Idiosyncratic issue salience in probabilistic voting models: The cases of Netherlands, UK, and Israel.*

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Abstract

We test the spatial voting model under the hypothesis that the voter preferences are of a more general class than Eucledian. In particular, we allow the spatial metric to be elliptic, and the paratemers of that metric to depend on the idiosyncratic characteristics of voters. We use datasets from Israel, Netherlands, and the UK. We find that for Nehterlands and, to a lesser degree, UK, education increases the weight that the voter puts on the spatial distance between her ideal point and the policy platform of a party. Thus, for a more educated voter, the policy platform of a party is more important than the party's identity. For Israel, the importance of spatial distance is decreasing with the degree to which the respondent observes religious tradition. At the same time we find little evidence that different policy dimensions, as reconstructed from the datasets via factor analysis, are of different salience.

1 Introduction

It has been the standard assumption of probabilistic voting models that the individuals differ by their preferences on the policy space, and by their idisyncratic characteristics, such as their social and demographic background. Throughout the research done previously, the latter was taken to have an additive effect on the utility that a voter attributes to a candidate's or party's policy position.

This approach to estimating the models of voter choice is restricting if the underlying policy space has more than one dimension. In this paper we work under a more general assumption that the voters with same policy preferences, but different social or demographic backgrounds, may react differently to changes in the policy positions of the candidates. We allow the salience of different policy dimensions to depend on the individual sociodemographic preferences. For example, suppose that there are several parties, two policy dimensions, social and economic[1], and two individuals, A and B, with identical evaluations of the ideal policy on either dimension. Under the assumptions made in the previous research, any change in the policy positions of the parties will have an identical effect on either voter's preferences over the set of the parties.

This assumption is restrictive for two reasons. First, suppose that individual A may believe that the economic dimension is more important that the social dimension, relative to individual

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[1]This how Quinn, Martin, and Whitford (1999) interpreted the policy dimensions in the 1977 Netherlands dataset.

B. If a party's position on the economic dimension changes, the preferences of individual A may change as the preferences of B remain constant. Second, individual A may pay more attention to changes in the policy positions of the parties on both dimensions — if A is better educated and more informed than B.

We estimate a multinomial logit model for three datasets: the Netherlands 1977 elections, the 1987 Great Britain elections, and Israel parliamentary elections in 1996. We find that the effect of the social and demographic factors on issue salience is strongest in Israel, moderate in the Netherlands, and weakest in the UK.

Under the probabilistic model of voting, the utility that a voter assigns to a political party depends on depends her policy preferences, policy positions of the political parties, on her sociodemographic characteristics, and on a random disturbance. Knowing the first three from survey data, one can then estimate the voter's objective function using a binomial (or multinomial) choice model.

The estimated spatial models of voting, starting with Poole and Rosenthal (1984), who used data from US Presidential elections, support the theory that the voters tend to support parties or candidates who are more proximate with respect to policy preferences. However, nonspatial factors, collectively named as valence[2], are also important. Quinn, Martin, and Whitford (1999), and Schofield, Quinn, Martin, and Whitford (1998), working with UK and Netherlands data, identified that valence that a voter attributes to a political party depends on the voter's social and demographic status — thus lending support to both the spatial theory of voting, and to the social-structure theory, according to which a voter's choice is determined by the social strata too which she belongs.

The estimated model of voter choice can then be tested for Nash rationality of political parties. This can be done in two ways. The first way is a numerical simulation a Nash equlibrium in a positioning game among the political parties and compare it to the estimeted policy platforms of the parties. The usual product of such research is a disparity between the estimated party equilibrium positions, that tend to converge, and the observed policy positions of the parties, that do not.

The second way to test the empirically estimated spatial voting model is to check the stability of an equilibrium where all parties select identical policy position. Such a Nash equilibrium is a central feature of probabilistic voting models — both under the assumption of Eucledian preferences, as in Hinich (1977), Lin, Enelow, and Dorussen (1999) and Schofield (2007), and under more general assumptions, such as in Banks and Duggan (2004) and McKelvey and Patty (2006). If the voters have quadratic disutility from policy distance, then the first-order conditions for expected vote maximization for all parties will be satisfied if all parties converge at the mean of voter policy preferences. The second-order conditions are not guaranteed, and one can check if they are satisfied with the survey data and the estimated voter objective functions.

Quinn and Martin (2002) for 1989 Netherlands elections argue that such disparity can be explained by strategic considerations by the political parties, who maximize their chance of joining the coalition government. Schofield, Sened, and Nixon (1998), Schofield and Sened (2005), and Schofield (2007), for the 1992 and 1996 Israel elections, argue that the divergence is due to exogenous political activism that rewards parties for taking more extreme positions.[3] Another way to account for the observed divergence of candidate platforms is to make alterna-

[2]After Stokes (1963). The valence has been primarily viewed as an exogenous characteristic arising primarily from incumbence. Recent theoretical and empirical research focused on endogenous valence arising from the actions of political activists (Schofield (2004, 2005)) and the candidates themselves (Zakharov (2008), Ashworth and Bueno de Mesquita (2008)).

[3]More recent works are Schofield and Cataife (2007), with data from the Argentine elections of 1989 and 1995 and Schofield and Ozdemir (2008), with data from 1999 and 2002 elections in Turkey.

tive assumptions about the voters. Rabinovitz and MacDonald (1989), Iversen (1994), Adams and Merrill (1999), and Merrill and Grofman (1999) propose a theory of directional voting, when a voter is motivated not only by the policy distance to the candidate, but also by the degree to which a candidate is "left" or "right". Adams, Dow, and Merrill (2006), Thurner and Eymann (2000), Plane and Gershtenson (2004) and Peress (2005) argued that the source of policy divergence is voter abstention, and applied logit models to estimate various spatial theories of voter abstention. Adams (1999, 2001) considered the voters to receive correlated random shocks to the utility that they attribute to a candidate. Alvarez and Nagler (2000) used the data from the 1987 British elections and argued that the citizens may vote strategically, instead using their vote to defeat the least-preferred party. Alvarez, Nagler, and Bowler (2000) argue that the voters also consider retrospective economic evaluations in choosing among parties.

The issue of policy dimension salience has been investigated in recent literature. Some models allowed for different policy issues to have different salience, such as in Thurner and Eymann (2000), but in all models studied so far the salience was taken to be uniform across the voters. The possibility of varying salience was suggested in Schofield and Sened (2006).

Hellwig (2008a) in his study of 16 European democracies has shown that the traditional left-right policy dimension is perceived as less important by those who are employed in either services sector or the setor producing tradeable goods. The author argues that the policymakers have less impact on the globalized industries than they do on the producers of nontradeable commodities. In this and in Hellwig (2008b), the author argues that the inability of elites to affect economic policy reduces the salience of the left-right policy issues in favor of nonpolicy factors, such as party valence of religious or ethnic attachment.

2 The results

Most existing research was done under assumption that the preferences of voters are Eucledian (see Alvarez and Nagler (2000), Quinn, Martin, and Whitford (1999), Schofield (2007), and other works.). Usually, it was assumed that the utility function of the voter was

$$u_{ij} = \alpha_j + \gamma_j^T x_i - \beta \|y_j - v_i\|^2 + e_{ij}, \tag{1}$$

where u_{ij} is the perceived utility of the voter i if the policy platform of party $j = 1, \cdots, m$ is implemented, α_j is a party-specific parameter, $\gamma_j \in \Re^l$ is a party-specific column vector of parameters, $x_i \in \Re^l$ is a voter-specific vector of variables unrelated to her policy platform (such as her age or education), $y_j \in \Re^2$ is party j's policy platform, $v_i \in \Re^2$ is the policy preference of voter i, β is a common parameter, $\|\cdot\|$ is the standard Eucledian metric, and e_{ij} is an error term. The parameters were then estimated using a multinomial logit or probit model. Let $z_i \in \{1, \cdots, m\}$ be the party that voter i indends to vote for.

In almost all works, the term β was found to be significant. Most of the terms α_j, γ_j were also significant. However, the utility function (1) does not account for some intuitive assumptions about voting behavior. Suppose that there are two voters, i and i', with identical policy preferences, but with different background variables. Suppose that the policy position of Party j changes. Then, u_{ij} and $u_{i'j}$ will change by the same amount. However, one may expect that amount to be affected by the background variables x_i. For example, one may expect a voter who is more educated (and, therefore, better informed) to respond more to the changes in policy than a voter with less education but identical policy preferences.

2.1 The model

In this work, we propose to estimate the multinomial choice model where the utility that voter i attributes to party j is

$$u_{ij} = \alpha_j + \gamma_j^T x_i + \|y_j - v_i\|_{B_i} + \epsilon_{ij}, \tag{2}$$

where

$$\|v\|_{B_i} = v^T B_i v. \tag{3}$$

The positive definite matrix B_i is of the form

$$B_i = \begin{pmatrix} \beta_{1i} & \beta_{3i} \\ -\beta_{3i} & \beta_{2i} \end{pmatrix}, \tag{4}$$

where

$$\beta_{ih} = b_{h1} + b_{h2}^T x_i \tag{5}$$

for $h = 1, 2, 3$, b_{h1} is a scalar, and $b_{h2} \in \Re^l$ is a column vector. This model will allow us to capture the effects of the variables x_i on the metric that the voter uses to evaluate the policy positions of the political parties.

The error terms were taken to be distributed independently, according to the rule

$$P(\epsilon_{ij} \leq a) = \exp(-\exp(-a)). \tag{6}$$

We assumed that the voter i supported party j if

$$u_{ij} = \max_k u_{ik}. \tag{7}$$

Given assumption (6), the probability that voter i will support party j is

$$P_{ij} = \frac{\exp\left(\alpha_j + \gamma_j x_i + \|y_j - v_i\|_{B_i}\right)}{\sum_{k=1}^{m} \exp\left(\alpha_k + \gamma_k x_i + \|y_k - v_i\|_{B_i}\right)}. \tag{8}$$

The likelihood is the product of (8) across all voters:

$$L = \prod_{i=1}^{n} P_{iz_i}. \tag{9}$$

We estimated the model by choosing parameter values α_j, γ_j^T, and the parameters of B_i maximizing (9).

2.2 The data

We used two data sets. The first set was obtained from the Eurobarometer 11 population survey and the EPPMLE survey of party elites.

Among the questions answered by each respondent in the first survey, there were five that measured her personal nonpolicy characteristics, seven that reflected the respondent's policy preferences, and a question on which party the respondent intended to vote for in the upcoming elections. The first five questions were `manlab` (whether the respondent's occupation is manual or nonmanual labor), `income` (measured on a 0 to 12 scale), `relig` (self-reported religiousness, 0 to 4), `educ` (education in years past secondary school, 1 to 9), and `stown` (the size of township, from 1 for countryside to 3 for city). The second set of questions was on the respondent's attitudes to the main policy issues (such as the need to regulate international corporations or the desired degree of state control in the economy). In the second survey, each expert respondent identified the position of every political party in her respective country on all the policy issues that were listed in the first survey.

The survey data can be used to estimate the preferred policy position of each voter and party in a two-dimensional policy space. We used the estimates obtained by Quinn, Martin, and Whitford (1999) for Netherlands (the survey was taken in 1978) and the UK (in 1979).

The second data set was obtained from the 1996 survey (of size 794) undertaken by Arian and Shamir for the election that year in Israel. We calculated the ideal policies for each respondent v_i by applying the factor weights obtained by Schofield and Sened (2006, Table A4.1) for the same dataset, and used the estimates of the party policy positions from the same work (Schofield and Sened, 2006, Figure 4.5).

We used the following nonpolicy characteristics: `obser` (the degree of religious observance, 1 to 4), `ashk` (whether the respondent is Ashkenazi or Sephardi), `educ` (education in years, 0 to 25), `income` (self-reported income, 1 to 5), and `age`.

2.3 Estimating the model

We estimated several models with various restrictions on the B_i metric. The estimation results appear in Tables 5 - 22. Whenever possible, we compared the models via the likelihood ratio test; the test results are shown in Tables 1, 2, and 3. The first value in each cell is the difference in the log likelihoods between the two models. The second value is the difference in the degrees of freedom. The third number is the p-value for the likelihood ratio test.

1. The benchmark Eucledian metric

$$B_i = \begin{pmatrix} \beta & 0 \\ 0 & \beta \end{pmatrix}. \tag{10}$$

   The results of the estimation appear in Table 5 for Netherlands, Table 11 for UK, and Table 17 for the Israel dataset. The same models were estimated in the original works of Quinn, Martin, and Whitford (1999) and Schofield and Sened (2006).

2. Salience for the first and second policy dimensions is different, but uniform across voters. We estimate the model without cross-effects

$$B_i = \begin{pmatrix} \beta_1 & 0 \\ 0 & \beta_2 \end{pmatrix}, \tag{11}$$

   and with cross-effects

$$B_i = \begin{pmatrix} \beta_1 & \beta_2 \\ -\beta_2 & \beta_3 \end{pmatrix}. \tag{12}$$

   The results of the estimation appear in Tables 6,7 for Netherlands, Tables 12,14 for UK, and Tables 18,19 for Israel.

   For Netherlands, the model with restrictions (11) offers no improvement over (10). At the same time, both coefficients β_1 and β_2 are significant. Adding a cross-effect does not improve the fit of the model at all.

   For both the UK and Israel, neither (11) nor (12) improves the fit of the model. For the UK, the coefficients β_2 and β_3 are not significant demonstrating the uni-dimensionality of English politics. The same is true of Israel.

3. Salience is the same for the first and second dimensions, but depends on the personal nonpolicy characteristics. The corresponding restriction is

$$B_i = \begin{pmatrix} \beta_i & 0 \\ 0 & \beta_i \end{pmatrix}, \ \beta_i = b_1 + b_2^T x_i. \tag{13}$$

The result of the estimation appear in Tables 8,15, and 20. With restriction (13), there is a possibility that the estimated β_is will be negative, making the predicted utility function meaningless for some observations. One apparent alternative is to specify a model where the β_i is always positive, such as with $\beta_i = e^{b_1 + b_2^T x_i}$. However, the likelihood function under this and other specifications that we have tried is non-concave, making it impossible to estimate with both Stata 8.0 and Gauss. Fortunately, for restriction (13) none of the estimated β_i was negative for any of the three datasets.

For the Netherlands dataset, only `educ` from the b_2 vector was significant; dropping the four other terms (`stown`, `income`, `relig`, `manlab`) reduced the log likelihood by 1.05, making the four terms jointly nonsignificant. However, the education term was highly significant (see Table 1).

Table 4 shows projected probabilities of voting for model (13) for Netherlands with nonzero constant and education terms in β_i. All other variables (`relig`, `manlab`, `stown`, and `income`) are set to their mean values. The values of 0.81 and 0.53 correspond, respectively, to one standard deviation of the first and second dimensions of the voter's policy preference. One can see that for highly educated voters (`educ`=9) the projected voting probabilities vary with the voter's policy preferences much more than they do for the voters with low education (`educ`=1).

For the UK, education has a similar effect on β_i. However, this effect is much weaker and only marginally significant. The four other terms are jointly nonsignificant (see Table 2).

For Israel, the only significant term from b_2 was `relig` — the extent to which a person observes religious traditon. All other things being equal, a person who fully observes tradition, will have β_i reduced by 1.260 compared to the person who does not observe tradition. See Table 3.

4. Salience is different for the first and second dimensions, and depends on the personal nonpolicy characteristics. This cornensponds to the model specified as

$$B_i = \begin{pmatrix} \beta_{1i} & 0 \\ 0 & \beta_{2i} \end{pmatrix}, \ \beta_{1i} = b_{11} + b_{12}^T x_i, \ \beta_{2i} = b_{21} + b_{22}^T x_i. \tag{14}$$

For the Netherlands, the education term from the b_{12} vector and the manual labor term from the b_{22} were significant. In Table 10, only those two terms, along with the constants, were retained.

For the UK, only the `stown` term from the b_{22} vector was individually significant. A reduced model, with `educc` term in β_1 and `manlab` and `stown` terms in β_2, performed better in terms of the likelihood ratio test.

For Israel, model (14) gave no improvement over either (10), (11), or (13). See Table 3.

5. Salience is different for the first and second dimensions, depends on the personal nonpolicy characteristics, and cross-effects are present. This cornensponds to the model specified as

$$B_i = \begin{pmatrix} \beta_{1i} & -\beta_{3i} \\ -\beta_{3i} & \beta_{2i} \end{pmatrix}, \ \beta_{1i} = b_{11} + b_{12}^T x_i, \ \beta_{2i} = b_{21} + b_{22}^T x_i, \ \beta_{3i} = b_{31} + b_{32}^T x_i. \tag{15}$$

For Netherlands or UK, undestricted model (15) offered no improvement over (14) (see Tables 1, 2). For Israel, the β_3 terms were jointly significant at the 5% level (see Table 3). Also, a restriction of (15), with `ashk` and `income` retained for β_1 and `ashk` and `obser` for β_2 and β_3, produced a log likelihood score only 2.92 lower than that of the undestricted model.

3 Conclusion

Under the usual specification of a probabilistic voting model, the voter's evaluation of a candidate or a political party depends on both the party's policy platform, and the voter's sociodemographic background. We show that certain characteristics affect the relative importance of the letter two factors for a voter's decision. For Netherlands and the UK, a voter with a higher level of education is more likely to pay attention to policy issues. For Israel, a voter who observes religiuos tradition is less likely to do so.

At the same time, we found no conclusive evidence that the preferences of the voters are non-Eucledian. Estimating models (14) and (15) is problematic since for a significant share of observations, the estimated matrix B_i is not positive-definite. Specifying the model in a way that B_i depends on x_i but is always positive-definite is possible. However, this results in nonconcavity of the likelihood function, making it impossible to maximize.

The results correlate with the findings of Adams and Ezrow (2008). In their study of twelve West European domocracies, the authors have constructed a corresponding "opinion leader" index. Respondents with the higher value of the index tend to locate themselves closer to the left be on the left on the right-left ideological scale. The relationship is statistically significant. The authors find that political parties are more responsive to the policy preferences of the opinion leaders. This indirectly suggests a relationship similar to the one found in this paper: that the opinion leaders may be more responsive to policy programs than the rest of the voters; thus the parties cater their policy program toward the opinion leaders. These results correlate with those of our paper, as in the UK and Netherlands datasets used in this work, voters with a higher level of education also tend to have a higher value of the first policy dimension of the ideal point, and a lower value of the second dimension. This suggests a relationship between education and political activism, and that both of those factors can increase the weight of policy preferences in a voter's decision at the polls.

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	β_1:_const	β_1:_const β_2:_const	β_1:_const β_2:_const β_3:_const	β_1:_const, educ	β_1:ALL	β_1:_const,educ β_2:_const, manlab	β_1:ALL β_2:ALL
β_1:_const β_2:_const	0.44 1 0.34	—					
β_1:_const β_2:_const β_3:_const	0.55 2 0.57	0.11 1 0.639	—				
β_1:_const,educ	4.46 1 0.003			—			
β_1:ALL	5.51 5 0.051			1.05 4 0.71	—		
β_1:_const,educ β_2:_const, manlab	12.3 3 0.00002	11.86 2 0.00001		7.84 2 0.0003		—	
β_1:ALL β_2:ALL	14.68 11 0.002	14.22 10 0.0015		10.22 10 0.029	9.17 6 0.0062	2.34 8 0.79	—
β_1:ALL β_2:ALL β_3:ALL	19.53 17 0.0018	19.09 16 0.0015	18.98 15 0.0009	15.07 16 0.013	14.02 12 0.0055	7.22 14 0.44	4.85 6 0.13

Table 1: Likelihood ratio test for the Netherlands dataset.

	β_1:_const	β_1:_const β_2:_const	β_1:_const β_2:_const β_3:_const	β_1:_const, educ	β_1:ALL	β_1:_const,educ β_2:_const, manlab,stown	β_1:ALL β_2:ALL
β_1:_const β_2:_const	0.27 1 0.47	—					
β_1:_const β_2:_const β_3:_const	0.28 2 0.77	0.01 1 0.92	—				
β_1:_const,educ	2.11 1 0.04			—			
β_1:ALL	2.93 5 0.322			0.82 4 0.8	—		
β_1:_const,educ β_2:_const, manlab, stown	5.87 4 0.0194	5.6 3 0.0107		3.77 3 0.0576		—	
β_1:ALL β_2:ALL	7.96 11 0.1441	7.7 10 .1181		5.85 10 0.305	5.04 6 0.1213	2.09 7 0.7588	—
β_1:ALL β_2:ALL β_3:ALL	12.08 17 0.1152	11.81 16 0.0981	11.8 15 0.722	9.97 16 0.229	9.15 12 0.1069	6.21 13 0.4935	4.12 6 0.221

Table 2: Likelihood ratio test for the UK dataset.

	β_1:_const	β_1:_const β_2:_const	β_1:_const β_2:_const β_3:_const	β_1:ALL	β_1:ALL β_2:ALL	β_1:_const,ashk,income β_2:_const,ashk,obser β_3:_const,ashk,obser
β_1:_const β_2:_const	0.05 1 0.75	—				
β_1:_const β_2:_const β_3:_const	2.76 2 0.0633	2.71 1 0.019	—			
β_1:ALL	6.25 5 0.0285			—		
β_1:ALL β_2:ALL	8.26 11 0.1228	8.21 10 0.0882		8.04 5 0.154	—	
β_1:_const,ashk,income β_2:_const,ashk,obser β_3:_const,ashk,obser	11.77 8 0.0027	11.72 7 0.00144	9.01 6 0.0061			—
β_1:ALL β_2:ALL β_3:ALL	14.7 17 0.0312	14.65 16 0.0221	11.93 15 0.0675	8.44 12 0.1542	6.43 6 0.0453	2.92 9 0.7558

Table 3: Likelihood ratio test for the Israel dataset.

	v_1	v_2	PvDA	VVD	CDA	D66
`educ`=1	0	0	0.49	0.13	0.29	0.09
	0	0.53	0.45	0.14	0.34	0.07
	0	-0.53	0.52	0.12	0.27	0.09
	0.81	0	0.23	0.27	0.43	0.07
	-0.81	0	0.73	0.05	0.16	0.06
`educ`=9	0	0	0.16	0.16	0.39	0.29
	0	0.53	0.13	0.17	0.53	0.17
	0	-0.53	0.19	0.13	0.24	0.44
	0.81	0	0.01	0.56	0.37	0.06
	-0.81	0	0.74	0.02	0.05	0.19

Table 4: Projected probabilities of voting for the Netherlands.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
PvDA	`_const`	1.946	0.602	3.232	0.001
	`manlab`	1.536	0.631	2.434	0.015
	`relig`	0.099	0.161	0.612	0.541
	`income`	-0.055	0.045	-1.232	0.218
	`stown`	0.350	0.244	1.433	0.152
	`educ`	-0.207	0.060	-3.476	0.001
VVD	`_const`	0.148	0.731	0.203	0.839
	`manlab`	-0.378	0.846	-0.447	0.655
	`relig`	0.118	0.178	0.667	0.505
	`income`	0.100	0.050	2.004	0.045
	`stown`	0.203	0.279	0.727	0.467
	`educ`	-0.063	0.065	-0.957	0.339
CDA	`_const`	-1.531	0.728	-2.101	0.036
	`manlab`	1.303	0.677	1.925	0.054
	`relig`	1.500	0.186	8.089	0.000
	`income`	0.011	0.048	0.228	0.820
	`stown`	0.558	0.265	2.103	0.035
	`educ`	-0.162	0.063	-2.574	0.010
β	`_const`	0.633	0.062	10.269	0.000
Log-likelihood	-434.92				

Table 5: Multinomial logit analysis of 1977 Netherlands data under restriction (10), normalized with respect to D66.

PvDA	`_const`	1.939	0.609	3.186	0.001
	`manlab`	1.501	0.635	2.363	0.018
	`relig`	0.071	0.163	0.438	0.662
	`income`	-0.052	0.044	-1.165	0.244
	`stown`	0.354	0.247	1.432	0.152
	`educ`	-0.200	0.060	-3.354	0.001
VVD	`_const`	0.252	0.729	0.346	0.730
	`manlab`	-0.510	0.840	-0.607	0.544
	`relig`	0.021	0.179	0.117	0.907
	`income`	0.103	0.049	2.104	0.035
	`stown`	0.195	0.279	0.700	0.484
	`educ`	-0.036	0.065	-0.548	0.584
CDA	`_const`	-1.310	0.734	-1.785	0.074
	`manlab`	1.117	0.685	1.630	0.103
	`relig`	1.371	0.189	7.275	0.000
	`income`	0.024	0.048	0.502	0.616
	`stown`	0.519	0.268	1.936	0.053
	`educ`	-0.134	0.064	-2.109	0.035
β_1	`_const`	0.661	0.063	10.489	0.000
β_2	`_const`	0.899	0.257	3.501	0.0005
Log-likelihood	-434.483				

Table 6: Multinomial logit analysis of 1977 Netherlands data under restriction (11), normalized with respect to D66.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
PvDA	`_const`	1.942	0.610	3.183	0.002
	`manlab`	1.487	0.637	2.332	0.020
	`relig`	0.066	0.162	0.410	0.682
	`income`	-0.051	0.044	-1.158	0.247
	`stown`	0.356	0.248	1.435	0.151
	`educ`	-0.198	0.060	-3.316	0.001
VVD	`_const`	0.244	0.729	0.335	0.737
	`manlab`	-0.520	0.841	-0.619	0.536
	`relig`	0.019	0.176	0.106	0.915
	`income`	0.102	0.049	2.092	0.037
	`stown`	0.195	0.279	0.699	0.484
	`educ`	-0.036	0.065	-0.548	0.584
CDA	`_const`	-1.302	0.734	-1.774	0.076
	`manlab`	1.109	0.686	1.617	0.106
	`relig`	1.365	0.188	7.276	0.000
	`income`	0.025	0.048	0.519	0.604
	`stown`	0.518	0.268	1.932	0.053
	`educ`	-0.134	0.064	-2.102	0.036
β_1	`_const`	0.664	0.063	10.510	0
β_2	`_const`	0.995	0.326	3.054	0.002
β_3	`_const`	-0.084	0.176	-0.478	0.633
Log-likelihood	-434.368				

Table 7: Multinomial logit analysis of 1977 Netherlands data under restriction (12), normalized with respect to D66.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
PvDA	`_const`	1.838	0.609	3.017	0.003
	`manlab`	1.499	0.631	2.376	0.018
	`relig`	0.103	0.163	0.633	0.527
	`income`	-0.048	0.046	-1.057	0.290
	`stown`	0.349	0.245	1.423	0.155
	`educ`	-0.194	0.062	-3.117	0.002
VVD	`_const`	-0.207	0.756	-0.274	0.784
	`manlab`	-0.247	0.847	-0.292	0.771
	`relig`	0.136	0.184	0.739	0.460
	`income`	0.109	0.052	2.100	0.036
	`stown`	0.235	0.287	0.821	0.411
	`educ`	-0.009	0.071	-0.120	0.904
CDA	`_const`	-1.715	0.739	-2.319	0.020
	`manlab`	1.333	0.677	1.970	0.049
	`relig`	1.518	0.189	8.053	0.000
	`income`	0.013	0.049	0.262	0.794
	`stown`	0.561	0.267	2.100	0.036
	`educ`	-0.125	0.066	-1.909	0.056
β	`_const`	0.252	0.095	2.651	0.008
	`educ`	0.112	0.027	4.166	0.000
Log-likelihood	-430.459				
% B not positive def.	0.00%				

Table 8: Multinomial logit analysis of 1977 Netherlands data under restriction (13), normalized with respect to D66.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
PvDA	`_const`	1.836	0.617	2.974	0.003
	`manlab`	1.469	0.633	2.321	0.020
	`relig`	0.078	0.165	0.472	0.637
	`income`	-0.044	0.045	-0.971	0.331
	`stown`	0.353	0.249	1.420	0.156
	`educ`	-0.188	0.062	-3.023	0.003
VVD	`_const`	-0.146	0.758	-0.192	0.847
	`manlab`	-0.372	0.854	-0.436	0.663
	`relig`	0.054	0.185	0.292	0.770
	`income`	0.120	0.051	2.328	0.020
	`stown`	0.238	0.287	0.829	0.407
	`educ`	0.015	0.070	0.210	0.834
CDA	`_const`	-1.603	0.756	-2.121	0.034
	`manlab`	1.178	0.679	1.734	0.083
	`relig`	1.423	0.193	7.361	0.000
	`income`	0.035	0.050	0.712	0.477
	`stown`	0.537	0.272	1.976	0.048
	`educ`	-0.098	0.066	-1.488	0.137
β_1	`_const`	0.263	0.096	2.728	0.006
	`educ`	0.116	0.027	4.290	0.000
β_2	`_const`	1.084	0.280	3.875	0.000
	`manlab`	-1.217	0.746	-1.632	0.103
Log-likelihood	-422.621				
% B not positive def.	14.74%				

Table 9: Multinomial logit analysis of 1977 Netherlands data under restriction (14), normalized with respect to D66.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
PvDA	`_const`	1.780	0.633	2.812	0.005
	`manlab`	1.557	0.686	2.269	0.023
	`relig`	0.167	0.174	0.960	0.337
	`income`	-0.035	0.048	-0.723	0.470
	`stown`	0.388	0.257	1.508	0.131
	`educ`	-0.217	0.064	-3.387	0.001
VVD	`_const`	-0.226	0.822	-0.275	0.783
	`manlab`	-0.093	0.911	-0.102	0.919
	`relig`	0.057	0.202	0.284	0.777
	`income`	0.122	0.058	2.097	0.036
	`stown`	0.232	0.309	0.751	0.452
	`educ`	0.047	0.079	0.591	0.554
CDA	`_const`	-1.762	0.810	-2.176	0.030
	`manlab`	1.253	0.727	1.724	0.085
	`relig`	1.557	0.210	7.425	0.000
	`income`	0.049	0.057	0.859	0.390
	`stown`	0.577	0.287	2.006	0.045
	`educ`	-0.129	0.076	-1.704	0.088
β_1	`_const`	0.277	0.269	1.027	0.305
	`manlab`	-0.267	0.157	-1.697	0.090
	`relig`	0.025	0.061	0.404	0.686
	`income`	0.010	0.018	0.564	0.573
	`stown`	-0.001	0.092	-0.013	0.989
	`educ`	0.104	0.029	3.618	0.000
β_2	`_const`	0.901	1.320	0.683	0.495
	`manlab`	-2.153	1.244	-1.731	0.084
	`relig`	0.559	0.287	1.949	0.051
	`income`	0.024	0.088	0.273	0.785
	`stown`	0.206	0.536	0.385	0.701
	`educ`	-0.197	0.115	-1.702	0.089
β_3	`_const`	-0.081	0.678	-0.119	0.905
	`manlab`	0.485	0.638	0.761	0.447
	`relig`	-0.266	0.158	-1.678	0.093
	`income`	-0.012	0.050	-0.242	0.809
	`stown`	-0.165	0.280	-0.589	0.556
	`educ`	0.165	0.069	2.395	0.017
Log-likelihood	-415.397				
% B not positive def.	10.77%				

Table 10: Multinomial logit analysis of 1977 Netherlands data under restriction (14), normalized with respect to D66.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Labor	_const	0.455	0.480	0.947	0.344
	manlab	1.070	0.267	4.014	0.000
	relig	-0.243	0.108	-2.251	0.024
	income	-0.105	0.052	-2.021	0.043
	stown	0.071	0.160	0.443	0.658
	educ	0.047	0.051	0.916	0.360
Liberal Democrat	_const	-0.907	0.639	-1.419	0.156
	manlab	0.408	0.396	1.031	0.302
	relig	0.003	0.150	0.019	0.985
	income	-0.114	0.070	-1.623	0.105
	stown	-0.246	0.220	-1.119	0.263
	educ	0.123	0.063	1.944	0.052
β	_const	0.314	0.046	6.882	0.000
Log-likelihood	-361.631				

Table 11: Multinomial logit analysis of 1987 UK data under restriction (10), normalized with respect to Conservative party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Labor	`_const`	0.492	0.483	1.019	0.308
	`manlab`	1.061	0.267	3.974	0.0001
	`relig`	-0.241	0.108	-2.235	0.0254
	`income`	-0.104	0.052	-1.995	0.0461
	`stown`	0.079	0.161	0.488	0.6253
	`educ`	0.046	0.051	0.905	0.3656
Libeal Democrats	`_const`	-0.906	0.638	-1.419	0.1558
	`manlab`	0.406	0.396	1.026	0.3047
	`relig`	0.003	0.149	0.022	0.9827
	`income`	-0.113	0.070	-1.611	0.1071
	`stown`	-0.244	0.220	-1.109	0.2672
	`educ`	0.123	0.063	1.946	0.0517
β_1	`_const`	0.309	0.046	6.713	0
β_2	`_const`	0.080	0.108	0.739	0.4602
Log-likelihood	-361.360				

Table 12: Multinomial logit analysis of 1987 UK data under restriction (11), normalized with respect to Conservative party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Labor	`_const`	0.493	0.483	1.019	0.308
	`manlab`	1.061	0.267	3.974	0.000
	`relig`	-0.241	0.108	-2.230	0.026
	`income`	-0.104	0.052	-1.995	0.046
	`stown`	0.079	0.161	0.489	0.625
	`educ`	0.046	0.051	0.904	0.366
Liberal Democrats	`_const`	-0.909	0.645	-1.409	0.159
	`manlab`	0.407	0.396	1.027	0.305
	`relig`	0.003	0.153	0.020	0.984
	`income`	-0.113	0.070	-1.611	0.107
	`stown`	-0.245	0.220	-1.110	0.267
	`educ`	0.123	0.063	1.945	0.052
β_1	`_const`	0.314	0.134	2.353	0.019
β_2	`_const`	0.111	0.725	0.152	0.879
β_3	`_const`	0.026	0.605	0.043	0.966
Log-likelihood	-361.358				

Table 13: Multinomial logit analysis of 1987 UK data under restriction (12), normalized with respect to Conservative party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Labor	_const	0.432	0.497	0.870	0.384
	manlab	1.060	0.269	3.945	0.000
	relig	-0.214	0.111	-1.939	0.053
	income	-0.107	0.054	-2.002	0.045
	stown	0.056	0.162	0.343	0.732
	educ	0.063	0.055	1.142	0.253
Liberal Democrats	_const	-0.980	0.645	-1.520	0.128
	manlab	0.412	0.397	1.038	0.299
	relig	0.022	0.151	0.143	0.886
	income	-0.105	0.071	-1.483	0.138
	stown	-0.247	0.221	-1.115	0.265
	educ	0.117	0.065	1.816	0.069
β	_const	0.460	0.194	2.369	0.018
	manlab	-0.011	0.102	-0.106	0.916
	relig	-0.009	0.042	-0.217	0.828
	income	-0.024	0.021	-1.134	0.257
	stown	-0.025	0.065	-0.383	0.701
	educ	0.045	0.023	1.966	0.049
Log-likelihood	-358.706				
% B not positive def.	0.00%				

Table 14: Multinomial logit analysis of 1987 UK data under restriction (12), normalized with respect to Conservative party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Labor	_const	0.099	0.577	0.172	0.863
	manlab	0.862	0.318	2.712	0.007
	relig	-0.203	0.129	-1.581	0.114
	income	-0.076	0.065	-1.163	0.245
	stown	0.228	0.186	1.226	0.220
	educ	0.078	0.066	1.184	0.237
Liberal Democrats	_const	-1.068	0.647	-1.650	0.099
	manlab	0.383	0.398	0.963	0.336
	relig	0.028	0.152	0.184	0.854
	income	-0.098	0.071	-1.380	0.168
	stown	-0.210	0.222	-0.946	0.344
	educ	0.126	0.066	1.918	0.055
β_1	_const	0.544	0.199	2.728	0.006
	manlab	0.000	0.104	0.001	0.999
	relig	-0.017	0.043	-0.385	0.700
	income	-0.030	0.022	-1.356	0.175
	stown	-0.043	0.067	-0.644	0.520
	educ	0.039	0.024	1.633	0.103
β_2	_const	-0.620	0.415	-1.496	0.135
	manlab	-0.309	0.260	-1.187	0.235
	relig	0.044	0.103	0.424	0.671
	income	0.040	0.049	0.812	0.417
	stown	0.328	0.150	2.183	0.029
	educ	0.040	0.055	0.727	0.467
Log-likelihood	-353.678				
% B not positive def.	32.86%				

Table 15: Multinomial logit analysis of 1987 UK data under restriction (13), normalized with respect to Conservative party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Labor	`_const`	0.056	0.597	0.093	0.926
	`manlab`	0.872	0.319	2.730	0.006
	`relig`	-0.190	0.129	-1.474	0.140
	`income`	-0.076	0.067	-1.132	0.258
	`stown`	0.234	0.187	1.254	0.210
	`educ`	0.082	0.066	1.231	0.218
Liberal Democrat	`_const`	-0.972	0.685	-1.419	0.156
	`manlab`	0.757	0.438	1.729	0.084
	`relig`	0.183	0.177	1.035	0.301
	`income`	-0.178	0.083	-2.157	0.031
	`stown`	-0.245	0.248	-0.991	0.322
	`educ`	0.163	0.077	2.108	0.035
β_1	`_const`	0.250	0.440	0.568	0.570
	`manlab`	-0.569	0.339	-1.677	0.094
	`relig`	-0.198	0.124	-1.589	0.112
	`income`	0.076	0.054	1.411	0.158
	`stown`	0.021	0.177	0.119	0.905
	`educ`	0.000	0.056	0.003	0.997
β_2	`_const`	-2.307	2.290	-1.007	0.314
	`manlab`	-3.551	1.846	-1.924	0.054
	`relig`	-0.995	0.676	-1.472	0.141
	`income`	0.648	0.289	2.240	0.025
	`stown`	0.690	0.944	0.731	0.465
	`educ`	-0.175	0.290	-0.604	0.546
β_3	`_const`	-1.391	1.885	-0.738	0.461
	`manlab`	-2.734	1.541	-1.774	0.076
	`relig`	-0.881	0.564	-1.561	0.119
	`income`	0.510	0.239	2.137	0.033
	`stown`	0.297	0.786	0.377	0.706
	`educ`	-0.185	0.244	-0.758	0.449
Log-likelihood	-349.593				
% B not positive def.	4.69%				

Table 16: Multinomial logit analysis of 1987 UK data under restriction (14), normalized with respect to Conservative party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Likud	_const	11.9442	1.9293	6.191	0.00
	educ	-0.0543	0.073	-0.744	0.46
	age	0.004	0.0142	0.283	0.78
	ashk	-0.3229	0.4958	-0.651	0.51
	income	0.2917	0.1991	1.465	0.14
	obser	-1.4516	0.371	-3.913	0.00
Avoda	_const	7.9358	1.7763	4.468	0.00
	educ	0.0222	0.0642	0.346	0.73
	age	0.024	0.0127	1.894	0.06
	ashk	-0.1769	0.4486	-0.394	0.69
	income	0.2811	0.1796	1.566	0.12
	obser	-0.9499	0.3397	-2.796	0.01
Mafdal	_const	3.8204	2.2568	1.693	0.09
	educ	0.2955	0.0975	3.029	0.00
	age	0.0388	0.0186	2.088	0.04
	ashk	0.4163	0.6392	0.651	0.51
	income	0.1518	0.2508	0.605	0.55
	obser	-2.8522	0.4363	-6.537	0.00
Modelet	_const	3.1383	2.5661	1.223	0.22
	educ	0.11	0.1274	0.863	0.39
	age	0.0006	0.0238	0.026	0.98
	ashk	-0.1761	0.7674	-0.229	0.82
	income	-0.1371	0.2995	-0.458	0.65
	obser	-1.3325	0.4786	-2.784	0.01
Third Way	_const	5.7572	2.6566	2.167	0.03
	educ	0.0053	0.1088	0.049	0.96
	age	0.0106	0.0206	0.515	0.61
	ashk	0.6426	0.7263	0.885	0.38
	income	0.294	0.2969	0.99	0.32
	obser	-1.0062	0.5161	-1.95	0.05
Shas	_const	13.4371	2.8854	4.657	0.00
	educ	-0.1956	0.1177	-1.662	0.10
	age	-0.0291	0.0248	-1.175	0.24
	ashk	0.1595	0.7553	0.211	0.83
	income	0.8124	0.3229	2.516	0.01
	obser	-3.5626	0.5449	-6.539	0.00
β	_const	1.6372	0.1107	-14.784	0.00
Log-likelihood	-656.760				

Table 17: Multinomial logit analysis of 1996 Israel data under restriction (10), normalized with respect to Meretz party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Likud	_const	11.910	1.935	6.156	0
	educ	-0.052	0.074	-0.710	0.4777
	age	0.004	0.014	0.268	0.7885
	ashk	-0.320	0.495	-0.647	0.5174
	income	0.288	0.200	1.440	0.1497
	obser	-1.432	0.376	-3.812	0.0001
Avoda	_const	7.935	1.778	4.462	0
	educ	0.023	0.064	0.364	0.716
	age	0.024	0.013	1.893	0.0584
	ashk	-0.176	0.448	-0.393	0.6946
	income	0.280	0.180	1.561	0.1186
	obser	-0.941	0.341	-2.765	0.0057
Mafdal	_const	3.733	2.275	1.641	0.1008
	educ	0.298	0.098	3.039	0.0024
	age	0.038	0.019	2.050	0.0403
	ashk	0.425	0.639	0.664	0.5065
	income	0.142	0.253	0.562	0.574
	obser	-2.818	0.450	-6.266	0
Modelet	_const	3.131	2.568	1.219	0.2228
	educ	0.112	0.127	0.877	0.3804
	age	0.000	0.024	0.016	0.9873
	ashk	-0.171	0.764	-0.224	0.8226
	income	-0.141	0.300	-0.472	0.6372
	obser	-1.313	0.482	-2.722	0.0065
Third Way	_const	5.724	2.659	2.152	0.0314
	educ	0.007	0.109	0.068	0.9459
	age	0.010	0.021	0.507	0.6122
	ashk	0.645	0.726	0.888	0.3743
	income	0.291	0.297	0.978	0.3281
	obser	-0.988	0.519	-1.903	0.057
Shas	_const	13.342	2.903	4.595	0
	educ	-0.195	0.118	-1.654	0.0981
	age	-0.029	0.025	-1.185	0.2359
	ashk	0.159	0.757	0.210	0.8338
	income	0.805	0.324	2.484	0.013
	obser	-3.528	0.556	-6.348	0
β_1	_const	1.629	0.114	-14.278	0
β_2	_const	0.0331	0.11	-0.313	0.7546
Log-likelihood	-656.7117				

Table 18: Multinomial logit analysis of 1996 Israel data under restriction (11), normalized with respect to Meretz party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Likud	_const	11.909	1.932	6.164	0.000
	educ	-0.056	0.074	-0.754	0.451
	age	0.004	0.014	0.280	0.779
	ashk	-0.330	0.491	-0.672	0.501
	income	0.302	0.199	1.515	0.130
	obser	-1.459	0.375	-3.892	0.000
Avoda	_const	7.772	1.776	4.376	0.000
	educ	0.026	0.065	0.394	0.693
	age	0.023	0.013	1.847	0.065
	ashk	-0.181	0.445	-0.407	0.684
	income	0.280	0.179	1.563	0.118
	obser	-0.919	0.339	-2.707	0.007
Mafdal	_const	3.719	2.270	1.638	0.101
	educ	0.293	0.098	2.985	0.003
	age	0.036	0.019	1.951	0.051
	ashk	0.433	0.635	0.682	0.495
	income	0.131	0.252	0.521	0.603
	obser	-2.768	0.447	-6.189	0.000
Modelet	_const	3.087	2.588	1.193	0.233
	educ	0.106	0.128	0.829	0.407
	age	0.005	0.024	0.188	0.851
	ashk	-0.249	0.768	-0.324	0.746
	income	-0.096	0.305	-0.315	0.753
	obser	-1.476	0.488	-3.028	0.003
Third Way	_const	5.667	2.658	2.132	0.033
	educ	0.006	0.109	0.053	0.958
	age	0.010	0.021	0.493	0.622
	ashk	0.637	0.723	0.881	0.378
	income	0.296	0.297	0.997	0.319
	obser	-0.989	0.519	-1.906	0.057
Shas	_const	13.243	2.935	4.513	0.000
	educ	-0.214	0.120	-1.788	0.074
	age	-0.032	0.025	-1.296	0.195
	ashk	0.049	0.757	0.064	0.949
	income	0.763	0.322	2.370	0.018
	obser	-3.424	0.555	-6.173	0.000
β_1	_const	1.875	0.160	-11.747	0.000
β_2	_const	0.498	0.232	-2.145	0.032
β_3	_const	-0.705	0.311	2.266	0.023
Log-likelihood	-654.060				

Table 19: Multinomial logit analysis of 1996 Israel data under restriction (12), normalized with respect to Meretz party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Likud	_const	9.631	3.324	2.898	0.004
	educ	0.002	0.158	0.011	0.991
	age	-0.002	0.027	-0.089	0.929
	ashk	-0.812	0.931	-0.872	0.383
	income	-0.085	0.360	-0.235	0.815
	obser	-0.070	0.565	-0.124	0.901
Avoda	_const	5.856	2.946	1.988	0.047
	educ	0.071	0.137	0.519	0.604
	age	0.019	0.024	0.815	0.415
	ashk	-0.619	0.830	-0.746	0.456
	income	-0.059	0.318	-0.184	0.854
	obser	0.285	0.515	0.555	0.579
Modelet	_const	2.842	2.641	1.076	0.282
	educ	0.311	0.124	2.512	0.012
	age	0.033	0.022	1.511	0.131
	ashk	0.252	0.741	0.340	0.734
	income	-0.022	0.278	-0.080	0.937
	obser	-2.186	0.480	-4.557	0.000
Mafdal	_const	2.944	2.630	1.119	0.263
	educ	0.110	0.130	0.844	0.399
	age	0.001	0.024	0.024	0.981
	ashk	-0.066	0.789	-0.084	0.933
	income	-0.144	0.301	-0.477	0.633
	obser	-1.317	0.484	-2.720	0.007
Third Way	_const	3.176	4.004	0.793	0.428
	educ	0.067	0.189	0.353	0.724
	age	0.003	0.033	0.099	0.921
	ashk	0.096	1.144	0.084	0.933
	income	-0.138	0.452	-0.305	0.760
	obser	0.559	0.708	0.789	0.430
Shas	_const	11.071	3.972	2.787	0.005
	educ	-0.138	0.183	-0.757	0.449
	age	-0.036	0.034	-1.054	0.292
	ashk	-0.335	1.091	-0.307	0.759
	income	0.450	0.440	1.022	0.307
	obser	-2.185	0.688	-3.175	0.002
β	_const	1.060	0.795	-1.333	0.183
	educ	0.014	0.041	-0.335	0.738
	age	-0.003	0.007	0.365	0.715
	ashk	-0.173	0.246	0.706	0.480
	income	-0.119	0.098	1.219	0.223
	obser	0.420	0.130	-3.233	0.001
Log-likelihood	-650.5188				
% B not positive def.	0.00%				

Table 20: Multinomial logit analysis of 1996 Israel data under restriction (13), normalized with respect to Meretz party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Likud	_const	10.117	3.352	3.018	0.003
	educ	-0.027	0.160	-0.170	0.865
	age	-0.003	0.028	-0.121	0.904
	ashk	-0.655	0.941	-0.696	0.486
	income	-0.079	0.378	-0.209	0.835
	obser	-0.202	0.601	-0.335	0.737
Avoda	_const	6.461	3.014	2.144	0.032
	educ	0.035	0.142	0.246	0.806
	age	0.017	0.025	0.697	0.486
	ashk	-0.392	0.854	-0.459	0.646
	income	-0.043	0.340	-0.127	0.899
	obser	0.121	0.549	0.221	0.825
Modelet	_const	2.557	2.661	0.961	0.337
	educ	0.325	0.125	2.606	0.009
	age	0.036	0.023	1.587	0.113
	ashk	0.065	0.748	0.087	0.931
	income	-0.063	0.301	-0.209	0.835
	obser	-2.066	0.503	-4.112	0.000
Mafdal	_const	4.055	2.912	1.393	0.164
	educ	0.056	0.142	0.394	0.693
	age	-0.006	0.026	-0.234	0.815
	ashk	0.362	0.865	0.418	0.676
	income	-0.115	0.338	-0.341	0.734
	obser	-1.652	0.547	-3.020	0.003
Third Way	_const	3.658	4.039	0.906	0.365
	educ	0.037	0.192	0.190	0.849
	age	0.003	0.034	0.080	0.936
	ashk	0.248	1.152	0.215	0.830
	income	-0.134	0.468	-0.286	0.775
	obser	0.436	0.739	0.589	0.556
Shas	_const	10.292	4.051	2.540	0.011
	educ	-0.107	0.187	-0.573	0.567
	age	-0.027	0.036	-0.744	0.457
	ashk	-0.846	1.148	-0.737	0.461
	income	0.400	0.469	0.851	0.395
	obser	-1.860	0.725	-2.564	0.010
β_1	_const	0.849	0.818	-1.039	0.299
	educ	0.023	0.041	-0.551	0.582
	age	-0.001	0.007	0.079	0.937
	ashk	-0.271	0.256	1.058	0.290
	income	-0.130	0.103	1.270	0.204
	obser	0.491	0.140	-3.501	0.001
β_2	_const	0.557	0.663	-0.840	0.401
	educ	-0.030	0.032	0.917	0.359
	age	-0.004	0.006	0.564	0.573
	ashk	0.255	0.223	-1.144	0.253
	income	0.023	0.084	-0.275	0.784
	obser	-0.175	0.116	1.511	0.131
Log-likelihood	-648.5019				
% B not positive def.	36.21%				

Table 21: Multinomial logit analysis of 1996 Israel data under restriction (14), normalized with respect to Meretz party.

	Parameters	Estimates	Std.err.	Est./s.e.	P-value
Likud	_const	10.729	2.789	3.847	0.000
	educ	-0.044	0.075	-0.584	0.559
	age	0.007	0.015	0.465	0.642
	ashk	-0.556	0.915	-0.608	0.543
	income	-0.153	0.379	-0.404	0.686
	obser	-0.454	0.673	-0.675	0.499
Avoda	_const	6.547	2.560	2.557	0.011
	educ	0.029	0.065	0.437	0.662
	age	0.026	0.013	2.010	0.044
	ashk	-0.287	0.831	-0.346	0.730
	income	-0.116	0.333	-0.349	0.727
	obser	-0.002	0.645	-0.002	0.998
Modelet	_const	3.343	2.502	1.336	0.182
	educ	0.285	0.098	2.910	0.004
	age	0.037	0.019	2.000	0.046
	ashk	0.259	0.756	0.343	0.732
	income	-0.078	0.301	-0.260	0.795
	obser	-2.240	0.554	-4.042	0.000
Mafdal	_const	1.031	2.893	0.356	0.722
	educ	0.107	0.130	0.821	0.412
	age	0.005	0.024	0.206	0.837
	ashk	0.651	0.915	0.711	0.477
	income	-0.156	0.311	-0.502	0.616
	obser	-1.064	0.638	-1.668	0.095
Third Way	_const	4.363	3.463	1.260	0.208
	educ	0.015	0.111	0.134	0.893
	age	0.013	0.021	0.615	0.539
	ashk	0.370	1.126	0.329	0.742
	income	-0.210	0.469	-0.447	0.655
	obser	0.153	0.808	0.189	0.850
Shas	_const	10.863	3.643	2.982	0.003
	educ	-0.244	0.128	-1.912	0.056
	age	-0.035	0.026	-1.361	0.174
	ashk	0.056	1.304	0.043	0.966
	income	0.317	0.456	0.696	0.487
	obser	-1.714	0.859	-1.995	0.046
β_1	_const	2.936	0.613	-4.787	0.000
	ashk	-0.523	0.324	1.615	0.106
	income	-0.138	0.099	1.400	0.162
β_2	_const	2.279	0.752	-3.030	0.002
	ashk	-0.387	0.496	0.781	0.435
	obser	-0.599	0.216	2.774	0.006
β_3	_const	-3.833	1.062	3.609	0.000
	ashk	0.865	0.659	-1.312	0.189
	obser	0.872	0.278	-3.133	0.002
Log-likelihood	-644.990				
% B not positive def.	46.65%				

Table 22: Multinomial logit analysis of 1996 Israel data under restriction (15), normalized with respect to Meretz party.