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# Empowering local citizens: assessing the inclusiveness of a digital democratic innovation for co-creating a Voting Advice Application

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**ABSTRACT**
Increasing citizen dissatisfaction with democracy leads governments and municipalities across the globe to seek new ways of including and empowering citizens. Little is known about whether 'Digital Democratic Innovations' (DDIs) could contribute to this goal. We developed a new DDI in a Swiss municipality, dubbed *Demokratiefabrik*, where 1,079 citizens co-created a questionnaire that served as an official Voting Advice Application for candidates and voters in communal elections. We find that while sophisticated and allegiant citizens and left-green voters participated more in the DDI, they did not dominate the process of creating the questionnaire. Intriguingly, citizens with lower political trust were particularly active on the platform, suggesting that DDIs might give disenchanted citizens a new voice in the political process. Overall, carefully designed DDIs can be a venue for inclusive citizen participation, involving and empowering local citizens in decision-making.

## Introduction

The perceived crisis of democracy with increasing citizen dissatisfaction and declining political trust has triggered a boom of participatory and deliberative innovations. A big issue is whether such democratic innovations are similarly promising to democracy as soon as they take place online. Can *Digital Democratic Innovations* (DDIs) supplement (or even replace) traditional democratic innovations (such as face-to-face mini-publics)?

Unlike conventional face-to-face venues, DDIs offer the possibility of linking many more people from diverse backgrounds and geographical contexts

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to political processes in a *bottom-up, co-creative* and *easy* way. The latter is especially true when DDIs are organised asynchronously, enabling people to participate at their own pace and independently of space and time (Iandoli et al. 2018). If designed to ensure the anonymity of participants, DDIs can further help suppress cues regarding gender or age, and promote inclusivity in online interactions. Moreover, locally organised DDIs hold the potential to appeal to the broader population since they offer the possibility of expressing citizens' everyday concerns and needs.

On the other hand, DDIs also have several drawbacks. For instance, we know that *unstructured* online environments with self-selected participation (such as commentaries on news websites or Facebook) can entail low argumentative complexity and incivility (Esau, Friess, and Eilders 2017; Quinlan, Shephard, and Paterson 2015). Moreover, they may exclude specific social strata from participation, such as older persons who lack the necessary technical skills (see Karen, Tolbert, and Stansbury 2003; Kersting et al. 2019). Due to these inconsistent results regarding the inclusionary and exclusionary potential of digital platforms, it is still unclear whether DDIs can meaningfully enrich the existing forms of participation (Kersting et al. 2019, 119).

Departing from this puzzle, this article explores whether well-structured DDIs represent a promising opportunity for (local) authorities to (re-)engage and (re-)include citizens in the political process. It 'zooms in' on a real-life DDI to test what the inclusionary potential of DDIs might be, and what democratic downsides DDIs might have. We evaluate whether and how an asynchronous DDI – dubbed '*Demokratiefabrik*' – with anonymous participants, fosters democratically desirable forms of participation and inclusion of citizens in the context of creating a citizen-driven Voting Advice Application (VAA) in a Swiss municipality, Köniz, in June and July . Based on a series of questions on political issues, VAAs allow citizens to find parties and candidates whose policies most closely match their own (Munzert et al. 2020). Traditionally, VAA questionnaires are composed by the VAA operator in cooperation with major media organisations. The *Demokratiefabrik* allows citizens to compose the questionnaire of political issues themselves in innovative ways.

We conduct an analysis of the inclusion potential of this DDI with a focus on traditionally under-represented citizen groups (such as citizens who are female, less educated, and less sophisticated politically) as well as citizen groups who are disenchanted with the current workings of democracy (including populist voters). Analytically, we distinguish between the 'external' and 'internal' dimension of inclusion (Young 2002). On the one hand, we assess whether all citizen groups followed our invitation and showed up on the online platform (external dimension of inclusion); on the other hand, we assess whether all citizen groups take part at comparable intensity and quality levels (internal dimension of inclusion). Furthermore, to assess the inclusionary potential of DDIs, we also assess how satisfied participants are

with the DDI. Process satisfaction is a critical evaluation yardstick, indicating whether such tools can incite a willingness for further participation.

The paper is structured as follows: we first introduce in more detail the relevant theoretical concepts on DDIs and inclusion. We also provide a literature review on this topic. Next, we present the case of the *Demokratiefabrik*, followed by an outline of our measurement of outcome and predictor variables and the statistical methods we employed. Then, we present the empirical results, followed by a discussion of our findings and a conclusion.

## Digital democratic innovations and inclusion

Democratic innovations refer to 'institutions that have been specifically designed to increase and deepen citizen participation in the political decision-making process' (Smith 2009, 1). These democratic innovations were supposed, among other things, to help solve the 'democratic malaise' (Geissel and Newton 2012) and are typically organised as face-to-face deliberations comprising only a few dozen participants (Smith 2009).

*Digital* democratic innovations, by contrast, offer a new possibility to involve a larger number of citizens in the democratic process. They can remove organisational barriers and diminish the costs of bringing many people together.

Arguably, more important than the sheer number of people involved in a democratic process is the degree of democratic inclusion. Inclusion means 'that all members of the given polity should ideally have effectively equal influence over debate and decision-making within that polity' (Young 2002, 8). Young (2002, 52) famously distinguished two sets of mechanisms of inclusion/exclusion. She argues that 'external exclusions' are practices 'that keep some individuals or groups out of the fora of debate or processes of decision-making'. In contrast, 'internal exclusions' are forms of exclusions present even when individuals are nominally included in the process. Examples are specific styles of expression or interaction privileges (Young 2002, 52). An assessment of the inclusionary aspect of DDIs shall, therefore, include not only an assessment of who takes part but also an assessment of whether the participants within the digital processes are equally active, discursive, and satisfied with the process.

In evaluating mechanisms for inclusion/exclusion, we focus on citizen groups who are often underrepresented in political participation. Hence, we closely observe participation patterns of gender and age groups as well as citizens with lower political sophistication (i.e., citizens with lower internal efficacy and lower formal education). Additionally, we include in our analyses two expressions of political (dis)satisfaction, namely citizens with low level of external efficacy and citizens with populist attitudes (who think that the

democratic system tends to bypass the will of ordinary people).[1] Focusing on these forms of political (dis)satisfaction, we particularly address a prominent claim that democratic innovations are able to reinclude dissatisfied citizens who turned away from traditional participation instruments (Goldberg, Wyss, and Bächtiger 2020).

So, what can we expect for DDIs when it comes to external and internal forms of inclusion? We introduce four theoretical scenarios. (1) Democratically speaking, an optimistic or ideal scenario would arise when under-represented, less sophisticated and dissatisfied citizens 'flocked' to DDIs at an equal rate as more privileged, sophisticated and allegiant citizens, and were equally active, discursive and satisfied within the digital forum. (2) Conversely, a pessimistic scenario would occur when only few under-represented, less sophisticated and dissatisfied citizens were willing to participate and those participating were largely inactive, non-discursive and dissatisfied with the experience. This would indicate that DDIs are the 'playground' of already advantaged citizens and undermines their role as democracy promoting tools. (3) A 'mixed' scenario arises when, for instance, a substantial share of under-represented, less sophisticated and dissatisfied citizens show up at the event but then remain passive and non-discursive and/or are dissatisfied with the experience. As presence does not guarantee voice and influence, this mixed scenario would imply that DDIs can hardly close the 'representation' gap that currently suffuses the workings of democracies. (4) Another 'mixed' scenario occurs when under-represented, less sophisticated and dissatisfied citizens were less willing to participate than more privileged, sophisticated and allegiant citizens but they were equally active, discursive and satisfied within the digital forum as the latter.

Few studies have investigated the link between DDIs and inclusion, especially when it comes to 'external' inclusion. Results are very mixed and hover between a pessimistic and a mixed scenario. In a pioneering study on online discussions held before the 2000 US presidential campaign, Price and Cappella (2002) found that people with higher political knowledge were more likely to participate in the online event, while older participants and those in full-time employment were less likely to participate. Other factors such as political efficacy, political interest and formal political participation did not turn out as significant predictors for online participation (Price and Cappella 2002). Subsequent studies paint an even more pessimistic picture. Comparing face-to-face and online environments, Baek, Wojcieszak, and Delli Carpini (2012) found that young, male, and white users, as well as ideological moderates, are overrepresented in online forums. Focusing on online consultations in different German municipalities, Rottinghaus and Escher (2020) reveal some biases regarding external inclusion, with men and middle-aged citizens being overrepresented. However, not all studies yield pessimistic conclusions. Neblo et al. (2010) have conducted an online deliberative experiment to explore the willingness of citizens to participate (and their actual

participation) in sessions involving US citizens and members of Congress. The experiment shows that the willingness to participate in such sessions was much higher than evidence from face-to-face participation research suggests. As Neblo et al. (2010, 582) put it: 'those most willing to deliberate are precisely those turned off by standard partisan and interest group politics'. These findings for external inclusion almost align with an ideal scenario and suggest that DDIs might give a voice to citizens absent in conventional participation processes.

Regarding 'internal' inclusion, a pattern regularly detected in large-scale online participation is the pronounced divide between users who participate actively and enthusiastically and users who prefer to observe. The latter group is often referred to as 'lurkers' and tends to represent the vast majority of participants (Rafaeli, Ravid, and Soroka 2004; Janssen and Kies 2005). Empirical studies suggest that the active users (i.e., citizens who contribute on the DDI, the so-called 'contributors') are only a fraction of the total users and clearly differ from passive users regarding their political characteristics. Analysing online discussions in two online projects and predicting individual word counts, Price (2009) found that older participants contributed with fewer words. Other variables such as education, political participation, and political knowledge had a positive effect on contributing (Price 2009). Smith, John, and Sturgis (2012) found that people who use the internet frequently were no more active in the online forum than people who use the internet less frequently. Moreover, women were more likely to post comments. Another study focusing on online political participation in Germany found that men, as well as persons with higher internal political efficacy and higher education, were more likely to participate actively on the platform (Rottinghaus and Escher 2020). Finally, Kennedy et al. (2021) obtained more optimistic findings in the context of an online synchronous platform in the US. They found that participants who were female, non-white, or aged 65 and over posted fewer comments than men, white and younger users.

By focusing on a real-life DDI where citizens could directly influence institutional politics, and by considering a broad array of 'external' and 'internal' forms of inclusion, our study tries to advance the debate of how 'inclusive' (and democratic) DDIs are and whether they represent a robust tool for citizen engagement and empowerment.

## *Demokratiefabrik*: increasing citizens' empowerment within the democratic practices of a municipality

### *Case and procedure*

The *Demokratiefabrik* represents a new tool for citizen involvement and empowerment. In our case, a large group of citizens used the DDI to create a questionnaire for the Swiss Voting Advice Application (dubbed 'smartvote').

smartvote is well established in Switzerland and helps voters match their attitudes and preferences on various political issues with candidates running for local, regional, or national elections (Fivaz and Nadig 2010; Ladner and Pianzola 2015).[2] To date, the questionnaires used for smartvote were created by the owner association Politools in cooperation with parties and media professionals. In contrast, in the *Demokratiefabrik*, randomly selected citizens were in charge of designing the questionnaire without the involvement of experts (i.e., representatives, administration members or scientists).

The fact that citizens were given the opportunity to directly influence institutionalised politics can be considered a powerful stimulus to participate in DDIs.

By inviting citizens to design the VAA-questionnaire, we wanted to obtain a questionnaire that reflects the real citizens' concerns and wishes. Yet, Lefevere and Walgrave (2014) have demonstrated that designing a VAA-questionnaire is a delicate task, since minor variations in the questionnaire can affect the final voting advice. To increase the VAA's accuracy, we produced a questionnaire that is longer than usual. We also avoided double-barrelled or redundant questions and we have taken into account the salience judgements of the citizens when we decided on the number of questions that represent the political themes.

The *Demokratiefabrik* came into action in advance of a local election held in September 2021 in the Swiss-German municipality of Köniz. This municipality has a population of 43,000 and is Switzerland's 12th largest city. Moreover, Köniz is a heterogeneous, geographically dispersed municipality comprising urban and rural areas. As such, Köniz is a very useful case: first, it offers a potentially high number of platform collaborators. Second, its diversity enables us to focus on a wide range of opinions and preferences. The *Demokratiefabrik* thus opened up a new possibility of exchange among citizens who rarely interact in daily life due to geographical and/or political-ideological distance.

The *Demokratiefabrik* started three months before the local elections and was accessible for three weeks from 14 June to 4 July 2021. This allowed citizens to develop the final VAA-questionnaire so that it could be uploaded on the Swiss VAA's website in time to permit all citizens to have their personal voting advice. Before the platform was opened to citizens, all local political parties were asked to propose a few VAA-questions as a starting point. These were reviewed by both the research and smartvote teams and then uploaded on the *Demokratiefabrik* (two to three questions per topic). This prevented that the users who logged in at the very beginning not became discouraged by an empty list.

To recruit participants, we sent an invitation letter to 9,000 randomly selected citizens entitled to vote from the local voting register ($N = 9,000$). These represent about one-third of all voters living in Köniz. In the letter,

citizens received the login credentials for the online platform and were informed about the financial incentive to participate (a prize draw for 10 × 400 CHF vouchers for a local travel agency). We expected that the prize draw would increase the participation rate, particularly among individuals with lower political resources.

When logged in for the first time on the online platform, participants could read the information material (code of conduct, VAA background) and had to complete a preliminary online survey (T1), a prerequisite to actively participate in the *Demokratiefabrik*. In the T1 survey, data on socio-demographic variables, political attitudes, political participation, and digital aspects were collected. At the end of the three week participation period on the platform, citizens who actively participated (i.e., citizens who indicated the perceived salience of at least one VAA-theme) were invited to complete a second online survey (T2). In this second survey, participants evaluated their experience regarding the *Demokratiefabrik*. After the closing of the *Demokratiefabrik*, the research team – together with smartvote – finalised the VAA-questionnaire.[3] The final VAA-questionnaire can be seen in Table A3 in the Appendix.

Throughout the citizen engagement phase on the DDI, the research team of moderators offered support for participants' questions. Moreover, the team was responsible for keeping the online discussions concise by structuring discussion threads. As no hate-speeches or other notable violations of the code of conduct were observed, the team was neither prompted to delete comments nor exclude users.

## *Features of the Demokratiefabrik*

We designed the DDI to motivate users to actively participate and to mini-mise biases between those who actively participate and 'lurkers' (see above). In large-scale environments, however, we must accept the fact that some participants will be silent. An attempt to 'de-lurk' participation by urging users to post their reflections would most likely lead to information overload, accompanied by redundancy problems and a low signal-to-noise ratio (Rafaeli, Ravid, and Soroka 2004; Gürkan et al. 2010). The *Demokratiefabrik* uses the following design features to promote online activity:

- *Anonymity*: research shows that anonymity can increase the motivation to participate, particularly among more conflict-averse citizens or citi-zens who fear social pressure or lack the necessary self-confidence to express their opinion in public (Wyss and Beste 2017). Anonymity may also help to reduce societal inequalities and social pressure (Baek, Wojcieszak, and Delli Carpini 2012; Price 2009). Following Moore et al. (2019), we decided to implement durable pseudonyms guaranteeing anonymity towards other users (and third-party actors). According to

Moore et al. (2019, 61), the durability of these pseudonyms might open up the possibility of a more significant commitment to the discussion space and enhance the potential for learning effects. When entering our DDI for the first time, participants received a randomly selected pseudonym in the form of a Swiss mountain (e.g., 'H. Matterhorn').

- *Artificial facilitation*: participants on the platform were assisted by two artificial facilitators (i.e., avatars). The artificial facilitators were programmed to help participants orient themselves on the platform and thus guided digitally less experienced participants through the *Demokratiefabrik*.

- *Asynchrony*: to enable thousands of citizens to collaborate, the *Demokratiefabrik* was designed as an *asynchronous* platform (e.g., Klein 2012). During the three weeks, the invited citizens could log in on the digital platform and complete the tasks at their own pace and independently of space and time.

- *Review mechanism*: to let participants influence the output of the platform without having to formulate their own content, the online platform was provided with a review mechanism. Randomly selected participants reviewed randomly assigned proposals for a new question or refinements to an existing question proposed by other participants. This mechanism encouraged the active participation of all invited citizens, as randomly selected citizens – regardless of their characteristics and political orientations – had to express their preference for a new question and/or refinement of an existing question. The mandatory peer review processes thus represented a low-threshold channel to engage otherwise passive users in the platform's governance and allow them to shape the output.

Participants were asked to complete four assignments. First, as a mandatory task, they were asked to indicate the perceived salience of different VAA-themes and VAA-questions. Second, they could propose new questions for the VAA-questionnaire or propose a refinement of an existing question. Third, they could write comments and/or queries under each theme and question and, thus, contribute to discussions and deliberation on political issues or specific questions. Fourth, they were occasionally asked to review assigned proposals of other participants. Only proposals approved by a majority of ten (randomly assigned) participants remained on the platform.[4]

## Operationalisation and methods

We start by elaborating on the external and internal dimensions of inclusion: regarding the external dimension, we consider who actually took part in the *Demokratiefabrik*. Here, we focus on the group of participants who rated at

least one theme or question (*N* = 1,079) and compare this information with the randomly drawn sample of citizens invited to participate in the study (*N* = 9,000) and with evidence from other studies (gfs.bern 2021; Räss, Differding, and Odermatt 2021).[5] Concretely, we look at the age of the participating citizens, their gender, whether they live in a rural or urban municipality, their placement on the political spectrum, their preferred party, their interest in politics, their (local) political trust, their satisfaction with democracy, populism and digital affinity.

Regarding the internal dimension of inclusion, we investigate whether there are certain types of citizens who dominated the process on the platform. One way to do so is to assess who extensively added own content in the form of VAA-questions or comments. However, citizens could also dominate by extensively participating at the peer review-mechanism. When citizens just read and rate themes and questions of other participants (without contributing any content and without participating in the review mechanism), we would not count this as 'dominance'. To account for different forms of domination, we construct a categorical variable with three values, namely activity of 'contributors', 'review-only users' and passive citizens (so called 'lurkers').

Due to the categorical character of the dependent variable, we estimate multinomial logit models. As we also assess levels of participation quality, we check whether there are differences in 'discursiveness' (measured via the psychological construct of integrative complexity). Discursiveness – while rarely assessed in the context of DDIs (see, e.g., Esau, Friess, and Eilders 2017; Kersting 2005) – is a critical indicator of whether participants in interactive tools can participate in competent ways; moreover, we know from research on mini-publics that levels of discursiveness can affect opinion formation . Integrative complexity captures the 'differentiation' of viewpoints (i.e., the extent to which participants take a multitude of perspectives into account) and 'integration' of viewpoints (i.e., the degree to which participants account for complexities in their reasoning). It is measured based on an automated LIWC (Linguistic Inquiry & Word Count) dictionary-based approach (Brundidge et al. 2014; Wyss, Beste, and Bächtiger 2015). Integrative complexity may also be a partial 'proxy' for deliberative quality as measured by the Discourse Quality Index (DQI; Steenbergen et al. 2003; Kersting 2005). Comparing hand-coded transcripts of a transnational deliberative poll (Europolis) with integrative complexity, Beste and Wyss (2014) find a solid correlation of IC with a component index of DQI (*r* = 0.57). We analyse 867 comments written by 201 platform users and then identify discrepancies between participants with high and low integrative complexity by estimating a linear regression model. The last aspect of inclusion considered is how satisfied participants were with the *Demokratiefabrik*. To shed light on this question, we focus on four questions collected at T2. First, we

consider if the participants found the instructions on the *Demokratiefabrik* 'clear'. Second, we check whether participants considered the review process of the proposed questions 'fair'. Third, we explore whether participants considered the process in the *Demokratiefabrik* 'meaningful'. Finally, participants were asked if they would consider participating in a future *Demokratiefabrik*. To predict satisfaction with the online platform, we estimate logistic regression models.

As stated above, regarding under-represented citizen groups, we focus on traditional criteria of under-representation, namely gender, age, lower political sophistication and (dis)satisfaction. To measure political sophistication, we rely on education and internal efficacy. For the latter, we apply two survey items used by Rottinghaus and Escher (2020) in their study. To measure (dis) satisfaction with democracy, we embed items to measure external efficacy (Beierlein et al. 2012) and populism in our survey. Our items for measuring populist attitudes are based on Schulz et al. (2018) and Wuttke, Schimpf, and Schoen (2020). Finally, we also put emphasis on the concepts of general satisfaction with democracy, local political trust and sympathy for the right-wing 'Swiss People's Party'.

As control variables, we focus on left-right placement, party affiliation, frequency of political discussions with family and friends, membership in a political association, digital affinity, and activity in the job market (see Table A2 in the Appendix for an overview of all variables, the question's wording and their summary statistics).

## Empirical results

The *Demokratiefabrik* achieved relatively high general participation rates compared to similar digital events in other countries (see, e.g., Strandberg and Grönlund 2013; Kersting 2014), despite there being extensive participation possibilities in Switzerland. Of the 9,000 citizens invited, 1,437 logged in at least once on the platform (16% of the total invitees). Most of them completed the initial survey T1 (1,180; 13.1% of the total invitees). 416 visited the *Demokratiefabrik* more than once (38.6%). 1,079 (12%) rated themes or VAA-questions. Of course, the degree to which participants engaged actively on our platform varied. 579 reviewed at least one randomly assigned question submitted by other participants (53.7%). 201 wrote at least one comment (18.6%) and 260 rated at least one comment (24.1%).[6] Finally, 108 submitted at least one proposal for a new question or the refinement of an existing question (10%), while only 39.6% neither engaged in the review process nor wrote their own contribution (lurkers). For an asynchronous online environment, these are good scores. Janssen and Kies (2005) find that in many online environments the group of lurkers amounts to two-thirds of participants (see also Iandoli et al. 2018). At the end of the *Demokratiefabrik*, participants had

submitted a total of 219 proposals – 54 proposals for refinements of already deposited questions and 165 proposals for new questions.

### *External inclusion: who wanted to participate?*

Let us first focus on the 'representativity' of participating citizens in the *Demokratiefabrik*, compared to the randomly drawn sample of 9,000 eligible citizens of Köniz. Results are shown in Table A1 in the Appendix. Regarding age and gender, only small biases can be detected for external inclusion. The average age of participants was 48 years old and thus slightly younger than the participants in our sample (mean: 52); under-represented were only participants aged 76 or older. Regarding gender, we have slightly more male than female participants (51.3% men compared to 47.2% men in the sample). In their study on the digital political participation of young people in Switzerland, Räss, Differding, and Odermatt (2021) found even more pronounced biases, with only 40% of participants being female. Compared to online debates elsewhere and to the user profile of smartvote users, the gender bias is rather small (Albrecht 2006; Fivaz and Nadig 2010). Only women over 65 years old have a lower probability of participating in the DDI. We only observe this for men in the oldest (and least computer literate) age category. Finding a gender gap for the older generation is in line with other research on direct democratic participation in Switzerland (Kriesi 2005: 124f; Dermont 2016; Gerber, Schaub, and Müller 2018). Furthermore, participants from the rural parts of the municipality were also under-represented.

Next, we observe a relatively strong left-green dominance among participants. 45.1% placed themselves on the left spectrum, while 44.1% placed themselves in the centre and 10.7% placed themselves on the right. This pattern is mirrored in party affiliations: 25.3% indicate the Socialist Party as the preferred party, 21.6% the Green Liberal Party (GLP), 19% the Greens, 9.4% the Liberal Party (FDP) and 6.5% the Swiss People's Party (SVP). When comparing these numbers with the election results of the last municipal election in 2021 (Köniz 2021), it becomes clear that the Socialist Party (SP) and the Green Liberal Party (GLP) were (slightly) overrepresented in our sample of participants (23.7% voted SP, 13% voted GLP). The party least represented in the *Demokratiefabrik* was the right-wing populist Swiss People's Party (2021: 15.3% SVP). Available data on the use of the smartvote VAA also show a certain under-representation of right-wing voters (Ammann 2018), indicating that citizens of particular groups who use the smartvote VAA less often were also more reluctant to participate in the development of the VAA questionnaire.

Furthermore, the *Demokratiefabrik* also attracted 'sophisticated' and 'allegiant' citizens. Participants in the *Demokratiefabrik* displayed a high or very high interest in politics (94.8% were either very interested or interested in

politics at the national level and 81.3% indicated having a high or very high interest in *local* politics.). In this respect, the *Demokratiefabrik* differed considerably from data from a Swiss voter survey gathered in the same month we launched the *Demokratiefabrik* (gfs.bern 2021). In that survey, only 70.4% of participants indicated having a high or very high interest in politics. This is also true for education: compared to the gfs-survey, participants with a higher education were overrepresented (37% in the *Demokratiefabrik* versus 27% in the gfs-survey). Furthermore, participants of the *Demokratiefabrik* showed fairly high levels of political trust at the national level.[7] For instance, only 11% indicated that they do not trust the executive body at the national level and 17.9% of them do not trust the national legislative body. The same number is indicated by the gfs-survey. Moreover, 85.2% of participating citizens were (very) satisfied with how democracy works in Switzerland (85.2% selected a value of at least 5 on a scale from 1 'Not at all satisfied' to 7 'Very satisfied') and 79.6% were satisfied with how democracy works in Köniz (participating citizens also selected a value of at least 5 on this scale). Regarding populism, only 1.9% of participating citizens show values of 6 or above, meaning that citizens with populist attitudes were under-represented.[8] Finally, 61.7% of participants indicated they avoid posting political comments on the Internet (e.g., on blogs, by email or on social networks such as Twitter, Instagram and Facebook), suggesting that there were also less computer literate participants in the *Demokratiefabrik*.

### *Internal inclusion: who dominated?*

Let us now explore patterns of activity within the *Demokratiefabrik*. A multinomial logit model is estimated to link the three types of participants – contributors, review-only users, and lurkers with attitudinal and socio-demographic variables.[9]

As shown in Table 1, we find some differences across the three types of participants regarding activity, but these are far less marked than a pessimistic scenario would predict. First, comparing contributors to lurkers (with lurkers forming the reference category), we find that contributors have higher levels of internal efficacy, are more often involved in associations (as a proxy for experience with political affairs) but less often have a full-time job (indicating that time resources do matter). We also calculated predicted probabilities for assessing the effect sizes. Regarding internal efficacy, the respective figures are slightly more marked. Participants in the third quartile have an 11% age points higher probability of being a contributor than the participants in the first quartile. Contrary to previous studies, no effects could be found for a traditional marker of under-representation in DDIs, namely gender and age (Rottinghaus and Escher 2020). However, contributors have *lower* political trust than lurkers, indicating that disenchantment can trigger

online activity see Einstein, Palmer, and Glick (2019) for similar findings). The effects of the trust level are sizeable, with predicted probabilities going from 22% (first quartile) to 40% (third quartile). Secondly, a similar pattern occurs for the comparison between contributors and review-only users here: we additionally find that contributors are slightly more educated than review-only users. Third, while comparing review-only users to lurkers, we encounter no major attitudinal or socio-demographic differences, except for age (with older participants being more frequently lurkers) and job (with review-only users less often having a full-time job than lurkers).

Next, we focus on the 'discursiveness' of contributors (measured via 'integrative complexity' based on participants' posts). Table 2 shows the results from the linear regression model, correlating attitudinal and socio-demographic variables with integrative complexity.[10] The surprising result is that there are few differences across our variables of interest: political dissatisfaction (including populist attitudes), political sophistication, gender, and age. Statistically significant effects only occur for education and party affiliation: in line with previous research (e.g., Jennstal 2019), higher education levels are positively correlated with higher levels of integrative complexity, whereas 'partisans' produce fewer complex posts than non-partisans. The effect of education on integrative complexity scores, however, is relatively small (0.26 on a scale ranging from −7.03 to 16.2). Overall, our findings indicate that a wide variety of contributors – including populist-minded citizens and populist voters – could communicate their thoughts at surprisingly similar quality levels.

Finally, we turn to the satisfaction of participants with the *Demokratiefabrik*. We rely on the second survey (T2) completed by 425 respondents (39.4% of 1,079 invitees).[11] A clear majority of respondents found the instructions on the DDI clear (72.6%), considered the review process fair (85.9%) and meaningful (95.9%), and stated they would participate again in the future (77.8%). Moreover, 67.9% of participants said they spoke at least once about the DDI with other people. These positive results show that DDIs have the potential to generate discussion and raise awareness of burning local topics. The logistic model (Table 3) distinguishing different satisfaction categories (from clear instructions to intention to participate in the future) indicates that some participants were more satisfied than others.

We find that more computer literate participants displayed a higher willingness to participate again. Elderly participants, on the contrary, less often stated that the DDI was meaningful and that they would participate again. More highly educated participants also viewed the DDI as less meaningful. However, these differences were all substantively minor. No effects could be found for populist citizens and SVP voters, who were under-represented in terms of external inclusion.12

**Table 1.** Predicting internal inclusion.

| | Contributors vs. Lurkers | Contributors vs. Review-Only Users | Review-Only Users vs. Lurkers |
|---|---|---|---|
| Internal efficacy | 0.39** | 0.28* | 0.11 |
| | (0.13) | (0.13) | (0.11) |
| External efficacy | 0.04 | 0.06 | −0.02 |
| | (0.12) | (0.12) | (0.10) |
| Populism | −0.06 | 0.04 | −0.10 |
| | (0.11) | (0.11) | (0.09) |
| Digital affinity | 0.21 | 0.29* | −0.08 |
| | (0.12) | (0.12) | (0.12) |
| Left-right-placement | −0.10 | −0.08 | −0.03 |
| | (0.07) | (0.07) | (0.06) |
| Sympathy for SVP | −0.02 | 0.56 | −0.58 |
| | (0.44) | (0.47) | (0.40) |
| Local political trust | −0.34* | −0.39** | 0.05 |
| | (0.14) | (0.14) | (0.12) |
| Local political interest | 0.14 | 0.29 | −0.15 |
| | (0.17) | (0.17) | (0.15) |
| Satisfaction with local democracy | 0.01 | −0.02 | 0.03 |
| | (0.11) | (0.11) | (0.10) |
| Political discussion | 0.14 | −0.02 | 0.16 |
| | (0.14) | (0.14) | (0.12) |
| Gender | −0.13 | 0.11 | −0.24 |
| | (0.21) | (0.21) | (0.18) |
| Age (in years) | −0.01 | 0.002 | −0.02** |
| | (0.01) | (0.01) | (0.01) |
| Education | 0.08 | 0.12* | −0.04 |
| | (0.05) | (0.05) | (0.04) |
| Job | −0.81** | −0.35 | −0.47* |
| | (0.25) | (0.24) | (0.21) |
| Party affiliation | 0.05 | −0.10 | 0.15 |
| | (0.22) | (0.22) | (0.19) |
| Involvement in association | 0.58** | 0.43* | 0.15 |
| | (0.20) | (0.20) | (0.18) |
| Constant | −1.05 | −2.48* | 1.43 |
| | (1.08) | (1.05) | (0.94) |
| Observations | | 891 | |
| Akaike Inf. Crit. | | 1,623.48 | |

Entries are multinomial logit coefficients (standard errors in parentheses); *p<0.05 ** p<0.01 *** p<0.001.

## Discussion

We have assessed a new asynchronous online tool, the *Demokratiefabrik*, for a bottom-up creation of a Voting Advice Application (VAA) in a Swiss municipality (Köniz). Conventional participation research claims that DDIs are conducive to seriously biased participation patterns, with already advantaged citizens participating more and dominating the internal process. The results presented in this study stand somewhat at odds to this pessimistic view. We identified an intriguing pattern of inclusion/exclusion that conforms to the fourth introduced – 'mixed' – scenario with manifested external and relatively moderate internal exclusion patterns.

**Table 2.** Predicting integrative complexity.

|  | Integrative Complexity |
|---|---|
| Internal efficacy | −0.06 |
|  | (0.27) |
| External efficacy | 0.10 |
|  | (0.24) |
| Populism | 0.19 |
|  | (0.22) |
| Digital affinity | 0.09 |
|  | (0.21) |
| Left-right-placement | −0.003 |
|  | (0.13) |
| Sympathy for SVP | 0.86 |
|  | (0.93) |
| Local political trust | −0.08 |
|  | (0.27) |
| Local political interest | 0.22 |
|  | (0.35) |
| Satisfaction with local democracy | −0.01 |
|  | (0.22) |
| Political discussion | 0.12 |
|  | (0.28) |
| Gender | 0.002 |
|  | (0.45) |
| Age (in years) | 0.01 |
|  | (0.02) |
| Education | 0.26* |
|  | (0.10) |
| Job | 0.23 |
|  | (0.50) |
| Party affiliation | −0.56 |
|  | (0.49) |
| Involvement in association | −0.16 |
|  | (0.43) |
| Constant | −3.40 |
|  | (2.28) |
| Observations | 201 |
| $R^2$ | 0.073 |

Entries are OLS coefficients (standard errors in parentheses); * $p<0.05$ ** $p<0.01$ *** $p<0.001$.

Regarding external inclusion, the *Demokratiefabrik* shows biases, with ideologically left-green and politically more sophisticated and allegiant participants being clearly more willing to participate. Regarding internal inclusion, however, we find that the *Demokratiefabrik* may present an alternative to politics as usual since it succeeded in activating citizens with lower political trust far more than citizens with high political trust. Discursiveness (measured by the psychological construct of integrative complexity) is fairly broadly distributed among contributors (with the partial exception of better-educated citizens who scored higher on integrative complexity). Remember that discursiveness is a key marker for judging whether participants in interactive tools can participate in competent ways. If we consider that traditionally under-represented groups – women, and less educated and younger

**Table 3.** Satisfaction with the Demokratiefabrik.

| | Clear Instructions | Considers review process fair | Considers DDI meaningful | Intention to participate in future |
|---|---|---|---|---|
| Internal efficacy | 0.08 | 0.44 | 0.24 | 0.21 |
| | (0.17) | (0.27) | (0.16) | (0.20) |
| External efficacy | 0.25 | 0.26 | −0.02 | 0.34 |
| | (0.16) | (0.23) | (0.15) | (0.19) |
| Populism | −0.20 | −0.04 | 0.06 | 0.15 |
| | (0.14) | (0.21) | (0.13) | (0.16) |
| Digital affinity | 0.13 | 0.24 | 0.27 | 0.63* |
| | (0.16) | (0.25) | (0.15) | (0.25) |
| Left-right-placement | 0.03 | −0.17 | −0.08 | −0.06 |
| | (0.09) | (0.14) | (0.09) | (0.11) |
| Sympathy for SVP | 0.68 | 0.15 | −0.89 | 0.53 |
| | (0.67) | (0.99) | (0.62) | (0.81) |
| Local political trust | 0.27 | 0.25 | 0.08 | −0.10 |
| | (0.18) | (0.26) | (0.17) | (0.20) |
| Local political interest | 0.04 | −0.15 | 0.15 | 0.30 |
| | (0.22) | (0.35) | (0.21) | (0.26) |
| Satisfaction with local democracy | −0.15 | −0.10 | −0.03 | −0.15 |
| | (0.15) | (0.23) | (0.14) | (0.18) |
| Political discussion | −0.04 | −0.73* | −0.07 | −0.38 |
| | (0.19) | (0.31) | (0.18) | (0.22) |
| Gender | 0.16 | −0.37 | 0.19 | 0.21 |
| | (0.28) | (0.44) | (0.26) | (0.32) |
| Age (in years) | −0.003 | −0.02 | −0.03** | −0.03* |
| | (0.01) | (0.02) | (0.01) | (0.01) |
| Education | 0.04 | −0.05 | −0.11* | 0.05 |
| | (0.06) | (0.09) | (0.06) | (0.07) |
| Job | −0.39 | 0.03 | −0.60 | −0.49 |
| | (0.32) | (0.47) | (0.32) | (0.40) |
| Party affiliation | −0.21 | −0.13 | 0.09 | −0.08 |
| | (0.29) | (0.45) | (0.27) | (0.33) |
| Involvement in association | −0.36 | −0.01 | 0.49 | 0.41 |
| | (0.27) | (0.40) | (0.25) | (0.32) |
| Constant | 1.68 | 7.05** | 2.71 | 3.22 |
| | (1.45) | (2.37) | (1.44) | (1.80) |
| Observations | 319 | 242 | 312 | 313 |
| Akaike Inf. Crit. | 398.04 | 216.42 | 427.64 | 313.44 |

Entries are logit coefficients (standard errors in parentheses); * $p<0.05$ ** $p<0.01$ *** $p<0.001$.

people – were almost as active as traditionally well-represented groups (men, and more educated and elderly people), the pattern of biases clearly contradicts pessimistic predictions. Our results on the internal dimension of inclusion corroborate the study by Kennedy et al. (2021), finding 'patchy' biases of under-represented citizens. The *Demokratiefabrik* shows that similar patterns also arise under more demanding conditions, namely asynchronous deliberation with citizen co-creation.

Overall, a major problem of DDIs such as the *Demokratiefabrik* seems to consist of overcoming biases in external inclusion – as well as mending some smaller deficits with internal inclusion. While our tool already boasts a variety of design features to overcome potential biases of internal inclusion –

including anonymity and review mechanisms – we could imagine further improvements to make it an even more democratic space for anyone. This could include programmed interventions by artificial facilitators to motivate less active participants to also become contributors in the *Demokratiefabrik* and make all voices fully 'heard'.

## Conclusion

*Digital Democratic Innovations* (DDIs) hold the promise of enabling mass participation at a much lower cost than traditional face-to-face venues. At the same time, they may deepen existing divides, privileging already advantaged citizens. Our asynchronous online tool – *Demokratiefabrik* – set out to create a Voting Advice Application (VAA) in a Swiss municipality (Köniz), based on citizen input and citizen co-creation. Our result document that the interest in our DDI was surprisingly high (compared to similar events in other countries).

While we found some serious biases in external inclusion, with left-green voters, sophisticated, and allegiant citizens being clearly over-represented, it is intriguing to see that these citizens did not dominate the internal process. Intriguingly, citizens with low political trust were among the most active participants, indicating that DDIs might have the potential to give (at least some) disenchanted citizens a new voice in the political process. While we acknowledge that Switzerland is a unique case with established participatory practices, we think that a replication of our results in places with less participatory possibilities might even show a higher interest of citizens for participating in a co-creative VAA.

## Notes

1. Internal political efficacy refers to competency feelings regarding politics participate in it, whereas external political efficacy refers to perceived influence on politics (Craig 1979).
2. VAAs work as follows: political candidates (or parties) standing for election answer various questions on political issues. Voters can then answer the same questions. By calculating the correspondence between voters' and candidates' responses, the former can learn which candidates are ideologically closest to them (Ladner and Pianzola 2015).
3. As soon as the *Demokratiefabrik* ended, the research and smartvote teams looked at the most rated and selected questions, and corrected, if necessary, the language and formulated the question in a clearer way. They then corrected any content errors. It is important to note that both teams tried not to intervene too much or change the questions in a radical manner, in order to stick as closely as possible to the questions formulated by the participants.
4. The party proposals (see above) were not subjected to the review process, since they had already been checked by the research team and smartvote employees.

However, participants were free to propose refinements to the party proposals (which then had to go through the review process).

5. Since we do not have information on the political attitudes of the entire population of Köniz, we cannot compare our data with the respective population. For this reason, we compare our results with evidence from other studies.

6. By clicking on three different emojis, participants could indicate whether or not they liked another participant's comment.

7. At the local level, only 16.3% of participants indicated they do not trust the local executive body and only 14.4% indicated they do not trust the local legislative body.

8. In comparison with the study of Schulz et al. (2018), we find lower values for populism. This could be ascribed to our subject being a suburban municipality, whereas the study of Schulz et al. (2018) was carried out across Switzerland as a whole.

9. We tested for multicollinearity but did not find any gross violations.

10. We also tested the relationship between attitudinal and socio-demographic variables and integrative complexity using a dichotomous variable for integrative complexity (measured as 1=values above the median and 0=values above the median) and found the same results.

11. We invited only the 1,079 participants to the second survey (those participants that appraised at least one theme). The sample of participants who completed the second survey at T2 is largely comparable to the sample of all participants, with the exception that participants at T2 were slightly younger and slightly more interested in politics (Gianola, Gerber, and Wyss 2021).

12. Notice, however, that depending on model specification, results slightly differ. If we omit the variable 'left-right placement' in the statistical analysis of the meaningfulness of the DDI evaluation (Table 3), the variable 'Sympathy for SVP' produces a negative and statistically significant effect. However, focusing on the raw figures, SVP sympathisers still consider the DDI meaningful, just less so than other participants.

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# Appendix

**Table A1.** External Inclusion regarding socio-demographics.

|  | Participants | Sample |
|---|---|---|
| Age |  |  |
| 18–25 | 8.2% | 9.1% |
| 26–35 | 17.9% | 16.4% |
| 36–45 | 19.7% | 15.3% *** |
| 46–55 | 18.5% | 15.3% * |
| 56–65 | 18% | 17.1% |
| 66–75 | 13.4% | 14% |
| 76+ | 4.5% | 12.8% *** |
| Gender |  |  |
| female | 48.6% | 52.8% ** |
| male | 51.4% | 47.2% ** |
| Location in the municipality |  |  |
| rural | 21.2% | 27.6% *** |
| suburban | 19.5% | 20.2% |
| urban | 59.4% | 52.3% *** |

*$p<0.05$ ** $p < 0.01$ *** $p < 0.001$*

**Table A2.** Operationalisation, question wording and summary statistics of the used variables.

| Variable | Operationalisation and question wording | Summary statistics |
|---|---|---|
| **Independent variables** | | |
| Internal efficacy | Index variable based on factor analysis of the following two items:<br>1. I can understand and evaluate important political issues well.<br>2. I dare to actively participate in a conversation about political issues.<br>Higher index values indicate higher internal efficacy. | *Min.: −3.72*<br>*Max.: 1.35*<br>*Mean: 0.04*<br>*SD: 0.98* |
| External efficacy | Index variable based on factor analysis of the two items:<br>1. Politicians care about what ordinary people think.<br>2. Politicians strive to maintain close contact with the population.<br>Higher index values indicate higher external efficacy. | *Min.: −2.52*<br>*Max.: 2.80*<br>*Mean: 0.004*<br>*SD: 0.99* |
| Populism | Index variable based on factor analysis (first factor extraction) of the following seven items:<br>1. Ordinary citizens are of good and honest character.<br>2. The people should always have the final say on important political issues by means of a referendum vote.<br>3. Ordinary citizens pull together.<br>4. The differences between citizens and the so-called elite are much greater than the differences between ordinary people.<br>5. Politicians do not have to spend time with ordinary citizens to do a good job.<br>6. The politicians in Parliament need to follow the will of the people.<br>7. Ordinary citizens share the same values and interests.<br>Multivariate missing value imputation was used (R Package 'mice').<br>Higher values indicate stronger populist values. The index values range from −2.9 to 3.1. | *Min.: −2.89*<br>*Max.: 2.82*<br>*Mean: −0.02*<br>*SD: 0.97* |
| Digital affinity | *Question-wording*: 'How often do you post or share something about politics on the Internet, for example on blogs, by email or on social media such as Twitter, Instagram or Facebook?'<br>Ordinal variable with values: 1=never, 2=once in a while, but less than once a month, 3=once to four times a month (=up to once a week), 4=several times a week, 5=once a day, 6=several times a day | *Min.: 1*<br>*Max.: 6*<br>*Mean: 1.54*<br>*SD: 0.83* |
| Left-right self-placement | *Question-wording*: 'Left, centre and right are three terms often used to characterise political views. Where do you place yourself on a scale from 0 (far left) to 10 (far right)?'<br>Scale from 0=far left to 10=far right | *Min.: 0*<br>*Max.: 10*<br>*Mean: 3.97*<br>*SD: 1.85* |
| SVP's sympathy | Dummy variable with values: 0=Otherwise, 1=SVP most closely matches my own views and wishes | *Min.: 0*<br>*Max.: 1*<br>*Mean: -*<br>*SD: 0.24* |
| Local political trust | Index variable based on factor analysis (first factor loadings) of the following two items:<br>1. On a scale of 0 (no trust) to 10 (full trust), how much do you trust the local legislative body?<br>2. On a scale of 0 (no trust) to 10 (full trust), how much do you trust the local executive body?<br>Higher values indicate higher trust in these political institutions. | *Min.: −3.55*<br>*Max.: 1.99*<br>*Mean: −0.0009*<br>*SD: 0.99* |

*(Continued)*

**Table A2.** (Continued).

| Variable | Operationalisation and question wording | Summary statistics |
|---|---|---|
| Local political interest | *Question-wording*: 'Generally speaking, how interested are you in local politics?' Ordinal variable with values: 1=not interested at all, 2=rather not interested, 3=rather interested, 4=very interested | Min.: 1 Max.: 4 Mean: 3.04 SD: 0.70 |
| Satisfaction with local democracy | *Question-wording*: 'All in all, how satisfied are you with the way democracy works in the municipality of Köniz?' Scale from 1= not at all satisfied to 7=very satisfied | Min.: 1 Max.: 7 Mean: 5.26 SD: 1.14 |
| Political discussion | *Question-wording*: 'On average, how often do you discuss politics with your friends, relatives and acquaintances?' Ordinal variable with values: 1=never, 2=less than once per month, 3=ne to four times per month (= up to once per week), 4=several times per week, 5=daily | Min.: 1 Max.: 5 Mean: 3.34 SD: 0.80 |
| Gender | Dummy variable with values: 0=men, 1=women | Min.: 0 Max.: 1 Mean: - SD: 0.50 |
| Age | Age in years | Min.: 17 Max.: 92 Mean: 48.5 SD: 16.16 |
| Education | *Question-wording*: 'What is the highest education you have completed with a certificate or diploma?' Ordinal variable with values: 1=none (no school attended or compulsory school not completed), 2=compulsory school, 3 = 2-year apprenticeship with EBA, 4 = 3–4-year apprenticeship with EFZ, 5=general education without diploma (Diplommittelschule, Fachschule), 6=diploma (grammar school, vocational or specialist baccalaureate) or teacher training college, 7=higher vocational education (with federal certificate, federal diploma or master craftsman's examination), 8=higher technical college (HTL, HWV, HFG, HFS, higher technical college for technology TS, business HKG), 9=university of Applied Sciences, University of Teacher Education, 10=university, ETH (Bachelor, Master, Lizentiat, Diplom, Staatsexamen, Postgrad), 11=Phd, Habilitation | Min.: 2 Max.: 11 Mean: 7.59 SD: 2.48 |
| Job | *Question-wording*: 'What is your current main employment situation?' Dummy variable with values 0=in education (apprentice, pupil, student) OR Retired OR Housewife/househusband OR Looking for work OR Without employment due to health reasons OR Other, 1=employed | Min.: 0 Max.: 1 Mean: 0.67 SD: 0.47 |
| Party affiliation | *Question-wording*: 'Are you affiliated with a political party?' Dummy variable with values 0=no, 1=yes | Min.: 0 Max.: 1 Mean: 0.56 SD: 0.50 |
| Involvement in association | *Question-wording*: 'Are you currently active in an organisation, club or association? By active we mean that you regularly participate in the events/meetings etc., as far as the COVID-19 situation allows'. Dummy variable with values: 0=no, 1=yes | Min.: 0 Max.: 1 Mean: 0.38 SD: 0.48 |

(*Continued*)

## Table A2. (Continued).

| Variable | Operationalisation and question wording | Summary statistics |
|---|---|---|
| **Dependent variables** | | |
| Activity | Categorical variable with values 1=Lukers (neither engaged in the review processes nor contributed any content) (reference), 2=Contributors (actively contributed own content in form of comments, VAA-question proposals, or justifications), 3=Review-only users (did not actively contribute but participated in the review process reading and commenting on the proposals of other citizens) | *(1)* *Lurkers: N =* *427* *(2)* *Contributors:* *N = 401* *(3)* *Review-only* *users: N =* *251* |
| Integrative complexity | Z-Score measured on the basis of an automated LIWC (Linguistic Inquiry & Word Count) dictionary-based approach | *Min.: −7.03* *Max.: 8.1* *Mean: −0.16* *SD: 2.66* |
| Clear Instructions | *Question-wording*: 'The tasks to be completed (evaluate questions and topics, propose questions, prepare expert opinions) were clearly formulated'. Ordinal variables with values: 1=Does not apply at all 2=Largely does not apply, 3=Partly applies, 4=Largely applies, 5=Fully applies Due to strong skewedness, the original variable is recoded to a dummy with values: 0=no [original values 1, 2, & 3], 1=yes [original value 4 & 5] | Original: *Min.: 1* *Max.: 5* *Mean: 3.85* *SD: 0.89* Recoded: *Min.: 0* *Max.: 1* *Mean: 0.86* *SD: 0.35* |
| Considers review process as fair | *Question-wording*: 'I felt the process of how new question proposals were reviewed by other participants was fair'. Ordinal variables with values: 1=Does not apply at all 2=Largely does not apply, 3=Partly applies, 4=Largely applies, 5=Fully applies Due to strong skewness, the original variable is recoded to a dummy with values: 0=no [original values 1, 2, 3], 1=yes [original value 4 & 5] | Original: *Min.: 1* *Max.: 5* *Mean: 4.11* *SD: 0.7* Recoded: *Min.: 0* *Max.: 1* *Mean: 0.86* *SD: 0.35* |
| Considers DDI as meaningful | *Question-wording*: 'How meaningful do you think it is that eligible voters were involved in creating the smartvote questionnaire?' Ordinal variables with values: 1=Not at all meaningful, 2=Rather not meaningful, 3=Rather meaningful, 4=Very meaningful Due to strong skewedness, the original variable is recoded to a dummy with values: 0=less meaningful [original values 1, 2, & 3], 1=meaningful [original value 4] | Original *Min.: 1* *Max.: 4* *Mean: 3.54* *SD: 0.61* Recoded: *Min.: 0* *Max.: 1* *Mean: 0.59* *SD: 0.49* |
| Intention to participate in future | *Question-wording*: 'Can you imagine participating in the "*Demokratiefabrik*" again in the future?' Ordinal variables with values: 1=Does not apply at all 2=Largely does not apply, 3=Partly applies, 4=Largely applies, 5=Fully applies Due to strong skewedness, the original variable is recoded to a dummy with values: 0=no [original values 1, 2], 1=yes [original values 3, 4 & 5] | Original: *Min.: 1* *Max.: 4* *Mean: 3.13* *SD: 0.88* Recoded: *Min.: 0* *Max.: 1* *Mean: 0.41* *SD: 0.49* |

**Table A3.** Final VAA-questionnaire.

| Theme and Question | Question by Demokratiefabrik participants (DF) or parties (PAR) | Number of ratings | Average rating |
|---|---|---|---|
| **Welfare State, Family & Health** | | | |
| 1  Should the municipality provide more support for versatile forms of housing (e.g., assisted living, retirement communities, and mixed-age housing)? | PAR | 258 | 71.8 |
| 2  Should the municipality provide more financial support for maternal and paternal counselling services? | DF | 236 | 64.9 |
| 3  Should the municipality contribute more to the cost of childcare in daycare centres? | PAR | 260 | 64.7 |
| 4  Are you in favour of cutting voluntary spending in the social sector (e.g., school social services, addiction counselling, youth and family counselling, social integration services)? | PAR | 253 | 63.7 |
| 5  Should the 'Midnight Sports' offer for young people be continued? | DF | 217 | 57.3 |
| 6  Should the municipality become more involved in sustainable nutrition (e.g., with school projects and poster campaigns that also inform about vegan and vegetarian nutrition)? | DF | 61 | 54.0 |
| **Education & School** | | | |
| 1  Should learning support for children be introduced at all schools in the municipality? | DF | 118 | 73.3 |
| 2  Should the municipality work to expand compulsory swimming lessons at schools (currently at least one semester)? | DF | 212 | 70.5 |
| 3  Should more sustainability topics be addressed at Köniz schools (e.g., in theme weeks)? | PAR | 258 | 70.1 |
| 4  Should voluntary all-day schools be implemented in all community school districts? | PAR | 262 | 69.9 |
| 5  Should Köniz invest more in learning structures in the area of digitalisation (e.g., expansion of ICT infrastructure in schools)? | PAR | 269 | 69.4 |
| 6  Should the upper secondary school models in Köniz be standardised (commitment to a single school model that applies to all secondary schools in the municipality)? | DF | 73 | 68.8 |
| **Migration & Integration** | | | |
| 1  Should the municipality work to ensure that apprentices who have received a negative asylum decision can still complete their training? | DF | 216 | 81.6 |
| 2  Should the municipality work harder to integrate the foreign population? | DF | 194 | 67.1 |
| 3  Should Köniz join the alliance 'Cities and Municipalities for the Reception of Refugees' and agree to receive refugees directly from foreign camps? | PAR | 221 | 65.6 |

(*Continued*)

**Table A3.** (Continued).

| Theme and Question | Question by Demokratiefabrik participants (DF) or parties (PAR) | Number of ratings | Average rating |
|---|---|---|---|
| 4 Should the municipality make voting documents available in simple language? | DF | 91 | 65.1 |
| 5 Should the municipality set up a service (so-called 'Schreibstube') to assist with administrative matters? | DF | 161 | 64.2 |
| **Society, Culture & Ethics** | | | |
| 1 Should the municipality promote offers of mutual support in the neighbourhoods (e.g., neighbourhood assistance, volunteering, support for family caregivers)? | PAR | 224 | 66.1 |
| 2 Are you in favour of Köniz joining other municipalities in financially supporting the major cultural institutions in the region (e.g., Bern City Theatre, Bern Historical Museum, Mühle Hunziken)? | PAR | 218 | 65.8 |
| 3 Köniz maintains four library locations. Do you support the continuation of all locations with the existing range of services? | PAR | 223 | 63.1 |
| 4 Should the municipality of Köniz work harder for the equality of LGBTIQ people (lesbian, gay, bisexual, trans, intersex and queer people), analogous to the city of Bern? | DF | 73 | 62.9 |
| 5 Should contributions to cultural institutions in the municipality be cut? | PAR | 213 | 60.3 |
| **Finances & Taxes** | | | |
| 1 Should married couples be taxed separately as individuals (individual taxation)? | DF | 137 | 71.4 |
| 2 Are you in favour of a six-year tax increase of 1.1 tax tenths (increase in municipal tax rate from 1.49 to 1.60 effective Jan. 1, 2022)? | PAR | 222 | 70.7 |
| 3 Are you in favour of lowering the basic charges for water and waste disposal and charging more for actual consumption in return? | DF | 136 | 68.7 |
| 4 Should the municipality create an earmarked climate fund to finance municipal climate protection measures? | DF | 59 | 67.5 |
| 5 Are you generally in favour of introducing a binding cost brake for the municipality's expenditures (personnel and non-personnel expenses)? | DF | 117 | 65.3 |
| 6 Should the voluntary services of the municipality (swimming pool, all-day schools, library locations, etc.) be subjected to a renewed task review? | DF | 102 | 58.2 |
| **Economy & Work** | | | |
| 1 Should the municipality support private efforts (e.g., start-ups) to reduce $CO_2$ emissions more strongly (e.g., financial support, facilitated approval procedures, consulting)? | DF | 70 | 73.1 |

*(Continued)*

**Table A3.** (Continued).

| Theme and Question | Question by Demokratiefabrik participants (DF) or parties (PAR) | Number of ratings | Average rating |
|---|---|---|---|
| 2 Do you support the expansion of measures to facilitate the reconciliation of family and work (e.g., tax credits for working parents)? | DF | 148 | 70.9 |
| 3 Should the municipality make additional efforts to become more attractive to small and medium-sized enterprises? | PAR | 226 | 68.3 |
| 4 Should Köniz be actively involved in the regional economic development network? | PAR | 221 | 63.5 |
| **Environment, Transport & Energy** | | | |
| 1 Should more solar panels (photovoltaic systems) be installed on roofs of properties owned by the municipality? | DF | 24 | 80.4 |
| 2 Should the municipality of Köniz do more to protect drinking water quality (e.g., by working with consumers and farmers to find solutions)? | DF | 154 | 78.9 |
| 3 Should the municipality promote non-motorised traffic (pedestrian and bicycle traffic) more strongly (e.g., expansion of infrastructure such as bicycle paths, footpaths, thoroughfares in neighbourhoods, seating areas)? | PAR | 316 | 78.5 |
| 4 Should municipal operations be carbon neutral (net zero greenhouse gas emissions) by 2030 at the latest? | DF | 96 | 78.3 |
| 5 Are you in favour of a stronger involvement of the municipality in the establishment or expansion of heating networks (district heating/thermal networks for heating entire residential quarters)? | DF | 54 | 78.2 |
| 6 Do you support a ban on new oil heating systems (in new buildings or the replacement of existing systems)? | DF | 92 | 77.9 |
| 7 Should the municipality participate more financially in the operation and expansion of public transport? | DF | 118 | 77.8 |
| **Municipality Development** | | | |
| 1 Should the municipality do more to promote affordable housing? | DF | 151 | 70.3 |
| 2 Should interim uses of vacant buildings in Köniz be promoted more strongly (incl. allowing non-zonal uses)? | PAR | 219 | 66.8 |
| 3 Do you support densification in the building zone between Liebefeld Park and Liebefeld train station ('Liebefeld Mitte')? | DF | 171 | 64.4 |
| 4 Are you in favour of establishing additional pedestrian zones (20 km/h zones) in Köniz? | DF | 138 | 62.5 |
| 5 Should municipality properties be allowed to be sold to fund development investments? | PAR | 205 | 57.7 |
| **Political System & Digitalisation** | | | |
| 1 Should the financing of municipal election and voting campaigns in Köniz have to be disclosed in the future? | PAR | 207 | 76.6 |

(*Continued*)

**Table A3.** (Continued).

| Theme and Question | | Question by Demokratiefabrik participants (DF) or parties (PAR) | Number of ratings | Average rating |
|---|---|---|---|---|
| 2 | Should the municipality engage for the voting and active electoral age in the municipality of Köniz to be lowered to 16? | DF | 184 | 62.4 |
| 3 | Should the voting ratio be announced in the decisions of the Municipal Council? | DF | 171 | 61.8 |
| 4 | Should on-site administrative services (at the counter in the municipal building) be reduced in favour of electronic offerings? | DF | 44 | 58.1 |
| **Security & Police** | | | | |
| 1 | Should more be done against littering in Köniz (e.g., higher fines, more controls)? | DF | 136 | 69.4 |
| 2 | Should the police take more targeted action against 'speeders' (e.g., with traffic controls in the evening and on weekends)? | DF | 177 | 68.2 |
| 3 | Should Köniz do more against damage to property in public spaces (vandalism) (e.g., by setting up video cameras in neuralgic places)? | PAR | 210 | 59.2 |
| 4 | Should the police presence in Köniz be expanded? | PAR | 211 | 54.1 |