Summary of Synthetic Variables Estimation

EES 2019 Voter Study (Belgian sample)

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1 Belgium

Synthetic variables have been estimated for the full set of Belgian parties available in the original 2019 EES Belgian 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 Tables 1.1 and 1.2). Note that the Belgian sample is splitted according to the two electoral colleges of Belgium, namely the Dutch and the French electoral college.

Table 1.1: Belgian relevant parties in Dutch electoral college

Dep. Var.	Party	Party name (eng)
stack_201	201	Workers Party of Belgium
stack_202	202	Christian Democratic and Flemish Party
stack_203	203	Socialist Party Different
stack_204	204	Open Flemish Liberals and Democrats
stack_205	205	New Flemish Alliance
stack_206	206	Green
stack_207	207	Flemish Interest

Table 1.2: Belgian relevant parties in French electoral college

Dep. Var.	Party	Party name (eng)
stack_208	208	Francophone Socialist Party
stack_209	209	Reform Movement
stack_210	210	Humanist Democratic Centre
stack_211	211	Ecologists
stack_212	212	National Front (Belgium)
stack_213	213	Workers Party of Belgium
stack_214	214	Francophone Democratic Federalists

Full OLS models converge and coefficients do not show any particular issue (see Table 1.11 and Table 1.13).

For the Dutch electoral college: In terms of model fit, the adjusted coefficient of determination (R^2) values vary between a minimum value of 0 for party 203 (Socialist Party Different) and a maximum of 0.062 for party 202 (Christian Democratic and Flemish Party). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that in all 7 cases out of 7 null models perform better than full ones (see Table 1.3).

For the French electoral college: In terms of model fit, the adjusted coefficient of determination (R^2) values vary between a minimum value of 0.027 for party 211 (Ecologists) and a maximum of 0.128 for party 213 (Workers Party of Belgium). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that in all 7 cases out of 7 null models perform better than full ones (see Table 1.4).

Also all seven logistic regression models in the Dutch electoral college show no issue (see Table 1.12) On the contrary, one out of seven logistic regression models in the French electoral college (see Table 1.14) show inflated standard errors for some of the coefficients of interest:

Table 1.3: Akaike Information Criterion values for OLS full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_201	201	218.286	221.796	-3.510
stack_202	202	172.948	196.202	-23.255
stack_203	203	312.241	302.151	10.090
stack_204	204	234.958	251.257	-16.299
stack_205	205	433.439	430.468	2.970
stack_206	206	259.913	271.127	-11.213
stack_207	207	498.332	499.672	-1.340

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

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_208	208	224.742	243.907	-19.165
stack_209	209	238.028	251.788	-13.760
stack_210	210	126.949	151.975	-25.026
stack_211	211	238.956	240.069	-1.113
stack_212	212	150.043	161.937	-11.894
stack_213	213	211.229	254.330	-43.100
stack_214	214	132.800	136.790	-3.990

- Model 26a: D8_rec, EDU_rec, D7_rec;

Model 26a of the French electoral college presents a more problematic profile, since it affects the models constant terms with its inflated standard errors.

Inflated standard errors are due to separation issues. In short:

- No respondents from rural areas voted for party 212 (Table 1.8);
- No low and high educated respondents voted for party 212 (Table 1.9)
- No upper class respondents voted for party 212 (Table 1.10);

As a consequence, a constrained version of model 26a without said variables was estimated and contrasted with the original, full model. Likelihood-ratio test results show that H_0 (namely, that the constrained model does not fit better than the full model) cannot be rejected at $p<0.05$ (see Table 1.5). Consequently, synthetic variables for respondents' vote choice for party 212 have been predicted relying on the constrained model.

Table 1.5: Likelihood-ratio Test between Model 26a (Unconstrained) and Model 26b (Constrained)

Resid. Df	Resid. Dev	Df	Deviance	Pr(>Chi)
372	42.18100			
367	29.34199	5	12.83901	0.024935

In the case of the Dutch electoral college: 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 207 (Flemish Interest) and a maximum of 0.012 for party 203 (Socialist Party Different).

In the case of the Fench electoral college: In terms of model fit, adjusted McFadden's pseudo R^2 values for the logistic full models vary between a minimum value of -0.158 for party 212 (National Front (Belgium)) and a maximum of 0.02 for party 210 (Humanist Democratic Centre).

Table 1.6: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_201	201	256.725	261.229	-4.504
stack_202	202	317.743	314.286	3.457
stack_203	203	572.088	581.032	-8.944
stack_204	204	361.724	357.521	4.203
stack_205	205	486.627	477.614	9.013
stack_206	206	347.090	340.740	6.350
stack_207	207	171.854	163.767	8.087

Table 1.7: Akaike Information Criterion values for logistic full and null models

Dep. Var.	Party	Full Mod.	Null Mod.	Diff. (Full-Null)
stack_208	208	334.675	326.04300	8.632000
stack_209	209	292.012	297.36100	-5.349000
stack_210	210	200.627	206.63700	-6.010000
stack_211	211	331.408	336.11000	-4.702000
stack_212	212	51.342	46.34600	4.996000
stack_212*	212	54.181	46.34632	7.834681
stack_213	213	276.248	277.95700	-1.709000
stack_214	214	150.056	140.68100	9.375000

* AIC value of 212 refers to Model 26b (constrained).

Table 1.8: Cross tabulation between vote choice for party 212 and respondents' area of residency

stack_212/D8_rec	0	1	Total
0	152	256	408
1	0	4	4
NA	9	16	25
Total	161	276	437

Table 1.9: Cross tabulation between vote choice for party 212 and respondents' education

stack_212/EDU_rec	1	2	3	NA	Total
0	48	132	223	5	408
1	0	4	0	0	4
NA	4	9	11	1	25
Total	52	145	234	6	437

Table 1.10: Cross tabulation between vote choice for party 212 and respondents' subjective social class

stack_212/D7_rec	0	1	2	NA	Total
0	140	196	64	8	408
1	2	2	0	0	4
NA	7	14	1	3	25
Total	149	212	65	11	437

Table 1.11: Vote choice for a relevant party according to respondents socio-demographic characteristics at Dutch Electoral College (Ordinary square models)

	207	**201**	**204**	**206**	**203**	**202**	**205**
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
D3_rec2	0.046	0.023	0.004	0.005	−0.033	0.076**	−0.005
	(0.027)	(0.025)	(0.029)	(0.027)	(0.033)	(0.028)	(0.035)
D8_rec1	0.007	−0.044	−0.007	−0.032	−0.042	−0.033	−0.027
	(0.027)	(0.025)	(0.029)	(0.027)	(0.033)	(0.028)	(0.035)
D5_rec1	−0.006	0.005	−0.023	−0.013	0.038	−0.025	0.063
	(0.028)	(0.026)	(0.030)	(0.028)	(0.034)	(0.029)	(0.036)
EDU_rec2	0.080	0.014	0.018	−0.108*	−0.039	0.070	0.026
	(0.050)	(0.047)	(0.054)	(0.050)	(0.061)	(0.051)	(0.064)
EDU_rec3	0.070	0.045	0.001	−0.092	0.021	0.093	−0.012
	(0.049)	(0.046)	(0.053)	(0.049)	(0.060)	(0.050)	(0.063)
D1_rec1	0.057*	−0.047	0.067*	0.006	−0.068*	0.002	−0.004
	(0.028)	(0.026)	(0.030)	(0.028)	(0.034)	(0.029)	(0.036)
D7_rec1	−0.015	0.036	0.016	0.091**	−0.012	−0.006	−0.074
	(0.029)	(0.028)	(0.032)	(0.029)	(0.036)	(0.030)	(0.038)
D7_rec2	−0.095*	−0.031	−0.019	0.103*	0.076	−0.018	−0.038
	(0.048)	(0.045)	(0.052)	(0.048)	(0.059)	(0.049)	(0.062)
D4_age	−0.002**	−0.001	−0.001	−0.002**	0.001	−0.003***	−0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
D10_rec	−0.002	0.042***	0.003	0.023**	0.011	0.006	0.016
	(0.008)	(0.008)	(0.009)	(0.008)	(0.010)	(0.008)	(0.010)
Constant	0.281***	0.351***	0.364***	0.501***	0.497***	0.426***	0.577***
	(0.068)	(0.064)	(0.073)	(0.068)	(0.084)	(0.070)	(0.087)
N	508	518	518	519	514	518	519
R-squared	0.045	0.080	0.019	0.068	0.033	0.058	0.040
Adj. R-squared	0.026	0.062	−0.0004	0.049	0.013	0.040	0.021

***p < .001; **p < .01; *p < .05

Table 1.12: Vote choice for a relevant party according to respondents socio-demographic characteristics at Dutch Electoral College (Logistic regression models)

	207	**201**	**204**	**206**	**203**	**202**	**205**
	Model 8	**Model 9**	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**
D3_rec2	0.010	0.406	−0.039	−0.080	−0.352	−0.106	0.709
	(0.369)	(0.328)	(0.215)	(0.291)	(0.239)	(0.303)	(0.515)
D8_rec1	−0.184	0.220	−0.213	0.506	−0.247	−0.013	0.065
	(0.367)	(0.327)	(0.214)	(0.306)	(0.238)	(0.302)	(0.492)
D5_rec1	0.129	−0.370	−0.200	0.046	0.436	−0.512	0.191
	(0.380)	(0.325)	(0.222)	(0.312)	(0.261)	(0.307)	(0.537)
EDU_rec2	−1.077	0.782	0.119	0.613	−0.357	−0.398	0.651
	(0.588)	(0.691)	(0.409)	(0.646)	(0.417)	(0.506)	(1.104)
EDU_rec3	−0.520	1.006	0.261	0.382	−0.465	−0.447	0.771
	(0.570)	(0.665)	(0.404)	(0.649)	(0.413)	(0.489)	(1.081)
D1_rec1	−0.282	0.164	−0.422	0.847**	0.134	0.158	0.534
	(0.387)	(0.327)	(0.227)	(0.303)	(0.245)	(0.311)	(0.495)
D7_rec1	−0.368	−0.220	0.127	0.353	−0.093	0.964*	−0.268
	(0.378)	(0.349)	(0.239)	(0.323)	(0.259)	(0.383)	(0.508)
D7_rec2	−1.936	0.260	0.750*	−0.193	−0.386	1.079*	−0.820
	(1.073)	(0.508)	(0.365)	(0.599)	(0.449)	(0.527)	(1.097)
D4_age	0.008	−0.029**	0.022***	0.016	−0.009	−0.003	−0.008
	(0.011)	(0.010)	(0.006)	(0.009)	(0.007)	(0.009)	(0.015)
D10_rec	0.352***	−0.044	−0.121	−0.073	0.060	0.098	−0.634
	(0.086)	(0.100)	(0.069)	(0.090)	(0.069)	(0.083)	(0.324)
Constant	−2.373**	−1.867*	−1.977***	−4.168***	−0.715	−2.152**	−3.768**
	(0.880)	(0.829)	(0.569)	(0.893)	(0.581)	(0.711)	(1.398)
N	503	503	503	503	503	503	503
Log Likelihood	−117.362	−147.872	−275.044	−169.862	−232.314	−162.545	−74.927
AIC	256.725	317.743	572.088	361.724	486.627	347.090	171.854

***p < .001; **p < .01; *p < .05

Table 1.13: Vote choice for a relevant party according to respondents socio-demographic characteristics at French Electoral College (OLS regression models)

	208	**209**	**210**	**211**	**212**	**213**	**214**
	Model 15	**Model 16**	**Model 17**	**Model 18**	**Model 19**	**Model 20**	**Model 21**
D3_rec2	0.035	0.027	0.025	0.017	−0.056	−0.008	−0.018
	(0.033)	(0.033)	(0.029)	(0.033)	(0.030)	(0.032)	(0.030)
D8_rec1	−0.019	−0.021	−0.030	0.031	−0.010	−0.023	0.043
	(0.033)	(0.034)	(0.030)	(0.034)	(0.030)	(0.033)	(0.030)
D5_rec1	0.065	−0.018	0.019	−0.004	0.068*	0.044	0.034
	(0.033)	(0.034)	(0.030)	(0.034)	(0.030)	(0.033)	(0.030)
EDU_rec2	−0.184**	0.0001	−0.032	−0.074	0.009	0.090	−0.109*
	(0.057)	(0.059)	(0.051)	(0.058)	(0.052)	(0.058)	(0.053)
EDU_rec3	−0.172**	0.073	−0.029	0.022	−0.037	−0.020	−0.085
	(0.055)	(0.056)	(0.049)	(0.056)	(0.050)	(0.055)	(0.050)
D1_rec1	0.040	−0.056	−0.080*	0.027	−0.010	0.100**	0.007
	(0.035)	(0.035)	(0.031)	(0.035)	(0.032)	(0.035)	(0.031)
D7_rec1	−0.035	0.101**	0.085**	0.052	−0.045	−0.081*	0.063
	(0.036)	(0.037)	(0.032)	(0.037)	(0.033)	(0.036)	(0.033)
D7_rec2	−0.112*	0.168**	0.046	0.066	−0.097*	−0.142**	0.055
	(0.050)	(0.051)	(0.045)	(0.051)	(0.046)	(0.050)	(0.045)
D4_age	−0.003**	−0.002	−0.003***	−0.002*	−0.002*	−0.004***	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
D10_rec	0.011	0.024**	0.035***	0.003	0.021**	0.004	0.016*
	(0.009)	(0.009)	(0.008)	(0.009)	(0.008)	(0.009)	(0.008)
Constant	0.652***	0.360***	0.460***	0.479***	0.319***	0.528***	0.401***
	(0.070)	(0.072)	(0.063)	(0.071)	(0.064)	(0.071)	(0.064)
N	395	393	392	396	392	387	384
R-squared	0.094	0.082	0.109	0.052	0.078	0.150	0.061
Adj. R-squared	0.071	0.058	0.085	0.027	0.054	0.128	0.035

***p < .001; **p < .01; *p < .05

Table 1.14: Vote choice for a relevant party according to respondents socio-demographic characteristics at French Electoral College (Logistic regression models)

	208	**209**	**210**	**211**	**212**	**212**	**213**	**214**
	Model 22	**Model 23**	**Model 24**	**Model 25**	**Model 26a**	**Model 26b**	**Model 27**	**Model 28**
D3_rec2	0.251	0.555	−0.393	−0.092	0.277	0.179	−0.170	−0.132
	(0.296)	(0.327)	(0.440)	(0.298)	(1.084)	(1.033)	(0.334)	(0.525)
D8_rec1	−0.677*	−0.313	−0.771	0.458	18.905		−0.205	0.646
	(0.297)	(0.327)	(0.420)	(0.316)	(5661.450)		(0.336)	(0.593)
D5_rec1	0.538	0.128	0.601	−0.415	−0.522	−0.428	−0.078	−0.685
	(0.315)	(0.333)	(0.472)	(0.300)	(1.073)	(1.036)	(0.336)	(0.519)
EDU_rec2	−0.288	1.505	0.596	−1.011	19.728		0.083	0.683
	(0.493)	(1.086)	(0.861)	(0.546)	(10629.430)		(0.532)	(1.166)
EDU_rec3	−0.218	1.956	0.545	−0.025	0.037		−0.506	0.342
	(0.466)	(1.056)	(0.824)	(0.471)	(11710.110)		(0.536)	(1.145)
D1_rec1	−0.149	−0.197	−0.631	0.377	0.338	0.419	0.644	0.807
	(0.319)	(0.360)	(0.486)	(0.316)	(1.154)	(1.090)	(0.341)	(0.544)
D7_rec1	−0.287	0.775	0.566	0.799*	−0.089		−0.456	0.996
	(0.323)	(0.418)	(0.500)	(0.382)	(1.103)		(0.340)	(0.695)
D7_rec2	−0.545	1.109*	0.501	1.150*	−18.595		−2.376*	1.282
	(0.482)	(0.518)	(0.624)	(0.456)	(7868.020)		(1.042)	(0.820)
D4_age	−0.009	0.003	0.006	−0.002	−0.001	0.003	−0.001	0.021
	(0.009)	(0.010)	(0.013)	(0.009)	(0.031)	(0.029)	(0.010)	(0.016)
D10_rec	−0.034	−0.204	0.403***	−0.112	0.253	0.290	0.011	0.108
	(0.085)	(0.111)	(0.095)	(0.087)	(0.214)	(0.212)	(0.087)	(0.123)
Constant	−0.850	−4.237***	−4.018***	−1.939**	−41.918	−5.298**	−1.392*	−5.868***
	(0.616)	(1.153)	(1.035)	(0.641)	(12043.120)	(1.873)	(0.699)	(1.442)
N	378	378	378	378	378	378	378	378
Log Likelihood	−156.337	−135.006	−89.313	−154.704	−14.671	−21.091	−127.124	−64.028
AIC	334.675	292.012	200.627	331.408	51.342	54.181	276.248	150.056

***p < .001; **p < .01; *p < .05