# Supplemental material – for online publication

## A1. Survey: sampling, weighting, operationalization

Table A 1 : Sampling and responses

|  |  |  |
| --- | --- | --- |
|  | Number | Percent of total |
| Mailed invitations to participate in a survey | 9000 | 100% |
| Undeliverable (returned mail) | 35 | 0.4% |
| Explicit refusals | 27 | 0.3% |
| Paper questionnaires returned | 2330 | 25.8% |
| Incomplete | 11 | 0.1% |
| Completed | 2319 | 25.7% |
| Online responses | 396 | 4.4% |
| Incomplete | 5 | 0.1% |
| Completed | 391 | 4.3% |
| Total valid (completed questionnaires and online responses) | 2710 | 30.1% |

At 30.1%, the overall response rate to the survey (Table A 1) can be deemed satisfactory. But to correct sampling bias, the data were weighted (see Table A 2). In a first step, the 18 strata in Table A 2 form the basis for the weighting. The weighting factor W of a person i in stratum j corresponds to the quotient of the proportion of j in the population (Pj) (column 4 in Table A 2) and the proportion of j in the sample (Sj) (column 5 in Table A 2)[[1]](#footnote-1): Wij = Pj/Sj. In a second step, the data weighted in this way were reweighted according to age and, in a third step, according to the respective community. As a result, the deviations between the weighted sample (column 6 in Table A 2) and the total population correspond to a maximum of 0.2 percentage points. The individual weights range between 0.66 and 1.58 with a mean of 1 and a standard deviation of 0.21.

Table A 2: Geographic and socio-demographic aspects; weighting

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | **Population\*** | **Sample (percent)** | |
| **Community** | **Gender** | **Age** | **(percent)** | **Unweighted** | **Weighted** |
| North | Female | 16 – 39 | 7.4 | 5.6 | 7.5 |
| North | Female | 40 – 64 | 9.1 | 9.3 | 9.0 |
| North | Female | 65 + | 6.2 | 5.9 | 6.0 |
| North | Male | 16 – 39 | 7.6 | 4.8 | 7.6 |
| North | Male | 40 – 64 | 9.0 | 9.2 | 8.9 |
| North | Male | 65+ | 5.1 | 6.9 | 5.0 |
| Center | Female | 16 – 39 | 4.7 | 3.9 | 4.8 |
| Center | Female | 40 – 64 | 5.9 | 6.4 | 6.0 |
| Center | Female | 65+ | 4.7 | 4.6 | 4.6 |
| Center | Male | 16 – 39 | 5.1 | 4.1 | 5.2 |
| Center | Male | 40 – 64 | 5.7 | 6.0 | 5.7 |
| Center | Male | 65+ | 3.5 | 5.2 | 3.5 |
| South | Female | 16 – 39 | 3.3 | 3.8 | 3.4 |
| South | Female | 40 – 64 | 5.4 | 5.6 | 5.5 |
| South | Female | 65+ | 4.4 | 4.3 | 4.4 |
| South | Male | 16 – 39 | 3.6 | 3.1 | 3.7 |
| South | Male | 40 – 64 | 5.2 | 5.4 | 5.3 |
| South | Male | 65+ | 4.0 | 5.9 | 3.9 |
| Total |  |  | 100 | 100 | 100 |
| (n=) |  |  | (26256) | (2589) | (2590) |

*Note:* \* Population = number of resident citizens aged 16 and older on December 31, 2018 (latest available census data).

Table A 3: Variables and operationalization

| **Variable name** | **Operationalization / Question Wording** | **Measurement** |
| --- | --- | --- |
| Control variables |  |  |
| Age | 2020 minus year of birth | Scale variable |
| Gender | Self-declared gender | Female, male, other |
| Resources and skills |  |  |
| Household with children | Children under 14 living in household | 0 = No, 1 = Yes |
| Tertiary education | Tertiary education (higher vocational education, higher technical school, teacher’s college, university of applied sciences, university) | 0 = No, 1 = Yes |
| Internal political efficacy | Index based on responses to the statement “I can understand and appreciate important political issues well” and the statement “I have the confidence to actively participate in a conversation about political issues.” | Sum of both statements, where 0=don’t agree at all, 1=agree a little, 2=agree somewhat, 3=agree a fair amount, 4=fully agree |
| Motivation |  |  |
| Interest in local politics | “How interested are you in the politics of your community?” | 0 = low (not or little interested),  1 = high (very or quite interested) |
| Attachment to municipality | “How attached you feel to your community?” | Ordinal from 0 (not at all attached) to 10 (strongly attached) |
| Homeownership | “Are you the owner of the apartment or the house you live in?” | 0 = No, 1 = Yes |
| Network membership |  |  |
| Years of residence | Years of residence in community divided by age \* 100 | Scale variable (0 to 100) |
| Network membership score | Cumulative index based on responses to Q32 (asking for membership and leadership function in a list of 11 types of association) | +1 if ‘member’  +2 if ‘leadership function’ |
| Psychological factors |  |  |
| Public meeting avoidance | Individual position on a scale question ranging from “I have no problem to express my opinion in a public assembly” to “I don't like to talk in front of many people.” | Score between 1 (completely agree with statement 1), 3.5 (don’t know), and 6 (completely agree with statement 2) |
| Conflict aversion | Individual position on a scale ranging from “The communal assembly creates a sense of community and shared responsibility” to “The communal assembly harms the sense of community because it fosters conflicts.” | Score between 1 (completely agree with statement 1), 3.5 (don’t know), and 6 (completely agree with statement 2) |
| Perceptions of democracy |  |  |
| External political efficacy | Index based on statement “Politicians strive to maintain close contact with the population” and statement “Politicians care about what people like me think”. | Sum of both statements, where 0=don’t agree at all, 1=agree a little, 2=agree somewhat, 3=agree a fair amount, 4=fully agree |
| Trust in local government | “How much to you trust the government of your community?” | Ordinal from 0 (no trust) to 10 (full trust) |
| Criticism of communal assembly | Individual position on a scale ranging from “The fact that often only few voters participate [in communal assemblies] is not fundamentally a problem.” to “Communal assemblies are problematic because usually only a small minority of voters participate”” | Score between 1 (completely agree with statement 1), 3.5 (don’t know), and 6 (completely agree with statement 2) |
| Political Participation |  |  |
| Participation in assemblies | “How often have you participated in communal assemblies in the last five years?” | 1 = Never, 2 = Sometimes, 3 = (almost) always |
| Participation in  local elections | “Did you vote in the communal government elections in March 2018?” | 0 = No, 1 = Yes |
| Participation in  cantonal elections:  cantonal executive | “Did you vote in the election of the cantonal government March 2018?” | 0 = No, 1 = Yes |
| Participation in  cantonal elections:  cantonal parliament | “Did you vote in the election of the cantonal parliament in June 2018?” | 0 = No, 1 = Yes |
| Participation in  national elections:  national parliament | “Did you vote in the election of the national parliament in October 2019?” | 0 = No, 1 = Yes |
| Participation in  national referendums | “In how many out of ten national votes do you normally participate?” | Ordinal from 0 to 10 |

## A2. Results: additional information and robustness checks

Table A 4: Respondents’ Self-reported Participation in Elections and Referendums

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Percent declared having  participated in… | Participated in Assemblies | | |  |
| (almost) Always | Sometimes | Never | Total |
| 2018 local elections |  |  |  |  |
| Communal government\*\*\* | 94.8% | 78.7% | 49.7% | 67.0% |
| 2018 cantonal elections |  |  |  |  |
| Cantonal executive \*\*\* | 94.2% | 84.1% | 56.7% | 72.3% |
| Cantonal parliament\*\*\* | 93.1% | 79.4% | 55.0% | 69.5% |
| 2019 national elections |  |  |  |  |
| National parliament\*\*\* | 95.6% | 86.4% | 64.0% | 76.8% |
| Ten National referendums\*\*\* | 94% | 84% | 72% | 80% |
| Total | 358 | 1061 | 1265 | 2684 |

Note: Differences between groups significant at \*p<0.05, \*\*p<0.01, \*\*\*p<0.001 (Chi-square tests and Kruskal-Wallis test).

The proportional odds model estimated in Table 3 revealed that self-reported assembly participation in the five years prior to the survey is significantly associated with most independent variables. Citizens who frequently attend assemblies are more interested in local politics, have higher internal political efficiency, are less likely to have concerns about the assembly system, etc. It is noteworthy that no statistical significance was found with respect to the importance of tertiary education or trust in local politics, and further analysis shows that interest in local politics can have differing effects. In other words, this means each independent variable does not automatically have an equally strong effect on the different levels of the ordinal dependent variable (proportional odds assumption).

To investigate this, we calculated two generalized binomial models (Table A 5).[[2]](#footnote-2) The results show that all but one of the effects of the two models point in the same direction in each case. Nevertheless, Table A 5 suggests that the proportional odds assumption may be violated with respect to four variables. First, the non-significant effect of tertiary education in the two models points in different directions. Second, the effect of interest in local politics is considerably stronger in the second model than in the first. Interest in local politics plays a significant role in the decision to attend an assembly in the first place (model 1). However, the effect is even stronger when it comes to (almost) always attending the assemblies (model 2). In fact, among those who (almost) always attend, there are hardly any people who are not interested or only slightly interested in the politics of their community (Table 2). Finally, public meeting avoidance and the criticism of municipal assembly exert a stronger and significantly negative effect in the second model. Not surprisingly, these reservations are lower among those who (almost) always participate than among those who never or only selectively participate. Although these results may violate the proportional odds assumption, they are rather unlikely to fundamentally distort the overall picture obtained with the ordinal regression.

Table A 5: Parallel Trends Assumption

|  |  |  |
| --- | --- | --- |
|  | Generalized binomial models | |
|  | Never vs.  Sometimes/(almost) always | Never/Sometimes vs. (almost) always |
| Constants | -1.598\*\*\* (0.417) | -4.872\*\*\* (0.608) |
| Age | 0.009\*\* (0.004) | 0.015\*\* (0.005) |
| Gender (dummy for female) | -0.193 (0.112) | -0.332\* (0.145) |
| Tertiary education | 0.154 (0.115) | -0.187 (0.149) |
| Internal political efficacy | 0.111\*\*\* (0.034) | 0.164\*\*\* (0.045) |
| Household with children (dummy) | -0.155 (0.148) | -0.006 (0.208) |
| Interest in local politics (dummy) | 1.213\*\*\* (0.122) | 2.073\*\*\* (0.322) |
| Attachment to community | 0.023 (0.024) | 0.040 (0.034) |
| Homeownership (dummy) | 0.420\*\*\* (0.124) | 0.461\* (0.189) |
| Years of residence in community/age | 0.439\*\* (0.161) | 0.561\*\* (0.203) |
| Network membership | 0.176\*\*\* (0.024) | 0.169\*\*\* (0.024) |
| Public meeting avoidance | -0.050 (0.035) | -0.175\*\*\* (0.046) |
| Conflict aversion | -0.223\*\*\* (0.045) | -0.184\*\* (0.062) |
| External political efficacy | 0.027 (0.036) | -0.017 (0.050) |
| Trust in local government | -0.041 (0.026) | 0.000 (0.036) |
| Criticism of communal assembly | -0.039 (0.035) | -0.151\*\*\* (0.045) |
| Number of observations (unweighted) | 2125 | 2125 |

Note: Table entries in column 2 and 3 are unstandardized model coefficients, with standard errors in parentheses. Data are weighted. \* p<0.05, \*\*p<0.01, \*\*\*p<0.001.

Table A 6: Distinctive features of the “disengaged” and “engaged” citizens

|  |  |  |  |
| --- | --- | --- | --- |
| **Hypotheses** | **Variables** | **Disengaged** | **Engaged** |
| H1 (civic resources, political engagement, recruitment) | |  |  |
|  | *Resources and skills* |  |  |
|  | Percent with tertiary education | 40.3% | 44.0% |
|  | Internal political efficacy  (mean, 0 – 8) | 4.3 | 5.7 |
|  | Percent living in households with small children | 27.4% | 16.5% |
|  | *Motivation* |  |  |
|  | Percent interested in local politics | 21.3% | 93.9% |
|  | Attachment to community  (mean, 0 – 10) | 6.2 | 7.5 |
|  | Percent homeowners | 40.1% | 79.2% |
|  | *Network membership* |  |  |
|  | Years of residence in community / age (mean) | 0.5 | 0.6 |
|  | Network membership score (mean, 0 – 22) | 1.8 | 3.9 |
| H2 (psychological factors) | |  |  |
|  | Uneasy feeling in public meetings  (mean, 1 – 6) | 4.5 | 3.8 |
| 0 – 8 | Uneasiness about conflicts in assemblies  (mean, 1 - 6) | 3.1 | 2.5 |
| H3 (perceptions of democracy) | |  |  |
|  | External political efficacy (mean, 0 - 8) | 3.2 | 3.8 |
|  | Trust in local government  (mean, 0 - 10) | 5.5 | 5.8 |
|  | Criticism of low turnout  (mean, 1 – 6) | 4.1 | 3.6 |
| Control variables |  |  |  |
|  | Age (median) | 39 | 59 |
|  | Percent male | 43.3% | 57.2% |
|  | Total N (unweighted) | 686 | 1359 |

## A3. Conjoint analysis

Table A 7 shows an example of a choice task as presented to a respondent in the survey. A choice task consists of two hypothetical assemblies - so-called "profiles". These profiles are composed of seven attributes. Each of these attributes is randomly assigned one of the levels listed in Table 1. Respondents are then asked to rate each profile and select one of the two profiles mentioned in the task. This is repeated again so that each respondent completes a total of two choice tasks.

Table A 7 : Example of a choice task

|  |  |  |
| --- | --- | --- |
| Please imagine the following situation: you received the invitation to the communal assembly, and you are now thinking about whether you are going to attend or not. We will now show you two pairs of fictitious communal assemblies that differ in some aspects. Please indicate which one of those assemblies you would be more motivated to attend. | | |
|  | Assembly 1 | Assembly 2 |
| Main agenda item | Credit for road maintenance | Overall revision of land use planning |
| Expected duration | 2 hours | More than 3 hours |
| Assembly scheduling | Wednesday evening | Saturday afternoon |
| Journey to location | 15 minutes | 10 minutes |
| Amenities | Gift | None |
| Accompanied by | Nobody | Family members |
| Expected atmosphere | Open dispute | No debate |
| Which assembly would you be more likely to attend? | □ | □ |

Now consider the two assemblies separately. How likely is it that you would attend the respective assembly?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | I do not attend | | | | | | |  | I attend | | | | |
|  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | | | 7 | 8 | 9 | 10 | |
| Assembly 1 | □ | □ | □ | □ | □ | □ | □ | | | □ | □ | □ | □ | |
| Assembly 2 | □ | □ | □ | □ | □ | □ | □ | | | □ | □ | □ | □ | |

Classically, survey experiments focus on binary treatments. However, in the context of conjoint analysis, Hainmueller, Hopkins, and Yamamoto (2014) have shown that multiple causal hypotheses can be tested simultaneously for many attributes. For this, several conditions must be met. First, the evaluation of profiles in the current task should not be affected by profiles in other tasks (“stability and no carryover effect”).

Therefore, Figure A 1 shows the differences in marginal means between the two tasks. With one exception, there are no significant differences.

Figure A 1: Assumption 1: Stability and absence of carryover effects



*Notes:* The squares represent the estimated differences in marginal means between the two tasks. The horizontal lines drawn through the squares are the 95% confidence intervals. The calculation is based on weighted data. NObservations = 9928, NRespondents = 2561. The data is clustered. See Table A 11 for full results.

Second, the response must not depend on the order of the profiles within a task (“no profile-order effect,” see Hainmueller, Hopkins, and Yamamoto 2014: 8). As Figure A 2 shows, there are no significant differences in the marginal means between the two profiles. The condition is therefore fulfilled.

Figure A 2 : Assumption 2: No profile-order effects



*Notes:* The squares represent the estimated differences in marginal means between the two profiles. The horizontal lines drawn through the squares are the 95% confidence intervals. The calculation is based on weighted data. NObservations = 9928, NRespondents = 2561. The data is clustered. See Table A 12 for full results.

Finally, according to the third assumption, the attributes of each profile must be randomly composed (Hainmueller, Hopkins, and Yamamoto 2014: 9). In the present study, the specific levels of each attribute were randomly assigned. Nevertheless, there are minor differences in the frequency of the individual attribute levels (Figure A 3). Overall, there is no evidence that the assumption is not met.

Figure A 3 : Assumption 3: Randomization of the profiles



*Notes:* NObservations = 9928, NRespondents = 2561. See Table Table A 13 for full results.

As a robustness check, the conjoint analyses were performed both with weighted and unweighted data. The results remain the same (Figure A 4 and Figure A 5). This not only buttresses the robustness of our findings. As the confidence intervals also remain the same, weighting does not result in a loss of statistical power, thereby emphasizing the high quality of the sample that we use.

Figure A 4 : Effects of assembly design features on likelihood to participate : conjoint analysis on full sample with weighted and unweighted data



Figure A 5 : Effects of assembly design features on likelihood to participate : conjoint analysis on engaged vs. Diesengaged citizens with weighted and unweighted data



## A4: Additional Tables: full results for figures

Table A 8 : Effects of assembly design features on likelihood to participate: conjoint analysis on full sample (full results for Figure 1)



Table A 9 : Effects of assembly design features on likelihood to participate: conjoint analysis on engaged vs. disengaged citizens (full results for 2)



Table A 10 : Assumption 1: Stability and absence of carryover effects (full results for Figure A 1)



Table A 11 : Assumption 2: No profile-order effects (full results for Figure A 2)



Table A 12 : Assumption 3 : Randomization of the profiles (full results for Figure A 3)



## A5. Considerations regarding research ethics

The authors declare that research conducted for this article fully complies with ethical and transparency obligations described in the relevant documents published by the EPSR. In the following, we briefly describe the ethical practice concerning the respondents to the survey according to the relevant principles.

* *Consent:* the invitation letter mailed to potential survey respondents explained the purpose of the survey (to better understand political participation in the canton of Glarus), disclosed its funder (the cantonal chancellery), as well as the selection procedure of those invited (random sample from residents’ register by the statistics office). In addition, contact information of the funder as well as of the research team were provided in case survey respondents wanted to get in touch. The invitation letter also explicitly stated that participation in the survey was voluntary, and that data were protected and anonymized before analysis. Consent was given by starting the online completion of the survey, or by filling in and mailing back the paper questionnaire.
* *Deception:* the survey did not involve deception. In particular, the attributes and the attribute levels of the conjoint experiment presented to respondents were all plausible and credible features of real-world assemblies in the three communities under scrutiny.
* *Confidentiality and data protection:* respondents were assured of confidentiality and anonymity in the invitation letter. Data collection and analysis was submitted to the cantonal law on data protection. The legal rules relevant to the research conducted for this article were spelled out in a contract signed by the cantonal chancellery and the principal investigator. The contract stipulated, among others, the following obligations: to definitely destroy personal identifiers of respondents (names and addresses) after the completion of data collection for this survey; to anonymize data before analysis and publish results only in forms that excludes identification of respondents; storage of data on a server of the research teams’ university inside Switzerland, with state-of-the art IT-security.
* *Potential harms for participants or risk of social impacts:* to the best of our knowledge, there were no risks or harms involved neither for survey respondents, nor for non-respondents. Regarding potential social impacts, it is important to emphasize that the survey was commissioned by the cantonal chancellery in order to better understand citizen participation, and to devise measures to improve it. Based on the insights of our study, a number of measures have been decided in the meantime.
* *Compensation:* compensation was provided neither to the respondents nor to the non-respondents of the survey.

Given that the research was commissioned by a cantonal authority and respondents to the survey were invited by the statistics office of this cantonal authority, the research was regulated by the Law on Protection of Personal Data (*Glarner Gesetz über den Schutz von Personendaten*, see https://gesetze.gl.ch/app/de/texts\_of\_law/I%20F%2F1 ), which does not require review by an ethics board.

1. As can be seen in Table A 2, not all of the 2710 survey respondents completed all three questions on age, place of residence, and gender. Individuals who did not answer all three questions to determine stratum affiliation receive a weighting factor of 1 in this first step. [↑](#footnote-ref-1)
2. A commonly used test for Proportional Odds Assumption is the Brant test. However, this is not appropriate when survey weights are used ([Williams 2016: 12](#_ENREF_55)). To our knowledge, there is no implementation of the Brant test for weighted models yet. Calculations without the survey weights confirm the results of the two generalized binomial models: The Proportional Odds Assumption may be violated for the independent variables of tertiary education, interest in local politics, public meeting avoidance, and criticism of low turnout. [↑](#footnote-ref-2)