Summary of Synthetic Variables Estimation

EES 2019 Voter Study (Belgian, Bulgarian, Cypriot, and Italian samples)

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1 Cyprus

Synthetic variables have been estimated for the full set of Cypriot parties available in the original 2019 EES Cypriot 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: Cypriot relevant parties

Dep. Var.	Party	Party name (eng)
stack_501	501	Progressive Party of the Working People
stack_502	502	Democratic Rally
stack_503	503	Democratic Party
stack_504	504	United Democratic Union of Centre
stack_505	505	Ecological and Environmental Movement (Cyprus Green Party)
stack_507	507	National Popular Front

Full OLS models converge and coefficients do not show any particular issue (see Table 1.11). In terms of model fit, the adjusted coefficient of determination (R^2) values vary between a minimum value of -0.008 for party 504 (United Democratic Union of Centre) and a maximum of 0.078 for party 502 (Democratic Rally). Moreover, the difference between Akaike Information Criterion (AIC) values for full OLS models and null models shows that in 4 cases out of 6 null models perform better than full ones (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_501	501	345.686	366.312	-20.626
stack_502	502	401.571	425.484	-23.913
stack_503	503	263.578	256.427	7.151
stack_504	504	146.427	132.226	14.200
stack_505	505	114.242	107.109	7.133
stack_507	507	204.881	199.676	5.205

On the contrary, three out of six logistic regression models (see Table 1.12) show inflated standard errors for some of the coefficients of interest, in particular:

- Model 9: D7_rec (only for category 2);
- Model 11a: D8_rec, D5_rec, EDU_rec, D7_rec (only for category 2), D6_une;
- Model 12: D6_une.

Nevertheless, models 9 and 12 constant terms and other regression coefficients are not affected by said inflated standard errors, whereas model 5a presents a more problematic profile.

Model 5a inflated standard errors are due to separation issues. In short, no respondents from rural areas or small cities, single, low educated, with high subjective socioeconomic status (SES), members of trade unions, and unemployed did vote for party 505 (see Tables 1.5, 1.6, 1.7, 1.8, 1.9, 1.10).

As a consequence, a constrained version of model 11 (namely, Model 11b) without said variables was estimated and contrasted with the original (Model 11a), 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 505 have been predicted relying on the constrained model (Model 11b).

Table 1.3: Likelihood-ratio Test between Model 5a (Unconstrained) and Model 5b (Constrained)

Model	Resid. Df	Resid. Dev	Df	Deviance	Pr(>Chi)
Constrained	391	52.33088			
Unconstrained	383	39.43782	8	12.89306	0.1155825

In terms of model fit, adjusted McFadden's pseudo R^2 values for the logistic full models vary between a minimum value of -0.183 for party 505 (Ecological and Environmental Movement (Cyprus Green Party)) and a maximum of 0.062 for party 501 (Progressive Party of the Working People). Moreover, the difference between Akaike Information Criterion (AIC) values for logistic full models and null models shows that in 3 cases out of 6 null models perform better than full ones. According to AIC values the related null model appears to have a better fit than Model 11b (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_501	501	270.27400	290.27300	-19.99900
stack_502	502	358.98900	383.05300	-24.06400
stack_503	503	233.62500	229.00000	4.62600
stack_504	504	151.74400	135.94400	15.79900
stack_505	505	63.43800	55.63100	7.80700
stack_505*	505	60.33088	55.63092	4.69996
stack_507	507	115.69400	116.33000	-0.63600

* AIC value refers to Model 11b (constrained).

Table 1.5: Cross tabulation between vote choice for party 505 and respondents' area of residency

stack_505/D8_rec	0	1	Total
0	84	354	438
1	0	5	5
NA	10	48	58
Total	94	407	501

Table 1.6: Cross tabulation between vote choice for party 505 and respondents' marital status

stack_505/D5_rec	0	1	Total
0	104	334	438
1	0	5	5
NA	14	44	58
Total	118	383	501

Table 1.7: Cross tabulation between vote choice for party 505 and respondents' education

stack_505/EDU_rec	1	2	3	NA	Total
0	92	175	154	17	438
1	0	2	3	0	5
NA	5	20	33	0	58
Total	97	197	190	17	501

Table 1.8: Cross tabulation between vote choice for party 505 and respondents' subjective SES

stack_505/D7_rec	0	1	2	NA	Total
0	161	246	25	6	438
1	2	3	0	0	5
NA	24	30	2	2	58
Total	187	279	27	8	501

Table 1.9: Cross tabulation between vote choice for party 505 and respondents' trade union membership

stack_505/D1_rec	0	1	NA	Total
0	339	84	15	438
1	5	0	0	5
NA	47	8	3	58
Total	391	92	18	501

Table 1.10: Cross tabulation between vote choice for party 505 and respondents' employment status

stack_505/D6_une	0	1	NA	Total
0	398	39	1	438
1	5	0	0	5
NA	55	3	0	58
Total	458	42	1	501

Table 1.11: Propensity to vote for a relevant party according to respondents' socio-demographic characteristics (OLS regression models)

| | 501 | 502 | 503 | 504 | 505 | 507 |
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
D3_rec2	0.097**	−0.054	0.046	0.010	0.053	−0.086**
	(0.036)	(0.038)	(0.032)	(0.028)	(0.027)	(0.030)
D8_rec1	0.021	−0.040	0.011	0.013	0.007	0.018
	(0.046)	(0.049)	(0.041)	(0.036)	(0.035)	(0.039)
D5_rec1	0.036	−0.027	0.038	0.023	0.026	−0.014
	(0.043)	(0.046)	(0.039)	(0.034)	(0.033)	(0.036)
EDU_rec2	−0.105*	0.110*	0.069	0.036	0.015	0.026
	(0.050)	(0.053)	(0.045)	(0.040)	(0.038)	(0.042)
EDU_rec3	−0.086	0.153**	0.086	0.054	0.061	0.001
	(0.055)	(0.059)	(0.050)	(0.044)	(0.042)	(0.046)
D1_rec1	0.020	0.124**	0.027	−0.019	−0.008	0.059
	(0.044)	(0.047)	(0.040)	(0.035)	(0.034)	(0.037)
D7_rec1	−0.136***	0.100*	0.005	−0.003	0.019	−0.006
	(0.037)	(0.040)	(0.034)	(0.030)	(0.029)	(0.032)
D7_rec2	0.008	0.196*	0.052	0.097	0.061	−0.076
	(0.082)	(0.088)	(0.075)	(0.065)	(0.063)	(0.070)
D6_une1	0.139*	0.002	0.049	0.026	0.015	−0.029
	(0.062)	(0.066)	(0.056)	(0.049)	(0.049)	(0.054)
D4_age	0.0002	0.002*	0.002*	−0.0003	−0.001	−0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
D10_rec	−0.028*	0.041***	−0.001	0.011	0.004	0.008
	(0.012)	(0.012)	(0.011)	(0.009)	(0.009)	(0.010)
Constant	0.437***	−0.002	0.066	0.115	0.119	0.265***
	(0.086)	(0.092)	(0.078)	(0.069)	(0.066)	(0.073)
N	430	430	431	427	427	428
R-squared	0.094	0.101	0.034	0.018	0.034	0.038
Adj. R-squared	0.071	0.078	0.009	−0.008	0.009	0.013

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

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

	501	502	503	504	505	505	507
	Model 1	**Model 8**	**Model 9**	**Model 10**	**Model 11a**	**Model 11b**	**Model 12**
D3_rec2	0.879*	0.005	−0.027	−0.592	0.765	0.463	−0.721
	(0.373)	(0.289)	(0.396)	(0.535)	(1.003)	(0.946)	(0.667)
D8_rec1	−0.439	−0.588	−0.452	−0.119	17.416		0.656
	(0.405)	(0.342)	(0.458)	(0.696)	(4596.570)		(0.866)
D5_rec1	0.638	−0.050	0.177	−0.231	18.145		0.561
	(0.449)	(0.366)	(0.498)	(0.653)	(4107.323)		(0.848)
EDU_rec2	−0.586	0.081	0.411	−0.710	18.749		0.565
	(0.432)	(0.408)	(0.542)	(0.732)	(4358.061)		(0.836)
EDU_rec3	−0.508	0.560	0.841	−0.146	19.403		−2.014
	(0.538)	(0.475)	(0.657)	(0.749)	(4358.061)		(1.283)
D1_rec1	0.088	0.368	0.500	0.398	−18.666		1.438*
	(0.413)	(0.322)	(0.422)	(0.614)	(4623.097)		(0.629)
D7_rec1	−1.129**	0.862*	−0.585	1.068	−0.675		0.941
	(0.375)	(0.339)	(0.405)	(0.691)	(0.992)		(0.732)
D7_rec2	−0.623	0.844	−15.467	1.761	−19.172		0.844
	(0.813)	(0.674)	(827.025)	(0.991)	(8981.149)		(1.320)
D6_une1	0.670	−0.163	0.593	−0.009	−17.835		−16.117
	(0.512)	(0.577)	(0.610)	(1.079)	(6690.058)		(1677.752)
D4_age	0.031**	0.035***	0.035*	0.004	0.047	0.019	−0.023
	(0.012)	(0.010)	(0.014)	(0.017)	(0.039)	(0.027)	(0.020)
D10_rec	−0.172	0.255**	0.046	0.022	−0.328	−0.281	−0.221
	(0.111)	(0.097)	(0.127)	(0.165)	(0.303)	(0.281)	(0.215)
Constant	−2.741**	−4.676***	−4.410***	−3.491**	−58.895	−4.492**	−3.129*
	(0.938)	(0.798)	(1.123)	(1.263)	(7549.255)	(1.591)	(1.358)
N	395	395	395	395	395	395	395
Log Likelihood	−123.137	−167.494	−104.813	−63.872	−19.719	−26.165	−45.847
AIC	270.274	358.989	233.625	151.744	63.438	60.331	115.694

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