# Appendix

Figure A1: Overview of data (sources)

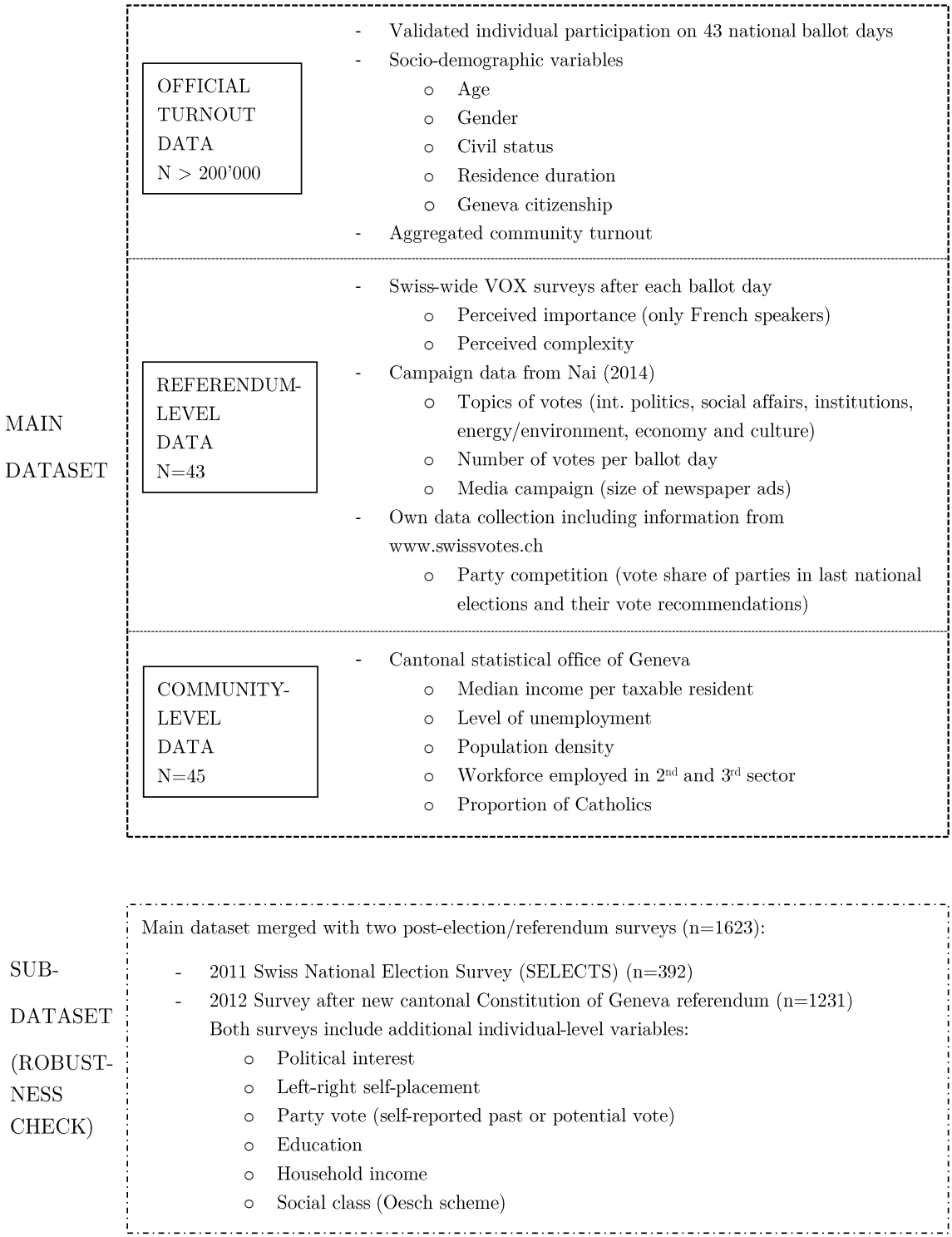

Table A1: Explanation of contextual data sources and variables

| | |
|---|---|
| **VOX surveys** | Swiss-wide surveys conducted after each national referendum on behalf of the Swiss Federal Council. The database comprises a representative sample of around 1500 citizens eligible to vote (randomly drawn from the official sample register of the Federal Statistical Office). The fieldwork is conducted by the company GFS (`https://vox.gfsbern.ch`). |
| Measures: | |
| IMPORTANCE | Importance is measured as self-perceived importance on a 0-10 scale by respondents. We aggregate these individual-level measures to construct our contextual variable. For this, we consider only French-speaking respondents, as citizens from the different language regions may differ in the assigned importance of various issues (the correlation between the French- and German-speaking respondents, though, is very strong with r=0.87). In case of multiple proposals per ballot day, we use the highest aggregate-level importance for any proposal. To exclude the possibility that the post-referendum measure may be influenced by the actual turnout at the ballot day, we calculated the correlation between perceived importance and actual turnout as well as between perceived importance and pre-referendum estimates of turnout. The latter are systematically collected six weeks before the vote by the public broadcaster SRG SSR since 2008, that is for 12 ballot days under study here. Interestingly, the correlation of importance with actual turnout (r=0.24) is much weaker than with the pre-referendum polls (r=0.58) and should thus not affect the measure of perceived importance. |
| COMPLEXITY | The measure of complexity follows the aggregate logic of the importance variable. Respondents provided the self-perceived complexity on a 0-100 scale. In case of parallel proposals, we use the lowest perceived complexity for any proposal. |
| **Campaign data (Nai 2014)** | Contextual data collected about all national referendums in the time period under study, which Alessandro Nai placed at our disposal. The data were collected by himself and research assistants. |
| Measures: | |
| MEDIA CAMPAIGN | Measure based on all political ads about a referendum up to vote – for or against the respective policy proposal – in the two major newspaper outlets in the French-speaking region: Tribune de Genève and Le Temps. All ads were collected in the four weeks prior to the referendum. Practically, first each newspaper ad was measured in $cm^2$ and then added up to measure the overall amount/space of political ads published before the respective referendum. |

| | |
|---|---|
| Number of ballots | This indicator represents the number of parallel ballots up to vote on a given day at the national level. In Switzerland, it is quite common to not only vote about one proposal (in only around 25% of the referendum days under study), but often several national ballots are voted on at the same day (usually not more than 5 ballots). |
| Topics of votes | Nai further coded the topic of each ballot. Based on an original 32-category classification as part of the above mentioned VOX data, he reduced this detailed classification to distinguish between six main issue topics: international politics (including European integration, security, immigration and asylum policy), social topics, institutional issues, energy/environment including land use, economic and financial issues, and culture/research. As a referendum day can include various ballots, various topics may be present in parallel on a given day. |
| **Community data** | Characteristics of the 45 municipalities of Geneva as provided by the cantonal statistical office of Geneva (`https://www.ge.ch/statistique/`). While some of the used variables are measured on a yearly basis, and would allow for time-varying influence, others are only available for certain years. Given that differences between municipalities in these characteristics remain rather stable over time, we rely on data from the middle of the period under investigation, usually from 2005 (but see exceptions in the following). |
| Measures: | |
| Income | Median income per taxable resident in 1'000 CHF. |
| Unemployment | Level of unemployment in %. |
| Population density | Number of residents per $km^2$. |
| 2nd/3rd sector | Proportion of workforce who is employed in the second (manufacturing) and third (service) sector (information from 2011). |
| Catholicism | Proportion of Catholics (information from 2000). |
| **Other** | For the remaining two contextual measures, we used an aggregated measure from the individual-level dataset and additional external data as explained below. |
| Measures: | |
| Community turnout | Aggregated community turnout across all referendums calculated from the validated voting dataset. As this aggregate measure across all ballot days violates the causality of potential effects, we doublechecked the measure with 11 ballot days before the period under study, i.e. all referendums held in 1996–1998. The aggregated community-level turnout in 1996–1998 is strongly correlated with the one for 1999–2012 (r=0.94), so that we are confident to use the more detailed measure covering 1999-2012. |

PARTY COMPETITION Ratio between the vote share of parties in the Swiss Lower House that recommend accepting a ballot and those who recommend rejecting it. The resulting score can vary between zero representing no party conflict as all parties propose to reject/accept the ballot and one standing for a strong party division with both party camps representing the same amount of voters in the Swiss Lower House in the previous general election (party positions on the ballot proposals retrieved from `www.swissvotes.ch`).

Table A2: Descriptive information about contextual variables

| Variable | Mean | SD | Min | Max |
|---|---|---|---|---|
| Media campaign (ads in $cm^2$) | 11306 | 10543 | 0 | 56635 |
| Party competition | 0.44 | 0.17 | 0.01 | 0.68 |
| Importance (max; 0-10 scale) | 7.40 | 0.72 | 5.50 | 8.58 |
| Complexity (min; 0-100 scale) | 27.58 | 9.92 | 6.25 | 49.8 |
| Number of ballots | 2.81 | 1.65 | 1 | 9 |
| Income (in 1'000 CHF) | 84.69 | 13.17 | 60.51 | 114.95 |
| Unemployment (in %) | 4.44 | 1.69 | 2.2 | 9.5 |
| Population density (residents per $km^2$) | 1415 | 2341 | 81 | 11696 |
| 2nd/3rd sector workforce | 0.92 | 0.10 | 0.64 | 1.00 |
| Catholicism | 0.39 | 0.06 | 0.22 | 0.52 |
| Community turnout | 0.54 | 0.04 | 0.45 | 0.63 |

| Issue topics (dummy variables) | Present | Not present |
|---|---|---|
| International politics | 20 | 23 |
| Social | 28 | 15 |
| Institutions | 15 | 28 |
| Energy | 10 | 33 |
| Economy | 11 | 32 |
| Culture | 6 | 37 |

Note: All variables displayed in their original measurement. For the calculation of the regression models, all variables were standardised with a mean of zero and standard deviation of one (except of dummy variables).

Table A3: Multilevel models using additional individual survey data

| | **Individual referendum participation** | | | | |
|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** |
| INDIVIUAL-LEVEL | | | | | |
| Age | 0.009** | | | 0.010** | 0.010** |
| | (0.002) | | | (0.002) | (0.002) |
| Age$^2$ | −0.0001 | | | −0.0001 | −0.0001 |
| | (0.0001) | | | (0.0001) | (0.0001) |
| Woman | −0.027 | | | −0.023 | −0.024 |
| | (0.035) | | | (0.035) | (0.035) |
| Married | 0.004 | | | −0.004 | −0.003 |
| (*ref. single*) | (0.051) | | | (0.051) | (0.051) |
| Divorced/widowed | −0.029 | | | −0.035 | −0.034 |
| | (0.062) | | | (0.062) | (0.062) |
| < 10 years residence | 0.049 | | | 0.052 | 0.051 |
| (*ref. > 20 years residence* ) | (0.057) | | | (0.057) | (0.057) |
| 10-20 years residence | −0.123** | | | −0.120** | −0.122** |
| | (0.046) | | | (0.046) | (0.046) |
| Geneva citizen | −0.010 | | | −0.014 | −0.012 |
| | (0.034) | | | (0.034) | (0.034) |
| Past participation | 4.554** | | | 4.541** | 4.543** |
| | (0.065) | | | (0.065) | (0.065) |
| Political interest | 0.204** | | | 0.204** | 0.205** |
| | (0.024) | | | (0.024) | (0.024) |
| Left-right scale | −0.002 | | | −0.002 | −0.002 |
| | (0.008) | | | (0.008) | (0.008) |
| Party vote "other" | −0.021 | | | −0.031 | −0.032 |
| *(ref. "center")* | (0.092) | | | (0.091) | (0.091) |
| Party vote "left" | −0.067 | | | −0.073 | −0.076 |
| | (0.048) | | | (0.048) | (0.048) |
| Party vote "right" | −0.078 | | | −0.077 | −0.080 |
| | (0.053) | | | (0.053) | (0.053) |
| Low education | −0.097* | | | −0.098* | −0.098* |
| *(ref. middle)* | (0.042) | | | (0.042) | (0.042) |
| High education | −0.060 | | | −0.056 | −0.055 |
| | (0.044) | | | (0.044) | (0.044) |
| Household income | 0.017 | | | 0.019 | 0.019 |
| | (0.012) | | | (0.012) | (0.012) |
| Socio-cultural specialists | −0.016 | | | −0.022 | −0.023 |
| *(ref. managers and administrators)* | (0.050) | | | (0.050) | (0.050) |
| Service workers | −0.010 | | | −0.007 | −0.007 |
| | (0.066) | | | (0.066) | (0.066) |
| Technical specialists | 0.138* | | | 0.141* | 0.142* |
| | (0.065) | | | (0.065) | (0.065) |
| Production workers | 0.237** | | | 0.244** | 0.244** |
| | (0.069) | | | (0.069) | (0.069) |
| Clerks | −0.022 | | | −0.021 | −0.022 |
| | (0.054) | | | (0.053) | (0.053) |
| Liberal professions | −0.053 | | | −0.049 | −0.051 |
| | (0.087) | | | (0.087) | (0.087) |
| Small business owners | 0.230** | | | 0.236** | 0.235** |
| | (0.066) | | | (0.066) | (0.066) |
| REFERENDUM-LEVEL | | | | | |
| Media campaign | | −0.011 | −0.011 | 0.055 | 0.056 |
| | | (0.080) | (0.080) | (0.116) | (0.116) |

**Table A3 Continued:** Multilevel models using additional individual survey data

| | | | | | |
|---|---|---|---|---|---|
| Party competition | | 0.192** | 0.192** | 0.197* | 0.198* |
| | | (0.066) | (0.067) | (0.096) | (0.096) |
| Importance (max) | | 0.227** | 0.227** | 0.342** | 0.344** |
| | | (0.058) | (0.058) | (0.084) | (0.084) |
| Int. politics | | 0.228 | 0.228 | 0.403 | 0.405 |
| | | (0.148) | (0.148) | (0.214) | (0.214) |
| Social | | −0.066 | −0.066 | −0.038 | −0.041 |
| | | (0.153) | (0.154) | (0.222) | (0.222) |
| Institutions | | 0.016 | 0.016 | 0.007 | 0.007 |
| | | (0.127) | (0.127) | (0.184) | (0.184) |
| Energy | | 0.281 | 0.280 | 0.474* | 0.470* |
| | | (0.164) | (0.164) | (0.237) | (0.237) |
| Economy | | 0.270* | 0.270* | 0.334 | 0.336 |
| | | (0.135) | (0.135) | (0.195) | (0.195) |
| Culture | | −0.024 | −0.024 | 0.009 | 0.009 |
| | | (0.193) | (0.193) | (0.279) | (0.279) |
| Complexity (min) | | −0.140* | −0.140* | −0.171* | −0.173* |
| | | (0.057) | (0.057) | (0.083) | (0.082) |
| Nr. of ballots | | −0.190 | −0.190 | −0.254 | −0.254 |
| | | (0.098) | (0.099) | (0.143) | (0.143) |
| Community-level | | | | | |
| Income | | −0.160 | −0.193 | −0.136* | −0.075 |
| | | (0.161) | (0.212) | (0.063) | (0.081) |
| Unemployment | | −0.406* | −0.390 | −0.134 | −0.155* |
| | | (0.192) | (0.201) | (0.071) | (0.074) |
| Population density | | 0.285 | 0.275 | 0.032 | 0.047 |
| | | (0.158) | (0.162) | (0.047) | (0.048) |
| 2nd/3rd sector | | −0.341** | −0.325* | −0.095 | −0.126* |
| | | (0.125) | (0.142) | (0.050) | (0.056) |
| Catholicism | | −0.131 | −0.127 | −0.001 | −0.002 |
| | | (0.115) | (0.116) | (0.046) | (0.045) |
| Community turnout | | | 0.043 | | −0.076 |
| | | | (0.180) | | (0.068) |
| Constant | −2.086** | 0.736** | 0.684* | −2.427** | −2.338** |
| | (0.160) | (0.244) | (0.326) | (0.338) | (0.348) |
| Variance: referendum | 0.486 | 0.087 | 0.087 | 0.186 | 0.185 |
| Variance: community | 0.042 | 0.491 | 0.490 | 0.032 | 0.030 |
| Observations: citizen | 29203 | 29203 | 29203 | 29203 | 29203 |
| Observations: referendum | 43 | 43 | 43 | 43 | 43 |
| Observations: community | 45 | 45 | 45 | 45 | 45 |
| Log Likelihood | -12822.330 | -17500.420 | -17500.400 | -12797.310 | -12796.680 |
| AIC | 25698.670 | 35038.850 | 35040.790 | 25680.620 | 25681.360 |
| BIC | 25922.280 | 35196.210 | 35206.430 | 26036.750 | 26045.770 |

Note: Contextual variables (except for binary variables) are standardized to ease the interpretation of their respective effects; standard errors in parentheses; *p < 0.05, **p < 0.01

## Survey-based model (Table A3): Explanation of data linkage and statistical approach

Given that our official turnout data only contains a handful of basic socio-demographic variables, but misses other important individual characteristics such as education or social class, we carry out a more in-depth analysis by merging that data-set with another smaller data-set stemming from two post-election surveys. This is possible as both our official turnout data and the two surveys include an anonymous identifier per eligible voter. The two surveys were conducted after the national Swiss elections in 2011 (n=392) and after a compulsory referendum on the new cantonal Constitution of Geneva in 2012 (n=1,231). For both surveys, the cantonal administration drew a random sample of Geneva citizens from the official vote registry, which served as the basis for the survey.

Due to this merging procedure, the resulting sub-dataset provides information about *political interest* (4-point scale), *self-placement on the left-right scale* (11-point scale), *party preference* recoded in four groups (left, right, center and other), *education* (recoded 3-point scale), *household income* (recoded 7-point scale) and *social class* (8-class Oesch scheme, see Oesch (2006)). The inclusion of these additional variables helps to clearly distinguish contextual and individual influences, particularly when the context variables are measured in compositional terms. For instance, when using the median income as a contextual measure of wealth, one should ideally also control for the respondent's personal income.

Our sub-dataset with additional individual variables includes much less individuals (n=1,623) than our main dataset. This results in a number of individuals per ballot day between 559 (1999) and 801 (2012) and a total of 29,203 observations in the respective models. The difference of around 250 respondents between the early years and the more recent ones is due to the survey data stemming from the end of our study period. Logically, new arrivals and young(er) people from the two surveys have not yet been eligible to vote in all of the years since 1999. However, this only leads to different numbers of observations per vote, but not to an age bias: We still have young people already in the beginning of our study period, 1999 onwards, who are simply older in the two survey years. The only drawback of the sub-dataset is that we cannot control for changes in the used survey variables between 1999 and 2012. Yet, especially variables such as education, political interest or social class belonging should be rather stable over time. Running the same multilevel models on this sub-dataset does not only add more individual variables, but also provides a robustness check of the results from our main dataset.

Table A4: Replication of multilevel models using survey data

| | **Individual referendum participation** | | | | |
|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** |
| INDIVIUAL-LEVEL | | | | | |
| Age | 0.009** | | | 0.010** | 0.010** |
| | (0.001) | | | (0.001) | (0.001) |
| Age$^2$ | −0.0002** | | | −0.0002** | −0.0002** |
| | (0.0001) | | | (0.0001) | (0.0001) |
| Woman | −0.108** | | | −0.108** | −0.109** |
| | (0.032) | | | (0.032) | (0.032) |
| Married | 0.030 | | | 0.022 | 0.023 |
| (*ref. single*) | (0.049) | | | (0.049) | (0.049) |
| Divorced/widowed | 0.013 | | | 0.007 | 0.007 |
| | (0.061) | | | (0.061) | (0.061) |
| < 10 years residence | 0.072 | | | 0.072 | 0.073 |
| (*ref. > 20 years residence* ) | (0.056) | | | (0.056) | (0.056) |
| 10-20 years residence | −0.095* | | | −0.094* | −0.095* |
| | (0.046) | | | (0.046) | (0.046) |
| Geneva citizen | 0.017 | | | 0.015 | 0.015 |
| | (0.033) | | | (0.033) | (0.033) |
| Past participation | 4.646** | | | 4.638** | 4.639** |
| | (0.063) | | | (0.063) | (0.063) |
| REFERENDUM-LEVEL | | | | | |
| Media campaign | | −0.011 | −0.011 | 0.060 | 0.060 |
| | | (0.080) | (0.080) | (0.115) | (0.115) |
| Party competition | | 0.192** | 0.192** | 0.192* | 0.193* |
| | | (0.066) | (0.067) | (0.095) | (0.096) |
| Importance (max) | | 0.227** | 0.227** | 0.339** | 0.341** |
| | | (0.058) | (0.058) | (0.084) | (0.084) |
| Int. politics | | 0.228 | 0.228 | 0.405 | 0.404 |
| | | (0.148) | (0.148) | (0.213) | (0.213) |
| Social | | −0.066 | −0.066 | −0.035 | −0.036 |
| | | (0.153) | (0.154) | (0.220) | (0.221) |
| Institutions | | 0.016 | 0.016 | 0.007 | 0.008 |
| | | (0.127) | (0.127) | (0.183) | (0.183) |
| Energy | | 0.281 | 0.280 | 0.469* | 0.473* |
| | | (0.164) | (0.164) | (0.236) | (0.236) |
| Economy | | 0.270* | 0.270* | 0.332 | 0.332 |
| | | (0.135) | (0.135) | (0.194) | (0.195) |
| Culture | | −0.024 | −0.024 | 0.011 | 0.012 |
| | | (0.193) | (0.193) | (0.277) | (0.278) |
| Complexity (min) | | −0.140* | −0.140* | −0.171* | −0.172* |
| | | (0.057) | (0.057) | (0.082) | (0.082) |
| Nr. of ballots | | −0.190 | −0.190 | −0.254 | −0.254 |
| | | (0.098) | (0.099) | (0.142) | (0.142) |
| COMMUNITY-LEVEL | | | | | |
| Income | | −0.160 | −0.193 | −0.101 | −0.062 |
| | | (0.161) | (0.212) | (0.066) | (0.086) |
| Unemployment | | −0.406* | −0.390 | −0.123 | −0.140 |
| | | (0.192) | (0.201) | (0.076) | (0.079) |
| Population density | | 0.285 | 0.275 | 0.031 | 0.044 |
| | | (0.158) | (0.162) | (0.051) | (0.054) |
| 2nd/3rd sector | | −0.341** | −0.325* | −0.076 | −0.095 |
| | | (0.125) | (0.142) | (0.052) | (0.059) |
| Catholicism | | −0.131 | −0.127 | 0.016 | 0.013 |
| | | (0.115) | (0.116) | (0.048) | (0.048) |
| Community turnout | | | 0.043 | | −0.048 |
| | | | (0.180) | | (0.073) |
| Constant | −1.721** | 0.736** | 0.684* | −2.056** | −2.001** |
| | (0.130) | (0.244) | (0.326) | (0.324) | (0.335) |
| Variance: referendum | 0.483 | 0.087 | 0.087 | 0.183 | 0.184 |
| Variance: community | 0.048 | 0.491 | 0.490 | 0.040 | 0.040 |
| Observations: citizen | 29203 | 29203 | 29203 | 29203 | 29203 |
| Observations: referendum | 43 | 43 | 43 | 43 | 43 |
| Observations: community | 45 | 45 | 45 | 45 | 45 |
| Log Likelihood | -12883.420 | -17500.420 | -17500.400 | -12860.030 | -12859.800 |
| AIC | 25790.850 | 35038.850 | 35040.790 | 25776.070 | 25777.610 |
| BIC | 25890.230 | 35196.210 | 35206.430 | 26007.960 | 26017.780 |

Note: Contextual variables (except for binary variables) are standardized to ease the interpretation of their respective effects; standard errors in parentheses; *p < 0.05, **p < 0.01

Table A5: Multilevel models excluding all residents of the community of Geneva

| | **Individual referendum participation** | | | | |
|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** |
| INDIVIUAL-LEVEL | | | | | |
| Age | 0.008** | | | 0.008** | 0.008** |
| | (0.001) | | | (0.001) | (0.001) |
| Age$^2$ | −0.001** | | | −0.001** | −0.001** |
| | (0.00002) | | | (0.00002) | (0.00002) |
| Woman | −0.038** | | | −0.037** | −0.037** |
| | (0.014) | | | (0.014) | (0.014) |
| Married | 0.013 | | | 0.012 | 0.013 |
| (*ref. single*) | (0.021) | | | (0.021) | (0.021) |
| Divorced/widowed | −0.165** | | | −0.165** | −0.164** |
| | (0.025) | | | (0.025) | (0.025) |
| < 10 years residence | −0.021 | | | −0.021 | −0.022 |
| (*ref. > 20 years residence* ) | (0.025) | | | (0.025) | (0.025) |
| 10-20 years residence | 0.024 | | | 0.024 | 0.023 |
| | (0.021) | | | (0.021) | (0.021) |
| Geneva citizen | −0.001 | | | −0.001 | −0.003 |
| | (0.014) | | | (0.014) | (0.014) |
| Past participation | 4.838** | | | 4.836** | 4.834** |
| | (0.025) | | | (0.025) | (0.025) |
| REFERENDUM-LEVEL | | | | | |
| Media campaign | | 0.008 | 0.008 | 0.018 | 0.019 |
| | | (0.058) | (0.059) | (0.102) | (0.102) |
| Party competition | | 0.102* | 0.102* | 0.128 | 0.128 |
| | | (0.048) | (0.049) | (0.084) | (0.084) |
| Importance (max) | | 0.197** | 0.197** | 0.316** | 0.316** |
| | | (0.043) | (0.043) | (0.074) | (0.074) |
| Int. politics | | 0.244* | 0.244* | 0.447* | 0.447* |
| | | (0.103) | (0.109) | (0.188) | (0.188) |
| Social | | 0.015 | 0.016 | 0.016 | 0.016 |
| | | (0.105) | (0.113) | (0.195) | (0.195) |
| Institutions | | 0.045 | 0.045 | 0.043 | 0.043 |
| | | (0.090) | (0.093) | (0.161) | (0.162) |
| Energy | | 0.366** | 0.366** | 0.681** | 0.683** |
| | | (0.118) | (0.120) | (0.209) | (0.208) |
| Economy | | 0.231* | 0.231* | 0.330 | 0.330 |
| | | (0.095) | (0.099) | (0.171) | (0.171) |
| Culture | | −0.063 | −0.063 | −0.108 | −0.107 |
| | | (0.137) | (0.141) | (0.244) | (0.244) |
| Complexity (min) | | −0.093* | −0.093* | −0.147* | −0.147* |
| | | (0.042) | (0.042) | (0.072) | (0.072) |
| Nr. of ballots | | −0.185** | −0.186* | −0.264* | −0.264* |
| | | (0.068) | (0.072) | (0.126) | (0.125) |
| COMMUNITY-LEVEL | | | | | |
| Income | | 0.091** | −0.014 | 0.004 | −0.031 |
| | | (0.021) | (0.013) | (0.014) | (0.017) |
| Unemployment | | −0.065** | −0.019 | −0.010 | −0.004 |
| | | (0.025) | (0.010) | (0.016) | (0.013) |
| Population density | | 0.025 | 0.008 | 0.011 | 0.005 |
| | | (0.023) | (0.007) | (0.011) | (0.009) |
| 2nd/3rd sector | | −0.046* | −0.005 | −0.017 | −0.008 |
| | | (0.019) | (0.011) | (0.015) | (0.014) |
| Catholicism | | −0.006 | −0.005 | −0.001 | 0.001 |
| | | (0.017) | (0.009) | (0.013) | (0.012) |
| Community turnout | | | 0.142** | | 0.037** |
| | | | (0.011) | | (0.014) |
| Constant | −2.077** | −0.124 | −0.286 | −2.527** | −2.569** |
| | (0.101) | (0.147) | (0.162) | (0.281) | (0.281) |
| Variance: referendum | 0.409 | 0.049 | 0.049 | 0.149 | 0.149 |
| Variance: community | 0.001 | 0.006 | 0.000 | 0.000 | 0.000 |
| Observations: citizen | 150000 | 150000 | 150000 | 150000 | 150000 |
| Observations: referendum | 43 | 43 | 43 | 43 | 43 |
| Observations: community | 44 | 44 | 44 | 44 | 44 |
| Log Likelihood | -68120.640 | -101139.200 | -101100.200 | -68097.320 | -68094.030 |
| AIC | 136265.300 | 202316.400 | 202240.300 | 136250.600 | 136246.100 |
| BIC | 136384.300 | 202504.900 | 202438.700 | 136528.400 | 136533.700 |

Note: Contextual variables (except for binary variables) are standardized to ease the interpretation of their respective effects; standard errors in parentheses; *p < 0.05, **p < 0.01

Table A6: Multilevel models excluding past participation and additional referendum-level variables

| | **Individual referendum participation** | |
|---|---|---|
| | **w/o past participation** | **additional referendum controls** |
| INDIVIUAL-LEVEL | | |
| Age | 0.026** | 0.007** |
| | (0.0004) | (0.001) |
| Age$^2$ | −0.0005** | −0.001** |
| | (0.00002) | (0.00002) |
| Woman | −0.068** | −0.019 |
| | (0.011) | (0.014) |
| Married | 0.173** | 0.005 |
| (*ref. single*) | (0.016) | (0.020) |
| Divorced/widowed | −0.503** | −0.170** |
| | (0.019) | (0.024) |
| < 10 years residence | −0.244** | −0.015 |
| (*ref. > 20 years residence* ) | (0.018) | (0.023) |
| 10-20 years residence | −0.094** | 0.009 |
| | (0.016) | (0.020) |
| Geneva citizen | 0.159** | −0.011 |
| | (0.011) | (0.014) |
| Past participation | | 4.851** |
| | | (0.025) |
| REFERENDUM-LEVEL | | |
| Media campaign | 0.005 | 0.004 |
| | (0.060) | (0.097) |
| Party competition | 0.105* | 0.108 |
| | (0.050) | (0.077) |
| Importance (max) | 0.202** | 0.348** |
| | (0.044) | (0.072) |
| Int. politics | 0.243* | 0.342* |
| | (0.111) | (0.173) |
| Social | 0.021 | 0.039 |
| | (0.116) | (0.177) |
| Institutions | 0.022 | −0.005 |
| | (0.096) | (0.147) |
| Energy | 0.348** | 0.496* |
| | (0.123) | (0.199) |
| Economy | 0.246* | 0.345* |
| | (0.102) | (0.158) |
| Culture | −0.075 | −0.039 |
| | (0.145) | (0.228) |
| Complexity (min) | −0.075 | −0.039 |
| | (0.145) | (0.228) |
| Nr. of ballots | −0.178* | −0.267* |
| | (0.074) | (0.116) |
| ADDITIONAL CONTROLS | | |
| No popular initiative | | −0.336* |
| | | (0.158) |
| Cantonal referendum | | −0.264 |
| (in parallel) | | (0.153) |
| COMMUNITY-LEVEL | | |
| Income | −0.022 | −0.056** |
| | (0.017) | (0.021) |
| Unemployment | −0.005 | −0.002 |
| | (0.012) | (0.015) |
| Population density | 0.006 | −0.002 |
| | (0.006) | (0.008) |
| 2nd/3rd sector | −0.033* | −0.019 |
| | (0.015) | (0.018) |
| Catholicism | −0.001 | 0.002 |
| | (0.010) | (0.012) |
| Community turnout | 0.126** | 0.049** |
| | (0.014) | (0.018) |
| Constant | −0.099 | −2.182** |
| | (0.168) | (0.300) |
| Variance: referendum | 0.051 | 0.122 |
| Variance: community | 0.000 | 0.000 |
| Observations: citizen | 150000 | 150000 |
| Observations: referendum | 43 | 43 |
| Observations: community | 44 | 44 |
| Log Likelihood | -96346.300 | -67762.200 |
| AIC | 192748.600 | 135586.400 |
| BIC | 193026.300 | 135893.900 |

Note: Contextual variables (except for binary variables) are standardized to ease the interpretation of their respective effects; standard errors in parentheses; *p < 0.05, **p < 0.01

Table A7: Robustness checks for complete model across ten randomly drawn samples

| | **Rob 1** | **Rob 2** | **Rob 3** | **Rob 4** | **Rob 5** | **Rob 6** | **Rob 7** | **Rob 8** | **Rob 9** | **Rob 10** |
|---|---|---|---|---|---|---|---|---|---|---|
| Indiviual-level | | | | | | | | | | |
| Age | 0.007** | 0.007** | 0.007** | 0.006** | 0.007** | 0.006** | 0.006** | 0.006** | 0.006** | 0.007** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| $Age^2$ | −0.001** | −0.001** | −0.001** | −0.001** | −0.001** | −0.001** | −0.001** | −0.001** | −0.001** | −0.001** |
| | (0.00002) | (0.00002) | (0.00002) | (0.00002) | (0.00002) | (0.00002) | (0.00002) | (0.00002) | (0.00002) | (0.00002) |
| | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) |
| Woman | −0.0002 | −0.028* | −0.007 | −0.025 | −0.013 | −0.002 | −0.023 | −0.023 | −0.050** | −0.007 |
| | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) |
| Married | 0.006 | 0.026 | 0.054** | 0.026 | 0.030 | 0.030 | 0.025 | 0.035 | 0.043* | 0.009 |
| (*ref. single*) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) |
| Divorced/widowed | −0.177** | −0.166** | −0.161** | −0.139** | −0.167** | −0.120** | −0.159** | −0.168** | −0.120** | −0.152** |
| | (0.024) | (0.024) | (0.024) | (0.024) | (0.024) | (0.024) | (0.024) | (0.024) | (0.024) | (0.024) |
| < 10 years residence | −0.029 | −0.061** | −0.050* | −0.027 | −0.033 | −0.005 | −0.089** | −0.034 | −0.012 | −0.002 |
| (*ref. > 20 years residence*) | (0.023) | (0.023) | (0.023) | (0.023) | (0.023) | (0.023) | (0.023) | (0.023) | (0.023) | (0.023) |
| 10-20 years residence | −0.011 | −0.026 | 0.001 | −0.008 | −0.027 | −0.025 | −0.045* | −0.025 | −0.042* | −0.009 |
| | (0.020) | (0.021) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) |
| Geneva citizen | 0.017 | −0.018 | −0.017 | −0.010 | −0.017 | −0.031* | −0.019 | −0.011 | −0.010 | −0.021 |
| | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) |
| Past participation | 4.843** | 4.816** | 4.817** | 4.829** | 4.817** | 4.831** | 4.818** | 4.800** | 4.856** | 4.826** |
| | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) |
| Referendum-level | | | | | | | | | | |
| Media campaign | 0.043 | 0.015 | 0.033 | 0.044 | 0.024 | 0.019 | 0.040 | 0.046 | 0.028 | 0.032 |
| | (0.100) | (0.095) | (0.096) | (0.099) | (0.093) | (0.098) | (0.098) | (0.096) | (0.096) | (0.095) |
| Party competition | 0.137 | 0.146 | 0.132 | 0.119 | 0.132 | 0.140 | 0.131 | 0.129 | 0.136 | 0.133 |
| | (0.083) | (0.079) | (0.080) | (0.082) | (0.078) | (0.081) | (0.082) | (0.080) | (0.080) | (0.079) |
| Importance (max) | 0.289** | 0.317** | 0.307** | 0.274** | 0.307** | 0.311** | 0.302** | 0.297** | 0.305** | 0.289** |
| | (0.073) | (0.069) | (0.070) | (0.072) | (0.068) | (0.071) | (0.072) | (0.070) | (0.070) | (0.069) |
| Int. politics | 0.464* | 0.423* | 0.413* | 0.446* | 0.455** | 0.465** | 0.429* | 0.407* | 0.470** | 0.472** |
| | (0.184) | (0.176) | (0.178) | (0.183) | (0.173) | (0.180) | (0.183) | (0.177) | (0.177) | (0.176) |
| Social | 0.065 | 0.014 | 0.013 | 0.059 | 0.046 | −0.008 | 0.031 | 0.050 | 0.054 | 0.044 |
| | (0.191) | (0.182) | (0.185) | (0.189) | (0.179) | (0.187) | (0.190) | (0.183) | (0.183) | (0.183) |
| Institutions | 0.013 | 0.013 | −0.020 | 0.031 | 0.018 | 0.019 | 0.005 | 0.017 | 0.026 | 0.009 |

**Table A7 Continued:** Robustness check of complete model across ten randomly drawn samples

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (0.158) | (0.151) | (0.153) | (0.157) | (0.149) | (0.155) | (0.157) | (0.153) | (0.152) | (0.151) |
| Energy | 0.515* | 0.590** | 0.557** | 0.593** | 0.635** | 0.593** | 0.593** | 0.552** | 0.590** | 0.623** |
| | (0.204) | (0.194) | (0.198) | (0.202) | (0.191) | (0.199) | (0.202) | (0.197) | (0.196) | (0.194) |
| Economy | 0.355* | 0.317* | 0.312 | 0.331* | 0.343* | 0.331* | 0.326 | 0.341* | 0.351* | 0.322* |
| | (0.168) | (0.160) | (0.163) | (0.167) | (0.158) | (0.165) | (0.167) | (0.162) | (0.162) | (0.161) |
| Culture | −0.026 | −0.073 | −0.058 | −0.070 | −0.062 | −0.067 | −0.044 | −0.062 | −0.053 | −0.073 |
| | (0.240) | (0.228) | (0.232) | (0.238) | (0.226) | (0.236) | (0.237) | (0.232) | (0.231) | (0.229) |
| Complexity (min) | −0.133 | −0.148* | −0.130 | −0.144* | −0.142* | −0.126 | −0.137 | −0.153* | −0.134 | −0.128 |
| | (0.071) | (0.068) | (0.069) | (0.070) | (0.067) | (0.070) | (0.070) | (0.069) | (0.069) | (0.068) |
| Nr. of ballots | −0.254* | −0.238* | −0.246* | −0.273* | −0.266* | −0.229 | −0.269* | −0.260* | −0.265* | −0.265* |
| | (0.123) | (0.117) | (0.119) | (0.122) | (0.115) | (0.120) | (0.122) | (0.118) | (0.118) | (0.118) |
| Community-level | | | | | | | | | | |
| Income | 0.010 | 0.033 | −0.016 | 0.028 | 0.024 | −0.015 | 0.036 | 0.008 | −0.011 | −0.022 |
| | (0.021) | (0.021) | (0.021) | (0.021) | (0.021) | (0.022) | (0.021) | (0.021) | (0.021) | (0.021) |
| Unemployment | 0.033* | −0.005 | 0.027 | 0.008 | 0.035* | 0.032* | 0.024 | −0.009 | 0.024 | 0.033* |
| | (0.015) | (0.015) | (0.015) | (0.015) | (0.015) | (0.015) | (0.015) | (0.015) | (0.015) | (0.015) |
| Population density | −0.003 | 0.017* | −0.012 | 0.005 | −0.008 | −0.010 | 0.001 | 0.010 | −0.003 | −0.016* |
| | (0.008) | (0.008) | (0.008) | (0.008) | (0.008) | (0.008) | (0.008) | (0.008) | (0.008) | (0.008) |
| 2nd/3rd sector | −0.006 | −0.001 | 0.030 | −0.016 | 0.018 | −0.012 | 0.016 | 0.026 | 0.0002 | 0.004 |
| | (0.018) | (0.018) | (0.018) | (0.018) | (0.018) | (0.018) | (0.018) | (0.018) | (0.018) | (0.018) |
| Catholicism | 0.014 | −0.019 | −0.014 | 0.008 | 0.0002 | 0.014 | 0.005 | 0.020 | 0.002 | 0.008 |
| | (0.012) | (0.012) | (0.012) | (0.012) | (0.012) | (0.012) | (0.012) | (0.012) | (0.012) | (0.012) |
| Community turnout | 0.033 | 0.001 | 0.047** | 0.001 | 0.014 | 0.047** | 0.011 | 0.007 | 0.045* | 0.063** |
| | (0.018) | (0.018) | (0.018) | (0.017) | (0.018) | (0.018) | (0.018) | (0.017) | (0.018) | (0.018) |
| Constant | −2.597** | −2.464** | −2.528** | −2.542** | −2.569** | −2.562** | −2.507** | −2.525** | −2.626** | −2.584** |
| | (0.275) | (0.262) | (0.266) | (0.273) | (0.259) | (0.269) | (0.274) | (0.263) | (0.263) | (0.265) |
| N | 150000 | 150000 | 150000 | 150000 | 150000 | 150000 | 150000 | 150000 | 150000 | 150000 |
| Log Likelihood | -67793.680 | -67881.750 | -68064.740 | -68140.510 | -67903.170 | -67966.840 | -68068.310 | -68352.360 | -67702.370 | -68000.630 |
| AIC | 135645.400 | 135821.500 | 136187.500 | 136339.000 | 135864.300 | 135991.700 | 136194.600 | 136762.700 | 135462.700 | 136059.300 |
| BIC | 135933.000 | 136109.100 | 136475.100 | 136626.700 | 136152.000 | 136279.300 | 136482.300 | 137050.400 | 135750.400 | 136346.900 |

Note: Contextual variables (except for binary variables) are standardized to ease the interpretation of their respective effects; standard errors in parentheses; *p < 0.05, **p < 0.01