

Voting in the rain – The impact of rain on participation in open-air assemblies

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Abstract

The analysis of how weather conditions influence participation at the ballot and whether bad weather influences ballot decisions has recently gained momentum. Because most of these studies have focused on ballot votes, very little is known about the influence of rain on open-air citizen assemblies. In the effort to fill this gap, this paper analyses the influence of rain on participation in the *Landsgemeinde* - the main decision-making body of two Swiss cantons, wherein citizens meet on the main square in order to debate and decide bindingly on political matters of all sorts. We rely on a survey with an in-built conjoint experiment that presents citizens with several hypothetical *Landsgemeinde* situations. In order to reveal causal mechanisms, we expose survey participants to a randomly varied combination of weather and other conditions such as outcome favorability, the expected closeness of the vote and the company available during the event. Drawing from the literature on political mobilization, we find that rain not only decreases overall participation but it also lowers participation when votes are expected to be uncontested and for individuals who do not primarily attend the *Landsgemeinde* for political reasons. However, there is one exception: if voters are expected to meet friends, rain does no longer decrease participation.

Keywords: citizen assemblies; voting; participation; political mobilization; survey experiment; rain.

Introduction

The most recent research in political participation has devoted increasing attention to weather conditions on voting days. It suggests that bad weather, rain and storms in particular, increases the costs of participation and accordingly reduces turnout (Fraga and Hersh 2010; Hansford and Gomez 2010). It has also claimed that bad weather promotes conservative (Arnold and Freier 2016; Gomez et al. 2007; Hansford and Gomez 2010; but see Knack 1994) and status-quo outcomes because rain reportedly affects not only the composition of the electorate but also the mood of those who comprise it (Meier et al. 2017). Moreover, the effect of rainfall has been shown to vary across contexts (Hansford and Gomez 2010: 274; Fraga and Hersh 2010).

Whereas previous studies have concentrated on ballot decisions, i.e., elections or direct-democratic ballot measures, in this contribution we focus on a type of political participation that seems to depend on the weather even more patently. In the Swiss cantons of Glarus and Appenzell Inner Rhodes, citizen assemblies serve as the cantonal legislative body. Once a year, the largest existing form of assembly democracy called the *Landsgemeinde* gathers several thousands of citizens in an open-air assembly to take collectively binding decisions on all important issues that lie within the cantonal decision-making competence (e.g., taxation, education or health and social policy).¹

¹ Compared to the rest of the Swiss cantons, the *Landsgemeinde* cantons grant their citizens more extensive political rights (see e.g., Schaub 2016). Contrary to ballot box cantons where people are only allowed to give their vote on a given proposal, Appenzell Inner Rhodes and Glarus also allow every citizen to go on stage and hold a speech in favor of or against a proposal at the *Landsgemeinde*. The proposals are prepared by the cantonal legislatures that, by themselves, have no final decision-making competence on laws and constitutional amendments. In the canton of Glarus, where the focus of our analysis lies, each speaker is also empowered to offer a counter-proposal on the spot, with such proposals consequently being included in the public and binding vote. In Glarus, citizens are also empowered to launch initiatives for

Contrary to ballot box voting in the rest of Switzerland, Glarus and Appenzell Inner Rhodes do not allow prior postal voting, tying the cantonal vote to a particular time and place. Since the most traditional type of direct democracy has been criticized for low turnout rates and, relatedly, a lack of legitimacy (Kübler and Rochat 2009; Ladner 2002, 2008), the question of whether bad weather further deteriorates turnout is particularly relevant to this case. If rain prevented certain groups from participating in the assembly more than it hindered other groups, and thus altered the composition of the electorate as well as, potentially, the vote outcomes, this would be a particularly worrisome result. We therefore ask:

Does bad weather impact an individual's propensity to participate in the Landsgemeinde and does the weather effect vary across different groups of voters?

Our work on this question contributes to the literature in three respects. First, although individual participation in elections and by ballot has attracted extensive attention, we know relatively little about political participation in assembly democracy - the most direct form of political decision making (Bryan 2004; Schaub 2012). By focusing on the weather effect, we can gain new insights into how costs of participation impact individuals' propensity to participate in a situation in which such costs are very obvious: the *Landsgemeinde* typically lasts several hours and citizens are literally left out in the rain for a long time.² Authors have blamed the weather on the *Landsgemeinde* day for influencing results on several occasions (Stauffacher 1962, 283; Huber-Schlatter 1987, 89). Although existing systematic evidence points to a zero effect on the number of

constitutional or legal amendments. If they reach the support of 1/6 of the canton's legislative body, these initiatives are directly subjected to a popular vote at the *Landsgemeinde* (if the threshold of 1/6 is not reached, the *Landsgemeinde* can still decide to put the initiative on the agenda of the next *Landsgemeinde*).

² Citizens are allowed to use umbrellas. However, umbrellas need to be closed when the debate is over and citizens are asked to vote.

delivered speeches and the success of the demands under consideration (Schaub 2008) as well as, more recently, on participation (see Schaub and Leuzinger 2018), these studies are deficient insofar as they do not or do not fully control for other drivers of or obstacles to participation.

Second and relatedly, we argue that learning more about how the costs of participation affect individual turnout is relevant beyond the case of the *Landsgemeinde* and Switzerland. In particular, the present study focuses on the relationship between the costs of participation and some aspects of mobilization (Rosenstone and Hansen 1993) – a factor often used to explain why people vote despite considerable costs. In contrast to ballot box participation, the *Landsgemeinde* may motivate people to participate for reasons other than purely political motivations. On the one hand, this type of legislative power has been used for a very long time and is an integral part of the two cantons' respective political cultures. On the other hand, citizen assemblies are also social events where people meet and socialize. Thus, social motivational factors might influence one's decision to participate in citizen assemblies (Mansbridge 1983; Bendix 1993, 61-64). Theoretically and empirically, we therefore also assess how varying costs of participation influence participation contingent on whether or not cultural and social mobilization takes place. Thus, our results should also be of relevance to the study of other, more public forms of political action, such as social movements or protest behaviour, where similar aspects of social mobilization should be of importance.

Third, we make an actual data contribution: One reason why assembly democracy has been neglected in participation research is the lack of data on the subject (Stadelmann-Steffen and Dermont 2016). For example, no exact turnout data exist for the *Landsgemeinde* in Glarus, since there is no strict control of whether a person is entitled to vote, or, in most cases, an exact counting of votes. Accordingly, individual-level data on

participation in the *Landsgemeinde* have been basically non-existent. In the present article, we rely on an original data set from a two-wave online survey experiment conducted among some 800 citizens of the canton of Glarus in spring 2016 (see Gerber et al. 2016). The collected data enable us to draw conclusions on individual-level factors that motivate people to attend the open-air assembly or abstain from it. Recent research focusing on the U.S. (Arnold and Freier 2016, Fraga and Hersh 2010; Gomez et al. 2007; Hansford and Gomez 2010) and Switzerland (Meier et al. 2017) strongly relies on the analysis of aggregate turnout data. To our knowledge, with the exception of Knack's (1994) seminal study, insights into how rain affects the propensity to participate for various individual level characteristics barely exist.

Fourth and finally, we pursue an innovative methodological approach by using a conjoint experiment (Hainmueller et al. 2014). In contrast to classical experiments, conjoint experiments are particularly suitable for the study of multidimensional choices. Concretely, conjoint experiments enable researchers to estimate the relative importance of various aspects of a choice (here: attending the *Landsgemeinde* or abstaining from it). Thus, unlike standard survey questions that capture individual participation, conjoint experiments mimic a more realistic situation, where the decision to participate or to abstain may depend on various personal but also situational factors. Conjoint experiments also hold important advantages over traditional survey research: by repeatedly presenting respondents with a randomly varied combination of aspects and thus a variety of hypothetical choice situations, conjoint experiments allow for inferring causality which is more difficult to attain when asking respondents about their actual behaviour under given

circumstances.³ Furthermore, conjoint experiments should decrease social desirability effects (Hainmueller et al. 2014) and, thus, the overreporting of individual political participation, which typically characterises analyses of voter turnout in survey contexts.

Theoretical background

The idea that the weather on a voting day matters is not new. However, while the “weather-turnout thesis” (Gomez et al. 2007) has been popular in newspapers and among the general population since at least the 19th century (Ludlum 1984, Knack 1994), participation research has only recently started to systematically analyse the effect of bad weather conditions on voter turnout and election outcomes (Gomez et al. 2007). Based on district-level data of election outcomes and weather conditions, most studies have hitherto concluded that on average bad weather decreases turnout levels (Arnold and Freier 2016, Fraga and Hersh 2010; Gomez et al. 2007; Hansford and Gomez 2010). Against this background, several studies have used local rainfall as an instrumental variable to proxy for turnout.⁴ These analyses further suggested that “The Republicans Should Pray for Rain” (Hansford and Gomez 2010, see also Arnold and Freier 2016), i.e., that bad weather conditions tend to favour conservative political positions, because their holders are more likely to make it to the voting polls if it rains.

³ For example, relying on survey data from the National Election Studies (NES) on three election days, Knack (1994: 197) had to admit that two of these election days were «unusually dry days across the nation» and thus only displayed very little variation in rain patterns. With the help of our conjoint experiment, we are in a position to test for the influence of rain (or its absence) when other factors, such as the topics tabled on a specific day or the closeness of the race, remain constant.

⁴ For a critical view on using rain as instrumental variable see e.g., Horiuchi and Kang (2018).

These results have proven robust in different national contexts but most clearly in the U.S. Conversely, a recent contribution focusing on direct democratic ballot decisions in Switzerland did not find a strong effect of rain on turnout (Meier et al. 2017). Only in the case of heavy rain did the authors observe a significant deteriorating effect on turnout (ibid.: 16). The limited rain effect can be explained by the fact that polling stations are located in every municipality in Switzerland and, therefore, voting does not typically involve traveling long distances or (outside) queuing. Moreover, a considerable share of Swiss voters make use of postal voting,⁵ which quite obviously makes voting largely independent from weather conditions. These factors make the weather-turnout thesis theoretically less likely to hold in contexts similar to Switzerland.

However, things might be different as far as turnout in open-air assemblies is concerned. In order to participate in this most direct form of Swiss direct democracy, citizens not only have to physically move to a specific place, which may be particularly unpleasant on rainy days, but also – in the case of the *Landsgemeinde* – stay outside for the duration of the event, as these assemblies are outdoor events. Hence, the *Landsgemeinde* seems to be a most likely case for the observation of a weather effect on turnout levels. At the same time, however, assembly democracy is not only a political but also a social and cultural event. As we will argue below, these multiple facets may dampen the weather effect. In the following, we briefly review the main theoretical arguments about the weather-turnout thesis before formulating our expectations about cases similar to the *Landsgemeinde*. Moreover, we will suggest that the weather effect

⁵ Already ten years ago, an average of 81.5% of all votes in Switzerland were cast by postal voting (Klaus 2006: 2). However, the variety in postal voting rates across Swiss cantons is large. Interestingly, the canton of Glarus exhibits the highest share of votes cast at the polling stations on voting day (84%).

might vary across different voter groups due to different mobilization mechanisms at play in each of them.

The weather-turnout thesis in the context of open-air assemblies

Most fundamentally, the weather is considered to influence the costs of participation (Gomez et al. 2007; Fraga and Hersh 2010). In the electoral context, these costs relate to going to a polling station, and maybe even to queuing for some time before casting a vote – elements of the voting process that are clearly more disagreeable if the weather is bad. Arguably, these are not major costs but as Gomez et al. (2007, 652) state, “the imposition of another minor cost may make the difference between voting and abstaining.”

Theoretically, this conclusion is justified within the framework of the prominent rational choice model of participation (Downs 1957), according to which citizens vote if the costs of voting are (marginally) lower than the benefits of voting (i.e., the desired outcome and the probability that one’s vote is decisive). Hence, everything that increases the cost factor in the equation decreases the likelihood that a person casts a vote.

However, this model has often been criticized for explaining abstention while failing to account for participation, as the cost coefficient in the model almost per definition outweighs the benefit-side – even if bad weather is not considered. To a certain extent, the mobilization model (Rosenstone and Hansen 1993) overcomes this shortcoming by arguing that the costs of voting might be (partially) absorbed by political entrepreneurs (i.e., political parties or grass-root organizations) that coordinate collective action. This mobilization diminishes the cost term in the equation, and thereby increases the probability that the costs of voting do not outweigh its benefits (Gomez et al. 2007).

Hence, this model also implies that turnout will be contingent on a rather fragile evaluation of the costs and benefits of participation, making small additional costs likely

to alter the outcome. However, there is some room for compensation, as under certain mobilizing conditions voters may accept some additional costs and still vote.

In the case of the *Landsgemeinde*, it is reasonable to expect that the costs of bad weather will reduce turnout. In fact, this type of political participation shares many similarities with elections in the U.S., where the weather-turnout hypothesis has garnered most consistent support. In order to participate in the assembly, some citizens have to travel long distances, since the *Landsgemeinde* takes place in one particular location. Hence, in contrast to ballot participation in Switzerland where distance is hardly an issue, travelling to the *Landsgemeinde* might be similar to travelling to a (sometimes rather distant) polling station in the U.S. Moreover, whereas queuing before the polling station is really rare in Switzerland, participating in the *Landsgemeinde* entails staying outside for several hours. Hence, similar to the long queues observed in other elections, bad weather conditions may have a deterrent effect on participation. We therefore derive the following hypothesis:

H1: Bad weather conditions decrease the likelihood of participation in the Landsgemeinde.

However, it is reasonable to assume that bad weather's deterrent effect will not affect all citizens equally and might vary even across different voting days. Previous research has considered heterogeneous rain effects mostly with respect to the characteristics of the vote or the election. Most prominently, Fraga and Hersh (2010) have demonstrated that whereas rain reduces turnout on average, this effect is not observed if the vote is very competitive, i.e., if voters feel that their vote "counts" (for a similar argument, see Arnold and Freier [2016, 220]). Surprisingly, *differences across voter groups* have attracted relatively little attention. As an exception, a few studies focus

on the partisan bias of low turnout (Arnold and Freier 2016; Gomez et al. 2007; Hansford and Gomez 2011; Knack 1994). However, Meier et al. (2016: 18) only find limited support for group-specific rain effects in Swiss ballot decisions. Nevertheless, the negative rain effects tend to be particularly strong both for voters who rarely vote and for individuals with low levels of political knowledge. Similarly, centre voters seem to abstain more often than leftist or right-leaning voters in rainy weather. Finally, out of all socio-economic categories, women and high-income voters react most strongly to bad weather conditions. Overall, however, these authors conclude that the effect of rain on the composition of the electorate is small (ibid. 19).

We argue that – conceptually – group-specific effects are of particular relevance to the case of the *Landsgemeinde* because of the latter’s underlying deliberative model of democracy (Kübler and Rochat 2009, 3f; Stadelmann-Steffen and Dermont 2016). Focusing on public discussion, the *Landsgemeinde* practices a “talk-centric” form of democracy where preferences are assumed to be not fixed but mutable in the aftermath of a deliberative exchange of a variety of arguments and positions (see Chambers 2003). Naturally, then, one core function of this deliberative form of democracy is the equal and fair inclusion of a multiplicity of voices and interests (Mansbridge et al. 2012). Moreover, in accordance with both the rational choice model of participation (Downs 1957) and the mobilization model (Rosenstone and Hansen 1993), the negative rain effect may be theoretically moderated by two mobilizing mechanisms. The first mechanism concerns the costs factor and we call it *political mobilization*, whereas the second focuses on the benefits side and is called *social and cultural mobilization*.

Political mobilization

This first mechanism builds on the classical rational choice argument that the costs of participation are a crucial barrier to participation. Expanding on this idea, it is reasonable

to hypothesize that bad weather may alter the composition of the electorate, since some voter groups are more likely to bear the (additional) costs of participation, while others have a lower propensity to do so (Knack 1994). In fact, a lack of individual resources has been identified as the most important reason why people do not participate (Verba et al 1995). In this vein, “the motivation and the capacity to take part in political life” (Verba et al. 1995, 4) are crucial to understanding voting and abstention. Not only do individuals who are highly interested in and motivated for politics think that participating is important, they also tend to be willing and motivated to have a substantial impact on political outcomes. They want their voices to be heard and, therefore, are less sensitive to “marginal changes in costs” due to circumstances such as bad weather (Knack 1994: 191) Hence, attending the *Landsgemeinde* is the default for this group, meaning that their participation is less contingent on the weather factor.

Political mobilization may also occur as a result of situational factors. Most obviously, participation will be less contingent on bad weather if voters feel that their vote “counts” (Fraga and Hersh 2010). Hence, contested decisions may present a situation where many voters attend the *Landsgemeinde* despite bad weather, because they perceive their participation as important for substantial, political reasons.

Summarizing this discussion, we hypothesize:

H2a: The rain effect is weaker for individuals who are highly motivated to vote.

H2b: The negative effect of rain is moderated by the expected closeness of a vote.

Social and cultural mobilization

However, as mentioned before, the *Landsgemeinde* is more than just a political event. We argue that the social and normative aspects of the *Landsgemeinde* may be an important mobilization factor: similar to the political entrepreneurs in Rosenstone and Hansen’s (1993) perspective, the *Landsgemeinde* as an institution may absorb the costs of

participation. This logic implies that citizens who strongly believe that the *Landsgemeinde* is an important cantonal tradition and consider the assembly to be a social event will attend the assembly due to social and cultural mobilization. Therefore, they will be less reactive to bad weather conditions.

As far as cultural mobilization is concerned, assembly democracy is a crucial element of the community's political culture and self-conception in the two cantons where the *Landsgemeinde* still exists (e.g., Bendix 1993). Thus, many people might not attend the *Landsgemeinde* primarily in order to express their political will, but rather to cultivate local customs and norms. In this context, Knack's (1994) findings that the rain effect is moderated by social norms are revealing: voters who perceive voting as a civic duty are less sensitive to bad weather. Accordingly, we hypothesize that:

H3: The rain effect is weaker for individuals who regard the Landsgemeinde as an important tradition.

Moreover, joining the assembly has a strong social dimension whereby most people attend the *Landsgemeinde* as an opportunity to meet people. Based on the logic presented above, we derive the following hypothesis:

H4a: The rain effect is weaker for individuals who attend the Landsgemeinde for social reasons.

Furthermore, researchers who have explored the link between social and political mobilization argue that the type of relationship between the two is important (e.g., Bond et al. 2012; Kitts 2010; Lim 2008; see also Campbell 2013: 40). While this literature is inconsistent on whether weak or strong ties are more promotive of political participation, as far as the *Landsgemeinde* is concerned, we assume that the mobilization effects within one's personal network become more powerful as the strength of the social ties increases. More precisely, and acknowledging that even strong ties can be related to both positive

and negative feelings (e.g., spending time with one's family), we expect that attending the *Landsgemeinde* together with friends and family will generate stronger motivation than attending this event with workmates. This expectation is in accordance with Bond et al.'s (2012) conclusion that especially close friends—those linked by strong ties—are instrumental for spreading political behaviour. Similarly, Nickerson (2008) documents that that if an individual votes, his/her family members are more likely to do so. We therefore expect that the company of close friends or family members is particularly important and is more likely to outweigh the negative effects of bad weather than is attending the *Landsgemeinde* together with neighbours or workmates. We therefore hypothesize that:

H4b: The rain effect is weaker when people are attending the Landsgemeinde together with family and friends compared to other types of companions.

Research design

Individual-level data on participation in assembly democracy are extremely rare. The discussion above makes it clear that Glarus does not even record official turnout or acceptance and rejection rate statistics for its *Landsgemeinde* sessions. Hence, we cannot explore the weather effect with official or reported (time-series) participation data.

Therefore, this study relies on a novel data set from a two-wave online survey conducted among some 800 Glarus citizens in spring 2016 (see Gerber et al. 2016).⁶ The cantonal administration assisted in recruiting the survey participants by promoting the survey using both an extensive email list collected for a previous marketing study and its own

⁶ The data set used for the analyses as well as the R-files is accessible at <http://dx.doi.org/10.7892/boris.131823>.

official homepage. In addition, we invited the population to participate in the survey using regional mass media and social media. The non-randomly selected sample is not representative in every regard (see Appendix Table A.3). Most importantly, it scores above average on measures of education, political interest and engagement in politics. Men are overrepresented and so are citizens of the municipality of Glarus (where the *Landsgemeinde* takes place). People above the age of 74 are highly underrepresented, which is not exceptional in online surveys. All other age groups, including the youngest ones, are adequately represented. Our survey reached respondents representing the entire political spectrum: self-placement on an 11-point left-right scale rendered a normal distribution with a mean of 5.2, which aligns well with the overall composition of voters in Switzerland (Lutz 2016). Note that the lack of official data means that there is almost no possibility to validate our data. Nevertheless, we argue that our results are valid and relevant for at least two reasons. First, our sample is conducive to a conservative test of the rain effect. If the effect of rain on participation in the *Landsgemeinde* proved robust in various models, this would lend support to the argument that rain does indeed make a difference. Second, our analyses concentrate on group-specific effects. Arguably, estimating relationships for different groups may be less problematic than deriving population estimates based on a biased sample.

In order to test the effect of weather conditions on citizens' participation in the *Landsgemeinde*, we use a conjoint experiment which enables us to study the contingencies of citizens' (self-reported) participation. More precisely, through a random allocation of different characteristics, respondents were exposed to hypothetical *Landsgemeinde* situations which they had to compare and rate (see Figure 1). We use the rating question, where respondents had to indicate how likely they were to attend the *Landsgemeinde* in the respective situation, as dependent variable in our analyses.

Methodologically, this paper follows Hainmueller et al. (2014) in applying a fully randomized conjoint design. Respondents were exposed to two different situations a total of five times. This enabled us to collect enough information on all varying attribute combinations.

[Figure 1 about here]

To describe a potential *Landsgemeinde* situation, we include social and political aspects of the citizen assembly. In terms of political factors, we include the expected competitiveness of the votes—whether the decisions are expected to be tight—and whether the expected outcomes were clearly in accordance with or contrary to one’s own preferences. A third characteristic is the main issue on the agenda. Infrastructure and financial issues are typical cantonal issues and were therefore selected to describe this dimension. We also factor in the potential impact of the decisions on the cantonal budget (i.e., moderate or substantial savings or substantial expenditures). We seek to capture social motives by presenting *Landsgemeinde* situations where individuals are not going to meet family members or friends versus situations in which they are. Most importantly, we also vary the weather conditions, namely whether the weather is sunny, cloudy or rainy (Table A.1. in the Appendix lists all characteristics and their levels).

In contrast to the results of single-item questions (e.g., “Would you participate when it rains?”), the outcomes of a factorial survey experiment reflect reactions to a particular *Landsgemeinde situation*, which is not defined just by the weather but also by a variety of social and political factors. Our design therefore approximates a realistic turnout decision that is not determined by a single attribute (e.g., the weather) but by a combination of multiple factors. Although an experiment never has the same consequences as a real-world decision and therefore, by definition, its advantages are

mainly limited to internal, rather than external, validity, we argue that the chosen conjoint design offers ideal conditions to analyse the effect of weather on individuals' decision to attend a *Landsgemeinde*. First, a conjoint experiment perfectly fits our theoretical argument that the decision to participate depends on various factors (i.e., costs and benefits) which citizens have to weigh against each other. The collected data enable us to analyse whether weather conditions are a relevant aspect in such a multidimensional choice situation (see Hainmueller et al. 2014, 3). Second, self-reported participation is subject to a social desirability bias, i.e., people say that they would participate despite the fact that they would not. Conjoint experiments provide respondents with multiple reasons to justify a particular rating (e.g., abstention), and thus have the potential to reduce this bias (ibid.).

To determine which attributes promote or hinder participation, we rely on the so-called average marginal component effect (AMCE) that represents the “marginal effect of an attribute averaged over the joint distribution of the remaining attributes” (Hainmüller et al. 2014, 10). We thereby use a hierarchical model to estimate changes in individuals' propensity to participate in the *Landsgemeinde* compared to the reference scenario category. In fact, the individual propensity to participate is not at all normally distributed, mostly because a considerable group of respondents indicate that they always participate. Hierarchical models are able to account for these varying participation propensities by adding an individual random intercept.

To test for group-specific rain effects, we include interaction effects into the models.⁷ As far as hypotheses 2b and 4b are concerned, we estimate two models in

⁷ We thereby apply a mostly descriptive approach, i.e., we compare the conditional AMCEs for different groups in terms of their magnitude and significance. We do not generally consider the significance of the

which we interact the attributes “Outcome” and “Company”, respectively, with the main independent variable of interest (weather), keeping all other attributes constant. We are interested in whether these indicators of political mobilization (the expected outcome of the vote) and social mobilization (the type of company expected at the assembly) moderate the rain effect. Moreover, following hypotheses 2a, 3, and 4a we also assume that the AMCE may vary across groups, i.e., depending on whether a citizen is mobilized mostly politically, socially or culturally. We therefore also estimate group-specific models based on a survey question where respondents had to indicate their agreement with different motivations for participating in the *Landsgemeinde*. More precisely, we consider the degree of agreement and disagreement with the following three items:

- I want to voice my opinion.
- The *Landsgemeinde* is an important tradition.
- I use the opportunity to meet old acquaintances.

The first item helps capture an individual’s political mobilization to attend the *Landsgemeinde*. The degree to which respondents consider the *Landsgemeinde* to be an important tradition stands for the extent to which respondents value the *Landsgemeinde* as a cantonal custom, and thus, are culturally mobilized. Similarly, individuals who use the *Landsgemeinde* as an opportunity to meet old acquaintances may be socially mobilized. All three individual-level variables are recoded as dummies whereby a value of 1 captures those respondents who want to voice their opinion, perceive the *Landsgemeinde* as an important tradition, and use the *Landsgemeinde* as an opportunity

group differences (the interaction coefficients), which – in this kind of analysis – often fail to reach conventional levels of significance due to the low number of cases per sub-group. We only report the group differences in cases where these differences are statistically significant, and to emphasize the importance of these differences.

to meet people, respectively. For more information on the question wording and the operationalization, see Table A.2. in the Appendix.

Empirical results

Figure 2 displays the results of the conjoint analysis of the five attributes. It presents a significant rain effect: the likelihood of participating in the *Landsgemeinde* is clearly lower if the weather is bad. In contrast, sunny weather does not affect participation, i.e., the propensity to participate in the *Landsgemeinde* does not significantly differ between cloudy and sunny weather. In other words, bad weather can indeed undermine turnout in the *Landsgemeinde*, whereas nice weather seems insufficient to motivate people to attend.

Moreover, the figure also confirms our hypothesis that the decision to attend the *Landsgemeinde* is influenced by various characteristics of the specific assembly day, i.e., that individual turnout is the result of a situational, multidimensional decision. Issues related to public transportation seem to mobilize more strongly than matters dealing with intra-cantonal financial equalization. This result is logical given that public transportation is very relevant to people's daily life, whereas financial compensations, especially if they do not concern one's hometown, are of lesser public interest. In a similar vein, decisions about cantonal budgets barely have an impact on whether a person attends or abstains. In contrast, a close race does mobilize voters to attend the *Landsgemeinde*, unlike situations in which it is quite clear that one's own position wins or loses. This result is a first indication that the expected closeness of the vote and, consequently, the prospect that one's vote may matter indeed result in a "political mobilization." Nevertheless, our initial analysis does not shed light on whether this mechanism also moderates the rain effect. We elaborate on this point below.

Finally, our analysis clearly demonstrates that the *Landsgemeinde* also has a social dimension. The prospect of attending the *Landsgemeinde* alone significantly

decreases the likelihood of participating compared to any situation in which an individual is accompanied. Respondents exhibited the highest propensity to attend when they were going with friends or family.

[Figure 2 about here]

We proceed to test hypotheses 2 to 4, which propose that the rain effect illustrated in Figure 2 varies across situational and individual characteristics. First, we hypothesized that different degrees of *political mobilization* could moderate the rain effect (H2a and H2b). We operationalize these aspects with a dummy variable indicating a respondent's willingness to voice her opinion and a categorical variable measuring the closeness of the decision. Both of these factors may lead a respondent to believe that attending the *Landsgemeinde* is important for substantive or democratic reasons. Such perceptions can reduce the relevance of the weather.

[Figure 3 about here]

The plots in Figure 3 lend some empirical support to the idea that political mobilization reduces the rain effect. Comparing individuals who want to voice their opinion to others who do not believe this is an important reason for attending the assembly confirms that situational factors indeed become less important if a person is politically mobilized. The AMCE often does not reach statistical significance and tends to be smaller compared to that of the other group. The rain effect clearly fits this pattern: it is strong and negative for those who do not have a strong political motivation, but disappears for citizens who perceive the *Landsgemeinde* as an opportunity to voice their

opinion. The interaction effect between rain and the importance of voicing one's opinion, i.e., the group difference, is highly significant.

As far as the closeness of the votes is concerned, there is some support for the hypothesis that closer decisions motivate citizens to attend, regardless of the weather (H2b). If the decision is expected to be close, the rain effect weakens. Compared to the situation where one's own position is (very) likely to win, the negative effect of rain is almost halved.⁸

[Figure 4 about here]

Figure 4 depicts the results concerning *social and cultural mobilization*. In contrast to cognitive mobilization, this approach suggests that people may attend the *Landsgemeinde* for reasons other than political motivations. Citizens who perceive the *Landsgemeinde* as an important tradition or a social event, may also attend by default, i.e., rather independently of the weather.⁹ However, the top plot in Figure 4 suggests that cultural aspects cannot compensate for the rain effect. We therefore reject our third hypothesis.

We now turn to social mobilization. The middle graph indicates that rain does not act as a significant deterrent to those individuals for whom meeting acquaintances is an

⁸ This interaction effect is significant at the 0.10 level ($t = 1.82$). Comparing close races to a situation where one's position is likely to lose does not yield a (marginally) significant interaction effect.

⁹ In fact, individuals who perceive the *Landsgemeinde* as an important tradition are significantly more likely to participate in the *Landsgemeinde* (mean attendance rate in the conjoint analysis: 81.7% vs. 70.4% $t = -16.678$, $df = 7136.4$, $p\text{-value} < 0.001$). In contrast, the difference in participation between individuals strongly emphasizing the social aspect of meeting friends and those who do not is small (77.5% vs. 76.2%, $t\text{-value} = -1.949$, $df = 6681$, $p\text{-value} = 0.05$).

important reason to attend the *Landsgemeinde*. At first sight, this finding supports our hypothesis. However, a disclaimer is in order: because this group is rather small, the confidence intervals are broad. Therefore, the difference between the two groups should not be overestimated (and is not statistically significant).¹⁰

However, we do find that the type of company moderates the rain effect to a certain extent: If a person attends the *Landsgemeinde* with a friend, the rain effect is not statistically significant. If she attends unaccompanied or in any other company, the rain effect is significant. These results lend some support to our hypothesis 4b. Interestingly, individuals who see the *Landsgemeinde* as an opportunity to meet friends and neighbours react more strongly to nice weather. These respondents are more likely to report participation if the weather is sunny.

Discussion

This contribution has focused on whether bad weather impacts the individual propensity to participate in open-air assemblies and whether the weather effect varies across different groups of voters. In addressing the second question, we have concentrated on the differences across voters with different degrees of political, social and cultural mobilization. We have explored these issues in a conjoint analysis using experimental survey data from the canton of Glarus.

Our analysis reveals that rain indeed reduces turnout at the *Landsgemeinde*. In contrast, sunny weather does not act as a boost factor and does not generally increase the probability that citizens will participate. The negative rain effect is in line with previous

¹⁰ In fact, in further analyses (not presented here), we code the variable in a different way to generate groups of about equal size. We do so by grouping individuals who find it quite important to meet friends with others who find it very important. In the subsequent analyses, the rain effect is statistically significant for this group.

studies focusing on the U.S. (Frage and Hersh 2010; Hansford and Gomez 2010) but contrasts with existing aggregate-level findings for the *Landsgemeinde* in Glarus (Schaub 2012, Schaub and Leuzinger 2018).

We demonstrate that the decision to participate in such assemblies is influenced by a variety of factors and their interplay. Our findings suggest that the rain effect is moderated by varying individual levels of political mobilization. More precisely, voters who generally perceive the *Landsgemeinde* as a forum to voice their opinion tend to be almost immune to bad weather. Similarly, the importance of political mobilization is also reflected in the result that the rain effect is smaller if close decisions are expected. In contrast, social and cultural mobilization cannot balance the rain effect: regardless of whether the *Landsgemeinde* is considered an important cantonal tradition or a social event, if it rains, the propensity to attend the *Landsgemeinde* significantly decreases across groups. Although there is some evidence that social and cultural mobilization are relevant to understanding participation in the *Landsgemeinde* in general, these mechanisms do not seem to substantially moderate the rain effect. There is, however, one exception: if individuals go accompanied by friends, the rain effect is no longer significant. This finding corroborates our expectation that spending time with friends at the *Landsgemeinde* is a strong mobilization factor that immunizes against bad weather. However, this is not the case when individuals are accompanied by more distant acquaintances.

Our study has some limitations. First, as far as our last finding is concerned, going to the assembly with family members does not moderate the effect of rain on attendance. This non-finding casts doubt on the argument that strong ties always act as mobilization factors. Another strand of the literature on social movements suggests that networks are not most influential when the relationship is strong, but when people share common

interests or a political identity (Lim 2008; see also Campbell 2013, 40). Given that at the Landsgemeinde of Glarus voting is done openly by the show of hands and colliding views cause discomfort (Mutz 2006, 100 ff.), there are reasons to suspect that this factor might also play a role when selecting one's company. Our measure of company does not allow us to capture exposure to consonant views.¹¹ Therefore, further research is needed to fully disentangle the effect of networks in citizen assemblies.

Another limitation clearly concerns our data - a convenience sample that is quite probably vulnerable to a self-selection bias of politically interested and motivated people (for a more detailed discussion of this point, see the methods section). A third limitation has to do with the fact that we do not observe real-world behaviour. We therefore need to acknowledge that the strength of our design mainly concerns internal validity and excludes external validity.

Finally, what are the implications of our results? The fact that citizen assemblies are traditional and social events in addition to political acts suggests that they may offer mobilizing mechanisms different than those found in the common ballot box systems and that these mechanisms may have the power to reduce the divide between "core voters," who are strongly mobilized due to political reasons, and more "peripheral" citizens (see Knack 1994), for whom social or cultural motivations trigger participation. These are all good news. However, the question of group-specific mobilization is particularly relevant in the context of assembly democracy, which – in contrast to ballot box democracy –

¹¹ However, the literature suggests that exposure to dissonant views is particularly limited when people can self-select their networks, such as when they make friends, choose a neighbourhood or join an association (Mutz and Mondak 2006). Therefore, our measure of company should not be completely unrelated to the degree of exposure to dissonant views. Finding that sunny weather works as a driver of political participation when one is accompanied by friends or neighbours could be a first indication of the importance of similar views.

follows the normative ideal of deliberative democracy. In order to produce good results, assembly democracy does not depend on how many people participate in the first place, but rather on how many different voices are included in the decision-making process. If bad weather discourages certain voter groups, such as less politically motivated, “social” or traditional people, more than it does others, this unevenness diminishes the potential deliberative benefits that citizen assemblies offer. From this perspective, our results are mixed. The finding that rain reduces turnout in general is not necessarily problematic, but a variation in weather effects depending on political mobilization might be and it raises the question of whether and under what conditions this traditional way of democratic decisions making “works.”

References

- Arnold, F. and R. Freier. 2016. “Only Conservatives are Voting in the Rain: Evidence from German Local and State Elections.” *Electoral Studies* 41: 213–224. doi: 10.1016/j.electstud.2015.11.005.
- Bendix, J. 1993. *Brauchtum und Politik: Die Landsgemeinde in Appenzell Ausserrhoden*. Herisau: Schläpfer.
- Bond, R. M., C. J. Fariss, J. J. Jones, A. D. I. Kramer, C. Marlow, J. E. Settle, and J. H. Fowler. 2012. “A 61-Million-Person Experiment in Social Influence and Political Mobilization.” *Nature* 489(7415): 295–298. doi: 10.1038/nature11421.
- Bryan, F. M. 2004. *Real Democracy: The New England Town Meeting and How it Works*. Chicago: University Of Chicago Press.
- Campbell, D. E. 2013. “Social Networks and Political Participation.” *Annual Review of Political Science* 16(1): 33-48. doi: 10.1146/annurev-polisci-033011-201728.

- Chambers, S. 2003. "Deliberative democratic theory." Annual Review of Political Science 6(1): 307-326. doi: 10.1146/annurev.polisci.6.121901.085538.
- Downs, A. 1957. *An Economic Theory of Democracy*. New York: Harper & Row.
- Fraga, B., and E. Hersh. 2010. "Voting Costs and Voter Turnout in Competitive Elections." *Quarterly Journal of Political Science* 5(4): 339–356. doi: 10.1561/100.00010093.
- Gerber, M., H. Schaub, and S. Mueller. 2016. „Umfrage zur Landsgemeinde des Kantons Glarus: Forschungsbericht“. Institut für Politikwissenschaft, Universität Bern.
- Gomez, B. T., T. G. Hansford, and G. A. Krause. 2007. "The Republicans Should Pray for Rain: Weather, Turnout, and Voting in U.S. Presidential Elections." *Journal of Politics* 69(3): 649–663. doi: 10.1111/j.1468-2508.2007.00565.x.
- Hainmueller, J., D. J. Hopkins, and T. Yamamoto. 2014. "Causal Inference in Conjoint Analysis: Understanding Multidimensional Choices via Stated Preference Experiments." *Political Analysis* 22(1): 1-30. doi: 10.1093/pan/mpt024.
- Hansford, T.G., and B. T. Gomez. 2010. "Estimating the Electoral Effects of Voter Turnout." *American Political Science Review* 104(2): 268-288.
- Horiuchi, Y., and W. C. Kang. 2018. "Why Should the Republicans Pray for Rain? Electoral Consequences of Rainfall Revisited." *American Politics Research* 46(5): 869–889. doi: 10.1177/1532673X17745631.
- Huber-Schlatter, A. 1987. *Politische Institutionen des Landsgemeindekantons Appenzell Innerrhoden*. Bern: Haupt.
- Klaus, M. 2006. *Briefliche Stimmabgabe: Analyse der Eidg. Volksabstimmung vom 27. November 2005*. Bern: Schweizerische Bundeskanzlei.

- Kitts, J. A. 2000. "Mobilizing in Black Boxes: Social Networks and Participation in Social Movement Organizations." *Mobilization: An International Quarterly* 5(2): 241–257. doi: 10.17813/maiq.5.2.5408016w34215787.
- Knack, S. 1994. "Does Rain Help the Republicans? Theory and Evidence on Turnout and The Vote." *Public Choice* 79(1-2): 187–209.
- Kübler, D., and P. Rochat. 2009. „Sind Gemeindeversammlungen noch zeitgemäss? Überlegungen anhand einer Umfrage im Kanton Zürich.“ *Statistik.info* 15: 1–17. doi: 10.5167/uzh-42184.
- Ladner, A. 2002. "Size and Direct Democracy at the Local Level: The Case of Switzerland." *Environment and Planning C: Government and Policy* 20(6): 813–828. doi: 10.1068/c0226.
- Ladner, A. 2008. "Die Schweizer Gemeinden im Wandel: Politische Institutionen und lokale Politik". *Cahier de l'IDHEAP* 238. University of Lausanne, Switzerland.
- Lim, C. 2008. "Social Networks and Political Participation: How do Networks Matter?" *Social Forces* 87(2): 961-982. doi: 10.1353/sof.0.0143.
- Ludlum, D. 1984. *The Weather Factor*. Boston: Houghton Mifflin Company.
- Lutz, G. 2016. *Eidgenössische Wahlen 2015. Wahlteilnahme und Wahlentscheid*. Lausanne: Selects – FORS.
- Mansbridge, J. 1983. *Beyond Adversary Democracy*. Chicago: University of Chicago Press.
- Mansbridge, J., J. Bohman, S. Chambers, T. Christiano, A. Fung, J. Parkinson, D. F. Thompson, and M. E. Warren. "A Systemic Approach to Deliberative Democracy." In *Deliberative Systems*, edited by J. Mansbridge and J. Parkinson, 1–26. Cambridge: University Press.

- Meier, A. N., L. Schmid, and A. Stutzer. 2016. "Rain, Emotions and Voting for the Status Quo." Discussion Paper Series IZA DP No. 10350, <http://ftp.iza.org/dp10350.pdf> (retrieved on July 5, 2017).
- Mutz, D. 2006. *Hearing the Other Side: Deliberative vs. Participatory Democracy*. Cambridge: Cambridge University Press.
- Mutz, D., and J. Mondak. 2006. "The Workplace as a Context for Cross-Cutting Political Discourse." *The Journal of Politics* 68(1): 140-155. doi: 10.1111/j.1468-2508.2006.00376.x.
- Nickerson, D. W. 2008. "Is Voting Contagious? Evidence from Two Field Experiments." *American Political Science Review* 102(1): 49–57. doi: 10.1017/s0003055408080039.
- Rosenstone, S. J., and J. M. Hansen. 1993. *Mobilization, Participation, and Democracy in America*. New York: Macmillan Publishing.
- Schaub, Hans-Peter (2008). «Die Glarner Landsgemeinde mit ihren Rede- und Antragsrechten: Ur- oder Scheindemokratie?» Licenciate thesis. University of Bern, Switzerland.
- Schaub, H. 2012. "Maximising Direct Democracy - by Popular Assemblies or by Ballot Votes?" *Swiss Political Science Review* 18(3): 305-331. doi: 10.1111/j.1662-6370.2012.02075.x
- Schaub, H. 2016. *Landsgemeinde oder Urne – was ist demokratischer? Urnen- und Versammlungsdemokratie in der Schweiz*. Baden-Baden: Nomos.
- Schaub, H., and L. Leuzinger. 2018. „Die Stimmbeteiligung an der Glarner Landsgemeinde.“ *LeGes* 29(1).

- Stadelmann-Steffen, I., and C. Dermont. 2015. "How Exclusive Is Assembly Democracy? Citizens' Assembly and Ballot Participation Compared." *Swiss Political Science Review* 22(1): 95–122. doi: 10.1111/spsr.12184.
- Stauffacher, W. 1962. *Die Versammlungsdemokratie im Kanton Glarus*. Glarus: Tschudi.
- Verba, S., K. L. Schlozman, and H. E. Brady. 1995. *Voice and Equality: Civic Voluntarism in American Politics*. Cambridge: Harvard University Press.