# Summary of Synthetic Variables Estimation

EES 2019 Voter Study (Czech, Finnish, Greek, Hungarian, Lithuanian, Slovakian, Polish and Swedish Samples)

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# 1 Czech Republic

Synthetic variables have been estimated for the full set of Czech parties available in the original 2019 EES Czech Republic voter study selected according to the criteria stated in the EES 2019 SDM codebook (for the criteria see Sect. XXX; for the relevant parties see Table 1.1).

Table 1.1: Czech Republic relevant parties

Dep. Var.	Party	Party name (eng)
stack_601	601	Christian and Democratic Union / Czechoslovak People's Party
$stack\_603$	603	Czech Social Democratic Party
$stack\_604$	604	Civic Democratic Party
${ m stack}\_605$	605	Communist Party of Bohemia and Moravia
$stack\_606$	606	ANO 2011
$stack\_607$	607	Czech Pirate Party
$stack\_608$	608	Freedom and Direct Democracy Tomio Okamura
$stack\_602$	602	Tradition, Responsibility, Prosperity 09 (TOP 09)

Full OLS models converge and coefficients do not show any particular issue (see Table 1.8). In terms of model fit, the adjusted coefficient of determination  $(R^2)$  values vary between a minimum value of 0.023, 0.023 for party 603, 608 (Czech Social Democratic Party, Freedom and Direct Democracy Tomio Okamura) and a maximum of 0.203 for party 601 (Christian and Democratic Union / Czechoslovak People's Party). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that the full models perform better in all cases (see Table 1.2).

Table 1.2: Akaike Information Criterion values for OLS full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
$stack\_601$	601	52.665	237.851	-185.186
$stack\_603$	603	160.505	169.927	-9.422
$stack\_604$	604	389.269	459.680	-70.412
$stack\_605$	605	392.501	411.747	-19.246
$stack\_606$	606	745.102	803.107	-58.006
$stack\_607$	607	525.489	633.168	-107.678
$stack\_608$	608	459.283	468.756	-9.473
$stack\_602$	602	140.632	241.723	-101.090

On the contrary, five out of eight logistic regression models (see Table 1.9) show inflated standard errors for some of the coefficients of interest, in particular:

- Model 9: D6\_une
- Model 10a: EDU\_rec (both categories), D7\_rec (second category), D6\_une
- Model 11: D6\_uneModel 15: D6\_uneModel 16: D6\_une

However, for models 9, 11, 15 and 16 the constant terms and other regressors are not affected by the inflated standard errors. Model 10a appears more problematic.

The inflated standard errors in Model 10a are due to separation issues. In short, no respondents who are unemployed or of high subjective social status did vote for party 603. Only one respondent with low education voted for party 603. (See tables 1.5, 1.6, 1.7)

As a consequence, a constrained version of model 10 (namely, Model 10b) without said variables was estimated and contrasted with the original (Model 10a), full model. Likelihood-ratio test results show that  $H_0$  (namely, that the constrained model fits better than the full model) cannot be rejected (see Table 1.3). Consequently, synthetic variables for respondents' vote choice for party 603 have been predicted relying on the constrained model (Model 10b).

Table 1.3: Likelihood-ratio Test between Model 10a (Unconstrained) and Model 10b (Constrained)

Model	Resid. Df	Resid. Dev	Df	Deviance	Pr(>Chi)
Constrained	849	163.7771			
Unconstrained	844	153.7958	5	9.981323	0.0757662

In terms of model fit, adjusted McFadden's pseudo  $R^2$  values for the logistic full models vary between a minimum value of -0.065 for party 603 (Czech Social Democratic Party) and a maximum of 0.155 for party 601 (Christian and Democratic Union / Czechoslovak People's Party). Moreover, the difference between Akaike Information Criterion (AIC) values for logistic full models and null models shows that in four cases out of eight null models perform better than full ones. According to AIC values the related null model appears to have a better fit than Model 10b (see Table 1.4).

Table 1.4: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_601	601	214.1510	255.3350	-41.184000
$stack\_602$	602	268.2320	275.1270	-6.894000
$stack\_603$	603	177.7960	168.9080	8.888000
$stack\_603*$	603	177.7771	168.9081	8.869078
$stack\_604$	604	473.8810	462.0590	11.822000
$stack\_605$	605	331.0110	331.1770	-0.166000
$stack\_606$	606	723.2760	774.4330	-51.157000
$stack\_607$	607	530.3500	528.9600	1.390000
stack_608	608	395.1280	394.0820	1.046000

<sup>\*</sup> AIC value refers to Model 10b (constrained).

Table 1.5: Cross tabulation between vote choice for party 603 and respondents' education

stack_603/EDU_rec	1	2	3	NA	Total
0	71	542	343	7	963
1	1	14	4	0	19
NA	3	7	7	1	18
Total	75	563	354	8	1000

Table 1.6: Cross tabulation between vote choice for party 603 and respondents' subjective social class

$stack\_603/D7\_rec$	0	1	2	NA	Total
0	366	467	118	12	963
1	8	11	0	0	19
NA	8	9	0	1	18
Total	382	487	118	13	1000

Table 1.7: Cross tabulation between vote choice for party 603 and respondents' employment status

stack_603/D6_une	0	1	Total
0	945	18	963
1	19	0	19
NA	17	1	18
Total	981	19	1000

 $\sigma$ 

Table 1.8: Propensity to vote for a relevant party according to respondents' socio-demographic characteristics (OLS regression models)

	601	603	604	605	606	607	608	602
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
$D3\_rec2$	0.0003	-0.022	0.016	-0.001	-0.024	0.026	-0.024	0.039*
	(0.017)	(0.018)	(0.021)	(0.021)	(0.026)	(0.023)	(0.022)	(0.018)
$D8\_rec1$	0.026	0.008	0.001	-0.010	0.012	0.003	0.009	-0.014
	(0.019)	(0.021)	(0.024)	(0.024)	(0.029)	(0.026)	(0.025)	(0.021)
$D5\_rec1$	-0.012	-0.030	-0.019	$-0.054^{*}$	0.035	$-0.050^{*}$	0.002	-0.040*
	(0.018)	(0.019)	(0.022)	(0.022)	(0.026)	(0.023)	(0.022)	(0.019)
$EDU\_rec2$	-0.003	-0.020	0.004	-0.017	-0.025	0.014	0.057	-0.007
	(0.035)	(0.038)	(0.043)	(0.043)	(0.053)	(0.046)	(0.045)	(0.038)
$EDU\_rec3$	0.028	-0.031	0.022	-0.044	-0.077	0.038	-0.001	0.023
	(0.036)	(0.038)	(0.044)	(0.044)	(0.054)	(0.047)	(0.046)	(0.038)
D1_rec1	0.038	0.121***	0.046	0.077**	$0.078^{*}$	-0.025	0.084**	0.004
	(0.024)	(0.025)	(0.029)	(0.029)	(0.035)	(0.031)	(0.030)	(0.025)
D7_rec1	0.018	0.013	0.036	-0.015	$0.032^{'}$	-0.012	$-0.054^{*}$	0.036
	(0.019)	(0.020)	(0.023)	(0.023)	(0.028)	(0.025)	(0.024)	(0.020)
$D7\_rec2$	-0.018	$0.040^{'}$	0.094**	-0.017	0.033	$0.055^{'}$	-0.052	$0.041^{'}$
	(0.029)	(0.030)	(0.035)	(0.035)	(0.043)	(0.038)	(0.036)	(0.030)
D6_une1	-0.014	0.008	-0.101	0.144	-0.077	$0.043^{'}$	$0.097^{'}$	-0.074
	(0.070)	(0.074)	(0.085)	(0.085)	(0.104)	(0.092)	(0.088)	(0.076)
D4_age	-0.003****	-0.0001	-0.005****	0.003***	0.006***	-0.008****	0.001	$-0.005^{***}$
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$D10\_rec$	0.068***	0.003	0.021***	$-0.016^*$	-0.013	$0.003^{'}$	-0.011	0.023***
	(0.005)	(0.005)	(0.006)	(0.006)	(0.008)	(0.007)	(0.006)	(0.005)
Constant	0.278***	0.299***	0.469***	0.187***	$0.136^{*}$	0.720***	0.240***	0.453***
	(0.044)	(0.046)	(0.053)	(0.053)	(0.065)	(0.057)	(0.055)	(0.046)
N	863	864	864	864	865	863	864	841
R-squared	0.213	0.036	0.101	0.047	0.088	0.140	0.036	0.136
Adj. R-squared	0.203	0.023	0.090	0.034	0.077	0.128	0.023	0.125

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

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Table 1.9: Vote choice for a relevant party according to respondents' socio-demographic characteristics (Logistic regression models)

	601	603	603	604	605	606	607	608	602
	Model 9	Model 10a	Model 10b	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16
D3_rec2	0.032	0.111	0.153	-0.039	-0.357	-0.405*	-0.027	-0.079	0.001
	(0.419)	(0.502)	(0.495)	(0.265)	(0.339)	(0.199)	(0.244)	(0.295)	(0.377)
$D8\_rec1$	0.185	0.547	0.455	-0.056	0.008	-0.002	0.117	0.509	-1.146**
	(0.483)	(0.652)	(0.645)	(0.299)	(0.383)	(0.227)	(0.282)	(0.384)	(0.379)
$D5\_rec1$	-0.060	-0.277	-0.213	-0.223	-0.354	0.551**	0.030	0.846*	-0.328
	(0.436)	(0.514)	(0.505)	(0.269)	(0.333)	(0.213)	(0.254)	(0.354)	(0.383)
$EDU\_rec2$	-1.014	$17.21\overset{\circ}{5}$	, ,	$0.025^{'}$	-0.513	-0.028	$0.298^{'}$	$0.945^{'}$	-0.546
	(0.697)	(2200.736)		(0.540)	(0.656)	(0.484)	(0.531)	(1.042)	(0.686)
$EDU\_rec3$	-0.680	16.563		$0.060^{'}$	-0.448	-0.316	$0.699^{'}$	1.144	$0.262^{'}$
	(0.700)	(2200.736)		(0.549)	(0.688)	(0.500)	(0.530)	(1.046)	(0.666)
D1_rec1	$0.030^{'}$	0.803	0.827	$0.175^{'}$	$0.693^{'}$	$0.527^{st}$	-0.176	$0.253^{'}$	-0.155
	(0.531)	(0.556)	(0.551)	(0.344)	(0.405)	(0.253)	(0.347)	(0.376)	(0.529)
$D7\_rec1$	$0.653^{'}$	-0.151	, ,	0.206	-0.314	$0.554^{st}$	-0.506	-0.585	$0.997^{'}$
	(0.477)	(0.508)		(0.307)	(0.351)	(0.217)	(0.271)	(0.329)	(0.520)
$D7\_rec2$	-1.370	-16.813		$0.805^{*}$	-0.685	$0.618^{'}$	-0.047	$0.229^{'}$	$1.182^{'}$
	(1.131)	(1627.428)		(0.393)	(0.661)	(0.334)	(0.360)	(0.423)	(0.626)
D6_une1	-13.302	-16.379		-14.133	$0.953^{'}$	-0.308	0.296	-13.887	-14.354
	(1083.416)	(4685.595)		(681.233)	(1.107)	(1.097)	(0.804)	(671.864)	(1089.635)
D4 age	0.004	-0.015	-0.001	-0.004	0.038***	0.048***	$-0.025^{**}$	0.011	-0.025
_	(0.013)	(0.016)	(0.015)	(0.008)	(0.011)	(0.007)	(0.008)	(0.010)	(0.013)
$D10\_rec$	0.579***	0.079	$0.052^{'}$	0.088	-0.159	-0.020	-0.124	-0.093	0.091
	(0.081)	(0.135)	(0.132)	(0.069)	(0.125)	(0.058)	(0.087)	(0.100)	(0.094)
Constant	$-4.343^{***}$	-20.454	-4.406****	$-2.468^{***}$	$-3.991^{***}$	$-4.550^{***}$	$-1.310^{*}$	$-4.985^{***}$	$-1.905^{*}$
	(0.970)	(2200.736)	(1.019)	(0.659)	(0.936)	(0.631)	(0.630)	(1.187)	(0.867)
N	856	856	856	856	856	856	856	856	856
Log Likelihood	-95.076	-76.898	-81.889	-224.940	-153.506	-349.638	-253.175	-185.564	-122.116
$\widetilde{\mathrm{AIC}}$	214.151	177.796	177.777	473.881	331.011	723.276	530.350	395.128	268.232

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

#### 2 Finland

Synthetic variables have been estimated for the full set of Finnish parties available in the original 2019 EES Finland voter study selected according to the criteria stated in the EES 2019 SDM codebook (for the criteria see Sect. XXX; for the relevant parties see Table 2.1).

Dep. Var. Party name (eng) Party stack 1001 1001 Finnish Social Democrats stack 1002 1002 True Finns National Coalition stack 1003 1003 stack 1004 1004 Finnish Centre stack 1005 Green Union 1005

1006

1007

 $stack_1006$ 

stack\_1007

Left Wing Alliance

Swedish People's Party

Table 2.1: Finland relevant parties

Full OLS models converge and coefficients do not show any particular issue (see Table 2.4). In terms of model fit, the adjusted coefficient of determination  $(R^2)$  values vary between a minimum value of 0.037 for party 1001 (Finnish Social Democrats) and a maximum of 0.135 for party 1003 (National Coalition). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that the full models perform better in all cases (see Table 2.2).

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_1001	1001	503.822	524.434	-20.611
$stack\_1002$	1002	760.632	793.350	-32.719
$stack_1003$	1003	455.497	567.635	-112.137
$stack\_1004$	1004	213.717	257.058	-43.341
$stack\_1005$	1005	579.991	634.977	-54.986
stack_1006 stack_1007	1006 1007	541.751 185.984	575.824 217.272	-34.073 -31.288

Similarly, only one out of the seven logistic regression models (see Table 2.5) shows inflated standard errors for one of the coefficients of interest, in particular:

#### • Model 11: D6\_une

However, the constant term and the other regressors of model 11 seem not to be affected by the inflated standard errors. Thus, no further adjustments are made and model 11 is kept as is.

In terms of model fit, adjusted McFadden's pseudo  $R^2$  values for the logistic full models vary between a minimum value of -0.08 for party 1007 (Swedish People's Party) and a maximum of 0.076 for party 1003 (National Coalition). Moreover, the difference between Akaike Information Criterion (AIC) values for logistic full models and null models shows that in two cases out of seven null models perform better than full ones (see Table 2.3).

Table 2.3: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_1001	1001	490.829	497.038	-6.210
$stack\_1002$	1002	646.780	659.969	-13.189
$stack_1003$	1003	478.675	520.112	-41.437
$stack_1004$	1004	255.100	260.410	-5.310
$stack\_1005$	1005	540.504	546.870	-6.366
$\rm stack\_1006$	1006	365.669	363.652	2.017
stack_1007	1007	195.727	183.272	12.455

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Table 2.4: Propensity to vote for a relevant party according to respondents' socio-demographic characteristics (OLS regression models)

	1001	1002	1003	1004	1005	1006	1007
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
$D3\_rec2$	0.046*	-0.143***	-0.041	-0.010	0.157***	0.062**	-0.002
	(0.022)	(0.026)	(0.022)	(0.019)	(0.023)	(0.023)	(0.019)
$D8\_rec1$	0.109***	$-0.069^*$	0.044	-0.016	0.070*	0.059*	0.012
	(0.029)	(0.033)	(0.028)	(0.024)	(0.030)	(0.029)	(0.024)
$D5\_rec1$	-0.046*	0.032	0.007	-0.017	$-0.055^*$	-0.028	-0.050**
	(0.023)	(0.027)	(0.022)	(0.019)	(0.024)	(0.023)	(0.019)
$EDU\_rec2$	-0.026	0.110*	-0.003	0.018	-0.037	-0.027	0.028
	(0.045)	(0.051)	(0.043)	(0.037)	(0.047)	(0.045)	(0.037)
$EDU\_rec3$	0.008	0.021	-0.016	0.005	0.012	0.006	0.031
	(0.042)	(0.049)	(0.041)	(0.035)	(0.044)	(0.043)	(0.035)
D1_rec1	0.073**	-0.016	-0.039	-0.006	0.038	0.063**	0.025
	(0.023)	(0.027)	(0.023)	(0.020)	(0.024)	(0.024)	(0.019)
$D7\_rec1$	0.004	0.023	0.157***	0.081***	0.031	-0.058*	0.066**
	(0.026)	(0.030)	(0.025)	(0.022)	(0.027)	(0.026)	(0.021)
$D7\_rec2$	-0.100**	0.005	0.299***	0.056	-0.021	-0.196***	0.101***
	(0.035)	(0.040)	(0.034)	(0.029)	(0.036)	(0.035)	(0.029)
$D6\_une1$	-0.032	0.025	-0.028	0.0004	-0.013	0.0001	0.0001
	(0.037)	(0.042)	(0.036)	(0.031)	(0.038)	(0.037)	(0.030)
D4_age	0.001	-0.002**	-0.001	-0.002**	-0.003***	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$D10\_rec$	0.011	0.004	0.028***	0.040***	0.003	0.007	0.029***
	(0.008)	(0.009)	(0.007)	(0.006)	(0.008)	(0.008)	(0.006)
Constant	0.282***	0.593***	0.320***	0.329***	$0.417^{***}$	0.368***	0.170***
	(0.060)	(0.069)	(0.058)	(0.050)	(0.062)	(0.061)	(0.049)
N	843	851	847	845	845	846	844
R-squared	0.049	0.062	0.146	0.074	0.087	0.064	0.061
Adj. R-squared	0.037	0.050	0.135	0.062	0.075	0.052	0.049

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

Table 2.5: Vote choice for a relevant party according to respondents' socio-demographic characteristics (Logistic regression models)

	1001	1002	1003	1004	1005	1006	1007
	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
$D3\_rec2$	0.020	-0.712**	-0.144	-0.019	0.873***	-0.055	-0.713
	(0.252)	(0.218)	(0.255)	(0.384)	(0.245)	(0.307)	(0.506)
$D8\_rec1$	0.410	-0.808***	1.040*	-0.580	0.236	0.277	-0.538
	(0.348)	(0.242)	(0.427)	(0.423)	(0.317)	(0.427)	(0.546)
$D5$ _rec1	0.027	0.013	0.026	0.282	$-0.580^*$	-0.404	0.107
	(0.258)	(0.215)	(0.259)	(0.401)	(0.244)	(0.312)	(0.488)
$EDU\_rec2$	0.364	0.974	0.436	-0.178	-0.547	0.385	0.091
	(0.656)	(0.525)	(0.668)	(0.858)	(0.411)	(0.793)	(1.200)
$EDU\_rec3$	0.656	0.878	0.602	0.030	-0.505	0.875	0.841
	(0.622)	(0.507)	(0.629)	(0.786)	(0.379)	(0.751)	(1.095)
D1_rec1	0.650*	0.125	-0.007	-0.376	0.168	0.519	-0.057
	(0.274)	(0.219)	(0.259)	(0.394)	(0.248)	(0.333)	(0.486)
$D7\_rec1$	-0.138	-0.385	0.890**	$1.057^{*}$	$0.636^{*}$	-0.464	0.631
	(0.285)	(0.252)	(0.315)	(0.448)	(0.264)	(0.342)	(0.565)
$D7\_rec2$	-0.455	0.538	1.538***	0.287	0.018	$-1.597^*$	0.853
	(0.410)	(0.292)	(0.342)	(0.650)	(0.392)	(0.748)	(0.651)
D6_une1	-0.242	-0.783	0.463	-15.884	0.362	-1.179	0.107
	(0.494)	(0.402)	(0.413)	(1057.586)	(0.365)	(0.747)	(0.797)
D4_age	0.033***	-0.008	0.022**	0.015	0.001	0.004	-0.010
_	(0.009)	(0.007)	(0.008)	(0.012)	(0.007)	(0.010)	(0.015)
$D10\_rec$	0.048	-0.026	0.238**	$0.241^{*}$	0.059	-0.152	0.146
	(0.083)	(0.069)	(0.073)	(0.106)	(0.079)	(0.128)	(0.134)
Constant	-5.248***	$-1.371^*$	-5.783***	-4.311***	-2.606****	-3.517***	-3.863**
	(0.874)	(0.611)	(0.856)	(1.069)	(0.602)	(0.994)	(1.341)
N	834	834	834	834	834	834	834
Log Likelihood	-233.414	-311.390	-227.338	-115.550	-258.252	-170.835	-85.864
AIC	490.829	646.780	478.675	255.100	540.504	365.669	195.727

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

## 3 Greece

Synthetic variables have been estimated for the full set of Greek parties available in the original 2019 EES Greece voter study selected according to the criteria stated in the EES 2019 SDM codebook (for the criteria see Sect. XXX; for the relevant parties see Table 3.1).

Table 3.1: Greece relevant parties

Dep. Var.	Party	Party name (eng)
stack_1201	1201	Coalition of the Radical Left
$stack\_1202$	1202	New Democracy
$stack_1203$	1203	Golden Dawn
$stack_1204$	1204	Panhellenic Socialist Movement/ Movement for Change
$stack_1205$	1205	Communist Party of Greece

Full OLS models converge and coefficients do not show any particular issue (see Table 3.7). In terms of model fit, the adjusted coefficient of determination ( $R^2$ ) values vary between a minimum value of 0.015 for party 1204 (Panhellenic Socialist Movement/ Movement for Change) and a maximum of 0.081 for party 1202 (New Democracy). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that the full models perform better in all cases (see Table 3.2).

Table 3.2: Akaike Information Criterion values for OLS full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
$stack_1201$	1201	822.224	839.980	-17.757
$stack\_1202$	1202	766.550	831.163	-64.614
$stack\_1203$	1203	131.977	163.404	-31.427
$stack\_1204$	1204	206.109	208.918	-2.809
$stack\_1205$	1205	237.283	258.529	-21.246

On the contrary, two out of five logistic regression models (see Table 3.8) show inflated standard errors for some of the coefficients of interest, in particular:

- Model 8a: EDU rec (both categories), D1 rec
- Model 9: D7\_rec (second category)

However, for model 9 the constant term and other regressors are not affected by the inflated standard errors. Model 8a appears more problematic.

The inflated standard errors in Model 8a are potentially due to separation issues. In short, no respondents with low education voted for party 1203 and only two respondents who were union members voted for party 1203. (See Tables 3.5, 3.6)

As a consequence, a constrained version of model 8 (namely, Model 8b) without said variables was estimated and contrasted with the original (Model 8a), full model. Likelihood-ratio test results show that  $H_0$  (namely, that the constrained model fits better than the full model) can be rejected (see Table 3.3). Consequently, synthetic variables for respondents' vote choice for party 1203 have been predicted relying on the unconstrained model (Model 8a).

Table 3.3: Likelihood-ratio Test between Model 8a (Unconstrained) and Model 8b (Constrained)

Model	Resid. Df	Resid. Dev	Df	Deviance	Pr(>Chi)
Constrained	851	282.583			
Unconstrained	848	270.891	3	11.69196	0.0085164

In terms of model fit, adjusted McFadden's pseudo  $R^2$  values for the logistic full models vary between a minimum value of -0.035 for party 1205 (Communist Party of Greece) and a maximum of 0.078 for party 1204 (Panhellenic Socialist Movement/ Movement for Change). Moreover, the difference between Akaike Information Criterion (AIC) values for logistic full models and null models shows that in one case out of five the null model performs better than the full ones. According to AIC values the related null model appears to have a better fit than Model 8b (see Table 3.4).

Table 3.4: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_1201	1201	824.145	828.3560	-4.21100
$stack\_1202$	1202	932.433	944.2880	-11.85500
$stack_1203$	1203	294.891	294.6670	0.22400
$stack_1203*$	1203	300.583	294.6668	5.91624
$stack_1204$	1204	309.280	337.5330	-28.25300
$stack\_1205$	1205	302.786	294.6670	8.11900

<sup>\*</sup> AIC value refers to Model 8b (constrained).

Table 3.5: Cross tabulation between vote choice for party 1203 and respondents' education level

stack_1203/EDU_rec	1	2	3	NA	Total
0	46	199	626	38	909
1	0	12	27	0	39
NA	2	12	36	7	57
Total	48	223	689	45	1005

Table 3.6: Cross tabulation between vote choice for party 1203 and respondents' trade union membership status

stack_1203/D1_rec	0	1	Total
0	820	89	909
1	37	2	39
NA	55	2	57
Total	912	93	1005

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Table 3.7: Propensity to vote for a relevant party according to respondents' socio-demographic characteristics (OLS regression models)

	1201	1202	1203	1204	1205
	Model 1	Model 2	Model 3	Model 4	$\bf Model~5$
$D3\_rec2$	0.089***	-0.038	-0.031	-0.019	0.057**
	(0.026)	(0.025)	(0.018)	(0.019)	(0.019)
$D8\_rec1$	-0.025	0.081	0.003	-0.010	-0.040
	(0.046)	(0.044)	(0.031)	(0.033)	(0.033)
$D5\_rec1$	0.027	0.037	-0.015	0.031	0.012
	(0.029)	(0.028)	(0.020)	(0.021)	(0.021)
$EDU\_rec2$	-0.117	-0.090	0.133**	-0.066	-0.072
	(0.068)	(0.065)	(0.046)	(0.048)	(0.049)
$EDU\_rec3$	-0.100	-0.104	0.076	-0.055	-0.021
	(0.065)	(0.063)	(0.045)	(0.046)	(0.047)
$D1\_rec1$	0.031	-0.030	-0.037	0.104***	0.049
	(0.044)	(0.043)	(0.030)	(0.032)	(0.032)
$D7\_rec1$	$-0.054^*$	0.114***	$-0.040^*$	0.033	-0.060**
	(0.027)	(0.026)	(0.018)	(0.019)	(0.020)
$D7\_rec2$	-0.121*	0.212***	0.024	-0.017	-0.084*
	(0.052)	(0.051)	(0.036)	(0.037)	(0.038)
D6_une1	-0.060	0.027	0.003	-0.005	-0.065*
	(0.039)	(0.038)	(0.026)	(0.028)	(0.028)
D4_age	0.0004	-0.001	-0.002**	0.001	-0.0001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$D10\_rec$	-0.028***	$0.043^{***}$	0.021***	0.004	-0.018***
	(0.007)	(0.007)	(0.005)	(0.005)	(0.005)
Constant	0.530***	0.234**	0.110*	0.180**	0.315***
	(0.079)	(0.077)	(0.054)	(0.056)	(0.057)
N	898	900	899	886	896
R-squared	0.043	0.092	0.058	0.028	0.047
Adj. R-squared	0.031	0.081	0.046	0.015	0.035

 $<sup>^{***}</sup>p < .001; ^{**}p < .01; ^{*}p < .05$ 

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Table 3.8: Vote choice for a relevant party according to respondents' socio-demographic characteristics (Logistic regression models)

	1201	1202	1203	1203	1204	1205
	Model 6	Model 7	Model 8a	Model 8b	Model 9	Model 10
$D3\_rec2$	0.133	0.002	-0.449	-0.382	-0.240	-0.055
	(0.185)	(0.171)	(0.372)	(0.371)	(0.354)	(0.369)
$D8\_rec1$	-0.014	0.384	0.134	0.141	-0.723	-0.613
	(0.331)	(0.328)	(0.630)	(0.626)	(0.528)	(0.515)
$D5\_rec1$	0.235	0.071	-0.113	-0.070	0.513	0.411
	(0.210)	(0.192)	(0.407)	(0.408)	(0.442)	(0.424)
$EDU\_rec2$	-0.513	-0.495	16.506	,	0.050	-0.500
	(0.442)	(0.408)	(1571.670)		(1.158)	(0.893)
$EDU\_rec3$	-0.601	-0.454	16.228		0.039	-0.421
	(0.423)	(0.389)	(1571.670)		(1.124)	(0.850)
D1_rec1	$0.243^{'}$	-0.207	-16.574		1.507***	0.466
	(0.296)	(0.286)	(1154.167)		(0.389)	(0.561)
D7_rec1	-0.061	$0.426^{*}$	-0.678	$-0.723^*$	$1.425^{**}$	-0.531
	(0.189)	(0.181)	(0.368)	(0.363)	(0.440)	(0.370)
$D7\_rec2$	$-0.65\acute{6}$	$0.689^{*}$	-1.319	-1.483	-14.887	-0.505
	(0.411)	(0.314)	(1.047)	(1.040)	(773.813)	(0.772)
D6 une1	$-0.824^{*}$	$0.176^{'}$	-0.560	-0.399	0.239	0.621
	(0.342)	(0.255)	(0.631)	(0.630)	(0.533)	(0.467)
D4_age	0.014	-0.002	0.004	0.008	$0.033^{*}$	-0.001
_ 0	(0.007)	(0.007)	(0.015)	(0.014)	(0.014)	(0.015)
D10 rec	$-0.161^{***}$	0.204***	$0.158^{'}$	$0.145^{'}$	$0.150^{'}$	$-0.246^{**}$
	(0.048)	(0.045)	(0.093)	(0.093)	(0.092)	(0.093)
Constant	$-1.131^{*}$	$-2.015^{***}$	-19.391	$-3.443^{***}$	-5.823****	-1.656
	(0.531)	(0.515)	(1571.670)	(0.930)	(1.310)	(0.975)
N	860	860	860	860	860	860
Log Likelihood	-400.072	-454.216	-135.446	-141.291	-142.640	-139.393
AIC	824.145	932.433	294.891	300.583	309.280	302.786

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

# 4 Hungary

Synthetic variables have been estimated for the full set of Hungarian parties available in the original 2019 EES Hungary voter study selected according to the criteria stated in the EES 2019 SDM codebook ( for the criteria see Sect. XXX; for the relevant parties see Table 4.1).

Table 4.1: Hungary relevant parties

Dep. Var.	Party	Party name (eng)
$stack_1301$	1301	Democratic Coalition
$stack_1302$	1302	FIDESZ-KDNP Alliance
$stack_1303$	1303	Jobbik
$stack_1304$	1304	Politics Can Be Different
$stack\_1306$	1306	Hungarian Socialist Party
$stack\_1307$	1307	Our Homeland Movement
stack_1308	1308	Momentum Movement

Full OLS models converge and coefficients do not show any particular issue (see Table 4.4). In terms of model fit, the adjusted coefficient of determination  $(R^2)$  values vary between a minimum value of 0.021 for party 1308 (Momentum Movement) and a maximum of 0.11 for party 1302 (FIDESZ-KDNP Alliance). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that the full models perform better in all cases (see Table 4.2).

Table 4.2: Akaike Information Criterion values for OLS full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_1301	1301	695.969	736.686	-40.717
$stack_1302$	1302	818.639	914.037	-95.399
$stack_1303$	1303	462.137	543.950	-81.813
$stack_1304$	1304	135.446	146.605	-11.158
$stack_1306$	1306	296.612	314.278	-17.666
$\rm stack\_1307$	1307	135.544	160.468	-24.924
$stack_1308$	1308	600.852	608.757	-7.905

On the contrary, three out of seven logistic regression models (see Table 4.5) show inflated standard errors for some of the coefficients of interest, in particular:

- Model 11: D7 rec (second category)
- Model 12: D6 une
- Model 13: D7\_rec (second category), D6\_une

However, for these models the constant terms and other regressors are not affected by the inflated standard errors. Thus, no additional adjustments are made and models 11, 12 and 13 are not modified.

In terms of model fit, adjusted McFadden's pseudo  $R^2$  values for the logistic full models vary between a minimum value of -0.07 for party 1304 (Politics Can Be Different) and a maximum of 0.082 for party 1302

(FIDESZ-KDNP Alliance). Moreover, the difference between Akaike Information Criterion (AIC) values for logistic full models and null models shows that in three cases out of seven null models perform better than full ones (see Table 4.3)..

Table 4.3: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_1301	1301	711.843	766.824	-54.981
$stack_1302$	1302	869.347	949.018	-79.671
$stack_1303$	1303	457.605	455.166	2.439
$stack_1304$	1304	125.609	119.342	6.268
$stack_1306$	1306	287.679	293.324	-5.645
$stack\_1307$	1307	221.046	227.216	-6.170
$stack_1308$	1308	514.295	508.228	6.067

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Table 4.4: Propensity to vote for a relevant party according to respondents' socio-demographic characteristics (OLS regression models)

	1301	1302	1303	1304	1306	1307	1308
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
$D3$ _rec2	0.012	-0.004	-0.032	0.027	0.013	$-0.043^{*}$	0.005
	(0.024)	(0.025)	(0.021)	(0.017)	(0.019)	(0.018)	(0.023)
$D8\_rec1$	0.005	-0.020	-0.090***	-0.013	-0.004	0.019	0.073**
	(0.029)	(0.031)	(0.025)	(0.021)	(0.023)	(0.021)	(0.028)
$D5\_rec1$	-0.002	0.066*	-0.032	-0.027	-0.002	0.011	-0.031
	(0.025)	(0.026)	(0.022)	(0.018)	(0.020)	(0.018)	(0.023)
$EDU\_rec2$	-0.004	0.002	0.015	-0.0004	-0.020	-0.050	-0.041
	(0.042)	(0.045)	(0.037)	(0.031)	(0.034)	(0.032)	(0.040)
$EDU\_rec3$	-0.042	0.013	0.023	0.013	-0.008	-0.015	-0.034
	(0.043)	(0.045)	(0.037)	(0.031)	(0.034)	(0.032)	(0.040)
D1_rec1	0.054	-0.016	0.076*	$0.057^{*}$	0.081**	0.093***	0.034
	(0.037)	(0.039)	(0.032)	(0.027)	(0.029)	(0.027)	(0.035)
$D7\_rec1$	-0.020	0.072**	-0.060**	-0.020	-0.018	-0.028	-0.031
	(0.025)	(0.026)	(0.022)	(0.018)	(0.020)	(0.019)	(0.024)
$D7\_rec2$	0.012	0.113	0.001	-0.050	0.027	-0.034	0.016
	(0.057)	(0.060)	(0.049)	(0.042)	(0.045)	(0.042)	(0.054)
D6_une1	-0.061	-0.019	-0.052	-0.019	-0.045	-0.035	$-0.125^*$
	(0.063)	(0.066)	(0.054)	(0.046)	(0.050)	(0.046)	(0.059)
D4_age	0.005***	-0.0001	-0.005***	-0.002***	0.002***	-0.002***	-0.0001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$D10\_rec$	-0.025***	0.065***	-0.008	-0.008	-0.019***	-0.003	-0.021***
	(0.006)	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)
Constant	0.195***	0.180**	0.652***	0.370***	0.166***	0.333***	0.397***
	(0.054)	(0.057)	(0.047)	(0.039)	(0.043)	(0.040)	(0.051)
N	911	916	918	910	915	880	906
R-squared	0.067	0.120	0.107	0.036	0.042	0.052	0.032
Adj. R-squared	0.055	0.110	0.096	0.024	0.031	0.040	0.021

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

Table 4.5: Vote choice for a relevant party according to respondents' socio-demographic characteristics (Logistic regression models)

	1301	1302	1303	1304	1306	1307	1308
	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
$D3\_rec2$	-0.122	-0.191	-0.438	1.182	-0.084	-1.416**	-0.063
	(0.199)	(0.173)	(0.270)	(0.693)	(0.363)	(0.511)	(0.248)
$D8\_rec1$	0.122	-0.032	-0.805**	0.899	0.968	-0.358	0.798*
	(0.250)	(0.211)	(0.284)	(1.072)	(0.618)	(0.500)	(0.389)
$D5\_rec1$	-0.159	0.333	-0.184	0.487	$0.859^{*}$	0.271	-0.052
	(0.203)	(0.184)	(0.275)	(0.700)	(0.427)	(0.476)	(0.255)
$EDU\_rec2$	-0.008	0.048	0.669	-1.492	-0.627	-0.126	0.419
	(0.377)	(0.330)	(0.530)	(1.455)	(0.680)	(0.892)	(0.514)
$EDU\_rec3$	-0.239	0.134	0.704	0.667	-0.253	0.821	0.352
	(0.387)	(0.329)	(0.528)	(1.117)	(0.673)	(0.823)	(0.514)
D1_rec1	0.476	-0.053	-0.331	0.324	-0.815	0.628	-0.309
	(0.286)	(0.256)	(0.451)	(0.815)	(0.746)	(0.535)	(0.419)
D7_rec1	-0.068	0.261	-0.383	0.737	-0.720	-0.041	0.298
	(0.209)	(0.181)	(0.292)	(0.673)	(0.411)	(0.425)	(0.263)
$D7\_rec2$	-0.048	0.639	-0.331	-15.078	0.021	-16.343	$0.947^{*}$
	(0.490)	(0.372)	(0.634)	(1515.647)	(0.776)	(1536.508)	(0.462)
D6_une1	-0.069	-0.281	-0.183	1.454	-15.489	-16.521	0.216
	(0.566)	(0.561)	(0.657)	(1.160)	(1105.602)	(1806.943)	(0.637)
D4_age	0.048***	0.013**	$-0.017^*$	-0.005	0.030**	-0.022	0.001
	(0.007)	(0.005)	(0.008)	(0.019)	(0.012)	(0.014)	(0.007)
$D10\_rec$	-0.203**	0.370***	-0.045	0.003	-0.191	-0.257	-0.157
	(0.063)	(0.043)	(0.077)	(0.172)	(0.123)	(0.155)	(0.080)
Constant	-3.686***	-2.645***	$-1.215^*$	-6.460***	-5.125***	$-2.051^*$	-3.348****
	(0.533)	(0.416)	(0.594)	(1.731)	(1.070)	(0.931)	(0.658)
N	844	844	844	844	844	844	844
Log Likelihood	-343.922	-422.674	-216.802	-50.805	-131.840	-98.523	-245.148
AIC	711.843	869.347	457.605	125.609	287.679	221.046	514.295

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

## 5 Lithuania

Synthetic variables have been estimated for the full set of Lithuanian parties available in the original 2019 EES Lithuania voter study selected according to the criteria stated in the EES 2019 SDM codebook (for the criteria see Sect. XXX; for the relevant parties see Table 5.1).

Table 5.1: Lithuania relevant parties

Dep. Var.	Party	Party name (eng)
stack_1701	1701	Homeland Union - Lithuanian Christian Democrats
$stack_1703$	1703	Lithuanian Social Democratic Party
$stack_1706$	1706	Liberal Movement
$\rm stack\_1705$	1705	Labour Party
$stack_1704$	1704	Order and Justice
stack_1707 stack 1702	1707 1702	Election Action of Lithuania's Poles Lithuanian Peasant and Greens Union

Full OLS models converge and coefficients do not show any particular issue (see Table 5.12). In terms of model fit, the adjusted coefficient of determination ( $R^2$ ) values vary between a minimum value of 0.004 for party 1703 (Lithuanian Social Democratic Party) and a maximum of 0.057 for party 1701 (Homeland Union - Lithuanian Christian Democrats). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that the full models perform better in six out of seven cases (see Table 5.2).

Table 5.2: Akaike Information Criterion values for OLS full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
$stack_1701$	1701	596.205	636.971	-40.766
$stack_1703$	1703	474.026	466.964	7.062
$stack_1706$	1706	263.609	290.702	-27.093
$\rm stack\_1705$	1705	260.523	299.923	-39.400
$stack_1704$	1704	58.720	92.687	-33.967
stack_1707	1707	-195.821	-158.090	-37.731
stack_1702	1702	502.026	515.036	-13.009

On the contrary, three out of seven logistic regression models (see Table 5.13) show inflated standard errors for some of the coefficients of interest, in particular:

- Model 10a: EDU rec (both categories)
- Model 13a: EDU\_rec (both categories), D7\_rec (second category), D6\_une
- Model 14a: EDU\_rec (both categories)

Models 10a, 13a and 14a are all problematic as the constant terms seem to be affected by the inflated standard errors issue. These inflated standard errors are due to separation issues which are explored below.

For Model 10a, we see that no respondent with low education voted for party 1706 (see Table 5.7). For Model 13a, we have that again no respondent with low education and no respondent who is unemployed

voted for party 1707 (see Tables 5.8, 5.10). Furthermore, only one respondent with high subjective social class voted for party 1707 (see Table 5.9). Finally, for Model 14a Table 5.11 shows that no respondent with low education voted for party 1702.

As a consequence constrained versions of Models 10, 13 and 14 (namely 10b, 13b and 14b) were estimated. In Models 10b and 14b the EDU\_rec variables were removed, while in Model 13b the EDU\_rec variables, the D7\_rec variables and the D6\_une variable were removed. These constrained models were then contrasted with their respective (original) full models (i.e. 10a, 13a, 14a). Likelihood-ratio test results show that  $H_0$  (constrained model fits better than the full model) cannot be rejected for any of the models (see Tables 5.3, 5.4, 5.5). Following these results, synthetic variables for respondents' vote choice for parties 1706, 1707 and 1702 have been predicted relying on the constrained models (Model 10b, 13b, 14b).

Table 5.3: Likelihood-ratio Test between Model 10a (Unconstrained) and Model 10b (Constrained)

Model	Resid. Df	Resid. Dev	Df	Deviance	Pr(>Chi)
Constrained	803	269.3368			
Unconstrained	801	263.6719	2	5.664943	0.0588672

Table 5.4: Likelihood-ratio Test between Model 13a (Unconstrained) and Model 13b (Constrained)

Model	Resid. Df	Resid. Dev	Df	Deviance	Pr(>Chi)
Constrained	806	80.61689			
Unconstrained	801	72.03682	5	8.580075	0.1270321

Table 5.5: Likelihood-ratio Test between Model 14a (Unconstrained) and Model 14b (Constrained)

Model	Resid. Df	Resid. Dev	Df	Deviance	Pr(>Chi)
Constrained	803	472.2648			
Unconstrained	801	469.0902	2	3.174585	0.2044785

In terms of model fit, adjusted McFadden's pseudo  $R^2$  values for the logistic full models vary between a minimum value of -0.043 for party 1705 (Labour Party) and a maximum of 0.056 for party 1701 (Homeland Union - Lithuanian Christian Democrats). Moreover, the difference between Akaike Information Criterion (AIC) values for logistic full models and null models shows that in two cases out of seven null models perform better than full ones. According to AIC values the related null models appear to have a worse fit than Models 10b, 13b and 14b (see Table 5.6).

Table 5.6: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_1701	1701	716.68400	761.3430	-44.660000
$stack_1702$	1702	493.09000	506.9030	-13.813000
stack_1702*	1702	492.26483	506.9028	-14.637938
$stack_1703$	1703	686.72700	682.5230	4.204000
$stack_1704$	1704	166.63600	167.1380	-0.502000
$\rm stack\_1705$	1705	313.75500	302.9360	10.819000
$stack_1706$	1706	287.67200	290.6480	-2.976000
$stack_1706*$	1706	289.33684	290.6479	-1.311111
$stack_1707$	1707	96.03700	100.9630	-4.926000
stack_1707*	1707	94.61689	100.9631	-6.346227

<sup>\*</sup> AIC value refers to constrained models (i.e. 14b, 10b, 13b)

Table 5.7: Cross tabulation between vote choice for party 1706 and respondents' education

stack_1706/EDU_rec	1	2	3	NA	Total
0	29	265	553	14	861
1	0	6	34	2	42
NA	7	28	59	3	97
Total	36	299	646	19	1000

Table 5.8: Cross tabulation between vote choice for party 1707 and respondents' education

stack_1707/EDU_rec	1	2	3	NA	Total
0	29	265	584	14	892
1	0	6	3	2	11
NA	7	28	59	3	97
Total	36	299	646	19	1000

Table 5.9: Cross tabulation between vote choice for party 1707 and respondents' subjective social class

stack_1707/D7_rec	0	1	2	NA	Total
0	387	353	125	27	892
1	5	5	1	0	11
NA	46	37	10	4	97
Total	438	395	136	31	1000

Table 5.10: Cross tabulation between vote choice for party 1707 and respondents' employment status

stack_1707/D6_une	0	1	Total
0	858	34	892
1	11	0	11
NA	91	6	97
Total	960	40	1000

Table 5.11: Cross tabulation between vote choice for party 1702 and respondents' education

$stack_1702/EDU_rec$	1	2	3	NA	Total
0	29	245	534	15	823
1	0	26	53	1	80
NA	7	28	59	3	97
Total	36	299	646	19	1000

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Table 5.12: Propensity to vote for a relevant party according to respondents' socio-demographic characteristics (OLS regression models)

	1701	1703	1706	1705	1704	1707	1702
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
$D3\_rec2$	-0.012	0.030	-0.002	0.025	0.017	0.001	0.006
	(0.024)	(0.022)	(0.020)	(0.020)	(0.018)	(0.015)	(0.022)
$D8\_rec1$	0.017	-0.011	$0.055^{*}$	-0.018	-0.010	-0.021	-0.084**
	(0.033)	(0.031)	(0.027)	(0.027)	(0.024)	(0.021)	(0.031)
$D5\_rec1$	0.003	0.020	-0.030	0.015	0.029	0.001	0.032
	(0.025)	(0.023)	(0.021)	(0.021)	(0.019)	(0.016)	(0.024)
$EDU\_rec2$	-0.120	-0.114	-0.020	0.023	0.055	0.044	-0.012
	(0.067)	(0.062)	(0.056)	(0.055)	(0.049)	(0.043)	(0.063)
$EDU\_rec3$	-0.054	-0.088	0.008	0.005	0.030	-0.002	-0.042
	(0.066)	(0.062)	(0.056)	(0.055)	(0.049)	(0.042)	(0.063)
D1_rec1	0.024	$0.072^{*}$	0.080**	0.122***	0.102***	0.139***	0.117***
	(0.037)	(0.034)	(0.030)	(0.030)	(0.027)	(0.023)	(0.035)
$D7\_rec1$	$0.058^{*}$	-0.032	0.012	-0.029	-0.034	-0.013	-0.038
	(0.025)	(0.023)	(0.021)	(0.021)	(0.018)	(0.016)	(0.024)
$D7\_rec2$	0.162***	-0.002	0.053	0.007	-0.00003	-0.015	-0.029
	(0.035)	(0.033)	(0.029)	(0.029)	(0.026)	(0.023)	(0.034)
D6_une1	0.017	0.063	0.122*	0.179***	0.094*	0.059	0.134*
	(0.061)	(0.056)	(0.050)	(0.050)	(0.045)	(0.039)	(0.058)
D4_age	-0.001	-0.0003	-0.003***	-0.003***	-0.002***	-0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.0005)	(0.001)
$D10\_rec$	0.031***	0.006	-0.0003	0.004	0.001	0.007	0.007
	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)	(0.004)	(0.006)
Constant	0.403***	0.511***	0.422***	0.327***	0.258***	0.145**	0.319***
	(0.074)	(0.069)	(0.062)	(0.061)	(0.055)	(0.047)	(0.070)
N	887	888	881	888	884	879	887
R-squared	0.068	0.017	0.054	0.067	0.061	0.066	0.039
Adj. R-squared	0.057	0.004	0.042	0.055	0.050	0.054	0.027

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

Table 5.13: Vote choice for a relevant party according to respondents' socio-demographic characteristics (Logistic regression models)

	1701	1703	1706	1706	1705	1704	1707	1707	1702	1702
Model	8	9	10a	10b	11	12	13a	13b	14a	14b
D3 rec2	-0.318	$0.444^{*}$	-0.389	-0.450	0.490	0.202	0.341	0.168	0.283	0.279
	(0.204)	(0.218)	(0.381)	(0.378)	(0.371)	(0.540)	(0.803)	(0.768)	(0.266)	(0.264)
$D8\_rec1$	0.296	0.211	0.504	$0.505^{'}$	-0.075	$-1.372^{*}$	0.774	$0.549^{'}$	$-0.999^{***}$	$-1.011^{***}$
	(0.299)	(0.301)	(0.622)	(0.620)	(0.463)	(0.547)	(1.183)	(1.105)	(0.281)	(0.281)
D5_rec1	$0.241^{'}$	$0.240^{'}$	0.111	$0.172^{'}$	-0.163	$0.607^{'}$	0.536	0.544	0.448	$0.493^{'}$
	(0.220)	(0.227)	(0.414)	(0.414)	(0.364)	(0.616)	(0.912)	(0.855)	(0.292)	(0.290)
EDU rec2	-0.787	-0.818	13.954	, ,	$0.454^{'}$	0.324	17.674	,	14.498	, ,
	(0.632)	(0.570)	(729.702)		(1.114)	(1.200)	(4946.833)		(734.059)	
$EDU\_rec3$	-0.415	-0.665	14.776		$0.524^{'}$	$0.027^{'}$	16.269		14.208	
_	(0.618)	(0.564)	(729.702)		(1.112)	(1.201)	(4946.833)		(734.059)	
D1 rec1	-0.171	0.148	1.243**	1.302**	$0.825^{'}$	0.206	1.389	1.332	-0.664	-0.683
_	(0.314)	(0.319)	(0.416)	(0.411)	(0.452)	(0.715)	(0.800)	(0.746)	(0.539)	(0.538)
D7_rec1	$0.405^{'}$	-0.286	$0.462^{'}$	$0.543^{'}$	-0.472	-0.590	-0.050	,	$0.056^{'}$	-0.012
_	(0.220)	(0.228)	(0.381)	(0.377)	(0.368)	(0.617)	(0.740)		(0.272)	(0.267)
$D7\_rec2$	0.849**	$0.272^{'}$	-0.404	-0.206	-1.330	$0.542^{'}$	-17.224		-0.219	-0.304
_	(0.276)	(0.284)	(0.665)	(0.659)	(0.758)	(0.676)	(2320.377)		(0.412)	(0.404)
D6 une1	-14.348	-0.607	$0.144^{'}$	-0.002	$0.851^{'}$	$0.345^{'}$	$-16.347^{'}$		$0.523^{'}$	$0.620^{'}$
_	(437.118)	(0.754)	(1.067)	(1.059)	(0.669)	(1.091)	(5145.352)		(0.585)	(0.582)
D4_age	0.024***	0.013	0.0004	0.009	-0.008	$-0.062^{**}$	-0.018	-0.026	0.027**	0.027**
_ 0	(0.007)	(0.007)	(0.012)	(0.011)	(0.011)	(0.020)	(0.026)	(0.022)	(0.009)	(0.008)
D10 rec	0.174**	0.028	-0.194	-0.190	0.006	$0.228^{'}$	0.664**	0.650**	-0.022	-0.025
_	(0.054)	(0.056)	(0.103)	(0.102)	(0.097)	(0.152)	(0.231)	(0.225)	(0.071)	(0.070)
Constant	-3.289****	-2.337****	-17.947	-3.932****	$-3.163^{**}$	-1.421	-24.323	-6.897***	-17.580	-3.256****
	(0.699)	(0.649)	(729.702)	(0.940)	(1.205)	(1.387)	(4946.834)	(1.943)	(734.059)	(0.619)
N	813	813	813	813	813	813	813	813	813	813
Log Likelihood	-346.342	-331.363	-131.836	-134.668	-144.877	-71.318	-36.018	-40.308	-234.545	-236.132
AIC	716.684	686.727	287.672	289.337	313.755	166.636	96.037	94.617	493.090	492.265

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

## 6 Slovakia

Synthetic variables have been estimated for the full set of Slovakian parties available in the original 2019 EES Slovakia voter study selected according to the criteria stated in the EES 2019 SDM codebook ( for the criteria see Sect. XXX; for the relevant parties see Table 6.1).

Table 6.1: Slovakia relevant parties

Dep. Var.	Party	Party name (eng)
stack_2510	2510	Christian Democratic Movement
$\rm stack\_2501$	2501	People's Party Our Slovakia
$stack_2509$	2509	We are family
$\rm stack\_2503$	2503	Direction - Social Democracy
$stack_2505$	2505	Freedom and Solidarity
$\mathrm{stack}\_2506$	2506	Ordinary People and Independent Personalities
$stack_2508$	2508	Electoral alliance Progressive Slovakia and TOGETHER <96> Civic Democracy
$\rm stack\_2504$	2504	Slovak National Part
$stack_2507$	2507	Bridge

Full OLS models converge and coefficients do not show any particular issue (see Table 6.8). In terms of model fit, the adjusted coefficient of determination  $(R^2)$  values vary between a minimum value of 0.011 for party 2505 (Freedom and Solidarity) and a maximum of 0.141 for party 2510 (Christian Democratic Movement). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that the full models perform better in eight out of nine cases (see Table 6.2).

Table 6.2: Akaike Information Criterion values for OLS full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_2510	2510	122.988	249.895	-126.907
$stack\_2501$	2501	603.763	604.122	-0.359
$stack_2509$	2509	337.752	363.837	-26.085
$\rm stack\_2503$	2503	616.661	633.097	-16.436
$stack_2505$	2505	404.605	403.405	1.200
$\mathrm{stack}\_2506$	2506	370.421	373.616	-3.195
$stack_2508$	2508	615.166	627.328	-12.162
$\rm stack\_2504$	2504	217.881	223.280	-5.399
stack_2507	2507	-159.866	-157.311	-2.555

On the contrary, two out of nine logistic regression models (see Table 6.9) show inflated standard errors for some of the coefficients of interest, in particular:

- Model 15: D6 une
- Model 18a: EDU\_rec (both categories), D1\_rec, D6\_une

However, for model 15 the constant term and other regressors are not affected by the inflated standard errors. Model 18a appears more problematic.

The inflated standard errors in Model 18a are due to separation issues. In short, no respondents with low education voted for party 2507. Furthermore, only one respondent with trade union membership status and only one repondent who is unemployed vote for party 2507. (See tables 6.5, 6.6, 6.7)

As a consequence, a constrained version of model 18 (namely, Model 18b) without said variables was estimated and contrasted with the original (Model 18a), full model. Likelihood-ratio test results show that  $H_0$  (namely, that the constrained model fits better than the full model) cannot be rejected (see Table 6.3). Consequently, synthetic variables for respondents' vote choice for party 2507 have been predicted relying on the constrained model (Model 18b).

Table 6.3: Likelihood-ratio Test between Model 18a (Unconstrained) and Model 18b (Constrained)

Model	Resid. Df	Resid. Dev	Df	Deviance	Pr(>Chi)
Constrained	888	98.52036			
Unconstrained	884	92.23932	4	6.281031	0.1791207

In terms of model fit, adjusted McFadden's pseudo  $R^2$  values for the logistic full models vary between a minimum value of -0.059 for party 2507 (Bridge) and a maximum of 0.1 for party 2510 (Christian Democratic Movement). Moreover, the difference between Akaike Information Criterion (AIC) values for logistic full models and null models shows that in six cases out of nine null models perform better than full ones. According to AIC values the related null model appears to have a better fit than Model 18b (see Table 6.4).

Table 6.4: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
$stack_2501$	2501	500.2010	488.3540	11.848000
$\rm stack\_2503$	2503	481.8520	498.2260	-16.374000
$stack_2504$	2504	247.7260	237.3100	10.416000
$\rm stack\_2505$	2505	415.8300	404.5320	11.298000
$stack_2506$	2506	286.6800	278.1040	8.576000
$stack\_2507$	2507	116.2390	111.7950	4.444000
$stack_2507*$	2507	114.5204	111.7951	2.725274
$stack\_2508$	2508	668.4200	673.2700	-4.850000
$stack_2509$	2509	325.4510	310.2900	15.161000
$stack\_2510$	2510	299.7850	335.0130	-35.228000

<sup>\*</sup> AIC value refers to Model 18b (constrained).

Table 6.5: Cross tabulation between vote choice for party 2507 and respondents' education

stack_2507/EDU_rec	1	2	3	NA	Total
0	78	521	360	8	967
1	0	7	4	0	11
NA	3	11	7	1	22
Total	81	539	371	9	1000

Table 6.6: Cross tabulation between vote choice for party 2507 and respondents' trade union membership status

stack_2507/D1_rec	0	1	Total
0	803	164	967
1	10	1	11
NA	17	5	22
Total	830	170	1000

Table 6.7: Cross tabulation between vote choice for party 2507 and respondents' employment status

stack_2507/D6_une	0	1	Total
0	910	57	967
1	10	1	11
NA	21	1	22
Total	941	59	1000

Table 6.8: Propensity to vote for a relevant party according to respondents' socio-demographic characteristics (OLS regression models)

	2510	$\boldsymbol{2501}$	2509	2503	2505	2506	2508	$\boldsymbol{2504}$	2507
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
$D3\_rec2$	-0.023	-0.017	0.057**	-0.008	-0.010	0.004	0.020	-0.027	-0.012
	(0.017)	(0.023)	(0.020)	(0.023)	(0.020)	(0.020)	(0.023)	(0.018)	(0.015)
$D8\_rec1$	-0.002	-0.032	-0.013	-0.009	0.0001	-0.007	0.020	-0.015	$-0.031^*$
	(0.018)	(0.024)	(0.020)	(0.024)	(0.021)	(0.021)	(0.024)	(0.019)	(0.016)
$D5\_rec1$	-0.002	0.014	0.010	0.038	-0.015	-0.009	0.017	0.008	0.001
	(0.018)	(0.024)	(0.021)	(0.024)	(0.021)	(0.021)	(0.024)	(0.019)	(0.016)
$EDU\_rec2$	0.009	0.033	0.028	-0.092	0.009	-0.022	-0.098*	-0.064	-0.040
	(0.037)	(0.048)	(0.041)	(0.048)	(0.043)	(0.042)	(0.049)	(0.039)	(0.031)
$EDU\_rec3$	0.015	-0.020	-0.012	$-0.097^*$	0.034	-0.009	-0.062	-0.096*	-0.021
	(0.037)	(0.048)	(0.042)	(0.049)	(0.043)	(0.042)	(0.049)	(0.039)	(0.032)
D1_rec1	0.006	$0.043^{'}$	0.034	$0.040^{'}$	0.006	-0.011	-0.002	0.073**	$0.045^{*}$
	(0.023)	(0.030)	(0.026)	(0.030)	(0.027)	(0.026)	(0.031)	(0.024)	(0.020)
D7_rec1	$0.007^{'}$	$-0.051^{*}$	-0.005	$0.023^{'}$	$0.048^{*}$	0.014	0.072**	$0.027^{'}$	0.015
	(0.019)	(0.025)	(0.022)	(0.025)	(0.022)	(0.022)	(0.026)	(0.020)	(0.016)
$D7\_rec2$	0.007	$-0.079^{*}$	$-0.076^{*}$	-0.038	0.046	-0.010	0.102**	-0.004	0.006
	(0.029)	(0.038)	(0.032)	(0.038)	(0.034)	(0.033)	(0.038)	(0.030)	(0.025)
D6_une1	0.048	0.044	$0.070^{'}$	-0.001	-0.047	$0.035^{'}$	-0.089	-0.003	-0.032
	(0.038)	(0.050)	(0.043)	(0.050)	(0.045)	(0.044)	(0.052)	(0.040)	(0.033)
D4_age	0.00002	-0.001	-0.003****	0.004***	$-0.002^{**}$	$-0.002^{***}$	-0.001	$0.001^{*}$	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.0005)
$D10\_rec$	0.043***	-0.003	-0.001	0.003	-0.003	0.007	-0.005	0.006	0.009**
	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)	(0.003)
Constant	$0.132^{**}$	0.383***	0.429***	$0.157^{**}$	0.371***	0.411***	0.432***	0.241***	0.141***
	(0.041)	(0.054)	(0.047)	(0.054)	(0.048)	(0.048)	(0.056)	(0.044)	(0.036)
N	904	906	906	907	906	904	891	905	901
R-squared	0.152	0.024	0.052	0.041	0.023	0.027	0.038	0.030	0.027
Adj. R-squared	0.141	0.012	0.040	0.030	0.011	0.015	0.026	0.018	0.015

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

Table 6.9: Vote choice for a relevant party according to respondents' socio-demographic characteristics (Logistic regression models)

N. 1.1	2510	2501	2509	2503	2505	2506	2508	2504	2507	2507
Model	10	11	12	13	14	15	16	17	18a	18b
$D3\_rec2$	-0.219	-0.158	0.336	-0.212	0.033	-0.495	0.071	-0.397	0.633	0.699
	(0.344)	(0.256)	(0.345)	(0.260)	(0.289)	(0.374)	(0.209)	(0.413)	(0.712)	(0.711)
$D8\_rec1$	-0.217	-0.072	0.073	0.437	-0.0001	-0.176	$0.467^{*}$	0.803	$-1.565^{*}$	$-1.513^*$
	(0.346)	(0.269)	(0.364)	(0.292)	(0.309)	(0.379)	(0.236)	(0.511)	(0.712)	(0.705)
$D5\_rec1$	-0.171	0.188	-0.046	-0.162	-0.452	-0.212	0.212	-0.048	-0.002	0.114
	(0.359)	(0.274)	(0.356)	(0.270)	(0.297)	(0.387)	(0.227)	(0.426)	(0.715)	(0.714)
$EDU\_rec2$	0.052	-0.256	-0.094	-0.162	-0.208	-0.331	-1.032*	-0.610	16.902	
	(0.717)	(0.546)	(0.694)	(0.662)	(0.612)	(0.723)	(0.405)	(0.851)	(3243.229)	
$EDU\_rec3$	0.372	-0.216	-0.207	-0.550	0.213	-0.160	-0.998*	-0.653	16.615	
	(0.716)	(0.552)	(0.711)	(0.685)	(0.607)	(0.726)	(0.411)	(0.876)	(3243.229)	
$D1\_rec1$	-0.193	-0.417	0.382	0.171	0.352	-0.796	0.254	0.283	-17.225	
	(0.473)	(0.393)	(0.418)	(0.342)	(0.359)	(0.620)	(0.264)	(0.517)	(2191.015)	
$D7\_rec1$	-0.638	-0.352	-0.387	0.269	0.189	-0.334	0.615*	0.115	-0.624	-0.614
	(0.382)	(0.274)	(0.363)	(0.282)	(0.334)	(0.420)	(0.247)	(0.431)	(0.784)	(0.782)
$D7\_rec2$	0.073	-0.479	-0.721	0.298	0.450	0.468	0.570	-1.227	1.255	1.042
	(0.495)	(0.450)	(0.658)	(0.451)	(0.458)	(0.527)	(0.354)	(1.075)	(0.900)	(0.818)
D6_une1	-0.439	0.926*	-0.005	0.143	-0.403	-15.376	-0.953	-0.198	-17.201	
	(0.783)	(0.425)	(0.759)	(0.633)	(0.750)	(913.004)	(0.737)	(1.061)	(3833.733)	
D4_age	0.006	0.004	-0.002	0.048***	0.007	0.010	0.020**	0.027	0.016	0.024
	(0.011)	(0.009)	(0.011)	(0.009)	(0.009)	(0.012)	(0.007)	(0.014)	(0.021)	(0.021)
$D10\_rec$	$0.495^{***}$	-0.054	-0.126	0.076	-0.119	0.117	-0.035	0.079	0.059	0.054
	(0.080)	(0.054)	(0.078)	(0.050)	(0.064)	(0.071)	(0.043)	(0.078)	(0.131)	(0.129)
Constant	-4.704***	-2.082***	-2.654***	-5.075***	-2.761***	-3.138***	-2.796***	-4.836***	-21.546	-5.535***
	(0.899)	(0.615)	(0.798)	(0.777)	(0.688)	(0.829)	(0.486)	(1.035)	(3243.229)	(1.408)
N	896	896	896	896	896	896	896	896	896	896
Log Likelihood	-137.892	-238.101	-150.726	-228.926	-195.915	-131.340	-322.210	-111.863	-46.120	-49.260
AIC	299.785	500.201	325.451	481.852	415.830	286.680	668.420	247.726	116.239	114.520

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

## 7 Poland

Synthetic variables have been estimated for the full set of Polish parties available in the original 2019 EES Poland voter study selected according to the criteria stated in the EES 2019 SDM codebook (for the criteria see Sect. XXX; for the relevant parties see Table 7.1).

Table 7.1: Poland relevant parties

Dep. Var.	Party	Party name (eng)
$stack_2104$	2104	Law and Justice
$\rm stack\_2106$	2106	Kukiz'15
$\rm stack\_2102$	2102	Spring
$\rm stack\_2105$	2105	Poland Together
$stack\_2103$	2103	European Coalition

Full OLS models converge and coefficients do not show any particular issue (see Table 7.8). In terms of model fit, the adjusted coefficient of determination  $(R^2)$  values vary between a minimum value of 0.028 for party 2103 (European Coalition) and a maximum of 0.125 for party 2104 (Law and Justice). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that the full models perform better in all cases (see Table 7.2).

Table 7.2: Akaike Information Criterion values for OLS full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_2104	2104	833.338	943.422	-110.085
$stack\_2106$	2106	437.048	502.658	-65.610
$stack_2102$	2102	469.635	555.309	-85.674
$stack\_2105$	2105	193.751	222.690	-28.939
$stack_2103$	2103	112.730	127.620	-14.890

On the contrary, one out of the five logistic regression models (see Table 7.9) shows inflated standard errors for some of the coefficients of interest, in particular:

• Model 9a: EDU rec (both categories), D7 rec (second category), D6 une

Model 9a appears to be problematic as the constant term seems to be affected by the inflated standard errors issue.

The inflated standard errors in Model 9a are due to separation issues. In short, no respondents who are unemployed or of high subjective social status voted for party 2105. Only one respondent with low education voted for party 2105. (See tables 7.5, 7.6, 7.7)

As a consequence, a constrained version of model 9 (namely, Model 9b) without said variables was estimated and contrasted with the original (Model 9a), full model. Likelihood-ratio test results show that  $H_0$  (namely, that the constrained model fits better than the full model) cannot be rejected (see Table 7.3). Consequently, synthetic variables for respondents' vote choice for party 2105 have been predicted relying on the constrained model (Model 9b).

Table 7.3: Likelihood-ratio Test between Model 9a (Unconstrained) and Model 9b (Constrained)

Model	Resid. Df	Resid. Dev	Df	Deviance	Pr(>Chi)
Constrained	901	165.5611			
Unconstrained	896	155.4471	5	10.11397	0.0720696

In terms of model fit, adjusted McFadden's pseudo  $R^2$  values for the logistic full models vary between a minimum value of -0.062 for party 2105 (Poland Together) and a maximum of 0.071 for party 2104 (Law and Justice). Moreover, the difference between Akaike Information Criterion (AIC) values for logistic full models and null models shows that in one case out of five null models perform better than full ones. According to AIC values the related null model appears to have a better fit than Model 9b (see Table 7.4).

Table 7.4: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_2102	2102	544.1240	548.0700	-3.946000
$stack\_2103$	2103	1020.6860	1082.1110	-61.424000
$stack_2104$	2104	946.7780	1020.9980	-74.219000
$\rm stack\_2105$	2105	179.4470	170.9330	8.514000
stack_2105*	2105	179.5611	170.9328	8.628321
$stack\_2106$	2106	477.0260	480.2080	-3.182000

<sup>\*</sup> AIC value refers to Model 9b (constrained).

Table 7.5: Cross tabulation between vote choice for party 2105 and respondents' education

stack_2105/EDU_rec	1	2	3	NA	Total
0	57	246	636	34	973
1	1	4	13	1	19
NA	1	2	3	2	8
Total	59	252	652	37	1000

Table 7.6: Cross tabulation between vote choice for party 2105 and respondents' subjective social class

stack_2105/D7_rec	0	1	2	NA	Total
0	314	493	147	19	973
1	11	8	0	0	19
NA	4	2	1	1	8
Total	329	503	148	20	1000

Table 7.7: Cross tabulation between vote choice for party 2105 and respondents' employment status

stack_2105/D6_une	0	1	Total
0	931	42	973
1	19	0	19
NA	8	0	8
Total	958	42	1000

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Table 7.8: Propensity to vote for a relevant party according to respondents' socio-demographic characteristics (OLS regression models)

	2104	2106	2102	2105	2103
	Model 1	Model 2	Model 3	Model 4	Model 5
$D3\_rec2$	-0.050	-0.003	0.095***	0.054**	0.024
	(0.026)	(0.021)	(0.021)	(0.018)	(0.017)
$D8\_rec1$	0.038	-0.015	-0.008	0.021	0.002
	(0.035)	(0.028)	(0.029)	(0.025)	(0.023)
$D5\_rec1$	0.039	0.041	0.064*	0.074***	0.029
	(0.030)	(0.024)	(0.025)	(0.021)	(0.020)
$EDU\_rec2$	-0.034	0.027	0.047	0.009	0.018
	(0.065)	(0.052)	(0.054)	(0.047)	(0.043)
$EDU\_rec3$	-0.001	0.047	0.034	-0.004	0.007
	(0.061)	(0.049)	(0.050)	(0.043)	(0.040)
D1_rec1	0.010	-0.013	0.030	0.012	$0.047^{*}$
	(0.034)	(0.028)	(0.028)	(0.024)	(0.023)
$D7\_rec1$	-0.037	-0.006	-0.027	$-0.045^*$	0.00005
	(0.029)	(0.023)	(0.024)	(0.020)	(0.019)
$D7\_rec2$	0.005	-0.032	-0.045	-0.046	0.015
	(0.041)	(0.033)	(0.034)	(0.029)	(0.027)
D6_une1	0.008	0.043	-0.005	0.007	0.022
	(0.075)	(0.061)	(0.063)	(0.055)	(0.051)
D4_age	-0.001	-0.005***	-0.001	-0.002**	0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$D10\_rec$	0.060***	$0.017^{***}$	$-0.041^{***}$	$-0.017^{***}$	-0.018***
	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)
Constant	0.203**	$0.473^{***}$	0.438***	$0.352^{***}$	0.308***
	(0.071)	(0.058)	(0.059)	(0.051)	(0.048)
N	905	900	889	884	907
R-squared	0.136	0.093	0.114	0.056	0.040
Adj. R-squared	0.125	0.082	0.103	0.044	0.028

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

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Table 7.9: Vote choice for a relevant party according to respondents' socio-demographic characteristics (Logistic regression models)

	2104	2106	2102	2105	2105	2103
	Model 6	Model 7	Model 8	Model 9a	Model 9b	Model 10
$D3\_rec2$	-0.168	-0.066	0.396	0.250	0.128	-0.248
	(0.166)	(0.261)	(0.245)	(0.503)	(0.496)	(0.159)
$D8\_rec1$	0.056	0.284	-0.052	1.126	1.111	0.305
	(0.216)	(0.384)	(0.338)	(1.047)	(1.040)	(0.230)
$D5\_rec1$	$0.561^{**}$	-0.304	0.177	0.105	0.155	-0.189
	(0.209)	(0.296)	(0.279)	(0.595)	(0.586)	(0.182)
$EDU\_rec2$	0.087	0.583	0.246	16.045		0.216
	(0.451)	(0.708)	(0.685)	(2361.013)		(0.453)
$EDU\_rec3$	0.226	1.037	0.185	16.329		0.301
	(0.422)	(0.664)	(0.652)	(2361.013)		(0.428)
D1_rec1	0.070	0.339	-0.184	0.641	0.706	-0.090
	(0.209)	(0.309)	(0.361)	(0.570)	(0.559)	(0.219)
$D7\_rec1$	-0.087	-0.083	0.038	-0.632		$0.434^{*}$
	(0.187)	(0.281)	(0.261)	(0.501)		(0.181)
$D7\_rec2$	0.218	-0.641	-0.456	-17.149		0.630*
	(0.253)	(0.482)	(0.429)	(1491.045)		(0.249)
D6_une1	0.015	0.567	0.601	-16.565		-0.988
	(0.499)	(0.581)	(0.580)	(3253.938)		(0.635)
D4_age	0.003	-0.034***	0.010	-0.004	-0.0004	0.032***
	(0.005)	(0.009)	(0.008)	(0.017)	(0.016)	(0.005)
$D10\_rec$	$0.317^{***}$	0.022	-0.213***	-0.007	-0.026	-0.134***
	(0.039)	(0.057)	(0.053)	(0.108)	(0.106)	(0.033)
Constant	-3.074***	-1.988**	-2.611***	-20.769	-5.193***	-2.566***
	(0.508)	(0.766)	(0.757)	(2361.013)	(1.407)	(0.504)
N	908	908	908	908	908	908
Log Likelihood	-461.389	-226.513	-260.062	-77.724	-82.781	-498.343
AIC	946.778	477.026	544.124	179.447	179.561	1020.686

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

## 8 Sweden

Synthetic variables have been estimated for the full set of Swedish parties available in the original 2019 EES Sweden voter study selected according to the criteria stated in the EES 2019 SDM codebook (for the criteria see Sect. XXX; for the relevant parties see Table 8.1).

Table 8.1: Sweden relevant parties

Dep. Var.	Party	Party name (eng)
stack_2702	2702	Social Democratic Labour Party
$stack_2705$	2705	Moderate Coalition Party
$stack_2707$	2707	Green Ecology Party
$stack_2704$	2704	Liberal People's Party
$\rm stack\_2703$	2703	Centre Party
$stack\_2708$	2708	Sweden Democrats
$stack_2706$	2706	Christian Democrats
$stack\_2701$	2701	Left Party

Full OLS models converge and coefficients do not show any particular issue (see Table 8.4). In terms of model fit, the adjusted coefficient of determination  $(R^2)$  values vary between a minimum value of 0.02 for party 2702 (Social Democratic Labour Party) and a maximum of 0.103 for party 2707 (Green Ecology Party). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that the full models perform better in all cases (see Table 8.2).

Table 8.2: Akaike Information Criterion values for OLS full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_2702	2702	736.830	742.960	-6.131
$\rm stack\_2705$	2705	583.583	623.368	-39.785
$stack_2707$	2707	397.673	479.613	-81.940
$stack_2704$	2704	221.126	263.305	-42.179
$stack_2703$	2703	216.840	266.672	-49.831
$stack_2708$	2708	836.810	856.252	-19.442
$stack_2706$	2706	470.258	502.935	-32.677
${\rm stack}\_2701$	2701	542.761	577.778	-35.018

On the contrary, one out of the eight logistic regression models (see Table 8.5) shows inflated standard errors for one of the coefficients of interest, in particular:

#### • Model 10: D6\_une

However, the constant term and the other regressors of Model 10 are not affected by the inflated standard errors issue. Therefore, no additional adjustments are made and Model 10 is kept as is.

In terms of model fit, adjusted McFadden's pseudo  $R^2$  values for the logistic full models vary between a minimum value of -0.041 for party 2704 (Liberal People's Party) and a maximum of 0.036 for party 2705

(Moderate Coalition Party). Moreover, the difference between Akaike Information Criterion (AIC) values for logistic full models and null models shows that in three cases out of eight null models perform better than full ones (see Table 8.3).

Table 8.3: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
$stack_2702$	2702	806.614	820.036	-13.422
$\rm stack\_2705$	2705	501.736	522.644	-20.909
$stack_2707$	2707	360.001	359.457	0.544
$stack_2704$	2704	256.021	247.996	8.025
$stack\_2703$	2703	299.075	299.837	-0.762
$stack_2708$	2708	736.057	735.017	1.040
$stack_2706$	2706	371.163	370.795	0.368
${\rm stack}\_2701$	2701	419.663	424.960	-5.297

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Table 8.4: Propensity to vote for a relevant party according to respondents' socio-demographic characteristics (OLS regression models)

	2702	2705	2707	2704	2703	2708	2706	2701
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
D3_rec2	0.017	-0.028	0.090***	0.018	0.042*	-0.091**	-0.019	0.056*
	(0.026)	(0.024)	(0.021)	(0.019)	(0.019)	(0.027)	(0.022)	(0.023)
D8_rec1	0.042	0.026	0.019	$0.040^{'}$	0.021	-0.047	$0.027^{'}$	-0.003
	(0.033)	(0.030)	(0.027)	(0.025)	(0.024)	(0.035)	(0.028)	(0.030)
D5 rec1	-0.017	-0.001	$-0.052^{*}$	-0.026	-0.027	$0.035^{'}$	$0.007^{'}$	$-0.054^*$
	(0.027)	(0.025)	(0.022)	(0.020)	(0.020)	(0.028)	(0.023)	(0.024)
$EDU\_rec2$	0.026	-0.063	0.034	0.031	-0.003	-0.041	-0.038	0.049
_	(0.050)	(0.046)	(0.041)	(0.037)	(0.037)	(0.053)	(0.043)	(0.045)
$EDU\_rec3$	-0.004	-0.045	0.063	0.061	0.031	-0.112*	-0.025	0.075
	(0.049)	(0.045)	(0.040)	(0.036)	(0.036)	(0.052)	(0.042)	(0.044)
D1_rec1	$0.068^{*}$	-0.043	0.034	$0.017^{'}$	$0.024^{'}$	-0.015	-0.038	0.064**
	(0.027)	(0.025)	(0.022)	(0.020)	(0.020)	(0.029)	(0.023)	(0.024)
D7_rec1	-0.039	0.121***	0.031	0.080***	$0.065^{**}$	0.016	0.094***	$-0.089^{***}$
	(0.028)	(0.026)	(0.023)	(0.021)	(0.021)	(0.030)	(0.024)	(0.025)
D7 rec2	$-0.097^*$	0.227***	0.011	0.120***	$0.068^{*}$	$0.013^{'}$	0.118***	-0.134****
	(0.040)	(0.036)	(0.032)	(0.029)	(0.029)	(0.042)	(0.034)	(0.035)
D6_une1	-0.075	-0.062	-0.076	0.001	-0.014	0.223***	-0.007	-0.052
	(0.054)	(0.049)	(0.044)	(0.040)	(0.040)	(0.057)	(0.046)	(0.048)
D4_age	-0.001	-0.001	$-0.005^{***}$	-0.003****	-0.003****	0.001	-0.0001	$-0.002^{**}$
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
D10_rec	0.012	0.005	$0.014^{*}$	$0.012^{*}$	0.019***	-0.003	0.029***	-0.003
	(0.007)	(0.006)	(0.006)	(0.005)	(0.005)	(0.007)	(0.006)	(0.006)
Constant	0.454***	0.433***	0.397***	0.275***	0.297***	0.427***	0.248***	0.383***
	(0.066)	(0.061)	(0.054)	(0.049)	(0.049)	(0.070)	(0.057)	(0.059)
N	854	852	852	849	853	852	851	850
R-squared	0.032	0.070	0.115	0.073	0.081	0.047	0.062	0.065
Adj. R-squared	0.020	0.058	0.103	0.061	0.069	0.035	0.050	0.053

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05

Table 8.5: Vote choice for a relevant party according to respondents' socio-demographic characteristics (Logistic regression models)

	2702	2705	2707	2704	2703	2708	2706	2701
	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16
D3_rec2	-0.065	-0.641*	0.845**	-0.122	0.008	-0.290	-0.126	0.205
	(0.184)	(0.270)	(0.325)	(0.404)	(0.351)	(0.200)	(0.318)	(0.281)
D8_rec1	0.347	0.250	-0.175	0.369	-0.228	-0.283	-0.103	0.207
	(0.251)	(0.337)	(0.396)	(0.556)	(0.442)	(0.233)	(0.378)	(0.382)
D5 rec1	0.061	0.512	0.146	-0.259	$-0.818^*$	0.135	0.059	-0.359
	(0.190)	(0.269)	(0.330)	(0.404)	(0.368)	(0.205)	(0.320)	(0.291)
$EDU\_rec2$	0.704	0.457	-0.227	0.850	-0.555	-0.095	-0.545	0.677
	(0.463)	(0.648)	(0.548)	(1.075)	(0.654)	(0.367)	(0.616)	(0.769)
$EDU\_rec3$	0.612	0.762	-0.034	0.823	-0.124	-0.340	-0.235	0.974
	(0.454)	(0.625)	(0.537)	(1.057)	(0.607)	(0.358)	(0.569)	(0.755)
D1_rec1	0.747***	-0.364	-0.324	-0.576	1.232**	-0.197	-0.123	0.596
	(0.203)	(0.257)	(0.325)	(0.411)	(0.444)	(0.201)	(0.321)	(0.309)
D7_rec1	-0.095	$0.640^{*}$	0.074	1.020	$0.995^{*}$	-0.102	-0.161	-1.043****
	(0.198)	(0.313)	(0.347)	(0.531)	(0.425)	(0.212)	(0.345)	(0.307)
D7  rec2	-0.212	1.033**	0.314	1.302*	0.157	-0.374	0.078	-1.320*
	(0.286)	(0.361)	(0.463)	(0.614)	(0.703)	(0.322)	(0.447)	(0.547)
D6_une1	-0.990	-14.798	-1.183	-0.325	0.349	0.742*	-0.964	-0.458
	(0.541)	(529.544)	(1.034)	(1.058)	(0.649)	(0.346)	(1.039)	(0.630)
D4_age	0.015**	0.008	-0.029**	0.012	0.0003	$0.012^{*}$	0.028**	0.003
	(0.005)	(0.007)	(0.010)	(0.012)	(0.011)	(0.006)	(0.009)	(0.009)
D10 rec	0.070	-0.010	0.026	-0.129	0.063	-0.067	$0.173^{*}$	-0.149
	(0.046)	(0.065)	(0.075)	(0.124)	(0.087)	(0.056)	(0.069)	(0.089)
Constant	$-3.545^{***}$	-3.836***	$-1.812^*$	-5.244***	$-3.889^{***}$	$-1.535^{**}$	-3.938****	$-3.314^{***}$
	(0.580)	(0.798)	(0.717)	(1.322)	(0.913)	(0.495)	(0.824)	(0.910)
N	847	847	847	847	847	847	847	847
Log Likelihood	-391.307	-238.868	-168.000	-116.010	-137.538	-356.029	-173.582	-197.832
AIC	806.614	501.736	360.001	256.021	299.075	736.057	371.163	419.663

<sup>\*\*\*</sup>p < .001; \*\*p < .01; \*p < .05