

Research Plan Full Proposal NRP 77 “Digital Transformation”

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Project title (English)	Digital Democratic Innovations to Empower Citizens in the Digital Age

Please indicate which research module (only one) is the most relevant to your project:

- Module 1:** “Education, learning and digital change”
- Module 2:** “Ethics, trustworthiness and governance”
- Module 3:** “Digital economy and labour market”

1 Research

1.1 State of research in the field

There is increasing agreement that we are experiencing a crisis of democracy with declining political trust, the rise of populism and an overload of political expression. This combines with a decline in civility in political discourse and a reduction in argumentative complexity (Dryzek et al. 2019). In the wake of these challenges, many scholars have called for a deepening of democracy. The focus of practice and research has been on implementing “democratic innovations” whereby citizens are given tools for enlightened understanding and meaningful inclusion in the political decision-making process. Several democratic innovations have been proposed and tried out. Some of these innovations, such as deliberative mini publics, put emphasis on sites and moments of listening and reflection, whereas others put emphasis on participatory and direct forms of democracy. At a minimum, democratic innovations should be entitled with some sort of political influence on political decisions (Elstub 2017; Bächtiger and Parkinson 2019).

Indeed, democratic innovations have several positive effects for the workings of democracy: participating in such institutions enhances the political knowledge of citizens and their civic skills (Geissel 2012). In contrast to knee-jerk responses to partisan and populist cues, citizen dialogues make citizens’ judgments more considered and more consistent with the general values that individuals hold. By the same token, research has also shown that ordinary citizens are both willing (Neblo et al. 2010) and able (Gerber et al. 2018) to effectively participate in democratic innovations. Contrary to pessimistic predictions, empirical evidence demonstrates that democratic innovations neither privilege already advantaged citizens nor conduce to undesired psychological dynamics (such as group polarization; Sunstein 2002) nor simply reinforce existing opinions (as the motivated reasoning literature predicts; Taber

and Lodge 2006). Rather, democratic innovations have the potential to include diverse strata of citizens who frequently experience transformative effects including outcomes aligning with the public good (Grillos 2019). A key reason for these positive findings lies in the institutional setup of democratic innovations: if an institution (like a mini public) is explicitly geared toward empowered inclusion and facilitated dialogue with deliberative norms, many well-known psychological biases tend to be reduced or wither away. As Neblo et al. (2018) concur, when citizens have the ‘means, motives, and opportunity’ to become informed about politics, they behave differently than is portrayed in the ‘anaemic view of democratic participation’ implied by many democracy scholars (p. 72).

In the view of these benefits, scholars emphasize the need to bring democratic innovations in from the margins and make them a more familiar part of standard political practice (Dryzek et al 2019). A big issue, however, is **the question whether and how much digital democratic innovations (DDIs) can supplement or even replace traditional democratic innovations.** On the one hand, digital platforms have the (theoretical) potential for scaling up democratic innovations to nation-wide levels with large numbers of participants. They offer the possibility for including people from diverse backgrounds and geographical regions at much lower costs than traditional face-to-face venues. A further advantage of DDIs is that they can be organized in asynchronous ways, enabling people to participate according to their own pace and independently of space and time (Iandoli et al. 2018). Online discussions may also have the advantage that all participants can stay anonymous. Personal characteristics of participants, which psychologists consider having major effects on opinion formation, play only a very minor role (Baek et al. 2011; Moore 2018). Finally, in an anonymous setting, the absence of non-verbal cues, such as gender, tone or body language, may reduce patterns of social dominance and make participants to express their views more freely (Price 2009; Rhee and Kim 2009).

On the other hand, DDIs also have several downsides. They can be exclusive to specific social strata (the well-known “digital divide”). We also know that unstructured online environments with self-selected participation (such as commentaries on news websites or Facebook) can have many drawbacks such as polarization, low argumentative complexity and incivility (Esau et al. 2017; Quinlan et al. 2015). Yet, the problem is not digital innovations per se, but how they are implemented and organized. There is broad consensus that discussion quality increases when environments are well tailored to the specific application (e.g. Luskin et al. 2006; Grönlund et al. 2009). It has been shown that several challenges of online participation can be addressed by careful platform designs, for example through intelligent discussion structures (Iandoli et al. 2018) or artificial facilitation (Wyss & Beste 2017).

A crucial variable for the normative assessment of democratic innovations (whether digital or face-to-face) is the degree of political influence given to participating citizens (Elstub 2017; Caluwaerts und Reuchamps 2015; 2016). Usually, the output of the democratic innovations has only recommending character with no guarantee of political uptake. In this case, democratic innovations are likely to be perceived as a straw man. In contrast, when democratic innovations are entitled with too much political influence (for instance, when they have direct influence into law making) questions about democratic legitimacy are raised. Lafont (2015) argues that the legitimacy problem arises because the few participating citizens “would have a sense of the rationale behind the decision they made; they will know why some political choices were made over others, but the citizenry at large would not be able to

comprehend these rationales.” (p. 54) This, in turn, creates a fundamental challenge for their legitimacy as policy-making tools. A challenge, which has not been convincingly addressed by existing digital projects (Smith et al. 2015).

The currently existing digital initiatives in Switzerland within the context of elections (e.g. “smartvote.ch”), direct democracy (e.g. “easyvote.ch”; “wecollect.ch”; “swissvotes.ch”), or parliamentary processes (e.g. “politik.ch”; “anneepolitique.swiss”, “smartmonitor.ch”) help to make democratic processes more transparent and enable citizens to make more efficient and smarter decisions (Rauschenbach 2019). To date, however, these tools do not offer a chance for a political influence exerted by citizens, whether on political actors nor on the political discourse. The challenge of political influence is not better addressed in the case of crowdsourcing projects that have burgeoned in the past decade. In crowdsourcing projects, citizens are asked to put forth their ideas, knowledge, and opinions regarding a specific political issue (Chen and Aitamurto 2019; Landemore 2015). According to advocates, crowdsourcing projects have a dual advantage over many other civic engagement practices: they reach citizens in large numbers and at low cost (p. 99). However, after the event the authorities are relatively free to decide which of the numerous suggestions they want to respond to and which of them shall be transformed into law (Chen and Aitamurto 2019; Smith 2005, p. 106f). Due to authorities’ opportunity for cherry-picking, these innovations tend to have only modest political influence as well.

For our own research, we take inspiration from the best-practice democratic innovations in the face-to-face domains, such as the Citizens’ Initiative Review (CIR) in Oregon, which became a permanent part of that state’s electoral process in 2011 (Knobloch et al. 2013, Gastil et al. 2016). The CIR convenes a stratified random sample of two dozen citizens for a four-to-five-day deliberation on a state ballot measure. As Gastil et al. (2016) detail, “[c]itizen panelists interrogate advocates, opponents, and background witnesses, then synthesize the best evidence and arguments to produce a one-page statement that goes into the official Voters’ Pamphlet mailed to every registered voter.” The CIR project demonstrates that many citizens find it helpful to use the recommendations provided by the citizens participating in the CIR (Knobloch et al. 2013). On this basis, democratic innovations can exert political influence, at least indirectly. Notice that the CIR has also found resonance among with Swiss political scientists. Yannis Papadopoulos (2012: 148) has claimed that “there is no reason why randomly selected citizens’ assemblies could not draft or scrutinize some of the reform proposals that are subject to referendum votes in Switzerland.” Moreover, the SNSF research project led by Nenad Stojanović attempts to transfer the Oregon model to Switzerland. Stojanović emphasizes the bridge-building potential of this face-to-face innovation, providing the wider public with well-considered information in an accessible language (Stojanović 2019).

Similar to Papadopoulos and Stojanović, we see Switzerland as a highly favourable place for implementing democratic innovations, including DDIs. Democratic innovations most likely succeed when they are carefully tailored to a specific political system. The Swiss political system offers promising connection points for democratic innovations, namely the idea of direct involvement of citizens through direct democratic instruments, semi-professional respectively voluntary political engagement at all political levels, and even a tradition in the

principle of sortition.¹ Hence, rather than being perceived as “foreign”, DDIs implemented in the system would reinvigorate Swiss political norms.

1.2 Personal contribution to research in the field

The applicants of this project are Marc Bühlmann (well-known expert of the **functioning of direct democracy** and chair of the Année Politique Suisse) and his colleagues Marlène Gerber and Anja Heidelberger. All of them have profound understanding of the specific characteristics of Swiss democratic processes. Anja Heidelberger wrote her dissertation on participation in Swiss ballots. Marlène Gerber has extensive experience in analysing deliberation within **Landsgemeinden** (Gerber et al 2019; Gerber & Mueller 2018) and **deliberative mini publics** (Gerber 2015; Gerber et al. 2018). Furthermore, Anja Heidelberger and Marlène Gerber have profound experience in **survey research**. In the framework of this project, we collaborate with Dominik Wyss and André Bächtiger, who bring in skills and knowledge that will be critical for successfully implementing the case studies. First, André Bächtiger has championed the first online deliberation field experiment in Swiss direct democracy (Bächtiger et al. 2011; Wyss and Bächtiger 2019) and is a **world-leading expert of deliberative democracy** (Bächtiger 2005; Bächtiger et al. 2018; Bächtiger & Parkinson 2019; Dryzek et al. 2019). Dominik Wyss, in turn, will be responsible for the development of the software. Due to his dual background as computer and a political scientist he is well equipped for developing and implementing a real-life digital platform. Dominik Wyss has championed innovative and theory-guided online forums for political participation including **nudging techniques and artificial facilitation** (Wyss & Beste 2017). The group of Bühlmann, Heidelberger, Gerber, Bächtiger and Wyss have already successfully collaborated in the current SNF project “Echo vs. Deliberative Chambers”.

Due to the interdisciplinarity and the ambitiousness of this proposal, we will collaborate with further leading experts. We will incorporate Mark Klein as a consultant for our team. Klein’s research is at the intersection of **artificial intelligence and social computing** and explores how computers can enable better knowledge-sharing and decision-making among humans. He is also a co-inventor of the collaborative argumentation platform “Deliberatorium” (Klein & Iandoli, 2008). For the conception and implementation of our second case study, we are closely connected with the founders of Politools, Daniel Schwarz and Jan Fivaz. Both are experts of **Swiss electoral system and the conduction of Voting Advice Applications (“smartvote”)**. We are also in close contact with Nenad Stojanović who conducts a **CIR innovation in Sion (2019)** in the context of his SNF-funded “Förderprofessur”.

With the proposed project, our team builds on a number of SNF-funded projects since 2010. In 2010, Bächtiger conducted the first deliberative field experiment in Swiss direct democracy based on synchronous online deliberation (Bächtiger et al. 2011; Wyss and Bächtiger 2019). The topic of the field experiment was the expulsion initiative („Ausschaffungsinitiative”) of the Swiss People’s Party (SVP) in 2010 and the counterproposal of the government and parliament. We found that the online discussion group became more favourable of the counterproposal, trying to combine the popular demand for expulsion of criminal foreigners with the requirements of international and basic law. Moreover, those participating in the

¹ For instance, sortition is applied in some communities to select among citizens the non-permanent members of election committees and (under specific circumstances) to select judges (Art. 37 of the Bundesgerichtsgesetz from the June 17th. 2005).

online discussion also had better knowledge on the initiative and the counterproposal compared to participant in the control group. A second field-experiment was conducted in the context of enforcement initiative (“Durchsetzungsinitiative”) of the SVP. It contained an asynchronous discussion platform dubbed ‘Smartopinion’ containing an artificial facilitator implemented to improve quality of discourse (figure 1; Wyss and Beste 2017). We found that artificial facilitation helped citizens having problems to form opinions as well as citizens who do not like to speak up in public. A third experiment was conducted in the context of the ongoing SNF-project “Digital Lives”. In a simulated online discussion (figure 2), we investigated the effects of echo chambers, balanced forums and nudging techniques on individual opinion formation. First results show that the information processing of citizens in the online forum was good and polarization effects could be contained (Wyss et al. 2019).

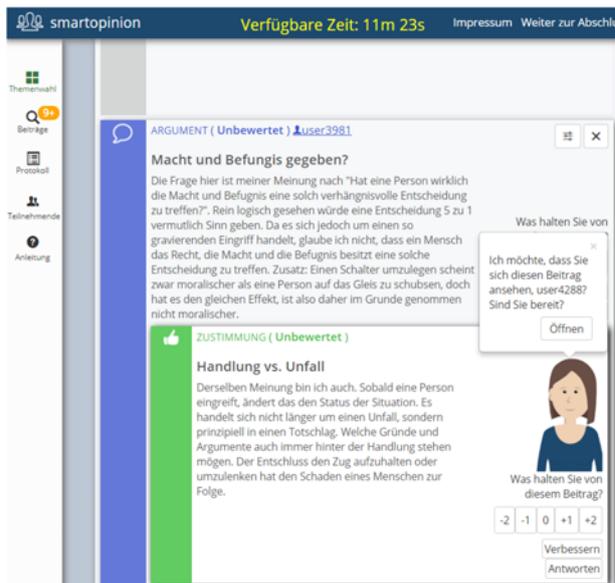


Figure 1 shows the user interface of the collaborative argumentation platform ‘Smartopinion’ (Version 1.0) at the moment when the artificial facilitator draws attention on a specific argument .



Figure 2 shows the user interface of the simulated forum used in our SNF-‘Digital Lives’ experiment.

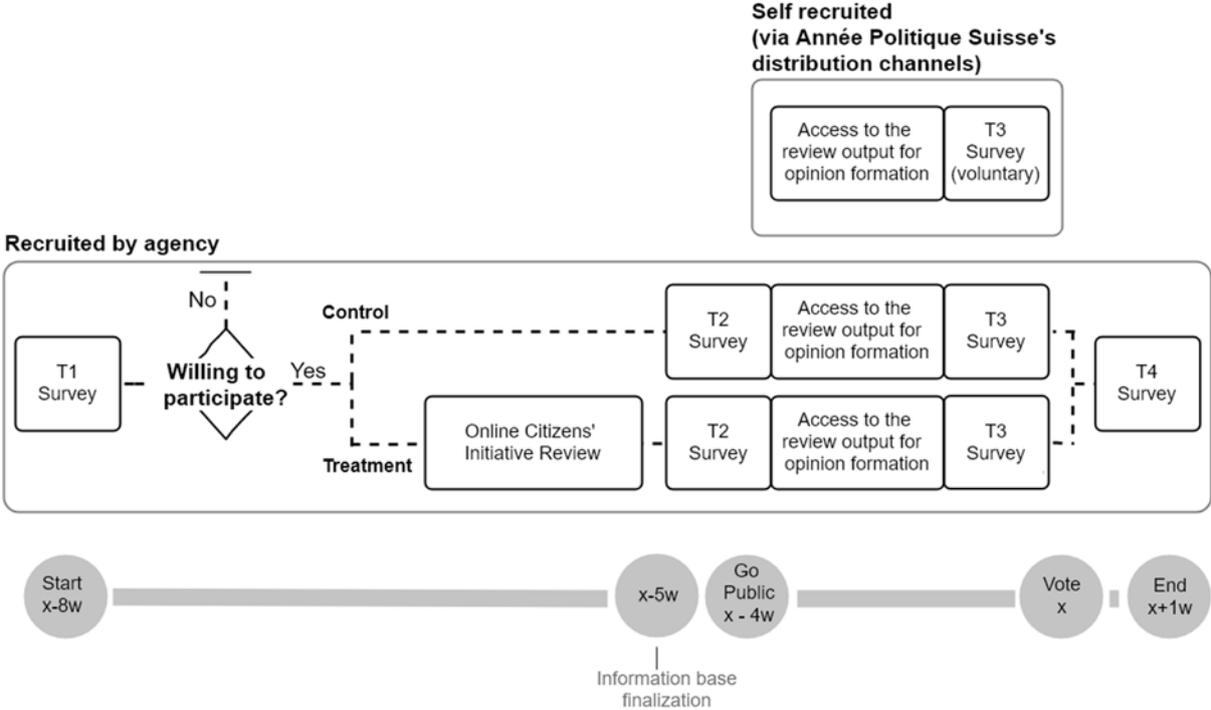
1.3 Detailed research plan and methods

In the proposed study, we will conduct and scientifically assess two DDI-prototypes that both aim at strengthening bottom-up influence when citizens make political decisions. In concrete terms, the output of DDIs shall inform other citizen’s opinion-formation process in the wake of a public voting (case study #1) and public elections (case study #2). The crucial feature is that it is no longer only elites who inform voters about the direct-democratic votes but also the citizens themselves (El-Wakil 2019).

Case Study #1: The first case study is inspired by the Citizen Initiative Review in Oregon (Gastil et al. 2016) and dubbed as “Citizens’ Initiative Review”. Two months before an upcoming initiative or referendum, we recruit more than thousand citizens who are representative of Swiss-German citizens entitled to vote. We will invite them to deliberate and collectively create an information base that serves public opinion formation. The information base not only provides the aggregate voting intentions but also the perspectives, considerations, and justifications uttered during the collaboration process. The core of the

information base will be an extensive argument repertoire regarding the pros and cons of the proposal. The finalized information base is then published by using the communication channels of all organizations involved in this proposal (i.e. Année Politique Suisse and Politools including the newsletter with about 65'000 registered Smartvote users). We also will encourage potentially interested media actors to report about our project. Citizens then can use the information base as a guidance to form their own voting decisions. Overall, the information base represents a bottom-up alternative to the official brochure published by the Federal Chancellery.

Figure 3: Study Design of Case Study #1



In order to scientifically monitor the case study, we employ the following study design (Figure 3). First, the 1'250 citizens recruited via a polling company are invited to take part in the initial survey (T1) containing questions about socio-demographic, political and attitudinal variables as well as about their initial stance towards a direct-democratic vote proposal. After the T1 survey, we randomly allocate the participants to a control group (20% of the participants) and a DDI-group (80% of the participants). The participants in the DDI-group will login to the Smartopinion platform (see below) and to collaboratively create the above-outlined information base. At the end of the collaborative process (that takes up to three weeks) and after a subsequent editing² by the Année Politique Suisse team, we re-invite all participants (including control- and treatment groups) to a next survey session (T2). At T2, we will repeat several questions of the initial survey (e.g. vote intention). Afterwards we present the finalized information base to the participants. At T3, we ask them to provide a detailed feedback (e.g. do you find your personal views appropriately represented in the information base?). A final survey (T4) then takes place a few weeks later (i.e. a few days after the vote).

² In the subsequent editing, we will increase readability of the texts and fix grammatical errors. However, we will refrain from adding substantial modifications.

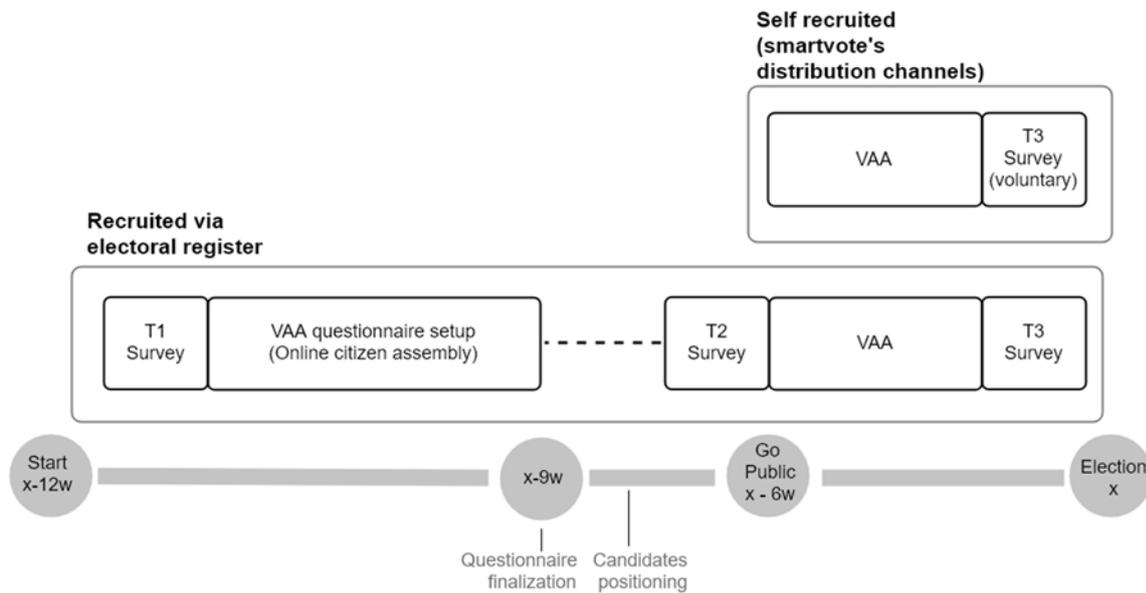
Here, we want to monitor whether participating at DDIs has long-term effects. For this last survey, we expect 900 attending participants.

Case study #2: We conduct the second case study in close cooperation with our partner “Politools”, the provider of the most prominent Voting Advice Application (VAA) in Switzerland (dubbed “smartvote”). In this prototype, we sample from an electoral register of a small or medium-sized city holding an upcoming election. The citizens are then asked to create a question catalogue (“questionnaire”) serving as the data basis for the VAA. The fact that citizens then not only can match candidates along predefined political criteria but also can shape the set of criteria themselves, gives citizens a much more salient role within the VAA-assisted opinion formation.

Although this second DDI-prototype features many similarities to the first prototype, its design is more modest. Instead of drawing a sample via a polling company, we use the electoral register to draw our citizen sample. Furthermore, we do not apply further experimental treatments. Moreover, the financial remuneration for the participants will also be significantly smaller and the study does not include a post-election survey. A final difference to the first study is the political level; while the first prototype focuses on the federal level, the second prototype focuses on a communal election in a small or medium-sized city. Politools has already identified five cities potentially ready to collaborate with us. The five cities hold their election on a date that corresponds to the schedule of this project. In a first informal inquiry, Politools received positive responses from some cities to provide us with the postal addresses of a random sample drawn out of the electoral register.

The concrete study design is shown in figure 4: we send an invitation to the T1-survey to 7500-10'000 citizens via postal mail. Based on previous projects, we predict that about 12% (e.g. 1'000) of the citizens will participate. After taking the survey, the actual collaboration phase starts, involving two steps. First, we ask the participants to collect, deliberate and rate the most important themes for the upcoming legislative period (such as “environment protection”, “social security”, etc.). Second, for each of the themes the participants are asked to collect, discuss and rate a certain number of questions about political preferences (Fivaz and Nadig 2010; e.g. should the city introduce speed limits to counter climate change?). When this collaboration phase is finished, we apply stratification weighting to decide which concrete themes and questions enter the final questionnaire. The weighting ensures that questions and topics perceived as salient by underrepresented citizens are also considered in the questionnaire. In a subsequent editing by Politools, we make sure that the questionnaire meets the stylistic and technical quality standards. After the editing, we send the questionnaire to all the candidates running for office. Politools predicts that more than 75% of the candidates will complete the questionnaire. Afterwards, participants are surveyed again (at T2) and receive access to the Voting Advice Application in order to generate a personalized voting advice, based on Euclidean matching between voters and candidates (Fivaz and Nadig 2010).

Figure 4: Study Design of Case Study #2



These study designs enable us to investigate the following research questions: Are citizens willing to participate meaningfully on digital platforms when they are given political influence? Are citizens capable to do so? Do we observe undesirable information-updating patterns (e.g. motivated reasoning, group-think tendencies)? What will be the quality of the citizen-generated output of the DDI? What is the impact of DDI participation on the citizens? And is there a chance that the output can influence public opinion formation? The details about evaluation methods and our predictions are outlined in the following paragraph:

- **Predictions regarding access and motivation to participate (H1):** The latest research paints a fairly positive picture by showing that citizens are both willing (Neblo et al. 2010) and able (Gerber et al. 2018) to effectively participate in democratic innovations, in particular in well-structured minipublics. For our DDIs, however, this question is brought back into focus. First, we predict that the digital character of our democratic innovations discourages the participation of people who are older or less familiar with Internet technology (**H1a, digital natives**). We also predict that the opportunity to influence public opinion formation increases the motivation of citizens to participate actively (**H1b, response rate**). Due to the same reason, we expect that the relative number of spectators is lower than in other online collaborations. We evaluate these hypotheses by observing activity patterns and a comparison with studies conducted earlier by our team. Furthermore, to better understand the source of motivation, we will randomize the financial incentives of the participants in case study#1 (between CHF 10.- and 50.-). The randomization allows us to juxtapose the importance of intrinsic and extrinsic motivation. We predict that there is only a weak relationship between the degree of active participation and the financial incentives that participants receive (**H1c, intrinsic motivation**).
- **Impact on procedural quality (H2):** Regarding the procedural quality, we assess the concepts of justification rationality, reciprocity, respect, and constructivity during the online discussions (Esau et al. 2017). In this regard, our team has proficiency in automated as well as hand-coded analyses of face-to-face and online discussions. For

instance, we will apply the psychological construct integrative complexity (Wyss et al. 2015) and the Discourse Quality Index (DQI) co-invented by André Bächtiger (Steiner et al. 2004; Fournier-Tombs 2018). Regarding procedural quality, we formulate a general hypothesis: since participating citizens are given political influence, the procedural quality will be good with argument quality and levels of reciprocity scoring higher than in our previous experiments.

- **Impact on participating citizens (H3):** As mentioned above, democratic innovations have several positive effects on the political knowledge, voting preferences, civic skills of participating citizens (Geissel 2012; Gastil et al. 2014; Már & Gastil 2019; Benz and Stutzer 2004). Especially case study #1 enables us to investigate these questions in a causal way, since we incorporate random allocation to the DDI- and the control group.

Besides these hypotheses, we will monitor further effects of our DDIs. We will examine whether the platform collaboration of citizens produces an output that outperforms alternative information bases. Thereby, we will compare our results with comparable information bases (i.e. VAA-questionnaires conventionally composed by Politools for elections in similar-sized cities and the official brochure of the Federal Chancellery). We will also report indicators such as website traffic, media coverage, and mentions in social media in order to gauge whether our DDI had a chance of influencing public opinion formation.

The digital platform: For the conceptualization of the digital platform, we draw from the above-outlined experiences. The proposed case studies will be run on a collaborative argumentation platform enabling meaningful and reason-based large-scale discussions (Wyss and Beste 2017; De Liddo & Buckingham Shum, 2013; Elliman, Macintosh, & Irani, 2009; Klein & Iandoli, 2008; Pingree, 2006). The basic idea of these platforms is to overcome constraining factors of large-scale online discussions such as redundancy, bifurcation, and fragmentation (Klein 2012). To overcome these constraints, they put emphasis on a facilitative structure prompting participants to bundle all relevant content concerning a certain aspect of the discussion into distinct subtopics. Moreover, due to their focus on structured and reason-oriented discussion, the platforms can restrain incivility. This is corroborated by case studies in which these platforms hosted political discussions on highly controversial issues (Wyss & Beste 2017; Iandoli et al. 2018).

The platform for the proposed project will be based on our ‘Smartopinion’ platform (Wyss & Beste 2017). Smartopinion has been developed and scientifically tested in the context of the NCCR Democracy in cooperation with Politools. Since its launch, the platform has been frequently applied by universities and NGO’s to host online discussions in Switzerland and Germany. For the studies outlined in this proposal, we will extend it significantly. Most importantly, we will implement a democratic concept for self-governance based on sortition algorithms.

In order to function as a platform for authentic democratic innovation, questions of platform governance become important. The problem can be easily illustrated by the above-mentioned crowdsourcing projects, in which citizen put forth their opinions, ideas and arguments. Public authorities then must analyse and synthesize the submissions. This task is more onerous and subjective than one might expect, because the “crowd’s input is often atomic, divergent, and heterogeneous in content and format.” (Chen and Aitamurto 2019, P.103) A likely

outcome is that the input of the citizens is ignored by the authorities (ibid). We claim that this issue is less severe when we provide self-governance mechanisms, whereby citizens themselves can synthesize the best suggestions and considerations into one information base (for instance in a format such as a VAA-questionnaire or a brief information base on an upcoming public voting).

Several types of self-governance are already implemented in existing platforms. They partially entrust only those participants with governance decisions who reach a certain level of reputation credits (e.g. Stack Overflow), whereas others entrust all participants (Klein 2012; Carroll et al. 2019). However, a persistent finding is that governance tasks are conducted only by a small and heavily biased group of participants (Butler et al., 2007; Klein 2012; Wyss and Beste 2017). Evidence from Wikipedia sheds light on the potential extent of such biases. Male users with high Internet skills are among those who most likely to contribute to a Wikipedia article. The likelihood to contribute for high-skilled women is less than the half of men (Hargittai et al. 2014). Studies find that the disproportionate influence of male editors on Wikipedia is also reflected in Wikipedia's content. There is also evidence that there are more hyperlinks from women portrayed on Wikipedia to male portraits than vice versa, which can put women at a disadvantage in terms of visibility or reachability (Wagner et al. 2015).

To overcome such biases, we propose an innovative approach to self-governance that builds on sortition (See for a similar proposal Velikanov and Prosser 2017). We entrust each participant with five randomly drawn governance decisions per day. Here is an example: when a governance decision (e.g. whether a proposed amendment to a text should be accepted) has to be made, the algorithm entrusts an ad-hoc subgroup with the actual governance decision. To constitute the ad-hoc group, the algorithm combines two random selection mechanisms: 1) Some members of the ad-hoc group are selected among the participants who will then enter the platform. 2) Other members are selected among the full sample of participants. The latter are then informed by email and SMS. Depending on the salience of the decision, the size of the ad-hoc group is either bigger or smaller. Moreover, when an ad-hoc group decides about a highly salient amendment, a qualified majority has to be reached. We will make these governance tasks as simple as possible (for instance with simple accept-reject decisions). The low-threshold access to self-governance should help to attenuate the emergence of severe content biases.

To be sure, this approach will not fully eliminate the unequal distribution of influence, since many participants will disregard the assigned governance tasks. Furthermore, not all activities of such a platform can be - and need to be - organized via self-governance (for instance, the operators remain responsible for legal issues and the users can still add simple comments independently of others). Nevertheless, we claim that this approach moves us closer to a core idea of deliberative democracy, namely that all participants should have equal opportunities of influence. From start to finish, such a DDI respects better the idea of a bottom-up instrument and the idea of assigning significant political authority to citizens than other existing digital innovations.

To sum up, we show in Table 1 an overview over both case studies.

Table 1: Comparison of the two Case Studies

	<i>Online Citizens' Initiative Review</i>	<i>VAA Questionnaire</i>
<i>Area</i>	<i>CH</i>	<i>Small-to-average sized city</i>
<i>Online Platform</i>	<i>Smartopinion V.2.0, emphasizing sortition based self-governance.</i>	
<i>Main Tasks</i>	Rate, improve, discuss, and add pro/contra arguments concerning the popular vote	Rate, improve, discuss, and add topics and questions for the VAA questionnaire
<i>Output</i>	An information base published on our website and distributed via partner's social-media accounts.	A question catalogue that feeds the Voting Advice Application. The VAA helps citizen to form independent opinions.
<i>Output Evaluation</i>	Onlooker survey + expert review + comparison to official brochure	Expert review + comparison to questionnaires of other cities
<i>Operator</i>	Année Politique Suisse	Politools
<i>Recruiting method</i>	Polling company	Electoral register
<i>N Invited people</i> - <i>Citizen assembly</i> - <i>Onlookers</i>	1'000 panel participants 250	7'500 – 10'000 citizens -
<i>N T2-Finishers (pred.)</i> - <i>Citizen assembly</i> - <i>Onlookers</i>	800 (80%) 200 (80%)	750-1000 (10%) -
<i>Incentives (CHF)</i> - <i>Citizen assembly</i> - <i>Onlookers</i>	Rand. $Z_i = \{10.-, 30.-, 50.-\}$ 15.-	Price draw: 15x CHF 500.- -

1.4 Timetable and milestones

Table 2: Research Agenda

	<i>Milestone</i>	<i>Date</i>
<i>Initialization</i>	Project launch	February 2020
	Hiring a PhD student	May 2020
<i>Software Development</i>	Complete specification	May 2020
	Pilot tests (student samples)	November 2020
	Software finalization	January 2021
<i>Case Study #1</i>	Voting date*	Between January 2021 and November 2021
	Case study finalization	December 2021
<i>Case Study #2</i>	Election date*	Between May 2021 and March 2022
	Case study finalization	April 2022
<i>Evaluation & Publishing</i>	Presentation of results at Political Science Congresses (e.g. ECPR)	September 2022
	Publishing of two or three articles.	Between Autumn 2022 to Autumn 2023

**Exact dates depend on the voting agenda and our choice of the commune/canton holding elections in this period.*

2 Practical applications and implementation

2.1 Previous achievements

The promotion of digital citizen participation within the Swiss democracy has been a long-term goal of this group. Between 2010 and 2015, Andre Bächtiger participated in the NCCR program “Challenges to Democracy in the 21st Century”. His project “Deliberating about democratic preferences: citizen preferences for representative and participatory schemes of governance” explored how (online) deliberation can be used in Swiss direct democracy voting. The field experiments in this research project were based either on a synchronous chat software or the collaborative argumentation platform “Smartopinion”. Smartopinion has been applied in numerous scientifically and non-scientifically contexts in Baden-Württemberg and Switzerland. For instance, in collaboration with Politools, we launched a public debate in the wake of a public voting in 2016; two years later we collaborated with the lab for innovation ethics for using our Smartopinion platform to initiate a public discourse about the ethical dimension of the use of robots in the daily lives.

Another project that is relevant for ours has been conducted by Politools this winter. Within the scope of the SNF-“Digital Lives” project “Digitalization and Electoral Decision-Making: The Impact of Voting Advice Applications on Electoral Choice, Polarization and Democratic Representation” led by Andreas Ladner at the University of Lausanne, Politools conducted a pre-election survey whereby they invited 60'000 citizens to report on their most salient

political topics. 7'500 citizens (12%) participated in the survey. This study is indicative in terms of the response rate in our second case study.

2.2 Activities planned

The development of the digital platform as outlined above is demanding. We are aware that we enter new territory with this vision of democratic self-governance (see chapter 1.2). For the realization of this vision, we have in Mark Klein in our research acting as a consultant. In addition, we have already performed feasibility tests of key features of the prototypes. So far, we achieved promising results suggesting that average-skilled Internet users are not overtaxed by solving self-governance tasks. Before running the case studies, we will conduct large-scale pilot tests with students of the University of Bern and Stuttgart (see timetable below).

After the conduction of our case studies, we will share the knowledge gained with all interested actors. For this aim, we will publish reports and blog posts on partners' homepages and social-media accounts, and we will try to get broad media coverage. Furthermore, our research team is part of a vivid network of civic-tech proponents in Switzerland and beyond. We are in close contact with pioneers such as Politools, PublicBeta, Disruptive Societies Institute, Procivis, reach, and the Swiss Federation of Youth Parliaments. We will regularly attend workshops to link the scientific knowledge obtained in our prototypes with the experiences of other academics and practitioners.

Furthermore, we will seek for long-term partners to finance the conduction of our DDIs on a regular basis. We have concrete plans for the institutionalization of both case studies (see chapter 2.3). We will also explore whether the concept of our DDIs can also be applied in other fields. For instance, we already concretized the idea to setup a digital democratic innovation during federal consultation procedures. This would strengthen the bottom-up principle in the law-formulating phase of the policy cycle. In addition, we will offer access to our platform for non-commercial organizations.

2.3 Implementation partners

Année Politique Suisse (APS) provides an objective and focussed depiction of the developments in Swiss politics and society and is used by scholars, political parties, the administration, and the media. With the establishment of a database and the launch of the "anneepolitique.swiss" platform in 2017, all previous articles and the ongoing chronicle of Swiss politics (brief scientific descriptions of parliamentary decisions and socio-political processes) were made digitally available to the public. Thus, the platform serves as an important basis for neutral information on current political events and as a reference work for past political events, which in turn represent the roots of today's political processes and decisions. The collaborators of APS generate a lot of expertise on different policies and are trained to prepare and know all arguments in a political field or concerning a specific proposal (e.g. popular votes). APS is also well known for its campaign research, research on direct democracy and Swiss politics. APS provides numerous data that form an important basis for understanding the functioning of Swiss politics (e.g. "swissvotes.ch"). The APS-platform "swissvotes.ch" provides information on all federal votes. The tool planned for this project (case study #1) will be integrated into Swissvotes as part of a comprehensive catalogue of arguments for and against a popular vote. For this purpose, a long-term cooperation between our partner Politools and APS for a common voting information platform ("smartinfo") has begun to take shape already several

years ago. The innovation that we scientifically test in case study #1 will be a suitable basis for a deeper partnership.

As a partner for the institutionalization of the case-study #2, Politools is our first choice. Politools (Political Research Network) is a non-profit, non-partisan interdisciplinary scientific network, which realizes Internet-based projects in the context of policy-analysis and political education. Politools is known as an operator of the prominent voting advice application (VAA) in Switzerland.

2.4 Timetable and milestones

Table 3: Practical Implementation Agenda

	<i>Milestones</i>	<i>Date</i>
<i>Case Study #1</i> <i>(Partner: Année Politique Suisse)</i>	Voting Date*	Between January 2021 and November 2021
	Case Study Finalization	December 2021
<i>Case Study #2</i> <i>(Partner: Politools)</i>	Election Date*	Between May 2021 and March 2022
	Case Study Finalization	April 2022
	Implement the DDI in other Communities and Cantons	> 2023
<i>Publishing and Sharing our Findings</i>	Participating at (civic-tech) conferences and publishing blog posts and media articles.	2021 - 2023
<i>Developing and Implementing further DDI's</i>	A blueprint for a DDI within the Swiss consultation process is already available.	> 2023

3 Significance

3.1 Scientific significance

By investigating the possibilities and challenges of empowering citizens in the Swiss digital sphere, we enter uncharted territory. Our research proposal yields important contributions to the scientific literature in these three regards:

Democratic Self-Governance on online platforms: A valuable asset for the political realm brought by the digital transformation is the possibility of crowdsourcing. By involving thousands of people on online platforms societies are able to collect essential information for solving societal problems. The benefits of crowdsourcing instruments notwithstanding, they also are strong flaws with regard to their legitimacy and fairness (Alexandrov P.259). We propose a new pathway and let platform participants decide themselves, which political topics, issues, arguments, and perspectives should gain more attention and prominence in the public discourse. While such decisions are conventionally made by political elites and media

organizations, we propose that in future, they are made – or at least co-created - by the participating citizens themselves. If we are able to demonstrate that democratic self-governance on digital platform can be realized, we will give both democratic spirit and a positive spin to the digital transformation of the political realm.

Empowering Citizens: Scholars agree that the actual degree of political influence of democratic innovations is pivotal (Elstub 2017; Lafont 2015). On the one side, research found that increasing political influence enhances both the motivation of citizens to participate in such processes and the seriousness of their engagement, which increases the quality of their contributions (Fung 2003; Bernhard & Bühlmann 2015). On the other side, when democratic innovations are entitled with too much political influence (for instance, when they can make binding decisions), the question rises whether non-participating citizens will accept the laws made by the democratic innovation (Lafont 2015; also Goldberg 2019 for empirical support of this argument). We predict that the pathway we propose addresses this dilemma quite well. First, we publish both the aggregated opinions of participants *and* the perspectives, considerations, justifications as well as opinion transformations experienced during the collaboration. According to Cristina Lafont (2015), this helps making deliberative innovations more legitimate.³ Second, in our setup every citizen is free to decide to which degree he or she will follow the recommendation of the DDI.

Understanding Causal Mechanisms: For accurately assessing DDIs, it is important to clarify what drives opinion shifts or potential polarisation and moderation processes during DDI-participation (Lindell et al. 2016). Will we experience undesired psychological dynamics in DDIs, such as group pressure (Sunstein 2002) or motivated reasoning (Taber and Lodge 2006)? The answer to these questions cannot only be found in observational studies. Yet, only very few studies implemented an experimental design that enables an in-depth look at the actual mechanisms present during democratic innovations. With study #1, we will conduct a field-experiment allowing to investigate causal questions, most importantly why participants' opinions were (potentially) transformed. For the analyses, the skills of Dominik Wyss and André Bächtiger in applying causal inference to data generated by field-experiments is of great benefit (Lindell et al. 2016; Wyss & Bächtiger 2019). In particular, we expect that we will have to apply matching technics to correct for sampling biases, CACE-analyses to properly distinguish the treatment effects on the actual participants from those citizens who did not participate or comply with the treatment (Goldberg et. al. 2019), and mediation analyses to identify potential causal mechanisms (Hildebrand et al. 2018; Wyss & Bächtiger 2019). By these means, we expect to contribute significantly to the scientific debate.

3.1 Practical significance

Our proposal will have great practical relevance for 1) citizens, 2) practitioners as well as authorities, and 3) Swiss direct democracy as a whole.

Citizens: The direct beneficiaries of our project proposal are the citizens entitled to vote. They will have an in-depth alternative to the official brochure published by Federal Chancellery at their disposal. Citizens interested in using our DDI-generated information base for opinion

³ Personal communication, August 31, 2019

formation, can benefit by the opinions and considerations of citizens that likely have deliberated about the issue longer than the non-participating citizens.

Extending the knowledge base on democratic innovations for authorities and practitioners around the world: Current political challenges such as declining political trust, the rise of populism and the decline in civility in political discourse require thinking about appropriate tools to alleviate these deficiencies (Dryzek et al. 2019). With the proposed project, we will extend the knowledge base on how to develop, conduct and assess democratic innovations. Hereby, we expand the available set of options for authorities and practitioners around the world of how to implement specifically tailored democratic innovations as a response to the democratic deficits in their own political system.

Democratizing Direct Democracy by DDIs: Swiss political scientists tend to put emphasis on the bottom-up channels (e.g. initiatives and referendums) institutionalized in the Swiss system, because they require political elites to maintain a continuous exchange with the citizens (Bühlmann 2018: P. 159, Cheneval and el-Wakil 2018). The claim draws from Lisa Disch's idea of 'interactive democracy' stressing that the iterative, creative, and sometimes even conflictual exchange between represented and representatives induces preference clarification, interpretations, and adjustments (Disch 2016: p.7; Bühlmann 2018, p. 159). We consider our DDIs as a further bottom-up channel giving citizens a stronger voice within direct-democratic and voting campaigns conventionally dominated by elite actors. The DDIs offer an alternative to the arguments and interpretation spread by the elites (as we find it, for instance, in the official brochure). They might contribute to a more interactive and more balanced relationship between citizens and elites.

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