# Annex

**Table A1:** Descriptive statistics.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Description** | **Missing** | **Complete** | **Distribution** | |
| govtminister | dummy assessing the presence of a government minister from a canton: 1 if yes, 0 otherwise | 0 | 100% | no: 12844, yes: 4576 | |
| overruled | was a cantonal majority overruled? 1 if yes, 0 otherwise | 303 | 98% | no: 14548, yes: 2569 | |
| official | did a cantonal majority vote as recommended? 1 if yes, 0 otherwise | 3705 | 79% | no: 3923, yes: 9792 | |
| period | time period, manually created | 0 | 100% | 1848-91: 1014, 1892-1919: 1066, 1920-59: 3042, 1960-92: 5304 1993-2022: 6994 | |
| type | type of popular vote | 0 | 100% | PI: 5928, FR: 5252, OR: 5148, CP: 1092 | |
| consensus | did the 4 major parties issue the same voting recommendation? 1 if yes, 0 otherwise | 0 | 100% | no: 12454, yes: 4966 | |
| sonderbund | was a canton a member of the 1847 Sonderbund? 1 if yes, 0 otherwise | 0 | 100% | no: 12060, yes: 5360 | |
| language | cantonal majority language: 0 = German, 1 = French, 2 = Italian | 0 | 100% | German: 12730, French: 4020, Italian: 670 | |
| turnout | % turnout at cantonal level (voted/electorate) | 953 | 95% | Mean: 47.9 | SD: 14.7 |
| turnout diff. | turnout difference of canton viz. rest of Switzerland | 953 | 95% | Mean: 0.4 | SD: 11.2 |
| approval dif. | absolute difference in % approval by canton viz. rest of Switzerland | 778 | 96% | Mean: 8.2 | SD: 7.6 |
| NRapproval | % approval in National Council (yes/(yes+no)) | 858 | 95% | Mean: 63.8 | SD: 30.4 |
| year | year of popular vote | 0 | 100% | Mean: 1972.9 | SD: 39.4 |

**Source:** author’s own elaboration with data from Swissvotes (2022), Giudici and Stojanović (2016/2019) and own updates.

Table A2: Multilevel models for cantonal turnout

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | | | **Model 2** | | | **Model 3** | | |
| *Predictors* | *Estimates* | *CI* | *p* | *Estimates* | *CI* | *p* | *Estimates* | *CI* | *p* |
| (Intercept) | 56.65 | 51.22 – 62.08 | **<0.001** | 58.91 | 53.49 – 64.33 | **<0.001** | 57.16 | 51.44 – 62.89 | **<0.001** |
| Govt. minister | 0.66 | 0.30 – 1.03 | **<0.001** | 0.64 | 0.17 – 1.12 | **0.008** | 0.89 | 0.46 – 1.31 | **<0.001** |
| *legal type of referendums (ref.: OR)* | | | | | | | | | |
| FR | 4.31 | 2.49 – 6.13 | **<0.001** | 4.30 | 2.48 – 6.13 | **<0.001** | 4.31 | 2.49 – 6.14 | **<0.001** |
| PI | 4.25 | 2.46 – 6.04 | **<0.001** | 4.24 | 2.45 – 6.03 | **<0.001** | 4.25 | 2.46 – 6.04 | **<0.001** |
| CP | 0.13 | -2.76 – 3.02 | 0.929 | 0.12 | -2.78 – 3.01 | 0.937 | 0.13 | -2.76 – 3.02 | 0.930 |
| *Period (ref.: 1848–1891)* | | | | | | | | | |
| 1892–1919 | -5.92 | -11.24 – -0.60 | **0.029** | -5.89 | -11.21 – -0.57 | **0.030** | -5.89 | -11.21 – -0.57 | **0.030** |
| 1920–59 | -2.26 | -7.20 – 2.68 | 0.370 | -2.17 | -7.11 – 2.77 | 0.390 | -2.22 | -7.16 – 2.72 | 0.379 |
| 1960–92 | -15.75 | -20.60 – -10.90 | **<0.001** | -15.72 | -20.57 – -10.87 | **<0.001** | -15.72 | -20.57 – -10.87 | **<0.001** |
| 1993–2022 | -13.60 | -18.39 – -8.82 | **<0.001** | -13.57 | -18.36 – -8.78 | **<0.001** | -13.55 | -18.33 – -8.76 | **<0.001** |
| Consensus | -1.07 | -2.67 – 0.53 | 0.190 | -1.07 | -2.67 – 0.53 | 0.191 | -1.07 | -2.67 – 0.53 | 0.191 |
| *Cantonally dominant language (ref.: German)* | | | | | | | | | |
| French |  |  |  | -8.09 | -13.32 – -2.86 | **0.002** |  |  |  |
| Italian |  |  |  | -11.33 | -22.79 – 0.13 | 0.053 |  |  |  |
| Govt.minister \* french |  |  |  | 0.72 | -0.08 – 1.51 | 0.076 |  |  |  |
| Govt.minister \* italian |  |  |  | -2.97 | -4.42 – -1.52 | **<0.001** |  |  |  |
| Sonderbund |  |  |  |  |  |  | -1.88 | -7.56 – 3.80 | 0.516 |
| Govt.minister \* sonderbund |  |  |  |  |  |  | -0.84 | -1.68 – -0.01 | **0.048** |
| **Random Effects** | | | | | | | | | |
| σ2 | 74.38 | | | 74.28 | | | 74.37 | | |
| τ00 | 68.87 vote | | | 68.87 vote | | | 68.88 vote | | |
|  | 45.31 canton | | | 32.26 canton | | | 46.38 canton | | |
| ICC | 0.61 | | | 0.58 | | | 0.61 | | |
| N | 644 vote | | | 644 vote | | | 644 vote | | |
|  | 26 canton | | | 26 canton | | | 26 canton | | |
| Observations | 16467 | | | 16467 | | | 16467 | | |
| Marginal R2 / Conditional R2 | 0.144 / 0.662 | | | 0.211 / 0.666 | | | 0.147 / 0.666 | | |
| AIC | 119906.172 | | | 119870.342 | | | 119901.679 | | |

*Note: VIFs < 1.3*

Table A3: Multilevel models for cantonal turnout differences to rest of Switzerland

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | | | **Model 2** | | | **Model 3** | | |
| *Predictors* | *Estimates* | *CI* | *p* | *Estimates* | *CI* | *p* | *Estimates* | *CI* | *p* |
| (Intercept) | -0.52 | -3.37 – 2.33 | 0.720 | 1.82 | -1.00 – 4.63 | 0.205 | 0.03 | -3.37 – 3.43 | 0.986 |
| Govt. minister | 0.69 | 0.32 – 1.07 | **<0.001** | 0.69 | 0.20 – 1.17 | **0.006** | 0.88 | 0.44 – 1.32 | **<0.001** |
| *legal type of referendums (ref.: OR)* | | | | | | | | | |
| FR | 0.02 | -0.36 – 0.39 | 0.935 | 0.01 | -0.37 – 0.39 | 0.963 | 0.02 | -0.36 – 0.40 | 0.926 |
| PI | -0.17 | -0.54 – 0.21 | 0.383 | -0.17 | -0.55 – 0.20 | 0.360 | -0.16 | -0.54 – 0.21 | 0.387 |
| CP | -0.40 | -1.00 – 0.20 | 0.191 | -0.42 | -1.02 – 0.18 | 0.173 | -0.40 | -1.00 – 0.20 | 0.189 |
| *Period (ref.: 1848–1891)* | | | | | | | | | |
| 1892–1919 | -0.78 | -1.90 – 0.33 | 0.168 | -0.76 | -1.87 – 0.36 | 0.184 | -0.76 | -1.88 – 0.35 | 0.181 |
| 1920–59 | -0.27 | -1.30 – 0.77 | 0.611 | -0.17 | -1.20 – 0.87 | 0.751 | -0.24 | -1.27 – 0.80 | 0.656 |
| 1960–92 | 1.37 | 0.35 – 2.38 | **0.008** | 1.41 | 0.39 – 2.42 | **0.006** | 1.40 | 0.38 – 2.41 | **0.007** |
| 1993–2022 | 0.98 | -0.03 – 1.98 | 0.057 | 1.01 | 0.01 – 2.01 | **0.048** | 1.02 | 0.02 – 2.03 | **0.046** |
| Consensus | 0.11 | -0.22 – 0.44 | 0.519 | 0.11 | -0.22 – 0.44 | 0.506 | 0.11 | -0.22 – 0.44 | 0.511 |
| *Cantonally dominant language (ref.: German)* | | | | | | | | | |
| French |  |  |  | -8.39 | -13.77 – -3.01 | **0.002** |  |  |  |
| Italian |  |  |  | -11.73 | -23.51 – 0.06 | 0.051 |  |  |  |
| Govt.minister \* french |  |  |  | 0.74 | -0.08 – 1.55 | 0.076 |  |  |  |
| Govt.minister \* italian |  |  |  | -3.21 | -4.68 – -1.74 | **<0.001** |  |  |  |
| Sonderbund |  |  |  |  |  |  | -1.96 | -7.82 – 3.90 | 0.511 |
| Govt.minister \* sonderbund |  |  |  |  |  |  | -0.69 | -1.55 – 0.16 | 0.110 |
| **Random Effects** | | | | | | | | | |
| σ2 | 78.88 | | | 78.77 | | | 78.88 | | |
| τ00 | 0.00 vote | | | 0.00 vote | | | 0.00 vote | | |
|  | 48.19 canton | | | 34.10 canton | | | 49.31 canton | | |
| N | 644 vote | | | 644 vote | | | 644 vote | | |
|  | 26 canton | | | 26 canton | | | 26 canton | | |
| Observations | 16467 | | | 16467 | | | 16467 | | |
| Marginal R2 / Conditional R2 | 0.007 / NA | | | 0.170 / NA | | | 0.021 / NA | | |
| AIC | 118838.033 | | | 118799.259 | | | 118834.799 | | |

*Note: VIFs < 1.3*

Table A4: Multilevel logit models for voting as recommended by federal authorities

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | | | **Model 2** | | | **Model 3** | | |
| *Predictors* | *Odds ratios* | *CI* | *p* | *Odds ratios* | *CI* | *p* | *Odds ratios* | *CI* | *p* |
| (Intercept) | 2.17 | 0.47 – 10.11 | 0.324 | 2.28 | 0.50 – 10.51 | 0.289 | 2.22 | 0.48 – 10.21 | 0.304 |
| Govt. minister | 1.35 | 1.16 – 1.56 | **<0.001** | 1.29 | 1.07 – 1.56 | **0.008** | 1.31 | 1.11 – 1.55 | **0.001** |
| *legal type of referendums (ref.: OR)* | | | | | | | | | |
| FR | 0.29 | 0.13 – 0.68 | **0.004** | 0.29 | 0.12 – 0.67 | **0.004** | 0.29 | 0.12 – 0.67 | **0.004** |
| PI | 5.70 | 2.45 – 13.25 | **<0.001** | 5.69 | 2.45 – 13.19 | **<0.001** | 5.65 | 2.44 – 13.11 | **<0.001** |
| CP | 0.34 | 0.08 – 1.40 | 0.134 | 0.34 | 0.08 – 1.38 | 0.131 | 0.34 | 0.08 – 1.38 | 0.130 |
| *Period (ref.: 1848–1891)* | | | | | | | | | |
| 1892–1919 | 0.14 | 0.02 – 0.86 | **0.034** | 0.15 | 0.02 – 0.92 | **0.041** | 0.15 | 0.03 – 0.94 | **0.043** |
| 1920–59 | 0.84 | 0.19 – 3.76 | 0.816 | 0.89 | 0.20 – 3.96 | 0.878 | 0.87 | 0.20 – 3.87 | 0.859 |
| 1960–92 | 1.40 | 0.34 – 5.83 | 0.645 | 1.42 | 0.34 – 5.87 | 0.626 | 1.47 | 0.36 – 6.04 | 0.593 |
| 1993–2022 | 3.03 | 0.76 – 12.05 | 0.115 | 3.17 | 0.81 – 12.47 | 0.099 | 3.20 | 0.82 – 12.53 | 0.095 |
| Consensus | 10.86 | 5.45 – 21.62 | **<0.001** | 10.98 | 5.52 – 21.82 | **<0.001** | 10.84 | 5.45 – 21.56 | **<0.001** |
| *Cantonally dominant language (ref.: German)* | | | | | | | | | |
| French |  |  |  | 0.72 | 0.53 – 1.00 | **0.047** |  |  |  |
| Italian |  |  |  | 0.56 | 0.28 – 1.13 | 0.106 |  |  |  |
| Govt.minister \* french |  |  |  | 1.19 | 0.87 – 1.64 | 0.275 |  |  |  |
| Govt.minister \* italian |  |  |  | 1.20 | 0.67 – 2.17 | 0.536 |  |  |  |
| Sonderbund |  |  |  |  |  |  | 0.80 | 0.60 – 1.07 | 0.132 |
| Govt.minister \* sonderbund |  |  |  |  |  |  | 1.11 | 0.78 – 1.57 | 0.558 |
| **Random Effects** | | | | | | | | | |
| σ2 | 3.29 | | | 3.29 | | | 3.29 | | |
| τ00 | 7.70 vote | | | 7.66 vote | | | 7.68 vote | | |
|  | 0.11 canton | | | 0.09 canton | | | 0.10 canton | | |
| ICC | 0.70 | | | 0.70 | | | 0.70 | | |
| N | 534 vote | | | 534 vote | | | 534 vote | | |
|  | 26 canton | | | 26 canton | | | 26 canton | | |
| Observations | 13715 | | | 13715 | | | 13715 | | |
| Marginal R2 / Conditional R2 | 0.232 / 0.772 | | | 0.234 / 0.772 | | | 0.233 / 0.772 | | |
| AIC | 9632.657 | | | 9634.477 | | | 9634.341 | | |

*Note: VIFs < 1.3*

Table A5: Multilevel logit models for being overruled

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | | | **Model 2** | | | **Model 3** | | |
| *Predictors* | *Odds ratios* | *CI* | *p* | *Odds ratios* | *CI* | *p* | *Odds ratios* | *CI* | *p* |
| (Intercept) | 0.34 | 0.19 – 0.62 | **<0.001** | 0.27 | 0.15 – 0.48 | **<0.001** | 0.34 | 0.19 – 0.63 | **0.001** |
| Govt. minister | 0.98 | 0.86 – 1.12 | 0.781 | 1.02 | 0.85 – 1.22 | 0.859 | 1.03 | 0.88 – 1.19 | 0.743 |
| *legal type of referendums (ref.: OR)* | | | | | | | | | |
| FR | 1.51 | 1.04 – 2.20 | **0.030** | 1.52 | 1.04 – 2.21 | **0.029** | 1.52 | 1.05 – 2.21 | **0.028** |
| PI | 0.46 | 0.31 – 0.69 | **<0.001** | 0.47 | 0.31 – 0.70 | **<0.001** | 0.45 | 0.30 – 0.68 | **<0.001** |
| CP | 0.48 | 0.25 – 0.93 | **0.029** | 0.46 | 0.24 – 0.89 | **0.022** | 0.49 | 0.25 – 0.95 | **0.034** |
| *Period (ref.: 1848–1891)* | | | | | | | | | |
| 1892–1919 | 0.65 | 0.31 – 1.39 | 0.269 | 0.66 | 0.31 – 1.41 | 0.287 | 0.67 | 0.31 – 1.42 | 0.295 |
| 1920–59 | 0.53 | 0.27 – 1.01 | 0.054 | 0.53 | 0.28 – 1.02 | 0.059 | 0.54 | 0.28 – 1.04 | 0.067 |
| 1960–92 | 0.33 | 0.17 – 0.61 | **<0.001** | 0.33 | 0.17 – 0.61 | **<0.001** | 0.33 | 0.18 – 0.62 | **0.001** |
| 1993–2022 | 0.20 | 0.11 – 0.37 | **<0.001** | 0.20 | 0.11 – 0.37 | **<0.001** | 0.21 | 0.11 – 0.38 | **<0.001** |
| Consensus | 0.39 | 0.27 – 0.56 | **<0.001** | 0.39 | 0.27 – 0.56 | **<0.001** | 0.40 | 0.28 – 0.58 | **<0.001** |
| *Cantonally dominant language (ref.: German)* | | | | | | | | | |
| French |  |  |  | 2.45 | 1.71 – 3.50 | **<0.001** |  |  |  |
| Italian |  |  |  | 2.28 | 1.05 – 4.98 | **0.038** |  |  |  |
| Govt.minister \* french |  |  |  | 0.88 | 0.67 – 1.17 | 0.385 |  |  |  |
| Govt.minister \* italian |  |  |  | 0.78 | 0.48 – 1.27 | 0.317 |  |  |  |
| Sonderbund |  |  |  |  |  |  | 0.89 | 0.57 – 1.38 | 0.605 |
| Govt.minister \* sonderbund |  |  |  |  |  |  | 0.81 | 0.59 – 1.13 | 0.219 |
| **Random Effects** | | | | | | | | | |
| σ2 | 3.29 | | | 3.29 | | | 3.29 | | |
| τ00 | 2.60 vote | | | 2.60 vote | | | 2.59 vote | | |
|  | 0.26 canton | | | 0.13 canton | | | 0.26 canton | | |
| ICC | 0.46 | | | 0.45 | | | 0.46 | | |
| N | 670 vote | | | 670 vote | | | 670 vote | | |
|  | 26 canton | | | 26 canton | | | 26 canton | | |
| Observations | 17117 | | | 17117 | | | 17117 | | |
| Marginal R2 / Conditional R2 | 0.105 / 0.521 | | | 0.123 / 0.521 | | | 0.105 / 0.520 | | |
| AIC | 11907.697 | | | 11895.632 | | | 11909.828 | | |

*Note: VIFs < 1.3*

Table A6: Multilevel models for cantonal approval differences to rest of Switzerland

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | | | **Model 2** | | | **Model 3** | | |
| *Predictors* | *Estimates* | *CI* | *p* | *Estimates* | *CI* | *p* | *Estimates* | *CI* | *p* |
| (Intercept) | 18.20 | 16.51 – 19.89 | **<0.001** | 17.18 | 15.55 – 18.82 | **<0.001** | 17.97 | 16.13 – 19.80 | **<0.001** |
| Govt. minister | -0.62 | -0.87 – -0.36 | **<0.001** | -0.60 | -0.93 – -0.27 | **<0.001** | -0.49 | -0.79 – -0.20 | **0.001** |
| *legal type of referendums (ref.: OR)* | | | | | | | | | |
| FR | -0.06 | -0.70 – 0.57 | 0.850 | -0.06 | -0.69 – 0.58 | 0.858 | -0.06 | -0.70 – 0.58 | 0.854 |
| PI | -0.50 | -1.13 – 0.13 | 0.119 | -0.50 | -1.13 – 0.13 | 0.122 | -0.50 | -1.13 – 0.13 | 0.120 |
| CP | -0.07 | -1.09 – 0.95 | 0.890 | -0.07 | -1.08 – 0.95 | 0.900 | -0.07 | -1.09 – 0.95 | 0.888 |
| *Period (ref.: 1848–1891)* | | | | | | | | | |
| 1892–1919 | -3.13 | -4.74 – -1.52 | **<0.001** | -3.14 | -4.75 – -1.53 | **<0.001** | -3.11 | -4.72 – -1.51 | **<0.001** |
| 1920–59 | -7.12 | -8.57 – -5.66 | **<0.001** | -7.16 | -8.62 – -5.71 | **<0.001** | -7.10 | -8.55 – -5.64 | **<0.001** |
| 1960–92 | -9.89 | -11.30 – -8.47 | **<0.001** | -9.91 | -11.32 – -8.49 | **<0.001** | -9.87 | -11.28 – -8.45 | **<0.001** |
| 1993–2022 | -11.27 | -12.66 – -9.88 | **<0.001** | -11.29 | -12.68 – -9.90 | **<0.001** | -11.24 | -12.63 – -9.85 | **<0.001** |
| Consensus | -1.09 | -1.66 – -0.53 | **<0.001** | -1.10 | -1.66 – -0.53 | **<0.001** | -1.09 | -1.66 – -0.53 | **<0.001** |
| *Cantonally dominant language (ref.: German)* | | | | | | | | | |
| French |  |  |  | 4.13 | 2.29 – 5.97 | **<0.001** |  |  |  |
| Italian |  |  |  | 2.25 | -1.78 – 6.29 | 0.273 |  |  |  |
| Govt.minister \* french |  |  |  | -0.41 | -0.96 – 0.14 | 0.144 |  |  |  |
| Govt.minister \* italian |  |  |  | 1.46 | 0.45 – 2.46 | **0.004** |  |  |  |
| Sonderbund |  |  |  |  |  |  | 0.65 | -1.55 – 2.84 | 0.563 |
| Govt.minister \* sonderbund |  |  |  |  |  |  | -0.46 | -1.04 – 0.12 | 0.118 |
| **Random Effects** | | | | | | | | | |
| σ2 | 36.15 | | | 36.13 | | | 36.15 | | |
| τ00 | 7.51 vote | | | 7.51 vote | | | 7.52 vote | | |
|  | 6.67 canton | | | 3.92 canton | | | 6.87 canton | | |
| ICC | 0.28 | | | 0.24 | | | 0.28 | | |
| N | 651 vote | | | 651 vote | | | 651 vote | | |
|  | 26 canton | | | 26 canton | | | 26 canton | | |
| Observations | 16642 | | | 16642 | | | 16642 | | |
| Marginal R2 / Conditional R2 | 0.140 / 0.382 | | | 0.183 / 0.380 | | | 0.141 / 0.386 | | |
| AIC | 108275.730 | | | 108251.707 | | | 108275.587 | | |

*Note: VIFs < 1.3*