How exclusive is assembly democracy? Citizens' assembly and ballot participation compared

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Abstract

This paper analyses the difference between two specific forms of citizens' involvements, namely whether a vote is cast by ballot or in a citizens' assembly in which people gather in town halls to decide legislative questions in a deliberative manner. We show both theoretically and empirically how citizens' assemblies and decisions at the ballot box substantially differ not only in terms of their underlying model of democracy, but also in their structural conditions and, thus, with respect to the social inequality of participation. We test our hypotheses in a Bayesian multilevel framework using real participation data collected from 15 political decisions made in a Swiss commune. Our results show that citizens' assemblies are not only characterised by lower participation rates, but also by a particular composition of the electorate. While citizens' assemblies are more equal regarding income groups, ballots favour a more equitable participation in terms of gender and age.

Introduction[i]

Conventional political participation—for most citizens around the world—typically means taking part in elections every few years. But what if a polity chooses to go beyond representative democracy and enable its citizens to take part in decision making more frequently and more directly? The most rigorous alternative to representative democracy is *citizens' assemblies*[ii] in which every citizen entitled to vote is allowed to participate, discuss and vote on the subjects at hand, or propose new legislation. While individual participation in elections and by ballot have been investigated extensively, we know relatively little about political participation in this most direct form of political decision making (Bryan 2004; Schaub 2012).

Recently, citizens' assemblies as legislative bodies of political entities have drawn increased attention. Where they exist (i.e., in New England, many Swiss communes, and a few Swiss cantons), town meetings often have been used for a very long time and are an integral part of the political culture. Moreover, this form of direct citizen input remains widely accepted by the citizenry.[iii] Additionally, and from an international perspective, direct democratic decision making, especially referendums, are becoming more prevalent and often are praised as being highly legitimate and as enabling citizen inclusion and control of the decision making process (Scarrow 2001). Similarly, town meetings can be seen as the most natural form of direct democracy (Schaub 2012: 306) and are being re-considered as an innovative and contemporary element of 21st century democracy (for a consultative large-scale approach see Lukensmeyer and Brigham 2003, and also Kübler and Rochat 2009).

The most obvious difference between participation by ballot (e.g., decisions about persons or issues) and town meetings is that the turnout of the latter is much lower, which is one reason why this most traditional type of direct democracy has been criticized as lacking legitimacy (Kübler and Rochat 2009; Ladner 2002, 2008). However, we follow Teorell (2006: 791) and argue that not all models of democracy are primarily interested in the level of participation, especially

deliberative forms of democracy, such as town meetings, which claim legitimacy through a process of decision making rather than mass representation. When comparing different forms of decision making, we cannot just evaluate turnout rates. The focus also should be directed to how different forms of decision making are able to equally integrate the preferences and needs of each citizen (Teorell 2006; Verba et al. 1995). More generally, *who* participates is more relevant than how many (Kübler and Rochat 2009).

In this article, we comparatively analyse individual political participation at the ballot box and in citizens' assemblies, thereby focusing on the degree of participatory (in)equality. We are interested in the extent to which individual characteristics such as social status, age, and gender influence participation in different participatory contexts, and how social stratification varies between these two different technical procedures for holding a vote (see Schaub 2012: 311).

Our analyses are based on a unique data set of "real"—i.e., registered—participation data for 15 political decisions made in the Swiss commune of *Bolligen*. The data structure at hand enables us to analyze the *same citizens* and their actual participation behavior across various types of political decisions and over time. We think that this registered participation data is very valuable for learning more about who is participating in which type of democratic decision. While the results with regard to the level of participation may not be generalizable beyond the case under investigation, the mechanisms that cause the differences in participation equality also can be assumed to be relevant in other contexts.

Hence, our paper adds to the extant literature in at least two respects. First, to the best of our knowledge, our study is the first comparative analysis of individual participation by ballot[iv] and in town meetings. Note that our main interest is not to compare direct (ballot measures, citizens' assemblies) and representative (elections) democracy, but rather the *different specific forms of citizens' involvements*, namely whether a vote is cast by ballot (be it on issues or persons) or in a citizens' assembly. In fact, both voting by ballot and in citizens' assemblies can theoretically and

empirically be related to direct democracy (i.e., voting on issues) as well as to representative democracy (i.e., voting on persons; see Schaub 2012: 311). Although the alternative to citizens' assemblies are local parliaments (i.e., a representative system), citizens' involvement in this case could and would actually still be through direct democratic votes. In general, people's participation in citizens' assemblies has been analyzed rarely, due mostly to a lack of data (Bryan 2004: 113). Moreover, the existing studies typically use national samples, which seldom reflect the relevant context in which this most direct form of democracy is practised.

Second, the analysis of the official participation data offers some methodological insights. On the one hand, our analysis can be considered a robustness test of the classic hypotheses of electoral participation research, i.e., we can see whether the analysis of the official participation data produces the same results as recall data that may be influenced by group-specific over-reporting and non-response. Unlike the few existing studies that use actual participation data (Tawfik et al. 2012; Sciarini et al. 2001), we have the advantage that our data set contains more individual characteristics, including income and professional status.

At the same time, the available individual variables also are a limitation of our data set (compared to survey data). While the official communal data include important individual socio-demographic and -economic characteristics such as sex, age, income, professional or family status, there is of course no information on the political competence (Campbell et al. 1976), civic skills, or political preferences (Verba and Nie 1972) that have been shown to be important predictors of individual political participation.

The remainder of the paper is organized as follows. First, we address the characteristics and peculiarities of popular assemblies. After presenting the theoretical background regarding the determinants of individual political participation and participatory equality, we derive hypotheses about how individual participation patterns vary between different types of political decisions. Next, the methodological approach and the operationalization of the variables are described. In

the fourth section, we present the empirical results. Then, we conclude with a summary of the most important findings and conclusions.

Popular assemblies—a particular but neglected form of political participation

Compared internationally, Switzerland is well known for its use of direct democracy, i.e., its exceptionally high number of popular initiatives and referendums (Gross and Kaufmann 2002). However, participation and direct democracy are not limited to the ballot box in Switzerland. At the subnational and particularly the local level, citizens' assemblies are a crucial element of the political system, serving as the legislative body of communes. Similar to town meetings in New England (see Bryan 2004; Mansbridge 1980; and Zimmerman 1999), decisions are made not only on trivial matters, but also on important issues like communal taxes (Mansbridge 1980, 53). While assembly democracy typically is referred to just as a historic phenomenon of ancient Greece (e.g., Dahl 1994), more than 80 per cent of Swiss communes still have a popular assembly (Ladner 2008 6; 1991). In most cantons, the communes are free to install either a citizens' assembly or a parliament, whereas others stipulate a parliament (i.e., Geneva) and still others explicitly grant all relevant competences entirely to citizens' assemblies (i.e., Uri).

Since data collection is more complex, the few studies that exist are mostly descriptive in nature, but nevertheless provide illustrative insights into New England town meetings (Bryan 2004, Mansbridge 1980). Apart from these studies, this type of political participation is largely ignored in the political participation literature, not only in the classic works (Downs 1957; Lazarsfeld et al. 1969; Verba and Nie 1972; Campbell et al. 1976; Huckfeldt 1979; Brady et al. 1995), but even where it is most common, i.e., in the Swiss participation research. Bühlmann (2006), for example, who probably offers the most encompassing study on political participation at the Swiss local

level, does not include popular assemblies in his analyses due to the low number of respondents who actually participate in this form of direct democracy.

A deliberative approach to democracy

A citizens' assembly and the related democratic process are fundamentally different from voting by ballot. This former type of democracy allows people to "settle issues by face-to-face negotiation among those concerned rather than by electing representatives or relying on secret ballot referenda," and thus follows the logic of a more "unitary democracy" instead of an adversary setting (Mansbridge 1980: 23). First, and as mentioned previously, *the process of decision making and voting diverges* from ballot measures and electoral democracy. Not only do participants have to physically move to the "town hall" and at times stay there for several hours, but the participatory activity is—in its ideal form—also more challenging than simply casting a vote. In fact, town meetings come closest to the ideals of *deliberative democracy* (Teorell 2006) in which citizens make decisions based on the arguments voiced in a discussion. At least in theory, a citizen participating in a town meeting not only wants to "influence those who have a say in government," but also desires to "have a say in government oneself" (Teorell 2006: 791). Accordingly, in town meetings, it is possible for people to be involved in discussions on various issues and to shape the debate, with the final decisions often made by public voting. As we will discuss below, however, a more passive and thus less demanding participation in town hall democracy is not only possible but in reality even more common, namely just listening to the discussion and finally casting a vote.

Second, the *turnout in citizens' assemblies is generally much lower* compared to elections and ballot measures. With respect to New England, Zimmerman (1999, 196) and Bryan (2004) report mean participation rates (of registered voters) of between 7 percent in Connecticut and roughly 20 percent in Vermont. In Switzerland, even in the smallest communes, the turnout generally does

not substantially exceed 30 percent, and falls to around 5 percent in the communes with more than 5000 inhabitants (Ladner 1991, 2008). However, as mentioned previously, this low level of participation does not necessarily pose a problem for town meetings (see also Lutz and Marsh 2007 or Rosema 2007 for a similar argument with regard to ballot participation). Since this type of decision making follows the ideal of deliberative democracy, the ability of assembly democracy to produce good results does not depend on how many people participate in the first place, but rather relies on the quality of the decision made. More precisely, the question is whether a real deliberate discussion of diverse preferences and arguments has occurred (Dryzek 2001; Kübler and Rochat 2009, 3f) and whether a process of "internaliziation" of interests and preferences has happened (Goodin 2005). While we do not have information about the diversity of discourse or the internalization of preferences, we conclude from the debate about the value of assembly democracy that we should not focus solely on how many, but also on who is present at a town meeting. If a social group is systematically underrepresented, this fact can be expected to reduce the diversity of discourses as well as the probability that a process of internalization occurs. Against this background, turnout as such is not a reasonable criterion by which to compare assembly and ballot democracy, but rather we should inquire into the extent to which these two types of decision making yield varying degrees of participatory equality (Teorell 2006: 798).

Theoretical background: Participatory equality on the local level—comparing ballot decisions and citizens' assemblies

We argue that one main precondition for political equality is that citizens are not only treated as equals in the political process (Dahl 1998), but also that no social group is systematically underrepresented in a political decision (Teorell et al. 2007). Put differently, we focus on the question of who is present during the decision making process, and thus has the possibility to be involved and to integrate her/his interests in the deliberation process.

The differing decision making and voting processes lead us to expect that the composition of the electorate and the determinants of individual participation also will vary between citizens' assemblies and ballot decisions. In this section, we elaborate on the theoretical differences in individual factors that explain participation and, thus, in the social stratification of participation.

We largely, but not exclusively, follow Brady et al.'s (1995, 2001) *resource model of participation*, assuming that political involvement necessities three types of resources—"time, money and civic skills" (Brady et al. 1995: 271). While this perspective focuses on why a citizen can or *can't* participate, a second question arises as to why individuals *want or do not want* to participate. The latter seems particularly important to theorizing the varying participation behaviors in various types of decisions (in our context by ballot and through citizens assemblies), given a constant set of individual resources (Brady et al. 1995). In this regard, we follow Teorell (2006) who emphasizes the relevance of *incentives,* which may help to explain why a person desires to take part in a (particular) political decision (see also the similar argument made by Verba et al. [1995] who focus on political interest and networks).

In the following section, we discuss how the classic hypotheses from participation research need to be adapted in the context of assembly democracy. Given that our data is limited regarding individual characteristics, we restrict the following discussion to three groups of factors that may explain individual political participation and, hence, to three sources of stratification: socioeconomic explanations, age effects, and gender differences. We thereby concentrate on whether systematic differences can be expected in political participation by ballot and through town meetings.

How ballot and assembly democracy differ: Resources and incentives

Brady et al. (1995; see also Verba et al. 1995; Teorell 2006) identify time, money, and civic skills as the main resources for explaining why people do or do not participate. *Time* is a prerequisite for political action, participating at events, or even running for office. *Money*, when available, can

support politics with opportunities (i.e., donations) or, in its absence, constrain people's participation, since opportunity costs are too high (which again is a direct link to time). *Civic skills* refer to the capacities that citizens need to participate, e.g., to understand the political process and to make decisions on political issues.

Initially, our crucial argument is that town meetings and ballot decisions differ in terms of their required resources. First and foremost, to participate in town meetings, a citizen will need more time, since a citizens' assembly takes several hours of discussion before a decision is made. Moreover, the actual duration of an assembly is often unpredictable. Hence, much more uncertainty surrounds the amount of time needed to participate. Following the literature on political behavior with respect to uncertainty (e.g., Matusaka 1995; Selb 2008), it can be assumed that it will decrease the probability that an individual will decide to join an assembly.

Second, greater civic skills will be required if a citizen wants to take part in the debate prior to a decision, since the deliberative form of democracy calls for the so called "skill-acts" (Brady et al. 1995, 277), e.g., the abilities to give a speech or take part in an open discussion. However, it also must be mentioned that participating in assembly democracy does not in any case require this kind of demanding involvement, since it may be limited to just casting a vote at the end of the debate. In this vein, attendance at an assembly may provide citizens with the necessary information about the issue put forward for a decision, whereas an individual who casts a ballot would need to acquire this kind of information more actively through reading, personal discussions, etc. Hence, for some individuals, a town meeting may compensate for a lack of knowledge and information, and may even be an easier way of political participation (see below).

Third, regarding money, ballot democracy and assembly democracy are similar in that the act of political participation itself is "free." However, long town meetings may be a disincentive to some due to the rising opportunity costs. This kind of discouragement may occur, for instance, if participation at a town meeting conflicts with an individual's working hours (important to note,

however, that in Switzerland most citizens' assemblies in communes are held in the evening). Another example is childcare, i.e., many parents may need to hire a babysitter to participate in a town meeting. The small town of Olsberg in Switzerland, for example, pays 20 CHF to parents with small children if both parents participate in citizens' assemblies, thus compensating them for the costs of participation.

Moreover, Teorell (2006, 2007) has argued that resources are not enough to explain individual political participation. Even if an individual has the required resources to participate, he or she also needs to be willing to do so, i.e., to possess the *incentives* to participate, which could refer to a desire to participate, but also to whether participation is expected by the environment, norms, or tradition. We expect that these incentives to participate may vary between ballot and assembly democracy, due mainly to the nature of the issues on which people need to decide. Decisions made at citizens' assemblies are inherently local; therefore, they tend to be closer to everyday life and conducive to a more enthusiastic participation, especially for those with strong bonds to the local community (Highton 2000). Moreover, assembly democracy is often deep-seated in a commune's culture and norms, which again may facilitate an incentive to participate. Decisions made at the ballot box also can of course refer to the local level. Empirically, however, this situation only applies to two out of the seven ballots in our sample (election of the executive of the commune), whereas all other decisions made via ballots were at the cantonal or national level.

To summarize, the discussion has illustrated that the two forms of casting a vote differ in terms of the degree and type of relevant participatory resources, as well as in their incentives for participation, which are mainly issue-related. Clearly, assembly democracy demands higher resources with respect to time and, possibly, money. With respect to civic skills, the difference between assembly democracy and ballot participation is not clear and may vary between groups. Similarly, regarding incentives, the differences between ballot and assembly decisions imply that different citizens may be appealed to differently by the specific nature of the issues decided on in either type of decision making process.

Hence, the central argument we derive from this discussion is that both resources and incentives as explanations for political participation not only differ between the two types of participation (citizens' assemblies and participation by ballot), but possibly also vary across social groups. This, however, shapes the composition of the electorate and thus the equality of participation. In the next sections, we discuss three main characteristics that affect political participation: socio-economic status, age, and gender.

Inequalities related to social status

Political participation research (i.e., on elections and ballot measures) repeatedly has shown that high socio-economic status—high income, education, and professional status—fosters political involvement (Bühlmann 2006, 57f; Lazarsfeld et al. 1969; Wolfinger and Rosenstone 1980; Falter and Schumann 1994; Kleinhenz 1995). One main reason for the observed disparities in participation across socio-economic groups is that political participation requires particular civic skills, which are, according to Brady et al. (1995, 276), "distributed differentially across socioeconomic groups."

As discussed previously, participation in a citizens' assembly requires additional civic skills from those individuals who want to be part of the deliberation process. First and foremost, internal efficacy and self-confidence play a more crucial role, at least to make most of the participation, i.e., to participate (and thus perform skill-acts) in the debates and to convince others of one's position. With respect to the idea of Athenian *rhétores*—e.g., people "who move articles, frame debates, or in other ways participate a lot" (Bryan 2004, 7)—these citizens will more likely be found among higher social groups. However and more importantly, following Dalton (2008, 81f), this stronger active participation also is related to, or even based on, the participatory norms of "engaged citizenship." Put differently, higher class individuals have stronger self-expressive values and norms of active participation. When participating in a town hall meeting, they feel

more obliged to not only listen and vote, but to actively contribute to the discussion. Therefore, it can be assumed that higher-class individuals perceive town meetings as more challenging than ballot participation.

By contrast, we assume that lower class individuals will perceive town meetings quite differently. On the one hand, they will feel obliged, to a much lesser extent, to actively participate in speeches and discussions, and instead may focus on profiting from the information they receive when listening to the discussions. As mentioned previously, and given this group's lower level of political knowledge and interest, this strategy may facilitate their personal decision to vote yes or no. Consequently, this "free" and condensed information provision makes this form of democracy a relatively attractive form of participation compared to ballot participation.

This conclusion is further supported by the fact that citizens' assemblies decide on *local* issues, which may decrease the relative advantage of the higher social classes and may serve as a special incentive for lower status individuals to participate. As Bryan (2004, 120) argues, based on Vermont experiences, "working-class and middle-class people are better informed about local matters than upper-class people." Local issues indeed tend to be closer to everyday life and therefore are perceived to be less complex than, for example, national direct democratic decisions (Bryan 2004).[v] Against this background, it can be argued that the particular nature of issues decided on in citizens' assemblies could weaken the relationship between social status and participation, compared to ballot democracy.

Overall, and taking the different mechanisms together, these comments lead to the *hypothesis that the influence that social status exerts on individual political participation is lower in citizens' assemblies than in the ballot decisions.*

Age-related inequalities

In addition to socio-economic factors, we should consider age effects on participation (Kleinhenz 1995; Sciarini et al. 2001; Bühlmann 2006; Tawfik et al. 2011). First, age reflects the process of getting older and thus the level of social integration and political experience. Second, age is a reference to a person's current life circumstances, i.e., life cycle effects. Last, age links a person to a particular generation with specific context experiences (Sciarini et al. 2001: 83–84). In this vein, and as Sciarini et al. (2001: 84) have argued, the relationship between age and participation is not direct, but rather represents the mechanisms that are closely related to age (see also Tawfik et al. 2011: 356).

Although with a cross-sectional design, we are not able to strictly distinguish between generational and life cycle effects (Kleinhenz 1995, 27), it certainly can be assumed that younger people typically lack all three types of resources. They do not have much time to participate, since education and establishing oneself socially and economically require time and concentration. Earnings tend to be lower at the beginning of a career, and social networks are scarce or not yet rooted in a particular commune, all of which predicts a lower level of participation by this group. As people grow older, they start to gain job stability, often have a family and stronger social networks, and their incomes rise. Accordingly, and following the resource approach, interest in politics and the propensity for political involvement increases. When retiring, income and social integration again decrease, and, at some point, participation may become difficult due to problems related to old age (see Kleinhenz 1995: 27).

We assume that this life-cycle pattern of participation is even more pronounced in a citizens' assembly than in a ballot vote or election. On the one hand, the resource argument—that younger people's lack of time and older citizens' (physical) capabilities—may have more weight. Moreover, the incentive to participate in a citizens' assembly may arise from the willingness to be part of the local community and rely on closer recruiting networks, such as associations or family members. Younger people in particular may lack these incentives.[vi] *We therefore hypothesize that*

participation first increases and then decreases as an individual ages. Moreover, we expect that the differences in participation between young, middle-aged, and old people are larger for citizens' assemblies than for electoral and ballot participation, meaning that young and elderly people are more strongly underrepresented in citizens' assemblies.

Gender inequalities

After the founding of modern Switzerland in 1848, the step to women's suffrage took 123 years and was only introduced at the national level in 1971 (Ballmer-Cao and Sgier 1998: 103). This very late introduction of women's suffrage is traditionally seen as the central reason why gender differences in participation still persist today (Tawfik et al. 2011: 355; Engeli et al. 2006; Bühlmann et al. 2003). While "tradition, sense of duty and habit" (Ballmer-Cao and Sgier 1998: 122f) are important motivations for men to participate politically, it can be argued that these incentives to participate are not equally developed for the female electorate. A still substantial part of the female population has experienced a time when women had neither political rights nor an active role in politics (Sciarini et al. 2001: 83). Moreover, it has been argued that the gender gap in participation is not only related to incentives and civic skills, but also is a result of lower levels of economic and social resources (Verba and Nie 1972; Milbrath and Goel 1977; Norris 1991; Engeli et al. 2006; Bühlmann and Freitag 2006). Sciarini et al. (2001: 83) has argued that discrimination in employment and access to education has led to less social integration for women in Switzerland, which again points to lower participation.

At least two reasons can be mentioned as to why an even greater gender gap may occur in citizens' assemblies. First, and as we have seen previously, time is an important precondition for participation in assembly democracy. Against the background of a changing gender-related division of labour, Sayer (2005) spoke of "time inequality" between women and men. More precisely, while women are increaslingly involved in paid employment, they still undertake a large

part of the unpaid work at home (FSO 2012). As a consequence, simply less free time is available to women that they can spend on activities such as political involvement.

Second, the particular— i.e., deliberative nature of participation in assembly democracy—leads us to expect a greater gender difference (Karpowitz, Mendelberg and Shaker 2012). Although in the U.S., the gender gap in electoral participation disappeared starting around the 1990s (Schlozman et al. 1994, 1999), Bryan (2004, 210) still documented differences between women and men when it came to town hall meetings: While the "percentage of women at town meetings is closing in on equality with men," gender differences occur in verbal participation. Bryan (2004: 213) explains these observations as stemming from the particular nature of town hall meetings in which public talk is crucial for deliberation, but "speaking in public often tops the list of human fears." This fear tends to be particularly prevalent among women, and is reinforced by low peer presence, e.g., the low number of female town officers that could act as role models (ibid.: 196f).[vii] The lack of recruiting networks for the female population also may lead to fewer incentives to participate.

While verbal participation is, as previously mentioned, not required, not joining this important part of citizens' assemblies may eventually be an argument for not going to the meetings at all. Taking these two arguments together, we thus formulate the *hypothesis that the gender gap in participation is higher in citizens' assemblies than in ballot democracy, meaning that women participate comparatively less than man in citizens' assemblies.*

Research Design

In the following, these hypotheses are tested empirically. While the large majority of participation research is based on survey data, one of the main strengths of the present analysis is its use of official participation records. More precisely, we rely on a unique panel data-set[viii] (Heer 2010) of actual political participation in 15 different decisions that occurred between June 2007 and November 2009 in *Bolligen*, a commune of roughly 6,000 inhabitants in the canton of Berne (Switzerland). Based on the communal citizens' register, 10 per cent of the electorate (i.e., 472 out of 4,723 citizens with voting rights) was randomly drawn. The dependent variable, participation, was measured through the cards bearing the entitlement to vote. Citizens who participate in ballot measures need to sign this card and return it with their ballot, and for citizens' assemblies, this card serves as admission to the place of the assembly. This information and personal data from the communal register were provided by the commune and merged by Heer (2010). Due to missing values, the final sample consisted of 458 individuals who were involved in up to 15 political decisions, or 6,552 observations.[ix]

Communes in Switzerland are very heterogeneous not only regarding size, but also with respect to their rural/urban environment, and cultural or socio-economic composition. Thereby, Bolligen can be characterized as a medium sized commune in the urban agglomeration of the Swiss capital city Berne. Compared to the overall Swiss population, Bolligen exhibits above average levels of education and income. Nearly one-third of the inhabitants have tertiary education, while overall, less than 25 percent of the Swiss population belongs to this category. Given these "advantageous" factors, it is not surprising that turnout in elections and ballot measures is higher than the average participation rate in Switzerland. These differences must be kept in mind for the interpretation of the results.

The dependent variable is individual participation in local political decisions, namely in local elections, cantonal and national ballot measures, and citizens' assemblies. In Bolligen, normally

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more than 50 percent of the citizenry casts a vote at the ballot box, while a citizens' assembly usually gathers fewer than 4 percent of the citizens. One notable exception occurred in August 2008 on an evening when more than 27 per cent of the population attended the town meeting to discuss and vote on a new zoning plan. Furthermore, one national ballot measure and one local election were held on the same day, but recorded separately. Since the turnout and abstentions were not identical for these two decisions (47.4 per cent participated in both, 32.6 per cent abstained in both, and 20.1 per cent participated either in one or the other), they are treated as separate cases.[x]

Figure 1: A cross-classified model of individual political participation
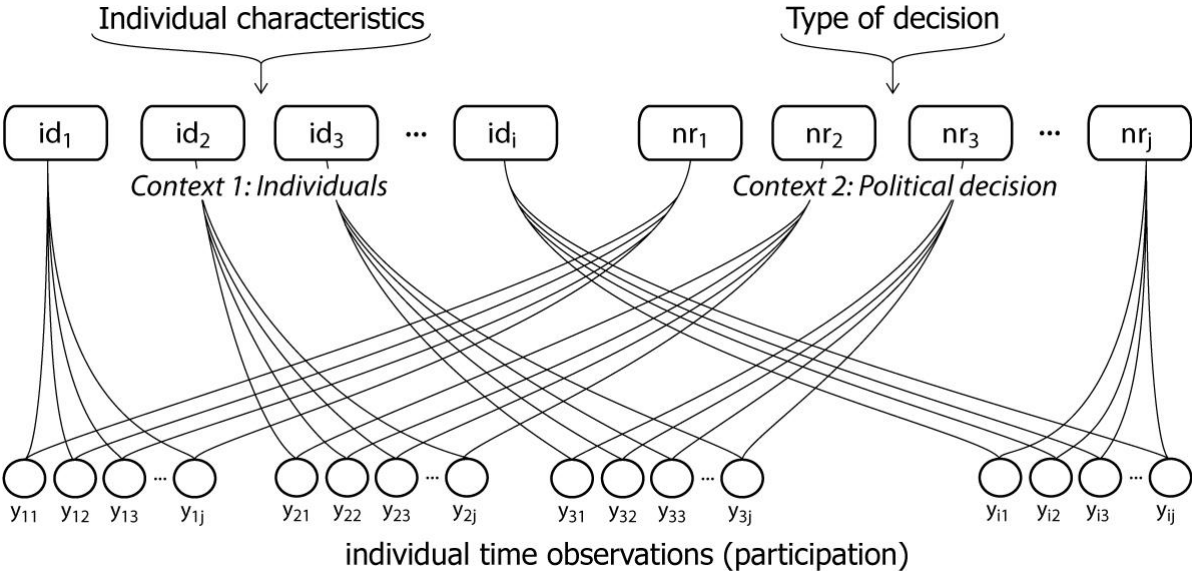
Note: own illustration.

Since observations are on the one hand nested within these different participatory contexts (nr_i) and also within individuals (id_i), cross-classified random intercept models were applied (Jones 1997; Steenbergen and Jones 2002, see Figure 1). While the random intercept for individuals accounts for the fact that some individuals generally have a higher participation propensity than others, the random intercept for different political decisions accounts for the fact that the probability to participate systematically varies between different participation events, e.g., and

according to our main hypothesis, depends on whether the decision was taken by ballot or at an assembly.

It also can be assumed that individual participation is serially correlated, meaning that the decision to participate at time t might also be related to the decision to participate at time t-1 (for instance, due to the factors that affected participation in multiple events such as travel, illness, etc.). Therefore, we further integrate a time variable with a random slope (i.e. varying between individuals) to capture individual developments and trends in participation decisions. Finally, because the dependent variable is dichotomous, individual participation is transformed to a logit structure.

A Bayesian estimation approach is used, which—particularly when employing logistic multilevel models and faced with a small number of level-2 units—has been shown to perform better than maximum likelihood (Browne and Draper 2006; Stegmüller 2013). For an easy interpretation of the Bayesian estimation results, the mean of the posterior distribution is presented, which can be interpreted similar to a standard regression situation. The mean is the average effect of an independent variable on the outcome variable. Moreover, the 90 percent credible intervals are provided, which are the Bayesian equivalent to the confidence intervals in a standard regression context and give a sense of the statistical reliability of the estimate. If these credible intervals do not include zero, the estimated coefficient can be considered to be systematic, i.e., "significant."[xi]

The choice of independent variables for the following analyses is, on the one hand, based on the theoretical arguments elaborated previously in the present paper, but also is determined by data availability (Appendix III). We rely on those individual characteristics provided by the communal register (sex, civil status, children, age, residential stability, and occupation) merged with taxation data, which offers information on income and wealth.[xii] To capture an individual's *social status,* we looked at a person's income.[xiii] Regarding the s*ocio-demographic factors,* sex and age were integrated

into the models. As control variables, we integrated whether a person had underaged children, her/his civil status, residential stability, self-reported occupation, and wealth.

It is important to note that this individual information was measured only once in the mid-2009s. Conceptually, this is not a problem because individual charactersitics remain mostly stable over this relatively short period of time. Methodologically, we accounted for this data structure by modelling the aforementioned individual random intercept, i.e., individual characteristics enter the equation at the level of individuals (id$_i$, Figure 1).

At the level of decisions, we differentiated the *types of political decision* (see Figure 1). We have data on three types of political decision making—local citizens' assemblies, local elections, and cantonal/national ballot measures. However, during the time covered by the data, citizens were able to participate only twice in (local) elections, which made it difficult to treat this type of decision on its own. Therefore, we conflateed the participation in elections and in ballot measures into one general category of ballot participation. On the one hand, this conflation also fits our theoretical framework, which assumes that the main differences occur between ballot decisions (either on persons or on issues) and those made in citizens' assemblies. On the other hand, and as shown in Appendix IV, the exclusion of the two local elections produces almost identical results as those presented in the following section.

Empirical results

In a first step, two (cross-classified) random intercept models are presented, including the individual and contextual variables described in the previous section. The difference between the two models is that in Model 1b the time variable randomized within individuals is excluded. Figure 2 demonstrates that the findings are very much in accordance with the survey-based studies on the individual determinants of political participation. The probability of participation increases with higher income and wealth and with longer duration of residence, whereas singles are less likely to participate than married or co-habiting individuals. Moreover, political

participation first increases and then decreases as a person ages. What we also observe from the estimation results is that the probability of participation is clearly higher for ballot measures and elections than for citizen's assemblies.

Figure 2: The basic models

--- Figure 2 about here ---

Note: Log odds of the logistic random intercept model (mean, standard deviation, and 90% and 95% credible interval).

Model 1a further demonstrates that the time variable is not systematically related to the decision to participate. This applies to the fixed effect, for which the credible intervals includes zero, but also for the random slope that is of minor importance. Since the exclusion of this time variable does not affect all other coefficients, and due to the fact that Model 1a produces very large intercept coefficients, we use Model 1b as our basic model for the subsequent analyses.

Our main interest is whether the two types of decision making differently discriminate between population groups. In a second analytical step, we therefore tested whether individual characteristics relate to participation in the two types of political participation in different ways by integrating interaction effects between the ballot and assembly decisions, on the one hand, and the invidiual characteristics, on the other.[xiv]

First, the analysis of income groups revealed that the context of citizens' participation indeed matters, i.e., income affects participation in citizens' assemblies and in ballot decisions differently (Figure 3).

Figure 3: Predicted probability of political participation by income

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Note: Averaged predicted probability of participation by income depending on the type of decision-making, based on 6,000 draws from the posterior distribution of the model as shown in Table 1 in Appendix II.

Regarding ballot participation, our findings are in accordance with our theoretical expectations, and with earlier studies that have investigated the individual determinants of political participation in Switzerland (e.g., Lutz 2012: 8). The probability of casting a vote clearly increases with income (see also Table 1 in the Appendix II). Unlike the survey results found by Bühlmann and Freitag (2006: 28) and Wernli (1998: 87), these income differences also are statistically systematic. More precisely, in more than 90 percent of all iterations, the posterior distribution of the differences (that is the differences in predicted probabilities between income groups) is different from zero. In a Bayesian context, this result can be interpreted to mean that group differences are "significant" with a probability of 90 percent (or more). By contrast, the income pattern of citizens' assemblies is quite different, and varies particularly regarding the highest income group. Figure 3 illustrates that only a very slight upward trend exists in the participation probability between the three income groups. Most importantly, the lowest income group is somewhat underrepresented (i.e., their participation rate is roughly 30 percent lower than those of the two other income groups), whereas the richest citizens do not participate more frequently than the medium income group.[xv] To some extent, our findings thus corroborate Bryan's (2004) hypothesis that town meetings are more equal than ballot decisions in terms of socio-economic equality. While the results do not confirm Bryan's argument that the (lower) middle class will tend to participate in this kind of decision-making rather than casting a vote in elections and ballot measures, we at least see that the overrepresentation of the rich in citizens' assemblies is

systematically less pronounced. In this vein, the results support our hypothesis that the relationship between social status and participation varies between ballot democracy and assembly democracy. While theoretically ambiguous, the empirical findings regarding income lead to the conclusion that participation in citizens' assemblies is socially more equal than in ballot decisions.

Second, Figure 4 shows that the age pattern of ballot participation and of participation at citizens' assemblies is quite similar and corresponds to the standard findings in participation research (see also Table 2 in the Appendix II). The individual participation probability first increases as a person ages, is highest between the ages of 30 to 65 years, and then participation decreases after an individual retires. However, citizens' assemblies are different in so far as the drop in participation among elderly people is systematically less pronounced than with ballot participation, in which persons over 65 years exhibit the lowest probability of participation. However, it must be mentioned that the relative effect of age is stronger for town meetings, which supports our hypothesis. The probability that an individual will participate in citizens assemblies' is twice as large for those who are middle aged compared to those who are 65 years and older. Conversely, in terms of ballot participation, the sharp decrease in participation between those aged 46–65 years and those who have retired amounts to less than 50 percent.

Figure 4: Predicted probability of political participation by age

---- Figure 4 about here ---

Note: Averaged predicted probability of participation by age depending on the type of decision-making, based on 6,000 draws from the posterior distribution of the model as shown in Table 2 in Appendix II.

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Finally, Figure 5 shows that the degree of gender inequality clearly differs between the two types of political participation (see Table 3 in Appendix II). In fact, a significant and large gender bias exists in citizens' assemblies, whereas the bias associated with ballot decisions is systematically lower and not of substantial relevance.[xvi] Consider that the gender difference in town democracy is quite substantial. The average probability that a man will participate in this type of political decision is roughly twice as high as that for a woman. Therefore, the gender gap is much larger than it has ever been reported for (national) elections. In 1971, just after the introduction of women's suffrage at the federal level, the difference in participation amounted to 20 percentage points, which had declined to five percentage points by 2011 (Lutz 2012, 8).

Figure 5: Predicted gender difference in ballot participation and in citizens' assembly

--- Figure 5 about here ---

Note: Averaged predicted probability of participation by gender, depending on the type of decision-making as well as the difference between the male and female predicted probability of participation (in percentage points) depending on the type of decision-making, based on 6,000 draws from the posterior distribution of the model as shown in Table 3 in Appendix II.

Our results thus reveal that citizens' assemblies can be seen as a place of traditional "male dominated democracy." By contrast, decisions made at the ballot box better correspond to an "emancipated" form of participation in which the gender gap has been essentially closed. While the latter finding is in accordance with a recent study from the Swiss canton of Geneva (Tawfik et al. 2012), also based on real participation data, it still contravenes a standard finding in Swiss participation research, which—40 years after the introduction of female suffrage—still documents a significant and substantial gender gap (Engeli et al. 2006). Although our data does not enable further investigation of the reasons for this result, several explanations may be relevant. On the one hand, this finding could be a "peculiarity" of the commune under investigation, whereas the gender bias is still a reality in other contexts, e.g., in Switzerland as a whole. In particular, the urban environment and the above average educational level found in

Bolligen could help to explain a more egalitarian participatory structure. This interpretation also would account for the results from Geneva, a canton with similar characteristics (Tawfik et al. 2012: 357). Moreover, other explanations could be varying distributions of non-response and/or over-reporting for men and women (Hugi 2014; Silver et al. 1986).

Conclusion

Based on official data for individual political participation in a Swiss commune in the Canton of Berne, the preceding analysis pursued two objectives. First, we examined the individual characteristics that influence the propensity to participate in local politics based on real participation data. Second, and most importantly, we aimed at investigating whether the determinants of political participation vary among the different types of political decision-making and thus influence participatory equality. The following conclusions can be drawn.

First and foremost, the present paper supports the view that town meetings are not only characterised by lower participation rates, but also by a particular composition of the electorate. On the one hand, these popular assemblies can be considered as a particular form of traditional democracy by middle-aged men. Although our findings suggest that in the commune under investigation, the gender gap in political participation has been closed when it comes to ballot decisions, women are still heavily underrepresented in citizens' assemblies. The same finding applies to the youngest and oldest cohorts, who, compared to middle-aged persons, are more likely to stay at home. By contrast, regarding income, citizens' assemblies tend to be more equal than ballot decision making. Thus, our analysis sheds some light on the theoretical controversy regarding the inclusiveness or exclusiveness of popular assemblies (Bryan 2004; Graham 2009; Mansbridge 1980; Zimmermann 1999). By doing so, we provide theoretical and empirical support for both the pessimistic and optimistic perspectives on participatory equality: town meeting democracy enforces the social bias in political participation regarding gender and age, but it is

more inclusive and egalitarian with respect to income. Hence, this contributions leads to the conclusion that town hall democracy is neither more exclusive nor inclusive in general, although it is *different*. From a theoretical perspective on democracy, we emphasized the different logics of both models of decision making and their related expectations for social stratification; and empirically, we showed that in fact both have advantages and disadvantages as to participatory equality. Obviously, both types of citizens' participation are to some extent exclusive *and* inclusive, leading to different "samples" of the population that eventually make a decision. While our results refer to the input side of democracy, further research could focus on the output side by asking whether and how citizens' assemblies differ from ballot decisions in terms of citizens' satisfaction and political outcomes (see Olken 2010).

Again, it must be mentioned that, strictly speaking, we cannot compare our results from a single Swiss commune with large-scale election or participation studies covering an entire country or region. Most importantly, the commune under investigation is not a representative reflection of Switzerland as such or of Swiss communes in general. This limitation of course negatively affects external validity, since our results regarding the differences between ballot and assembly democracy cannot simply be transferred to all Swiss communes or even other countries. Still, we argue that our study offers important insights beyond the case under investigation. Initially, to our knowledge, our study is the first theoretical and comparative discussion about the social stratification of these two forms of decision making, and also provides a first empirical test for the derived hypotheses. It is highly plausible that the mechanisms behind individual participation will also be meaningful for other political entities. Moreover, and from a methodological point of view, our analysis supports the view that survey-based analyses—despite the problems involved with such data—are a meaningful tool in participation research. The claims made in these studies about the individual determinants of political participation are largely corroborated by our real participation data.

Last, another weakness of our research design is that we cannot completely disentangle institutional (i.e., whether a decision is made by ballot or in a citizens' assembly) and issue-related effects (i.e., whether the proposal is associated with local or cantonal/national questions). This weakness is due to the fact that in our sample, local decisions—with the exception of two local elections—are made in citizens' assemblies, whereas cantonal and national issues always are decided by ballot. Against this background, we see our contribution as a first step towards showing that a comparison of the same people who participate in different democratic procedures has great potential, and that further efforts should be made mainly with respect to collecting such data. In this vein, similar data for different local entities with different decisional structures (e.g., including ballot measures on local issues) would help to provide a better understanding of the relationship between institutional forms of participation and the social stratification of the electorate.

Notes

[i] We thank Marc Bühlmann as well as two anonymous reviewers for helpful comments on earlier versions of this article and Wayne Egers for linguistic assistance.

ii Throughout this article, we use the notions *citizens' assemblies*, *popular assemblies*, *assembly democracy*, and *town meetings* synonymously. We focus on the Swiss type of citizens' assemblies that act as the legislative body of a commune or canton with wide competencies, but we do not take into account the consultative bodies that have recently gained importance.

iii A Swiss example may serve as an illustration. In the last 30 years, Ittigen—the largest commune in the canton of Berne without a parliament—voted four times against the establishment of a local parliament and the abolishment of the town meeting. Despite the fact that the mean turnout rate in the citizens' assemblies amounted to only 2.1 per cent between 2001 and 2010, in a ballot decision in 2011 (with a

turnout of roughly 33 per cent), 68 per cent voted for maintaining the town meeting as the legislative body of the commune.

iv When we refer to *ballot democracy* or *ballot participation*, we are referring to decisions made by ballot on persons (i.e., elections) or issues (i.e., ballot measures).

v Findings by Ladner and Bühlmann (2007) confirm this assumption. Lower status citizens in Switzerland orient themselves more strongly towards the local political level than higher status individuals, with the latter being more strongly interested in cantonal and national matters.

vi Regarding the elderly, it could be assumed that their incentives to participate in town meetings would be particularly strong, given that this group may have the most strongly internalized local norms and traditions. However, we do not derive the hypothesis that older people will be more likely to participate in town meetings than at the ballot box, since the resource argument may carry more weight. If an elderly person is unable to attend an assembly due to physical problems, the willingness to do so will not make much difference.

vii Our commune under investigation confirms this view. In the first half of our research, two out of seven members of the local executive were female; in the second half, the local executive was completely male. Women in charge who could serve as peers or take a role as "rhétores" were clearly underrepresented or even absent.

viii All citizens' assemblies between 12.6.2007 and 24.11.2009 and all votes and elections between 9.11.2008 and 29.11.2009 were included in the dataset. After the merging of the different dates and the personal data based on individual codes, the dataset was completely anonymized.

ix Since some individuals did not live in Bolligen for the entire period under investigation, not all individuals can be observed in all 15 decisions. Also, since the main interest of the present article is participation in the different types of decision making processes and not the comparison of different votes or assemblies, it is not necessary to exclude citizens with such incomplete data.

ˣ Further analyses not presented here show that neither the exclusion of the extraordinary citizens' assembly, nor the treatment of the two decisions of the same day as one case, influence our results as presented in this article.

ˣⁱ A fully Bayesian analysis requires the specification of priors for the unknown parameters. We used non-informative normal priors $\sim N(0, 10^8)$ for the fixed effect parameters and inverse Wishart priors $\sim W\text{-}1(2, 2)$ for the variance component. All models were estimated in R using the package MCMCglmm (Hadfield 2010). We let the models run for 800'000 iterations, with a burn-in of 500,000 and a thinning of 50. Extensive diagnostics based on the graphical inspection of the trajectories and the autocorrelations as well as on the Geweke and Heidelberg diagnostics lead to the conclusion that the chains have mixed well and converged (provided upon request).

ˣⁱⁱ However, the income data must just be seen as a rough indicator of an individual's actual income and wealth situation. The data, which is a person's taxable income and wealth (hence, after various deductions, for instance, for work-related costs, children and childcare, etc.), is biased at least in two respects. First, we do not know who could profit from which tax deductions and to what degree. Second, we do not have any further information about a person's household situation, namely whether a second (main) earner is present or not.

ˣⁱⁱⁱ To measure social status, we focus on the income variable, since we consider current income to capture social status (of the household) best in our data (despite the problems mentioned in note xi). Wealth does not need to be necessarily closely related to liquid financial or educational resources (e.g., house ownership heavily influences this measure). The socio-professional category, on the other hand, is based on a self-reported occupation and may be quite outdated, since changes in professional status or occupation can but does not need to be reported to the commune. We still integrate both wealth and the socio-professional categories as control variables.

ˣⁱᵛ Due to the small number of units at the level of ballots, it is conceptually not reasonable to include all interactions into one encompassing model, i.e., the interactions between the variable ballot and income, age, and gender. This leads to a situation in which eight parameters at least need to be estimated at the level of just 15 political decisions. For this reason, we estimated three different models, each one including

the interactions with either income, age or gender. However, further tests in which we nevertheless estimated that an encompassing model produced almost identical mean estimators—despite larger credible intervals—strongly confirmed the findings presented in this paper. These estimations can be found in Appendix V.

[xv] It is of course debatable whether one should look at absolute or relative differences to compare two forms of political participation. While we think that neither perspective should be completely neglected, relative differences are of particular importance in our context. Our main argument in this paper is on the social stratification of participation, i.e., we ask whether some social groups are systematically over- or under-estimated in different forms of participation. Against this background, relative differences are the most obvious way to go, since they actually provide information on how much one group is over- or under-represented relative to others, i.e., capturing our crucial interest. Moreover, relative differences seem to be a reasonable tool to compare the two forms of participation given that they are characterized by very different general turnout rates.

[xvi] In statistical terms, however, the credible interval just *not* includes zero.

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Appendix I: The 15 political decisions under investigation

No.	Type	Date	Partici-pation (Sample)	N	present	Real Partici-pation	present
1	Popular assembly	12.06.2007	5.50%	400	22	2.84%	133
2	Popular assembly	27.11.2007	5.65%	407	23	2.37%	111
3	Popular assembly	03.06.2008	3.57%	420	15	2.97%	139
4	Popular assembly	26.08.2008	29.93%	431	129	27.8%	1300
5	Ballot; local election	09.11.2008	55.50%	436	242	58.4%	
6	Popular assembly	25.11.2008	5.02%	438	22	3.25%	151
7	Ballot; local election (2. Round)	30.11.2008	59.23%	439	260	59.7%	
8	Ballot; cantonal and national	30.11.2008	55.03%	447	246	48.7%; 56.8%	
9	Popular assembly	16.12.2008	8.43%	439	37	5.7%	263
10	Ballot; national	08.02.2009	56.10%	451	253	56.8%	
11	Ballot; cantonal and national	17.05.2009	47.79%	452	216	40.19%; 47.1%	
12	Popular assembly	09.06.2009	3.57%	448	16	2.5%	103
13	Ballot; cantonal and national	27.09.2009	47.10%	448	211	50.2%; 51.1%	
14	Popular assembly	24.11.2009	4.69%	448	21	2.85%	133
15	Ballot; cantonal and national	29.11.2009	60.71%	448	272	59.0%; 60.3%	

Appendix II: Models

Table 1: The income-group model

	Mean	5%	95%
Constant	-5.55	-6.98	-4.20
Male (*Ref.ca. female*)	0.36	-0.24	0.96
Single (*Ref.cat. married*)	-0.88	-1.60	-0.20
No children (*Ref.cat. children*)	-0.15	-0.95	0.60
Income (Ref.cat. medium income)			
Low income	-0.55	-1.36	0.21
High income	-0.07	-0.90	0.67
Wealth (Ref.cat. medium wealth)			
No assets	-0.96	-1.63	-0.29
High fortune	0.27	-0.39	0.85
Age (Ref.cat. 46–65 years)			
18–30 years	-0.85	-1.89	0.05
31–45 years	-0.53	-1.35	0.29
66 years and more	-0.61	-1.25	0.01
Residential stability (*ref. cat. <10 years of residence*)	1.17	0.56	1.74
Occupation (Ref.cat. Clerks)			
Legislators, senior officials, and managers	1.26	-0.17	2.60
Professionals	1.47	0.53	2.43
Technicians and associate professionals	0.66	-0.33	1.65
Service workers, and shop and market sales workers	0.83	-0.36	2.06
Skilled agricultural and fishery workers	1.61	-0.06	3.20
Craft and related trades workers	-0.59	-1.87	0.68
Plant and machine operators and assemblers	-3.02	-5.55	-0.44
Elementary occupations	-2.13	-5.10	0.86
Retired/disabled	1.09	-0.68	2.79
Housewives	0.27	-0.74	1.29
Students	0.95	-1.12	2.97
Ballot	5.18	3.98	6.52
Ballot*low income	-0.03	-0.64	0.54
Ballot*high income	1.01	0.38	1.63
Variance intercept individual	5.23	4.27	6.33
Variance intercept political decision	1.38	0.49	2.66
N	6552(15/458)		
DIC	3975.00		

Note: Log odds of logistic random intercept model (mean, as well as 95% credible interval).

Table 2: The age-group model

	Mean	5%	95%
Constant	-5.72	-7.16	-4.35
Male (Ref.ca. female)	0.36	-0.22	1.01
Single (Ref.cat. married)	-0.93	-1.61	-0.23
No children (Ref. cat. Children)	-0.17	-0.95	0.61
Income (Ref.cat. medium income)			
Low income	-0.60	-1.26	0.04
High income	0.60	-0.06	1.25
Wealth (Ref. cat. Medium wealth)			
No assets	-0.93	-1.57	-0.29
High fortune	0.28	-0.31	0.91
Age (Ref.cat. 46–65 years)			
18–30 years	-0.25	-1.42	0.99
31–45 years	0.09	-0.93	1.01
66 years and more	-1.02	-1.78	-0.25
Residential stability *(Ref.cat. -10 years of residence)*	1.15	0.58	1.75
Occupation (Ref.cat. Clerks)			
Legislators, senior officials, and managers	1.21	-0.20	2.56
Professionals	1.43	0.45	2.40
Technicians and associate professionals	0.63	-0.44	1.57
Service workers, and shop and market sales workers	0.79	-0.41	2.04
Skilled agricultural and fishery workers	1.58	0.00	3.23
Craft and related trades workers	-0.68	-1.98	0.59
Plant and machine operators and assemblers	-3.18	-5.78	-0.56
Elementary occupations	-2.02	-5.04	1.00
Retired/disabled	0.99	-0.68	2.82
Housewives	0.20	-0.85	1.26
Students	0.92	-1.12	2.90
Ballot	5.49	4.24	6.75
Ballot*18–30 years	-0.67	-1.54	0.18
Ballot*31–45 years	-0.78	-1.43	-0.10
Ballot*66 years and more	0.62	0.01	1.22
Variance intercept individual	5.28	4.25	6.39
Variance intercept political decision	1.41	0.48	2.75
N	6552(15/458)		
DIC	3970.00		

Note: Log odds of logistic random intercept model (mean as well as 90% credible interval).

Table 3: The gender-bias model

	Mean	5%	95%
Constant	-6.16	-7.57	-4.77
Male (*Ref.ca. female*)	1.12	0.35	1.80
Single (*Ref.cat. married*)	-0.94	-1.65	-0.29
No children (*Ref.cat. children*)	-0.17	-0.92	0.64
Income (Ref.cat. medium income)			
Low income	-0.59	-1.24	0.05
High income	0.59	-0.08	1.25
Wealth (Ref.cat. medium wealth)			
No assets	-0.97	-1.65	-0.32
High fortune	0.27	-0.33	0.91
Age (Ref.cat. 46–65 years)			
18–30 years	-0.81	-1.77	0.11
31–45 years	-0.53	-1.34	0.29
66 years and more	-0.64	-1.30	-0.04
Residential stability *(Ref.cat. -10 years of residence)*	1.14	0.56	1.72
Occupation (Ref.cat. Clerks)			
Legislators, senior officials, and managers	1.20	-0.13	2.58
Professionals	1.40	0.45	2.33
Technicians and associate professionals	0.64	-0.36	1.61
Service workers, and shop and market sales workers	0.78	-0.42	2.01
Skilled agricultural and fishery workers	1.60	0.09	3.26
Craft and related trades workers	-0.58	-1.85	0.66
Plant and machine operators and assemblers	-2.95	-5.62	-0.44
Elementary occupations	-2.10	-5.04	1.07
Retired/disabled	1.12	-0.59	2.80
Housewives	0.29	-0.84	1.24
Students	0.91	-1.03	2.95
Ballot	6.03	4.68	7.36
Ballot*male	-0.99	-1.54	-0.50
Variance intercept individual	5.24	4.24	6.34
Variance intercept political decision	1.45	0.52	2.78
N	6552(15/458)		
DIC	3972.00		

Note: Log odds of logistic random intercept and random slope model (mean as well as 90% credible interval).

Appendix III: Variables, operationalization, and sources

Variable	Summary statistics	Operationalization/Source*
Dependent variables		
Political participation	Shares: Participated: 30.3% Did not participate: 69.7%	Dummy: 1 = participated in ballot/citizens' assembly; 0 = did not participate
Independent variables – individual level		
Sex	Shares: Men: 48.7% Women: 51.3%	Dummy: 0 = women; 1 = men
Age	Shares: 30 years and younger: 12.6% 31–45 years: 21.1% 46–65 years: 36.8% 66 years and older: 29.5%	Four age categories: 1 = 30 years and younger; 2 = 31 to 45 years; 3 = 46 to 65 years, 4 = 65 years and older
Civil status	Shares: Married/registered partnership: 64.1% Single/divorced/widowed: 35.9%	Dummy: 1= married, registered partnership; 0=Single, divorced, widowed
Children	Shares: Children: 20.5% No children: 79.5%	Dummy: 1= children under 18 in the same household; 0 = no children under 18
Income	Shares: Low income: 38.7% Medium income: 37.1% High income: 24.3%	Three income groups (taxable income): 1 = CHF 4000 and under; 2 = CHF 4001-8000, 3 = CHF 8001 and above
Wealth	Shares: No assets: 21.3% Medium level of assets: 45.7% High level of assets: 33.0%	Three wealth groups (taxable wealth): 1 = no assets; 2 = taxable assets up until CHF 300,000, 3 = taxable assets greater than CHF 300,000
Residential stability	Shares: More than 10 years: 66.0% Less than 10 years: 34.0%	Dummy: 1= more than 10 years; 0 = fewer than 10 years

Occupation	Shares: 1: 4.8% 2 : 25.0% 3: 17.8% 4 : 9.5% 5: 6.6% 6 : 3.0% 7: 7.4% 8 : 1.4% 9 : 0.9% 11 : 2.9%[xvi] 12 : 19.3% 13: 1.5%	13 categories: 1 = Legislators, senior officials and managers; 2 = Professionals; 3 = Technicians and associate professionals; 4 = Clerks; 5 = Service workers and shop and market sales workers; 6 = Skilled agricultural and fishery workers; 7 = Craft and related trades workers; 8 = Plant and machine operators and assemblers; 9 = Elementary occupations; 11 = Retired/disabled; 12 = Housewives; 13 = students
Independent variable –contextual level		
Type of political decision	Shares: Ballot: 47.6% Citizens' assembly: 52.4%	Dummy: 1 = elections and ballot measures (ballot); 0 = citizens' assembly

Appendix IV: Estimations for policy decisions only (i.e., excluding elections)

--- Figure Appendix IV_1_income about here ---

--- Figure Appendix IV_2_age about here ---

--- Figure Appendix IV_3_gender about here ---

Note: Averaged predicted probability of participation by category, depending on the type of decision-making, based on the posterior distributions of the models as shown in Appendix II, but excluding the two cases of local elections.

Appendix V: An encompassing model

	Mean	5%	95%
Constant	-5.89	-7.34	-4.49
Male (*Ref.ca. female*)	1.12	0.40	1.89
Single (*Ref.cat. married*)	-0.93	-1.63	-0.28
No children (*Ref.cat. children*)	-0.21	-0.99	0.59
Income (Ref.cat. medium income)			
Low income	-0.60	-1.44	0.17
High income	-0.07	-0.85	0.71
Wealth (Ref.cat. medium wealth)			
No assets	-0.92	-1.58	-0.25
High fortune	0.30	-0.32	0.92
Age (Ref.cat. 46–65 years)			
18–30 years	-0.56	-1.80	0.70
31–45 years	-0.04	-1.00	0.89
66 years and more	-1.16	-1.93	-0.38
Residential stability *(Ref.cat. -10 years of residence)*	1.13	0.53	1.72
Occupation (Ref.cat. Clerks)			
Legislators, senior officials, and managers	1.21	-0.26	2.46
Professionals	1.44	0.49	2.39
Technicians and associate professionals	0.65	-0.33	1.65
Service workers, and shop and market sales workers	0.80	-0.49	2.01
Skilled agricultural and fishery workers	1.57	-0.10	3.09
Craft and related trades workers	-0.60	-1.91	0.66
Plant and machine operators and assemblers	-3.02	-5.53	-0.46
Elementary occupations	-2.10	-5.24	0.79
Retired/disabled	1.08	-0.59	2.78
Housewives	0.23	-0.84	1.23
Students	0.93	-1.16	2.93
Ballot	5.68	4.27	6.97
Ballot*low income	0.01	-0.67	0.63
Ballot*high income	0.98	0.40	1.63
Ballot*18–30 years	-0.27	-1.27	0.66
Ballot*31–45 years	-0.60	-1.26	0.08
Ballot*66 years and more	0.73	0.09	1.32
Ballot*male	-1.01	-1.52	-0.49
Variance intercept individuals	5.25	4.23	6.34
Variance intercept political decision	1.43	0.48	2.78
N	6552(15/461)		
DIC	3952.85		

Note: Log odds of logistic random intercept model (mean as well as 90% credible interval).