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How innovation in
participation could increase
legitimacy

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How innovation in participation could increase legitimacy

How can democracy establish and maintain a viable social and political order? In essence, what makes democracy work? This is a question of utmost social and scientific relevance, and the answer to that question lies in legitimacy. Without citizens willfully complying with political decisions and authority, effective governance would be impossible, as authority could only be established by implementing costly and inefficient mechanisms regulating behavior by rewards and/or threats of punishment (Tyler 2001).

While a decline in political support has been identified for quite some time (Dalton 2004), this issue has recently gained further relevance through the rise of right-wing populism and the “epistemic crisis” (Dahlgren 2018) as challenges to liberal democracy. Against this background, it is crucial to secure citizen’s support of democracy, the legitimacy of democratic political decisions. Can this be achieved not only by defending democracy against the present challenges, but also by actively advancing democratic legitimacy? This is the promise of democratic innovations, often in the form of novel opportunities for political participation.

Our research aims to put that promise to the test. In the present paper, we ask how different participative arrangements in decision making processes relate to legitimacy. In a first step, we conceptualize procedural legitimacy. In the next step, we present our empirical strategy, followed by an analysis of the data collected. We then analyze the effects of key influence factors on legitimacy, analyze interaction effect between participation (in agenda-setting and voting) and individual outcome favorability, and investigate the size of the effects.

Legitimacy

Our research interest lies in explaining – as a precondition of enhancing – willful compliance with political decisions through innovation in democratic processes. Without citizens willfully complying with political decisions and authority, effective governance would be next to impossible, as authority could only be established by implementing costly and inefficient mechanisms regulating behavior by rewards and/or threats of punishment (Tyler 2001, Grimes 2006). Thus, it is crucial for political authority to be perceived as legitimate. In the same vein, Kaina (2008) highlights that decision acceptance on its own is not a sufficient conceptualization of legitimacy, as decision acceptance might also be a matter of habitude or utilitarian considerations of costs and benefits (structured by rewards and punishment). However, compliance or decision acceptance based on these considerations falls short of democratic aspirations.

We adopt a psychological perspective on legitimacy, as opposed to normative or theoretical arguments about which decision-making arrangements are more or less legitimate from a

theoretical point of view. We follow the conceptualization of Tyler (2006), who defines legitimacy as “the belief that authorities, institutions, and social arrangements are appropriate, proper and just” (2006: 376). Adopting this attitudinal conception of legitimacy, we see willful compliance with authorities as the behavioral corollary of legitimacy. This perspective is also reflected in Weber’s (1964) definition of legitimacy as the belief of the governed that an authority is right and proper and ought to be obeyed. Accordingly, the belief of legitimacy (“Legitimitätsglaube”) is central to authority.

Considering legitimacy, we build on Scharpf’s (1999) conceptualization distinguishing two dimensions of legitimacy. Input-legitimacy refers to the opportunities of citizens to participate in political processes and the procedures introducing their preferences to the political system, while output-legitimacy is contingent on the substantive outputs and how they promote common welfare. This conceptualization leads us to an important insight with regard to our research question: Almost per definition, democratic decisions entail a majority that favors the decision, while a minority is opposed to it. For a functioning democracy, it is crucial to also ensure the legitimacy of this decision independently of its outcome. While the proponents of the outcome (the majority) will be happy to accept the decision, ensuring to the legitimacy of the decision among those who are opposed to it is paramount (Arnesen 2017). Therefore, we cannot rely only on output legitimacy to create widespread willful compliance with political decisions, and need to include the role of features of the political process in doing so.

A later addition to this conceptualization of legitimacy is the idea of throughput-legitimacy, as proposed by Schmidt (2013). Throughput legitimacy refers to the mechanisms inside the “black box” of government between input and output (Schmidt 2013: 5), i.e. the quality of the internal government processes of policy making. Factors that influence throughput legitimacy are, for instance, transparency and the quality of deliberation in decision-making processes (Strebel et al. 2018: 491). As Strebel et al. (2018) point out, input and throughput legitimacy together can be seen as the *procedural* dimension of legitimacy, while output legitimacy is the instrumental dimension of legitimacy.

Moreover, legitimacy consists also of political involvement or interpersonal assurance (see Weatherford 1992). We are leaving these two dimensions out here. The music does not play on these factors in our study: From a theoretical point of view, our independent factors do not influence those dimensions of legitimacy. Output legitimacy is used as influence factor and will be manipulated. Thus, we will work with input and throughput dimension as dependent variable in this paper. As will be shown below, we will rely on one latent factor for measuring the combination of them, i.e. a factor for procedural legitimacy.

Influence factors of legitimacy

We investigate three direct effects (whether a decision is taken via a vote, modes of decision-making, agenda setting) and moderating effects of outcome satisfaction on these effects (see Figure 1). The most basic institutional arrangement considered in the literature (Esaïsson et

al. 2012, Persson et al. 2013, Esaiasson et al 2016, Arnesen 2017, Marien and Kern 2017) is *involvement in the decision-making process* in a direct-democratic way, usually by submitting the decision to a vote. In fact, the literature on participatory democracy theorizes an effect of participation in decision-making on legitimacy. It is argued that being able to participate in the decision gives individuals a sense of being able to influence the decision, which creates legitimacy. Ultimately, this relates to the fundamental democratic idea of self-rule, implemented by involving those who are concerned by a decision in the decision-making process. Thus, decisions are to a lesser extent imposed from the outside, and the ability to influence a collective binding decision is theorized to foster compliance with that decision (Pateman 1970, see Esaiasson et al. 2012, Arnesen 2017). We expect the possibility to take part in a political decision by casting a vote can be expected to increase legitimacy. Thus, we hypothesize:

H1: Allowing citizens to vote in a decision-making process increases-the legitimacy of the process.

Going a step further, we argue that not only the possibility to vote matters, but also the *mode of voting*. Following Emerson (2020a), we argue that different modes of voting differ their orientation towards consensus, with simple majority voting carrying a risk of a “tyranny of the majority”, disregarding the interest of the defeated minority. Emerson proposes a multi-option preferential voting procedure to address this issue. Citizens are not only asked about their favorite option, but rank all options on the table according to their preferences. This leads to citizens consider all options on the table and not insist on their favorite option, but think about compromise and what might also be acceptable for them. We expect this incentivization of considering all perspectives to contribute to the perceived fairness of the decision-making process, as every individual can expect their interests to be duly considered. A similar argument posits that political support is greater in institutional settings where all parties continue to have a stake in the political process, as opposed to systems that are based on a winner-take-all principle (Norris 1999: 223).

Another variation of this theme is the procedure of “quadratic voting” (Lalley and Glen Weyl 2018). Under quadratic voting, individuals have a “budget” of votes at their disposal. They are free to give one or several votes to different options, allowing them to express the strength of their preference. However, casting more than one vote for an option results in the “budget” of votes being diminished by that number of votes squared¹. In that sense, voters can “buy” additional votes to express a strong preference for one option at the expense of expressing a slight preference for a multitude of options. This allows for example minorities to make their voices heard while disincentivizing strategic voting.

¹ Therefore, giving 1 vote to a specific option has a cost of 1, giving 2 votes to a specific option has a cost of $2^2 = 4$, giving 3 votes to a specific option has a cost of $3^2 = 9$ votes, and so forth. For instance, if the budget amounts to 10 votes, individuals might give 3 votes to one option and 1 to another ($9 + 1 = 10$), or 2 votes to three options each, and a single vote to four other option ($2 + 2 + 2 + 2 + 1 + 1 + 1 + 1 = 10$), or any other possible combination.

The use of such consensus-oriented voting procedures might be especially useful in contexts where there is a greater risk of a majority unduly overruling a minority and disregarding their interests. This would be the case when a polity is characterized by deep structural or cultural cleavages between a majority and a minority, in particular if they are non-cross-cutting. If such a cleavage translates into political preferences and interests, there is a higher risk of constant marginalization of the minority under majority rule. This highlights that consensual institutions such as the voting procedures we presented are particularly suited for certain contexts.

Therefore, we expect the extent of the orientation towards consensus of the voting procedure to enhance the legitimacy of the decision.

H2: Consensus-oriented voting procedures such as multi-option preferential voting and quadratic voting increase the legitimacy of the process.

However, taking decisions by voting is not the only institutional arrangement that enables citizens to take influence in decisions. Direct democratic instruments (such as the Swiss Popular Initiative) and participative processes often also have an *agenda-setting* function, enabling citizens to introduce their concerns into the political process. The possibility to introduce issues to the political agenda also gives citizens more control over the political process, resulting in greater perceived influence or perceived fairness of the decision-making process (i.e., legitimacy): Tyler theorizes a “voice” effect in assessing procedural justice, arguing that individuals value the opportunity to make arguments and present their position and feel treated more fairly when given this opportunity. This voice effect does not depend on having actual control over outcomes, people value the opportunity to express their view in its own right (Tyler 2000: 121). Thus, we expect the opportunity put issues on the political agenda to also have an effect on legitimacy by giving citizens the opportunity to make their concerns heard, which makes them feel treated more fairly.

H3: An institutional arrangement that enables citizens to put their concern on the political agenda increases the legitimacy of the decision.

Even though our main focus lies on the effects of procedures, we must not neglect the effects of *decision outcomes* on legitimacy. This insight is based on the findings of the literature addressing the gap in satisfaction with political decisions between the “winners”, i.e. those who favor the outcome of the decision-making process, and the “losers”, who were politically defeated. Anderson and Guillory (1997) found that the winners tend to be more satisfied with the process than the losers. This reflects an instrumental mechanism of evaluation and is in line with the findings of Esaiasson et al. (2019) and Arnesen (2017), who find that outcome satisfaction is the main determinant of decision acceptance. However, Anderson and Guillory (1997) also find that this difference in satisfaction depends on institutional context, with the difference in satisfaction between winners and losers being smaller in consensus-oriented systems. Opportunities for political participation in the form of direct democratic institutions were also found to moderate the winner-loser gap in satisfaction (Bernauer and Vatter 2012).

We adopt this argument and expect the effect of procedural arrangements on legitimacy to be moderated by outcome satisfaction. We hypothesize:

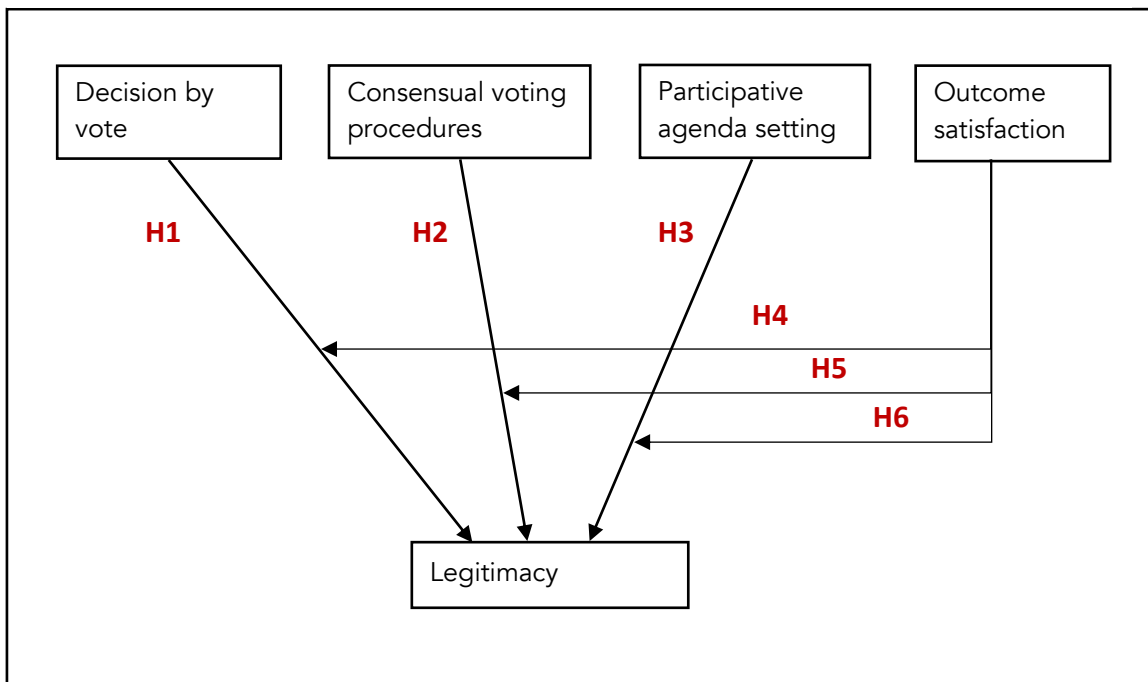
H4: The effect of outcome favorability on legitimacy is weaker when individuals can vote in the decision-making process.

H5: The effect of outcome favorability on legitimacy is weaker when individuals can vote in the decision-making process with a consensus-oriented voting procedure such as quadratic voting or multi-option preferential voting.

H6: The effect of outcome favorability on legitimacy is weaker when individuals can participate in agenda-setting.

The following figure (Figure 1) summarizes our conceptual considerations and the effects we expect:

Figure 1: Theoretical model



Empirical strategy

We tested these hypotheses empirically by means of a vignette survey experiment. In the survey, we presented the respondents with a fictitious process of participatory budgeting on the municipal level and asked them to evaluate the process. We present the respondents with the scenario that their home municipality is planning to spend a sum of 100'000 CHF for a certain project, with five different projects² being proposed. The decision on which of these five projects to spend that sum of money is to be taken participatively.

This process of taking that decision as outlined in the vignette consists in three different stages, and the treatment was varying the descriptions of each of these stages. The first stage relates to agenda-setting, in our case the genesis of proposal of projects to spend the budget on. This treatment dimension has two levels, one being that the five projects were proposed by the municipal executive, the other being that projects were proposed by the citizens themselves. The second stage of the process relates to the actual decision about which proposal to implement. Here, we implemented a four-level treatment. The levels include no participation at all, the decision being taken by municipal executive, a majoritarian vote, multi-option preferential vote, and quadratic voting. The last treatment dimension relates to the outcome of the decision-making process. One group of respondents was presented with the fact that the outcome of the process (the decision how to spend the budget) is in line with their preferences, while the other group will be presented with an outcome they oppose. Thus, it is a 2 x 4 x 2 factorial design, and we end up with 16 different vignettes.

For the implementation of this treatment, we asked the respondents to what extent they would prefer or oppose the implementation of each of the five projects independently. In case the respondent was assigned a decision outcome that was in line with their preferences, the vignette featured the project the respondent rated most favorably. In case the respondent was assigned an outcome of the decision process that they oppose, the vignette featured the project the respondent rated least favorably among the five proposed options.

Every respondent was asked to rate three of the 16 vignettes. Every vignette composed by randomly selecting one of the attributes of every treatment dimension. With this experimental design, we are able to identify effects by relying on the conjoint experiment approach developed by Hainmüller et al. (2014), as explained in further detail below. More often than not, this methodology is applied to conjoint choice tasks, where respondents are asked to indicate a preference for one of two randomly composed profiles. However, it can be analogously applied to rating tasks, where one or two profiles are rated on given criteria (see Hainmüller et al. 2015). We opted for the latter approach, asking respondents for a rating of a single vignette. As Hainmüller et al. (2015) note, this entails some drawbacks regarding the external validity of the observed effects. However, we argue that comprehending and envisioning a single participative process is cognitively quite demanding, let alone doing so for

² The first project aimed at improving the municipal finances; the second at creating a public space with benches and green areas where citizens can meet; the third at building more parking spaces; the fourth at reducing noise pollution in a residential area; and the fifth at increasing biodiversity on communal green spaces.

two different processes and comparing them. Thus, we see a single-profile rating task as a viable compromise that minimizes cognitive strain for the respondents.

Data and randomization

We implemented this empirical strategy in an Online Survey. The survey was answered in October 2020 by 90 German-speaking respondents, mostly students at the University of Fribourg. Figures 2, 3 and 4 report basic descriptive statistics of the socio-demography of the respondents. 67 out of 90 respondents are female, the median age of the respondents is 24, with a mean of 29.4 years. The fact that most of our sample is comprised of university students is also reflected by the distribution of educational attainment among the sample, where the median and modal category is a high school diploma qualifying for further (university) education.

Figure 2 : Gender of respondents

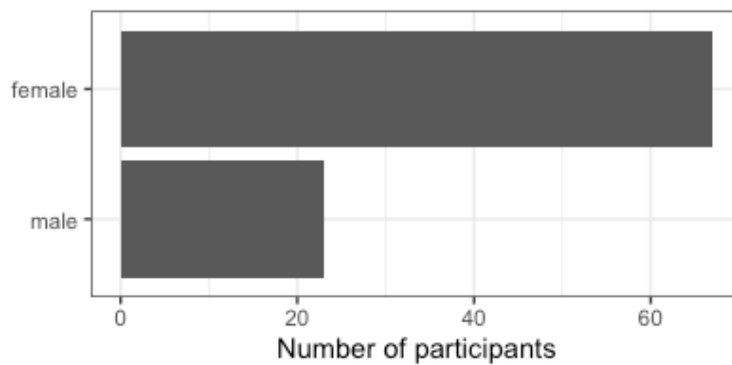


Figure 3 : Age of respondents

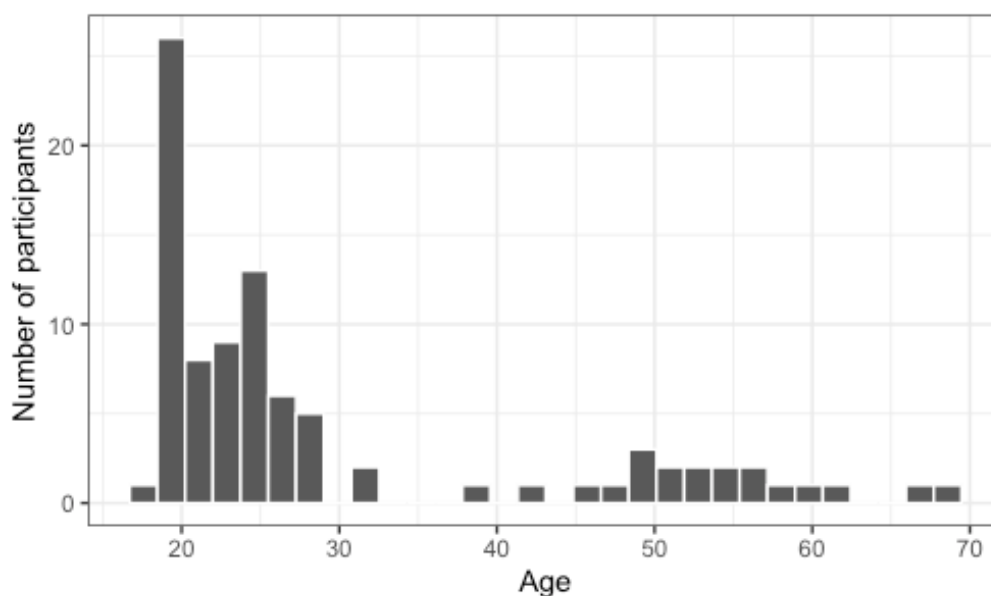
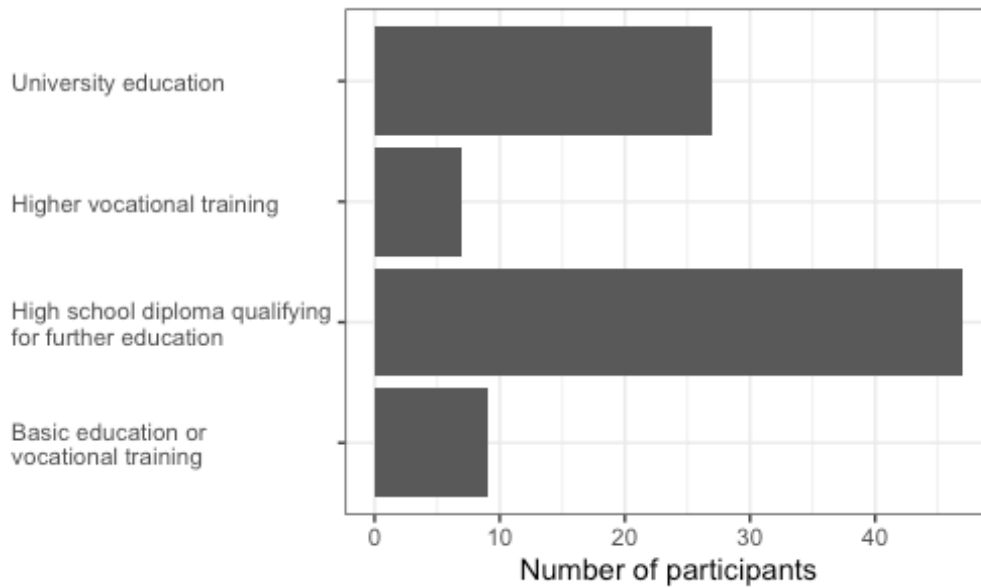


Figure 4: Education levels of respondents



Additionally, we investigated whether the random assignment of the treatment variables was successful. To this end, we checked for statistical independence between the assignment of the 16 different possible vignettes and a number of socio-demographic and attitudinal background characteristics. These background characteristics include age, gender, political interest, political left-right positioning, general interpersonal trust (measured with the scale proposed by Beierlein et al. (2012)) and political trust. A series of one-way ANOVA (and Chi²-tests where required by the scale of the variable) showed that there are no statistically significant differences in the distribution of these variables across the treatment groups, suggesting successful randomization of the treatment.

Measuring legitimacy

For our measurement of legitimacy, we use different indicators of input and throughput legitimacy found in literature. Respondents were asked to evaluate each vignette by answering these questions on an 11-point scale from 0 to 10, with 0 meaning "not at all" and 10 "completely" Table 1 shows the wording of these items, descriptive statistics of the responses, the shorthand labels of the indicators as used in further analysis, and the theoretical dimension of legitimacy the indicator relates to. The number of observations for the different items do not suggest any significant problems with particular items that would lead to a disproportionate number of missing data points. From a total of 270 observations, there are close to 260 observations for every item, with the exception of "trust02", featuring 250 observations – a number that we do not deem problematic either.

Table 1: Indicators of Input and Throughput Legitimacy, Descriptive Statistics

| Item | Wording | Legitimacy dimension | Mean | St. Dev. | Median | Max | Min | N |
|--------------|---|----------------------|-------|----------|--------|-----|-----|-----|
| | If a decision was made in my municipality as described above, ... | | | | | | | |
| acceptance01 | I would be able to accept the decision well. | throughput | 6.443 | 2.571 | 7 | 10 | 0 | 262 |
| acceptance02 | I would be willing to go along with the decision. | throughput | 6.431 | 2.484 | 7 | 10 | 0 | 260 |
| fairness01 | I would feel the process for deciding on a project was fair. | throughput | 5.912 | 2.970 | 7 | 10 | 0 | 260 |
| fairness02 | I would feel that I was treated fairly in the process of deciding on a project. | throughput | 5.850 | 2.886 | 6 | 10 | 0 | 260 |
| trust01 | I would trust the process of deciding on the budget. | throughput | 5.587 | 2.789 | 6 | 10 | 0 | 259 |
| trust02 | I would trust in the local council (executive). | input | 5.500 | 2.627 | 6 | 10 | 0 | 250 |
| influence01 | I could influence the outcome of the decision | input | 5.172 | 3.105 | 6 | 10 | 0 | 261 |
| influence02 | I would feel that I had brought my opinion and interests into the decision | input | 5.798 | 3.044 | 6 | 10 | 0 | 263 |

Input legitimacy is measured via three indicators (influence the outcome, bring in opinion and interest, trust in the local council, I.e. representatives). Regarding throughput legitimacy, fairness of the process is used as one indicator: Legitimate political decisions arise from processes that are perceived as fair. This argument is advanced in social psychology (Thibaut and Walker 1975, Tyler 2000, 2001, 2006). This literature posits that fair treatment in political and legal processes signals to individuals that they are valued and have high social status, thus increasing their self-worth and self-esteem (Tyler 2001). Evoking these feelings, in turn, leads to a greater willingness to obey to authorities and view them as legitimate (2001: 424). Moreover, Tyler (2011) argues that citizens confer some inherent value to procedural justice. Esaisasson et al. (2012: 790) see fair treatment as “a moral right fulfilled”, while Marien and Werner argue that it is a universal norm, albeit with varying strength (2019: 76). With a similar argument, Hooghe et al. (2017) show that political trust is determined by the extent to which democratic ideals are met in political processes. This study shows that fair treatment (by the judiciary) is the most highly valued democratic practice. In addition, trust in the process is used, as well as whether one can accept and go along with the decision. Those indicators seem to represent the dimensions well. We do not argue that those are the only possible ones. Weatherford (1992) also relied on *available* survey indicators. It seems not to matter which indicators are used exactly. To some extent indicators are interchangeable.

We combine these correlated variables (table A1 in appendix) into the underlying dimension of input and throughput legitimacy by running a factor analysis (PCA). With this method, we are assuming that all of every variable's variance is shared with all other variables, that is, the

factor should account for all of the variance among the variables. Obviously, in our context input and throughput legitimacy indicators are highly correlated and belong to the same dimension of legitimacy. Based on the results of the PCA, we decided to retain the first principal component, explaining 74 % of the total variance, and all of the indicators, as the minimal factor loading amounts to 0.78. Table 2 reports the factor loadings, the complete results of the PCA are reported in the appendix. We used the factor resulting from this principal component as our measure of legitimacy in the further analysis. Inherently to the PCA procedure, this factor has a mean of 0 and a standard deviation of 1, while the values range from -2.43 to 1.72.

Table 2: Loadings of retained factor

| Item | PC1 |
|--------------|-------|
| acceptance01 | 0.839 |
| acceptance02 | 0.837 |
| fairness01 | 0.909 |
| fairness02 | 0.931 |
| influence01 | 0.776 |
| influence02 | 0.850 |
| trust01 | 0.899 |
| trust02 | 0.848 |

As a robustness check, we also run the models for all the indicators separately (single indicator measurement of legitimacy) and a composite indicator of legitimacy of all the variables added together and assessed the results. It does not change insights described in the results section at all. We are manipulating outcome legitimacy here, so we do not include this dimension in our dependent variable here.

Model

We follow the Hainmueller et al. (2014) approach to estimate the effects, adapting it for a single-profile rating task. Hainmueller et al. (2014) propose the average marginal component effect (AMCE) as estimator. Its definition is rooted in the potential outcomes framework of causal inference, where a causal treatment effect is defined as the difference between the outcome given presence of the treatment and the outcome given absence of the treatment on the unit level. As one of these outcomes will always be counterfactual, the causal effect is derived by computing the difference between averaged outcomes given the treatment and averaged outcomes absent the treatment. Based on this framework, the AMCE of a given treatment component is defined as the effect of that treatment component averaged over the distribution of all other treatment components. Hainmueller et al. show (2014) that the AMCE is causal assuming stability and no carry-over effects, no profile-order effects, and randomization of the treatment. Stability and no carry-over effects are given when the outcome is affected neither by the position of a rating task within the sequence of all rating tasks

given to a respondent, nor by the treatments in the other choice tasks. Profile-order effects relate to the effect of the position of a profile within a choice task, thus they do not apply to our design, featuring a single profile. The last requirement is randomization of the profiles, ensuring statistical independence between the treatment and the outcomes.

Moreover, as none of the treatment combinations had to be ruled out as implausible, we were able to fully randomize the treatment combinations, assigning every possible treatment combination with equal probability. Following Hainmueller et al. (2014: 16), we can thus assume completely independent randomization, which enables us to nonparametrically estimate the causal effects of the vignettes using a standard OLS regression of the treatment variables (as dummies) on the outcome. For our analyses, we implemented this approach using the *cjoint* package for R. As every respondent evaluated three vignettes, our data is clustered by respondent. Thus, we used the package's implementation of cluster-robust standard errors to correct the estimates with regards to this clustered structure of our data.

As outlined above, we estimate the AMCE by running an OLS regression of the factor score for legitimacy (which is standardized as it was derived in a PCA) on the treatment variables of participation in agenda-setting, the voting procedure (if any), and whether the outcome is in line with the respondent's policy preference.

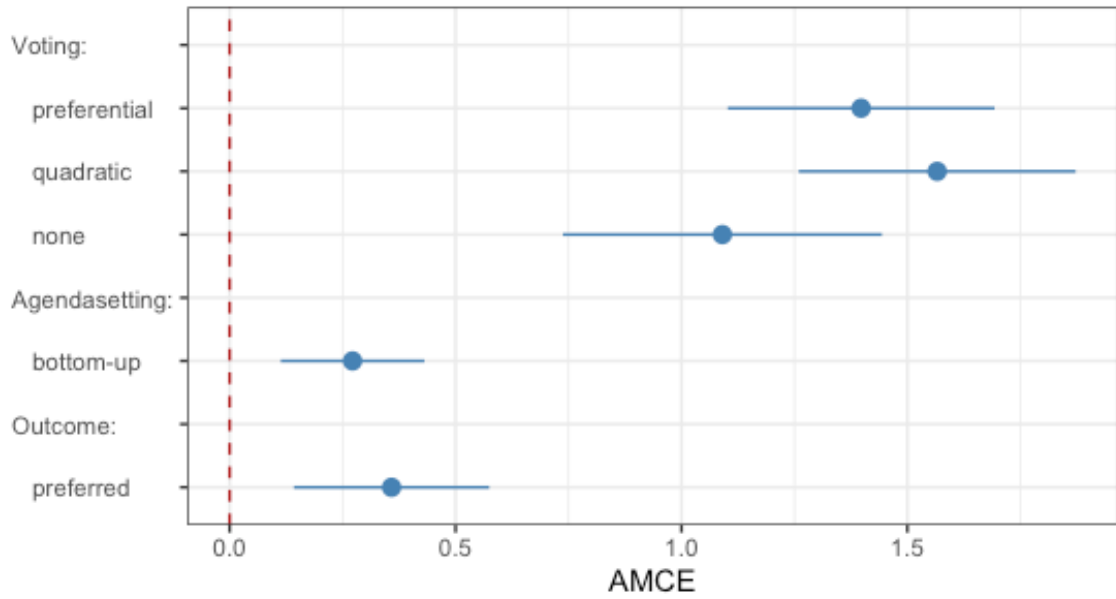
Main results

The AMCE estimates are shown in Figure 5, and the numeric estimates for all analyses are reported in the appendix. A total of 242 observations, clustered by 87 respondents, entered the analysis. As for the *opportunity to decide about the proposals in a vote*, all three voting procedures have a strong significant effect on legitimacy evaluations when compared to a top-down decision by the government. A simple majority vote increases perceived legitimacy by 1.40 standard deviations of the legitimacy factor, a preferential voting mechanism leads to a 1.57 standard deviation of the legitimacy factor, while the effect of quadratic voting is somewhat less pronounced, with an increase of 1.09 standard deviations of the legitimacy factor with respect to no opportunity to vote. All these effects are highly statistically significant. Moreover, with effect sizes by far exceeding one standard deviation of the dependent variable, we interpret them as very strong in terms of substantive significance.

The perceived legitimacy of the participatory budgeting process is increased by 0.27 standard deviations of the legitimacy factor when respondents were told that citizens had the possibility to propose how to spend the budget (*agendasetting*), as opposed to the proposals being made by the executive. This effect is statistically highly significant.

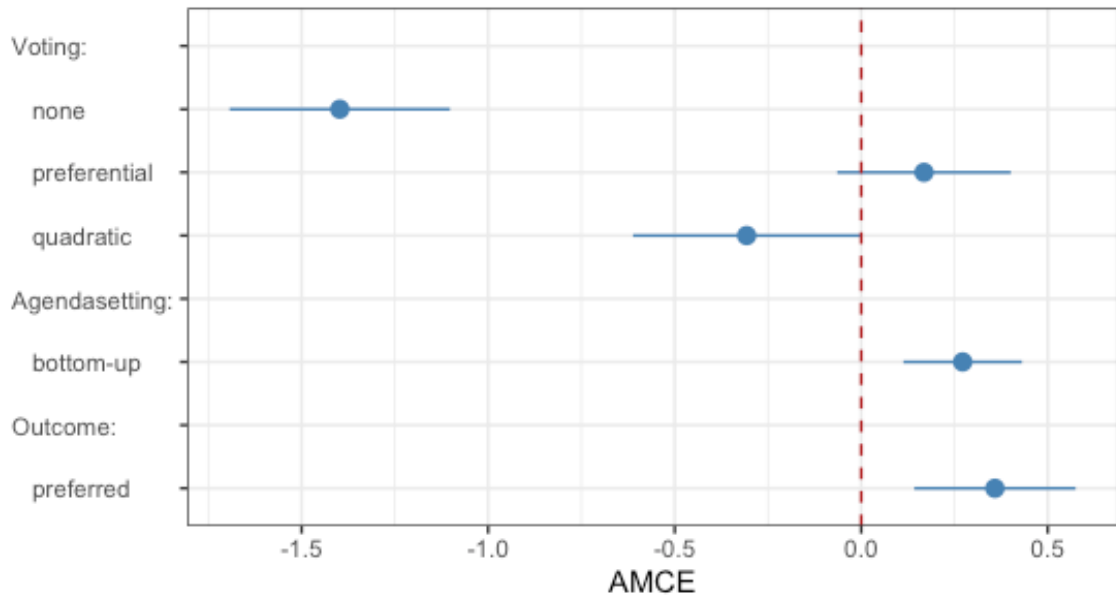
As expected, respondents also evaluated processes that yielded their *preferred policy outcomes* as more legitimate. The difference in perceived legitimacy to an outcome that opposes the respondents' policy preferences amounts to 0.36 standard deviations of the legitimacy factor. This effect is statistically significant with a p-value below 0.01.

Figure 5: Effects of participation and outcome favorability on legitimacy



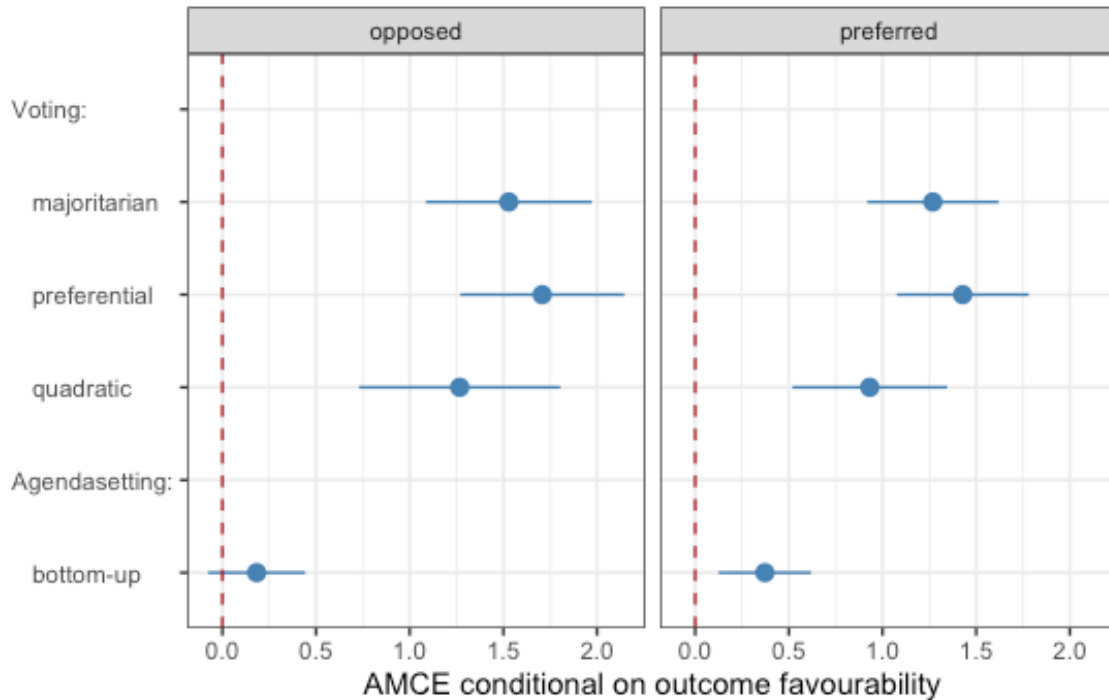
In order to gauge the effects of different *voting procedures*, we rerun the analysis, setting simple majority voting as reference category. The estimates are reported in Figure 6. Compared to majority voting as a baseline, a preferential voting procedure is seen as more legitimate by 0.17 standard deviations. However, this effect is not statistically significant at conventional thresholds. Moreover, quadratic voting has a negative effect of -0.31 standard deviations on legitimacy compared to preferential voting, an effect that is statistically significant at the 5 % level.

Figure 6: Effects of voting procedures on legitimacy compared to majority voting



In a next step, we examine the *interaction effect we expect between participation (in agenda-setting and voting) and individual outcome favorability*. To do so, we divided the observations into two subgroups, one where the respondents were presented with their preferred policy outcome, and another where the respondents were presented with their opposed policy outcome, and analyzed both subgroups separately, thus following the approach of Hainmueller et al. (2014: 22). The estimates are reported in Figure 7.

Figure 7: Effects of participation conditional on outcome favorability



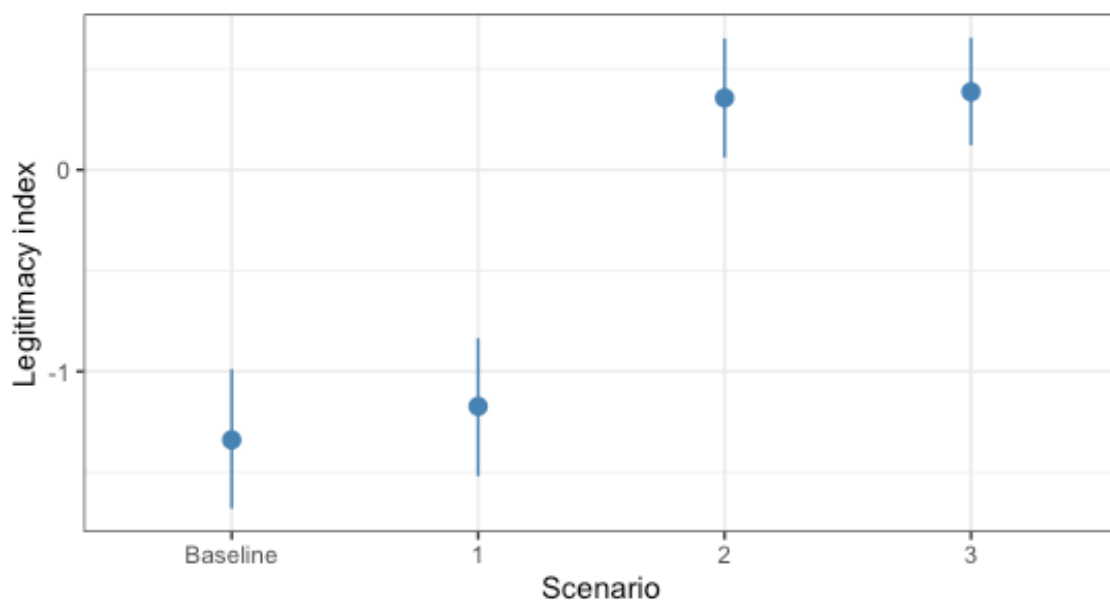
The analysis shows that participation in agenda-setting has a positive effect of 0.37 standard deviations when respondents get their preferred policy outcome, the effect being statistically significant at a p-value below 0.01. When they do not get their preferred policy outcome, the effect of agenda-setting is no longer significantly different from zero. Thus, the effect of participation in agenda-setting is significantly stronger under the condition of a favorable policy outcome. If somebody can set a topic on the agenda and the project gets selected, the person is more involved and gives more legitimacy to the decision. However, agenda setting cannot compensate for not getting the preferred outcome. For voting mechanisms, no such differences between the subgroups were observed, the effects remain positive and statistically significant irrespective of the subgroup defined by outcome preference. However, all of the three point estimates for the effects of voting are somewhat smaller in the subgroup of preferred outcomes than in the subgroup of opposed outcomes.

As a further illustration of these effects and their substantive significance, we apply the approach of King et al. (2000) to compute expected values for legitimacy including a measure of the uncertainty around these values. King et al. propose a quasi-Bayesian approach to simulate these quantities of interest. Based on the parameters of the AMCE estimations,

assumed to be following a multinomial normal distribution, we ran a 1000-iteration simulation of expected values, setting the treatment variables to different levels. The distribution of these simulated values provides us with a point estimate and a measure of uncertainty of the expected values.

We simulated expected values of legitimacy for four different scenarios, defining the values to which the treatment covariates were set. The computations were based on the full model including the interaction of outcome favorability and participation (in agenda-setting and voting). First, we simulated a baseline scenario without any participation and an opposed policy outcome, thus setting all covariates to zero. This resulted in an estimated legitimacy value of -1.34. Scenario 1 includes participation in agenda-setting, but no participation in the actual decision (i.e. voting), and opposition to the policy outcome. This results in a computed legitimacy score of -1.17, more than one standard deviation below the mean. Scenario 2 does not include participation in agenda-setting, whereas it does include voting in the form of a preferential voting procedure, and opposition to the policy outcome. This scenario yields an expected legitimacy score of 0.36, slightly above the mean. Scenario 3 does not include participative agenda-setting, either, while featuring a decision in a majority vote, and a favorable policy outcome. The expected legitimacy score for this scenario amounts to 0.39 and is thus far above the mean. Figure 8 reports these point estimates graphically, including the 95 % confidence intervals as a measure of uncertainty around these estimates.

Figure 8: Simulated legitimacy scores for different participation scenarios



Discussion and conclusion

From a theoretical point of view, we expect that the legitimacy of a participatory budgeting process is increased by the opportunity to participate in agenda-setting, by the opportunity to vote about how to spend the budget, by the consensus-orientation the voting procedure,

and by the relation of the outcome and individual policy preferences. In Hypothesis 1, we stated our expectation that the opportunity to vote in a participatory budgeting process increases the legitimacy of that process. Empirical analysis seems to support this expectation, we find strong and statistically significant positive effects of all voting procedures compared to a top-down decision by political authorities. Thus, our findings support the hypothesis of a positive effect of participation by voting on legitimacy of participatory budgeting processes.

Building on this argument, we further hypothesized that consensus-oriented voting procedures such as preferential voting and quadratic voting increase legitimacy compared to basic majority voting. While preferential voting was associated with an increase in legitimacy, this effect was not statistically distinguishable from zero at conventional levels of confidence. Nonetheless, we argue that further investigation is promising, as the sample size was rather small. King et al. (2000) claim, we should not rely too much on p-value. In different, more conflictive or problematic settings, we expect that the voting mechanism really matters and therefore makes a difference. In this way, we deal here with a least-likely case that it makes a difference. In more likely cases, the empirical results will possibly be different.

As for quadratic voting, we find a statistically significant negative effect on legitimacy compared to majority voting, contradicting our theoretical expectations. While this finding does not support our theoretical argument about the consensus-orientation of voting procedures *prima facie*, we suggest an alternative explanation specific to quadratic voting. As this is a novel and arguably quite complex mechanism, a brief explanation in the context of a survey experiment might not be sufficient to convey its benefits, leading to a degree of rejection or confusion regarding this mode of voting. In turn, this could lead to more negative evaluations of the political process. We argue that further research on quadratic voting either in (experimentally) emulated or actual political decision-making processes is needed to discern whether this effect is due to the survey experiment setting and how quadratic voting is perceived in practice.

Our third hypothesis relates to participation in setting the political agenda, operationalized in the context of our survey experiment as the opportunity to propose how to spend a public budget. We find that such an opportunity is associated with increased perceived legitimacy of the political process, independent of having a vote in the decision and whether the outcome is in line with individual policy preferences. However, this effect is relatively small in substantial terms compared to the effect of having an actual say in the decision through a vote. Nonetheless, we see it as an important finding, especially with regard to innovations in political participation, that giving citizens an opportunity to voice their wants and needs increases legitimacy even without being actually able to influence the decision.

Moreover, we find that the policy outcome of a participatory budget is associated with its perceived legitimacy. The process is seen as more legitimate to the extent that it yields a policy outcome that is in line with individual preferences. In our fourth, fifth and sixth hypothesis, we stated our expectation that this effect is moderated by opportunities to participate in the decision-making process, leading to higher legitimacy with the “losers” of the

political process when they had an opportunity to participate in the decision. Regarding voting (in different procedures), results do not indicate statistically significant differences in the effect of voting depending on whether the decision is in line with policy preferences or not. Regarding participation in agenda-setting, we find a positive interaction effect, as opposed to the negative one we expected. Our results indicate that there is a significantly positive effect of participation in agenda-setting when individuals get their preferred policy outcome, where there is no significant effect when the policy outcome contrasts individual preferences. This suggests that being able to introduce policy proposals and seeing them enacted at the same time has a particularly strong and mutually reinforcing effect on legitimacy, an interesting finding in its own right.

An important limitation of our analysis lies in our sample. We acknowledge that the present analysis is based on a sample that is quite far from being representative for the general population. Our experimental methodology ensures that this is not a threat to the internal validity of our findings, but there is potential to increase their external validity by relying on representative samples, as we cannot rule out that some effects interact with respondents' characteristics. Moreover, increasing sample size provides more statistical power. As our sample so far is quite small, we hesitate to outright reject the hypotheses for which we did not find sufficient empirical support. As the effects often went in the expected direction and we might find statistically significant effects with adequate statistical power. However, we are convinced that the present findings warrant further investigation of these mechanisms, and that these limitations can be addressed when doing so. Further research also needs to investigate in which way the results are generalizable beyond the local level and beyond the Swiss context.

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Appendix

A1 Complete Principal Component Analysis Results

| | PC1 | PC2 | PC3 | PC4 | PC5 | PC6 | PC7 | PC8 |
|--------------|-------|--------|--------|--------|--------|--------|--------|--------|
| acceptance01 | 0.839 | -0.360 | 0.183 | 0.169 | -0.109 | 0.301 | -0.050 | 0.016 |
| acceptance02 | 0.837 | -0.320 | 0.285 | 0.113 | 0.102 | -0.301 | 0.038 | 0.018 |
| fairness01 | 0.909 | 0.116 | 0.019 | -0.239 | -0.252 | -0.049 | 0.012 | 0.190 |
| fairness02 | 0.931 | 0.118 | 0.077 | -0.134 | -0.188 | -0.020 | 0.078 | -0.231 |
| influence01 | 0.776 | 0.504 | -0.021 | 0.377 | -0.026 | -0.023 | -0.004 | 0.027 |
| influence02 | 0.850 | 0.237 | 0.204 | -0.201 | 0.347 | 0.134 | -0.001 | 0.015 |
| trust01 | 0.899 | -0.091 | -0.303 | -0.044 | 0.051 | -0.073 | -0.283 | -0.041 |
| trust02 | 0.848 | -0.185 | -0.432 | 0.029 | 0.106 | 0.038 | 0.217 | 0.021 |

| | PC1 | PC2 | PC3 | PC4 | PC5 | PC6 | PC7 | PC8 |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Eigenvalues | 5.949 | 0.612 | 0.441 | 0.302 | 0.256 | 0.210 | 0.137 | 0.093 |
| Proportion Var | 0.744 | 0.077 | 0.055 | 0.038 | 0.032 | 0.026 | 0.017 | 0.012 |
| Cumulative Var | 0.744 | 0.820 | 0.875 | 0.913 | 0.945 | 0.971 | 0.988 | 1 |

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Abstract

Legitimacy is the bedrock of any democratic regime. Effective governance crucially relies on citizens' support of the political system and the decisions it produces. This study investigates how participatory budgeting as a novel form of political participation relates to legitimacy perceptions. In a conjoint vignette survey experiment, we asked respondents to rate the legitimacy of hypothetical participatory budget decision processes, relating to a Swiss local context and differing in three attributes: (1) the opportunity to introduce policy proposal (agenda-setting), (2) the opportunity to vote on a proposal according to different voting methods, (3) whether the decision is in line with the respondent's policy preferences or not. We find that participation in agenda-setting, (preferential) voting, and outcome favorability significantly increase the perceived legitimacy of participatory budgeting processes. However, our findings suggest that novel participation opportunities do not alleviate the difference in perceived legitimacy between the winners and losers created by policy decisions.

Keywords

Legitimacy, Democratic Innovations, Participatory Budgeting, Voting Methods, Decision-making.

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