.000	1.001	2069.676	3372.016
lr_sigma	3	1.001	1.002	1956.611	2582.401
lr_source_offset	3	1.000	1.000	3477.519	3814.374
lr_weight	3	1.002	1.002	1540.806	1560.217
mean_sigma	6	1.005	1.009	534.811	918.502

8 Posterior uncertainty

The completed party-position output reports posterior standard errors and interval endpoints for both dimensions. These summaries describe the typical uncertainty in the release file used by the report.

rows	parties	countries	min_year	max_year	mean_economic_se	median_economic_se	mean_cultural_se	me
17585	708	65	1944	2025	0.065	0.063	0.058	

9 Validation diagnostics

The validation diagnostics combine convergent and discriminant comparisons with expert surveys, posterior predictive coverage, construct checks, and out-of-sample validation when the corresponding outputs are available.

diagnostic	dimension	n	pearson_r	spearman_r	mae	coverage
convergent validity	economic left-right	4637	0.904	0.901	0.076	NA
convergent validity	cultural cosmopolitan-traditionalist	1425	0.960	0.967	0.079	NA
posterior predictive coverage	economic left-right	7455	NA	NA	NA	0.899
posterior predictive coverage	cultural cosmopolitan-traditionalist	15539	NA	NA	NA	0.848

9.1 Discriminant validity

model_dim	expert_dim	r_pearson	r_spearman	n	type
economic left-right	economic	0.904	0.901	4637	convergent
cultural cosmopolitan-traditionalist	economic	0.422	0.435	4637	discriminant
cultural cosmopolitan-traditionalist	cultural cosmopolitan-traditionalist	0.960	0.967	1425	convergent
economic left-right	cultural cosmopolitan-traditionalist	0.393	0.398	1425	discriminant

9.2 External validation correlations

var	dimension	n	pearson_r	mean_absolute_error	coverage_95
culsup_vparty	cultural cosmopolitan-traditionalist	536	0.812	0.128	0.384
galtan_ches	cultural cosmopolitan-traditionalist	222	0.959	0.079	0.523
gender_vparty	cultural cosmopolitan-traditionalist	545	0.563	0.169	0.290
immig_vparty	cultural cosmopolitan-traditionalist	537	0.743	0.103	0.490
lgbt_vparty	cultural cosmopolitan-traditionalist	541	0.794	0.094	0.551
relig_vparty	cultural cosmopolitan-traditionalist	548	0.676	0.303	0.047
lrecon_ches	economic left-right	223	0.974	0.055	0.812
lrecon_poppa	economic left-right	74	0.980	0.066	0.662
lrecon_vparty	economic left-right	534	0.866	0.088	0.674
welf_vparty	economic left-right	534	0.682	0.176	0.363

10 Generated tables

- alliance_union_harmonization.csv
- construct_family_positions.csv
- construct_temporal_stability_flags.csv
- external_validation_correlations.csv
- item_coding_orientation.csv
- item_coverage.csv
- model_convergence_by_dimension.csv
- model_convergence_summary.csv
- party_family_coverage.csv
- party_year_source_coverage.csv
- posterior_uncertainty_summary.csv
- posterior_validation_convergent_summary.csv
- posterior_validation_discriminant_summary.csv
- posterior_validation_uncertainty_summary.csv
- reversed_items.csv
- source_coverage.csv