

Overstrained Citizens?

The Number of Ballot Propositions and the Quality of the Decision Process in
Direct Democracy

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Abstract

We study how the number of ballot propositions affects the quality of decision making in direct democracy, as reflected in citizens' knowledge, voting behavior, and attitudes toward democracy. Using three comprehensive data sets from Switzerland with over 3,500 propositions, we exploit variation in the number of federal and cantonal propositions. Voters know the most about the content of federal propositions when they are exclusively presented and less with a high number of concurrent cantonal propositions on the ballot. Across other outcomes we find no consistent indications that – for the observed variation in the exposure to popular votes – a high number of propositions impedes the quality of decision making in Swiss federal direct democracy. In the medium to longer term, more federal propositions on the ballot rather relate to higher perceived political influence and satisfaction with democracy.

JEL Classifications: D03, D72, D78, H00

Keywords: ballot length, direct democracy, political efficacy, pole-party endorsements, political knowledge, satisfaction with democracy, turnout, voter behavior

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1 Introduction

Direct democracy is a most relevant process for collective decision making.¹ Like any democratic process it has informational demands and relies on public discourse.² A meaningful discourse is helping citizens to form a reasoned opinion.³ However, concerns have been raised about uninformed and overburdened voters, overstrained by the number of issues about which they are asked to decide (for discussions, see, e.g., Bowler, 2015; Lupia, 2016; Seabrook, Dyck and Lascher, 2015). Overburdened voters may be easily swayed and are more likely to follow the endorsements of extremists (see, e.g., the concerns raised in Sartori, 1987).

This reasoning suggests a relationship between the quality of the decision process and the number of ballot propositions within a period of time. On the one hand, citizens might be too infrequently engaged with the political process so that neither the politicians nor the media nor citizens' networks are prepared for an open and productive discourse. On the other hand, there might be too many issues being debated, which can turn a potentially meaningful discourse into a superficial exchange of slogans. If citizens feel overstrained, the motivation to cast an informed vote might decline, and support for the very process of direct democracy might be undermined.⁴

In this paper, we explore how the number of popular votes affects the quality of the decision-making process in direct democracy. Following Matsusaka's (1995) information theory of voting, we assume that voters are at least partly intrinsically motivated to vote whereby the incentive to vote increases with the confidence in their vote choice. Information increases certainty about the consequences of a proposition.

¹There is a rich scientific literature in political science and political economics analyzing how the possibility of direct democratic participation affects the political process by offering additional means to control politicians and to discuss politics (see, e.g., Cronin, 1999; Frey and Stutzer, 2006; Lupia and Matsusaka, 2004). The consequences of direct democracy have been empirically studied, primarily for the United States and Switzerland (see, e.g., Asatryan et al., 2017; Bowler and Donovan, 2004; Frey and Stutzer, 2000; Funk and Gathmann, 2011; Kirchgässner, Feld and Savioz, 1999; Leemann and Wasserfallen, 2016; Matsusaka, 2018).

²The fundamental role of public discussions about politics for the functioning of democracy is emphasized in work on deliberative democracy (e.g., Habermas, 1992; Elster, 1998; Dryzek, 2000) and on the pre- and postreferendum stage in direct democracy (e.g., Benz and Stutzer, 2004; Bohnet and Frey, 1994).

³The concept of "considered opinion" in direct democracy is developed in Colombo (2018).

⁴In the United States, the rise in the number of citizen initiatives (Matsusaka, 2018) has raised concerns that direct democratic decision making is applied too often (Democracy in America, 2009; Baldassare, 2013; Broder, 2000; Luce, 2016; Schrag, 2004). In Switzerland, the debate focuses inter alia on the threshold for the qualification of initiatives (e.g., Rühli and Adler, 2015). The concern about too many popular decisions may gain further attention with the spread of e-democracy or instant democracy. A complementary debate thus concerns the constitutional requirements, for example, with regard to signature requirements, that have to be met for a proposition to qualify for ballot voting and how this affects the number of popular decisions.

With each additional proposition, voters looking for orientation thus have to gauge whether they should acquire more costly information or search for cues allowing them to use heuristics. On the basis of this theory, we derive indicators that are meant to capture traces of overstrained citizens.

To empirically analyze the consequences of a high number of ballot propositions, we exploit the unique setting of Swiss direct democracy. We rely on the variation in the number of federal propositions on the ballot as well as arguably exogenous variation in concurrent cantonal propositions, that is, propositions from the subfederal state level. For the empirical tests, we use three comprehensive data sets: administrative data (1981–2015, up to 7,080 observations), individual postvote survey data (1981–2015, up to 264,000 observations), and household panel data (1999–2012, up to 114,000 observations).

Our results are threefold: First, we consider the relationship between the number of propositions on the ballot and voters’ knowledge, turnout, blank voting, and use of decision shortcuts. We find that citizens know the most about a federal proposition if it is exclusively put to a vote at a vote weekend. With more than one federal proposition on the ballot, only with a relatively high number of concurrent federal and cantonal propositions voters tend to have less knowledge about federal propositions and to cast more blank votes. Given the deliberate agenda setting of the Federal Council for the federal propositions, the correlations might reflect consequences of the *number* of propositions as well as of their specific *content*. Focusing on the consequences of a high number of concurrent cantonal propositions, we measure a positive effect on turnout. This could be because of a mobilization effect, as more issues are likely to affect more citizens to a larger extent. With more propositions on the ballot, citizens are *not* more likely to vote in line with the recommendations of the pole parties. We thus do not find any systematic evidence for polarization. We also do not observe an increase in voting for the status quo.

Second, we assess how the number of propositions within the last 12 months prior to a voting weekend relates to voters’ knowledge and behavior regarding the current federal votes on the ballot. We do not find relationships consistently pointing to citizen overstrain. The coefficients for the effects of past cantonal propositions are close to zero and rather precisely estimated.

Third, we estimate the relationship between the exposure to past and forthcoming popular votes on citizens’ perceived influence, interest in politics, and general support of democracy. For the variation in the Swiss federal context, we find no evidence that exposure to popular votes negatively affects citizens’ attitudes toward democracy. To the contrary, our results suggest that citizens tend to feel more influential in politics in the short term around vote weekends. In the medium to longer

term, they feel more influential and are more satisfied with democracy when they are more intensely exposed to popular votes at the federal level.

In sum, our large set of results combining behavioral and attitudinal data suggests that even in periods with a high number of popular votes in Switzerland, citizens were not generally overstrained. For the observed variation in the number of propositions, the functioning of direct democracy seems not endangered. It is important to note, however, that a higher number of popular votes could still lead to citizen overstrain.

This paper contributes comprehensive correlational and possibly causal evidence on the effects of exposure to popular votes on behavior and attitudes. Unlike previous work on the immediate effect of the number of votes (see, e.g., Augenblick and Nicholson, 2016), we also consider medium to longer term consequences. Another feature which distinguishes our paper from the previous literature is evidence on an array of behaviors other than turnout (Garmann, 2017) or voting for the status quo (Augenblick and Nicholson, 2016).⁵ Specifically, we examine the relationship of exposure to a lower or higher number of popular votes with blank voting, citizen knowledge, and reliance on government and party recommendations.

One of our main contributions is that we add evidence on attitudinal measures which capture the general support of and interest in democracy. Evidence from a European setting on the correlation between the intensity of exposure to popular votes and support of democracy is scarce. Previous work by Augenblick and Nicholson (2016) focuses on important choice fatigue effects in the specific setting of California. They show that for votes lower down on the ballot list individuals are more likely to opt for the status quo. People concerned about a high number of propositions, however, are not only worried about potential tiring effects because of cognitive depletion. They fear that citizens, media, and potentially even parties disengage with specific policy issues because of general overstrain leading to dissatisfaction. To assess whether this concern is founded one needs evidence on behavioral, but also attitudinal reactions. The current policy debate lacks such evidence, although the debate may be crucial for the further institutional development of democracies and citizens' role in politics in particular.

⁵We consider the previous literature that focuses on how the number of propositions and proposition complexity relate to voter behavior in more detail in the Section 2, where we present our conceptual framework (see, in particular, Bowler and Donovan 1998; Hessami 2016; Matsusaka 2016; Selb 2008; Stadelmann and Torgler 2013). We discuss how our evidence compares to the evidence in Garmann (2017) and Augenblick and Nicholson (2016) in more detail in Section 5.1.2 where we present results on turnout and Section 5.1.4 where we present our results on voting for the status quo.

The remainder of our paper is organized as follows. Section 2 presents the conceptual framework and refers to the previous literature. In Section 3, we explain the institutional setting and present the data. In Section 4, we describe the empirical strategy. Section 5 presents the results. We offer concluding remarks in Section 6.

2 Conceptual Framework

The democratic process is about information exchange and preference formation as much as it is about information or preference aggregation. The debate about overburdened citizens revolves around a prominent concern: Citizens have to deal with multiple issues within a limited period of time, which can overstrain voters' capabilities and undermine the quality of the political discourse as well as of the collective decisions. We focus on the concern that too many propositions may harm the quality of direct democratic decision making in the short term and its sustainability and popular support in the medium to long term.

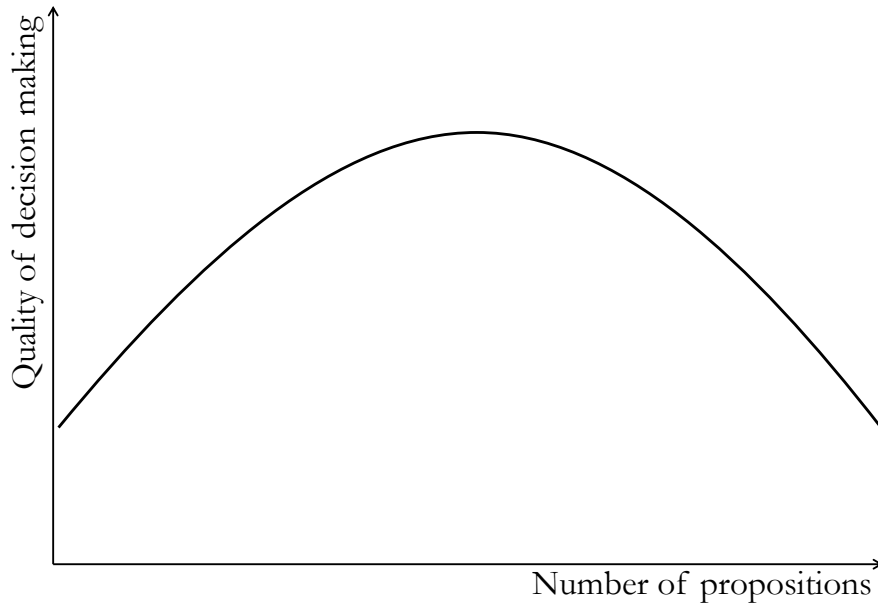
2.1 Mechanisms Related to the Quality of Decision Making

We argue that there are counteracting forces at play that lead to an inverse U-shaped relationship between the number of propositions on ballots within a given time period and the quality of decision making (see Figure 1). The main arguments refer to forces that determine the procedural attractiveness of direct democracy from a long run perspective. They are linked to forces shaping the quality of decision-making in the short term, i.e. related to the number of concurrent popular votes at a single voting day.

Most prominently, an active direct democracy fosters citizens' capacity to acquire and process political information (see, e.g., Barber 2004; Benz and Stutzer 2004; Bohnet and Frey 1994; Bowler and Donovan 1998; Hibbing and Theiss-Morse 2001; Mendelsohn and Cutler 2000; Olken 2010; Smith and Tolbert 2007). Different mechanisms might be at work. Individual voters learn to inform themselves about politics and they build up political human capital.⁶ Thereby voters do not have to become political "encyclopedias" (Lupia, 1994) but can rely on their experiences and information shortcuts (see Cramer and Toff 2017 for a review of the arguments). Moreover,

⁶Two strands of related literature study (i) habit formation in voting, potentially picking up some of the same mechanisms that are also relevant when people are frequently exposed to decisions about propositions (see, e.g., Bechtel, Hangartner and Schmid 2018) and (ii) political socialization (see, e.g., Slotwinski and Stutzer (2018) in the context of female suffrage).

Figure 1: The number of propositions and the quality of decision making



the media responds to the increased demand for issue-specific political information, leading to lower information costs.⁷

The above arguments highlight positive aspects of engaging citizens in politics. An overly active democracy, however, can also lead to an overstrain of citizens, parties, and media. Given a certain level of political human capital of citizens and of political news coverage in the media, a high number of propositions may lead citizens to be less informed about each single political issue. This is because citizens have a limited capacity to process political information due to limited time, attention, or interest. According to this perspective of individual information processing, an increase in the number of propositions on the ballot decreases the average knowledge a citizen has about each proposition.⁸ Voters might become susceptible to biased information or be more easily swayed by arguments favoring narrow interests or extremists' positions (see the related concerns in Sartori 1987). Disappointed about the process

⁷This line of argument has not found unanimous support in the literature. For instance, Seabrook, Dyck and Lascher (2015) argue that there are few educative benefits of direct democracy, as they do not find a correlation between the presence of direct democracy and general political knowledge in U.S. states. Similarly, Schlozman and Yohai (2008) do not find large turnout or knowledge spillovers from direct democratic votes to general elections. One might not be surprised by the latter result, though, as elections become relatively less important in the presence of direct democratic participation rights.

⁸The latter may be less of a problem for information aggregation as long as voters have an informative signal about the attractiveness of a proposal and the law of large numbers comes into play (known as the Condorcet jury theorem) or if voters can more easily learn as they get recommendations from different actors for a larger set of propositions on different issues (see more below).

and potentially unfavorable outcomes, they doubt their influence on politics and become dissatisfied with democracy altogether.⁹

In addition to these forms of citizen strain, the interplay between cantonal and federal propositions can affect outcomes on the federal level for two reasons. First, it could be that media attention varies depending on how many federal or cantonal votes are on the ballot. For instance, there could be spillovers from the number of cantonal votes on the media coverage of national votes. A higher number of concurrent cantonal votes could crowd out news about federal propositions. If that was the case, we would overestimate the effect of a “pure” citizen overstrain effect as the engagement with federal propositions would be lower. The resulting effect would capture a form of media overstrain. While conceptually distinct from voter overstrain, media overstrain would still be a concern for the viability of direct democracy. Second, parties could jointly determine their campaigning effort based on the number of federal and cantonal propositions. In tendency, we would expect that more popular votes on the ballot lead to lower average campaigning effort. This would imply that parties can inform people less and may have less resources for persuasion per proposition. If that was the case, party overstrain would lead to an overestimation of citizen overstrain. Again, this party strain still seems informative about the general burden of an active direct democracy. Thus, there may be mechanisms at play in addition to pure citizen overstrain. Our estimates therefore likely capture a form of general overstrain rather than a specific form of citizen overstrain, such as choice fatigue (Augenblick and Nicholson, 2016).

In sum, a low level of citizen involvement in politics may be detrimental to voters’ capability to make well-grounded decisions because of low levels of political human capital and processing capacity for political information. A very high exposure to popular votes may, however, overstrain citizens through increasing costs for acquiring and processing political information. To strengthen citizens’ sovereignty and simultaneously limit the risk of uncertainty, institutional preconditions should thus preserve a balanced involvement of citizens.

2.2 Searching for Traces of Overstrain

We look for traces indicating whether the experienced level of activity is still contributing to high quality democratic decisions, i.e. an activity level to the left of the maximum in Figure 1, or whether the experienced number of popular votes is overstraining voters, i.e. a situation as captured to the right of the maximum. In

⁹The latter aspect might be described as a procedural disutility of an overly demanding mechanism of political decision making (see Frey, Benz and Stutzer, 2004) for the concept of procedural utility and ? for an application to direct democracy).

the exploration, we analyze data on citizens' voting behavior as well as perceptions and attitudes. The behavioral patterns related to voting allow us to learn primarily about the consequences on the optimization calculus in the short term when citizens are exposed to a shorter or longer list of popular votes. The patterns in reported attitudes can provide us with an indication on the consequences of experiencing popular votes on the evaluation of the direct democratic process in the short term as well as in the medium to longer term.

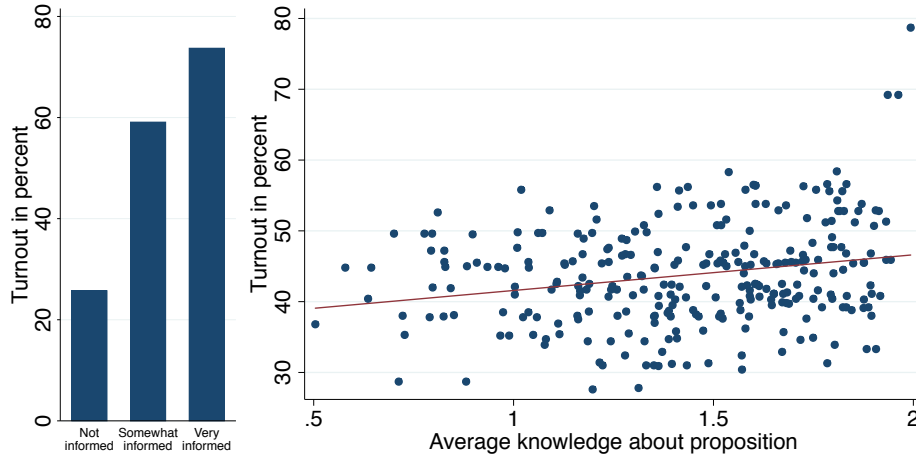
2.2.1 Voting Behavior

Regarding behavior, we derive predictions about the potential effects of a high number of propositions following the model of Matsusaka (1995). In his voting model, voters have an intrinsic motivation to vote, but their incentive to cast a vote depends on the perceived benefit of their vote. Uncertainty about the effects of propositions diminish the perceived benefit. Therefore, the more certain voters are about the benefits of their vote choice, the more likely they are to turn out. If more information increases the certainty about the consequences of proposals, then more information is also likely to increase turnout. On the basis of this theory, many stylized facts about turnout have been rationalized.

A first look at our data, presented in Figure 2, supports the argument for this mechanism. On both the individual and the aggregate level, we see a strong correlation between how well voters are informed and turnout. Citizens who knew a lot about a ballot proposition voted with a likelihood of 70%. In contrast, citizens with little knowledge about the proposition participated with a likelihood of only 30%.¹⁰

¹⁰This also highlights an important trade-off in normative evaluations of a high turnout per se vis-à-vis having informed voters. Hodler, Luechinger and Stutzer (2015) emphasize that turnout in itself may not be the relevant indicator from a welfare perspective if more uninformed voters cast a ballot.

Figure 2: Knowledge and turnout in voting on federal ballot propositions, 1981–2015



Note: The graph on the left shows the average self-reported turnout of all respondents (including respondents who did not vote), grouped by their knowledge about the proposition. Respondents who were “not informed” were neither able to reproduce the title nor the content of a proposition. The respondents who were “somewhat informed” were able to reproduce either the title or the content of the proposition. Respondents who were “very informed” were able to reproduce the title and the content of a proposition. In the graph on the right, each dot represents a proposition. The correlation between national turnout and average knowledge is 0.23. Information on national turnout is based on administrative data. Information on average knowledge of the citizens about a proposition is based on postvote survey data. The three propositions with the highest turnout (in the top right corner of the graph on the right) are the referendum over the accession of Switzerland to the European Economic Area (06.12.1992), the initiative on the abolition of the Swiss army, and the initiative on increasing the maximum speed limit on motorways to 130 km/h (26.11.1989).

Data sources: Swiss Federal Statistical Office, VoxIt.

According to the model, voters have to acquire costly information about each additional proposition on the ballot if they want to be certain about their choices. If citizens were overburdened by too many propositions we should observe a decrease in citizens’ knowledge about the propositions on the ballot as well as a reduction in turnout. On the basis of the same calculus, we would also expect an increase in blank votes. We hypothesize that certain groups of citizens have a harder time absorbing information when there are many votes on the ballot. We examine potential heterogeneity in the effect of the number of propositions on the ballot on knowledge in Appendix A.

A normative assessment of the relationship between the number of propositions and citizens’ knowledge, however, is not straightforward. Citizens learn about propositions based on the statements and voting recommendations of credible political parties, interest groups and other actors. Credibility is thereby built up if citizens learn about arguments in areas they know. More ballot propositions increase the possibilities to learn and strengthen the credibility mechanism. Citizens might thus be better able to pursue their interest with more popular votes even though they factually know less about each individual proposition. This makes an exclusive fo-

cus on knowledge as an indicator for quality of the direct democratic process less appealing compared to indicators referring to perceptions and attitudes.¹¹

Slightly extending the theoretical considerations, we expect that strained citizens are more likely to use decision shortcuts, such as voting for the status quo.¹² Voting for the status quo has been used in several studies to assess the consequences of long ballots. In previous work on Switzerland (Selb, 2008) as well as the United States (e.g., Matsusaka 2016), a positive correlation has been found between ballot length and voting for the status quo. Augenblick and Nicholson (2016) even identified a causal effect of ballot length on choosing the status quo.¹³

Another decision shortcut voters might use is to follow endorsements from political parties and organizations. Comparing support for the recommendation of the federal government in a long time series for Switzerland, Stadelmann and Torgler (2013) observe that when the agenda is set to involve only one proposition (rather than several), voters are less likely to follow the government. While the finding might reflect that controversial issues are put on the agenda alone, the observation is also consistent with the use of cues in complex decisions. We concentrate on endorsements of pole parties. If citizens are more likely to follow them if they are strained, a high number of propositions on the ballot reinforces polarization. We would like to note here already that an empirical test of this hypothesis is difficult as parties sponsor propositions. In the Swiss context, pole parties are particularly active so that with many propositions on the ballot, pole party propositions become more likely. We will therefore concentrate on the effects of concurrent cantonal propositions.

2.2.2 Perceptions and Attitudes About Democratic Politics

Ultimately, if citizens are overstrained by the exposure to popular votes, they are expected to no longer support a social consensus that direct democracy is a productive process to solve problems in society. To test this procedural argument about the quality of decision making in relation to the experience of more or less popular votes, we study citizens' perceptions and attitudes. We concentrate on their reported efficacy, that is, their perceived ability to influence politics. If overstrained, citizens are expected to report a lower interest in politics, a lower perceived personal influence in politics, and overall less satisfaction with democracy. Previous research focuses

¹¹We owe this argument to Reiner Eichenberger.

¹²Besides cognitive load, Meier, Schmid and Stutzer (2016) highlight the role of emotions in the use of decision shortcuts and find that individuals are more likely to vote for the status quo if they are in a bad mood.

¹³In related research on the complexity of ballot propositions, Hessami (2016) and Hessami and Resnjanskij (2019) provide evidence that propositions that cause a high cognitive burden are more likely to be rejected so that the status quo is maintained.

on empirical tests of a presumed *positive* relationship between direct democracy and political efficacy. For Switzerland, recent work explores the relationship between the extent and use of direct democratic rights and trust in cantonal authorities (Bauer and Fatke, 2014; Kern, 2017). For the United States, a series of studies reports positive effects on political efficacy (many of them reviewed in Smith and Tolbert, 2007). The assessment was challenged by Dyck and Lascher (2008). Recent work based on new data (Wolak, 2018) reports higher internal efficacy in ballot initiative states.

We complement these studies and tests by flexibly allowing not only a positive or negative relationship between the exposure to more or less popular votes but also an inverse U-shaped relationship. Moreover, we analyze people’s reactions from two temporal perspectives. First, we look at the short term when exposed to an upcoming vote or after having just experienced one. Second, we capture the consequences of lower or higher exposure on efficacy in the medium to longer term.

3 Institutions and Data

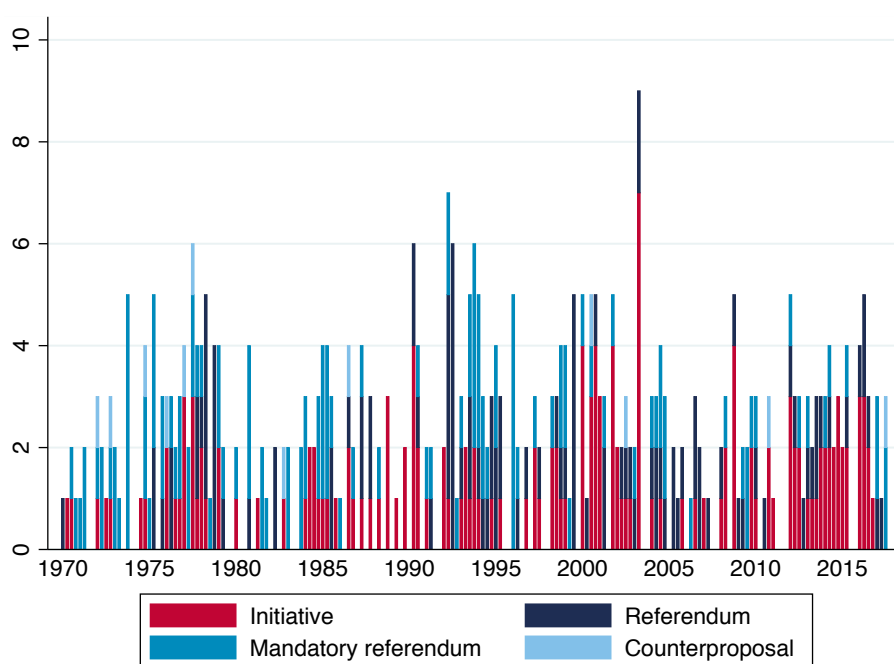
Direct democracy is central to the Swiss political system. Citizens in Switzerland face decisions about several propositions per year on different constitutional levels. The outcomes of all of these propositions are binding and can lead to major changes in public policy. Notable important propositions on the federal level include several votes on the integrated market with the European Union, fundamental changes to the federal tax code, and the future of the social security system. Such votes are intensely covered in the media.

There are two broad categories of direct democratic votes: referendums and popular initiatives. On the federal level, popular initiatives allow citizens, parties, and special interest groups to propose constitutional amendments. A vote on an amendment takes place if the initiators collect 100,000 valid signatures within 18 months. A mandatory referendum takes place for all amendments to the federal constitution proposed by the federal Parliament. In addition, federal laws approved by both chambers of Parliament are put to a popular vote if a committee submits 50,000 valid signatures within 100 days after the Parliament’s resolution.

Throughout the year, voters decide, on average, about nine federal propositions distributed over three polling days.¹⁴ Figure 3 shows that the variance in the number of federal propositions across polling days is sizable, with the minimum number of

¹⁴The federal Chancellery sets four polling days for every year in advance that can be used depending on the number of pending propositions (see the list until 2037 on https://www.bk.admin.ch/ch/d/pore/va/vab_1_3_3_1.html#).

Figure 3: Number of federal propositions per polling day, 1970–2017

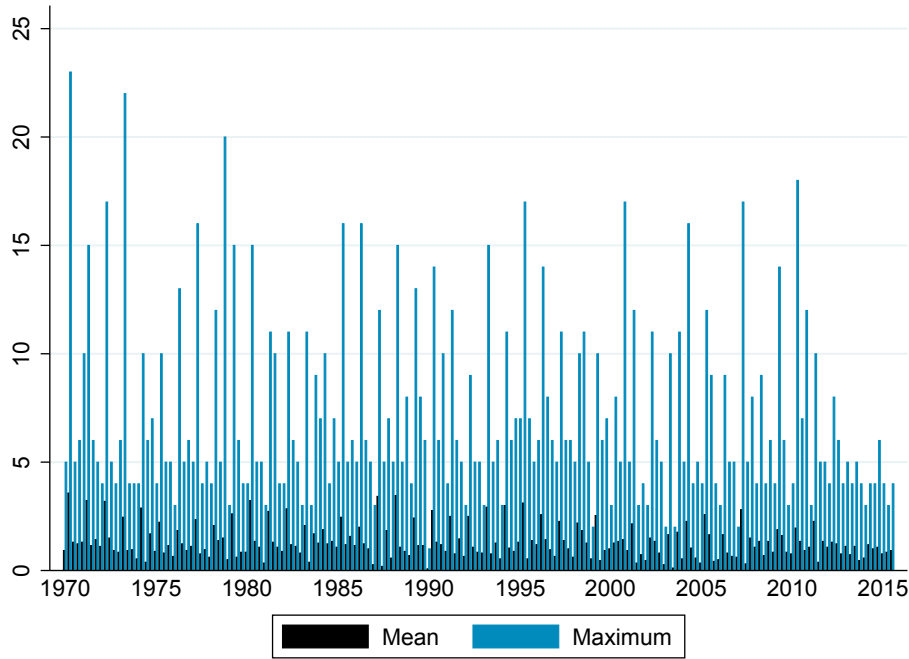


Data source: Database of Swiss Federal Referendums.

propositions on the ballot being one, the maximum being nine. Figure A.2 in the Appendix presents the number of federal propositions per year. In contrast to discussions about a current “flood” of propositions, the number of federal propositions on the ballot has not significantly increased in recent years. However, there has been an accumulation of initiatives since the year 2000, as indicated by the red bars in Figure 3.

Initiatives as well as referendums are also frequently and consistently used at the subfederal level of the 26 cantons that enjoy considerable sovereignty. The outcomes of these votes are equally binding and can lead to large policy changes in the respective canton. The propositions cover subjects such as cantonal taxes, infrastructure investments, and land-use planning and feature prominently in the local media. Moreover, the national television media communicate many of the results of the cantonal votes together with the results of the federal votes. The number of propositions per federal polling day and canton has been quite stable over the years with an average of 5.7 propositions per canton and year. Cantons are free to schedule their votes but over time they have increasingly held them parallel to the federal votes. The total number of cantonal propositions has been falling over time (see Figure A.3 in the Appendix).

Figure 4: Number of cantonal propositions per polling day, 1970–2015



Note: The highest numbers of cantonal propositions emerge in cantons with votes taking place on the same day as federal votes.

Data source: c2d, Centre for Democracy Studies Aarau.

Citizens fill in federal and cantonal ballot cards at home and bring them to the ballot box on the vote weekend or mail them before the vote weekend.¹⁵ The ballot cards from the federal and cantonal chancelleries arrive in the same envelope and are accompanied by a federal and a cantonal booklet. The short texts summarize the arguments on each proposition and list a recommendation of the government. The ballot cards state the type of vote and the title of each proposition. In a designated field on the right, people can write out “Yes” or “No” by hand.

We use three main data sets for the analysis.¹⁶ The first data set is a record of individual voting decisions from postvote surveys about federal ballots. Several Swiss universities and the private research institute GFS administered these so-called VOX surveys after each federal polling day (Kriesi, Brunner and Loréтан, 2017). A representative sample of roughly 1,000 voters is interviewed by phone within 2 weeks after the polling day. The resulting VoxIt data contains information on whether and how respondents voted, knowledge about the propositions, and perceived complexity and perceived importance of the propositions as well as socioeconomic characteristics of the respondents. The sample of VoxIt that we are using for our analysis contains

¹⁵Postal voting was gradually introduced across cantons from the 1970s through the 1990s. More than 80% use it today (Luechinger, Rosinger and Stutzer, 2007).

¹⁶Table A.2 shows the descriptive statistics for the variables that are most frequently used in our analyses.

information of 293,641 respondents from 24 Swiss cantons¹⁷ who were interviewed in the years 1981 to 2015. The observations were collected following 97 polling days during which Swiss citizens voted on 285 federal propositions.¹⁸

Our second data set contains information on turnout as well as the fraction of yes and no votes for federal propositions on the cantonal level. This is an administrative data set that consists of 7,056 observations that capture the results of 294 propositions in 24 cantons. This data set covers the same period as the VoxIt data and features all 295 propositions that happened in that period on 102 polling days. The data were obtained from the Swiss Federal Statistical Office.

We extend the two data sets with information about the vote recommendations of parties and the Federal Council, as well as about the legal form of the proposition. The latter information is taken from Swissvotes, a database maintained by the University of Bern and Année Politique Suisse (2018).¹⁹ We supplement the VoxIt and administrative data sets with the number of concurrent federal and cantonal propositions as well as the number of propositions within the last year. This information is taken from the electronic database on direct democracy maintained by Department c2d of the Centre for Democracy Studies Aarau (Serdült, 2017).²⁰

The third data set we use is the Swiss Household Panel (SHP).²¹ Data are collected throughout the year by phone and provided by FORS for the years 1999 to 2015. The data set contains the following variables with response scales ranging from 1 (lowest) to 10 (highest): interest in politics (1999–2015), satisfaction with democracy (1999–2012) and perceived personal influence in politics (1999–2012). We merge the household panel data with information on a weighted average of the number of propositions over the last 12 months and the upcoming month. The latter measures of a federal and cantonal exposure index capture the cumulative experience or exposure to direct democracy. We use linear weights such that, for example,

¹⁷We exclude observations from the two cantons Appenzell Innerrhoden and Glarus. These two cantons maintain an assembly democracy (“Landsgemeinde”), i.e., a direct democratic process that is rather different from other cantons’ institutions. The canton of Appenzell Innerrhoden has the smallest population and Glarus the fourth smallest population of all Swiss cantons. Excluding those two cantons reduces the VoxIt data set by 2,034 observations. We exclude observations from these two cantons in all individual-level analyses. Assembly democracy on the cantonal level was active in cantons Nidwalden (until 1996), Appenzell Ausserrhoden (until 1997), and Obwalden (until 1998). We include observations from these cantons and do not differentiate between cantonal ballot propositions before and after the abolition of the “Landsgemeinde” in these cantons.

¹⁸During our sample period there were 295 federal propositions on 102 polling days. We exclude seven propositions because there were no VOX surveys conducted for those. Three other propositions are excluded because the variable for the canton of residence of the respondents is missing.

¹⁹Data access via <http://www.swissvotes.ch>.

²⁰Data access is possible via <http://www.c2d.ch>.

²¹A description of the SHP is provided at <http://forscenter.ch/en/our-surveys/swiss-household-panel/>

four propositions that were on the ballot 11 months ago (relative to the interview date) enter the index with a weight of 30/360 and three propositions that were on the ballot 2 months ago enter with a weight of 300/360. If two propositions are to be decided within 2 weeks after the interview date, then these two propositions enter the index with a weight of 15/30. Figure A.18 shows two violin plots for the distributions of the respective index values. In addition, we exploit that we know the exact interview date to examine the short run effects of exposure to a popular vote.

4 Empirical Strategy

The Federal Council determines the number of votes to be decided on a single polling day, whereby it presumably aims at reducing the joint complexity and importance of votes. Very important votes are usually put on the ballot alone. For instance, the votes about joining the European Economic Area or the United Nations were held as single votes. Even considering two or more votes, strategic reasons might influence the number of votes on the ballot. This is consistent with the decrease in the perceived importance of the propositions the more of them there are on the ballot (see Figure A.4). The analysis for the number of federal propositions on the ballot and voting behavior thus remains correlational. Given the political debate about overstrained citizens that primarily relies on presumed relations between the number of federal propositions and citizen engagement, the descriptive analysis might still productively contribute to the discussion. However, we also attempt to mitigate potential endogeneity issues with two strategies.

First, we exploit variation in the number of propositions on the ballot due to concurrent cantonal propositions. Cantonal propositions are perceived as important and feature prominently in national and local media. Making these additional decisions adds to the burden of voters. The number of cantonal propositions is neither correlated with the *number* (see Figure A.5) nor the *importance* of concurrent federal propositions (see Figure A.24).²² Institutional conditions are likely the reason that there seems to be no systematic selection of the number of cantonal propositions. For example, the cantons of Basel-Stadt and Zurich both have strict timelines for putting initiatives to a vote. In Basel-Stadt, an initiative must be put on the ballot within at most 24 months after the discussion in the parliament. In Zurich it must be put on the ballot within at most 30 months. Referendums have an even shorter

²²There is also no change in the coefficient estimates of controls derived from characteristics of federal propositions when we add the number of cantonal propositions. Moreover, the coefficient estimates do not change qualitatively when we drop the 5% most important propositions from our specifications.

time frame during which they must be put to a vote. This suggests limited leeway for the executive to strategically schedule the votes. Moreover, the cantonal laws do not indicate that the executive should consider the burden put on voters by concurrent federal votes. We can thus not reject that the number of cantonal propositions provides plausibly exogenous variation in the number of decisions voters have to take.

Second, we control for two determinants of the number of federal propositions on the ballot: complexity and perceived importance of the propositions. Our postvote survey data show that perceived importance and the number of propositions are negatively correlated (see Figure A.4). Similarly, the more difficult the decision in a specific proposition is perceived to be, the fewer propositions there are on the ballot (see Figure A.6). To reduce any endogeneity bias, we condition on perceived importance and perceived complexity in the specifications with postvote survey data.

The extensive data sets allow us to explore the relation between the number of propositions and several indicators for the decision making of citizens with the following econometric model:

$$Y_{jpct} = \eta_c + \delta_{year} + \text{fed}'_t \alpha + \text{cant}'_{ct} \gamma + z'_p \pi + x'_j \beta + \rho \text{pv}_{ct} + \varepsilon_{jpct}, \quad (1)$$

where j indexes individuals, p indexes propositions, c indexes cantons, and t indexes polling days. Y_{jpct} is our outcome of interest measured for propositions on the federal level. Two sets of fixed effects are typically included: canton-specific effects η_c and year-specific effects δ_{year} . Particularly relevant are α and γ . We denote α a vector of coefficients for dummies comprising the number of federal propositions, fed_t . This vector contains dummies for the values 1, 3, and “4 or more” propositions. The dummy for two propositions is used as the reference category. Similarly for the cantonal level, γ is a vector of coefficients for dummies comprising the number of concurrent cantonal propositions, and cant_{ct} is the vector containing dummies for the number of propositions from 1 to “5 or more” propositions, with zero concurrent cantonal propositions being the reference category. We use dummies for the number of propositions since it allows a flexible characterization of the impact of the number of propositions on the dependent variables. Proposal-specific covariates are included in z'_p . They consist of dummies indicating the legal type of the proposal. Variable x'_j comprises individual-specific covariates, which include perceived complexity and importance as well as sociodemographic variables. Finally, pv_{ct} is a dummy variable that is 1 if there was postal voting available (from Luechinger, Rosinger and Stutzer,

2007), and ε_{jp} is an idiosyncratic error term.²³ All estimates are retrieved from linear least squares estimations.²⁴ We cluster the standard errors on polling days to take into account correlation in voter behavior within a ballot.

The specification we use for the analysis of the administrative data is analogous to the one above for individual-level data with the exception that no individual-specific covariates are included. We analyze the individual level survey data with linear least squares estimations as well. We study the effects of the exposure to popular votes on perceptions and attitudes in the short term based on a set of time dummies around the vote weekend and examine the effects for the medium to longer term based on the newly generated indicator for exposure described above. We provide more details about the corresponding analyses in Section 5.3.

5 Results

5.1 Knowledge and Voting Behavior

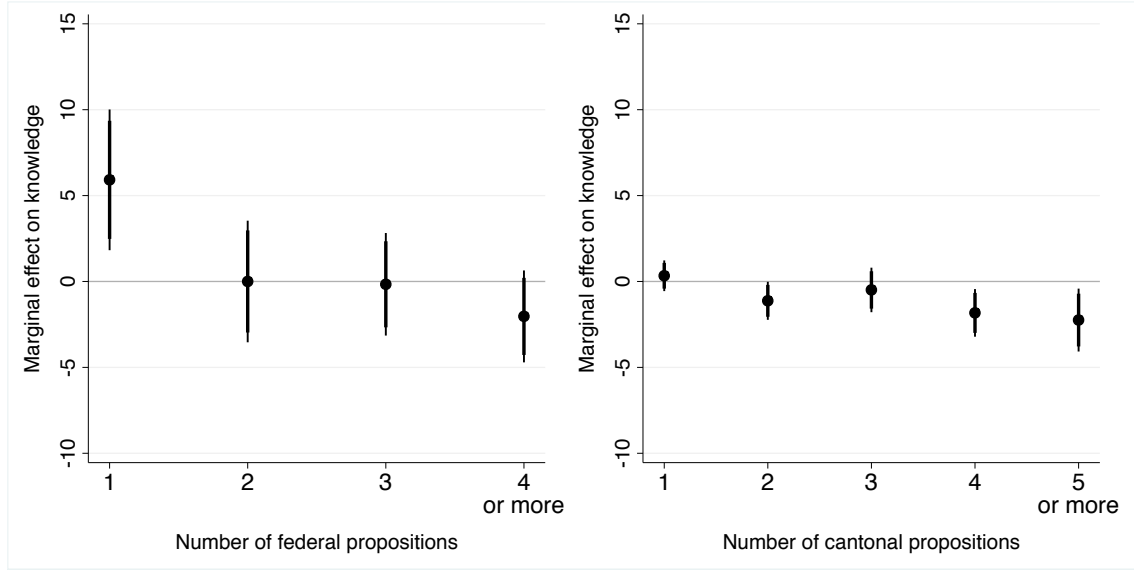
5.1.1 Knowledge

We assess the relationship between the number of propositions on the ballot and knowledge of citizens by estimating variants of equation (1). Knowledge offers an approximation of voters' uncertainty in the model of Matsusaka (1995). In Figure 5 we present the size of the coefficients for the partial correlation between the number of propositions and voters' knowledge about the content of current *federal* propositions (see also Table 1). In all figures, we depict the estimates of regressing the dependent variable on dummies for the number of federal and cantonal propositions, while controlling for canton-specific effects, year-specific effects, complexity, importance, legal type, and socioeconomic variables, if available (equivalent to the specification in column III of Table 1).

²³We also present estimates for specifications including canton x year fixed effects for our main results in Tables A.16, A.17, and A.18 in the Appendix. Except for a few estimates, coefficient estimates are smaller and less precisely estimated.

²⁴We use a linear model since we take into account granular fixed effects that would be difficult to estimate with nonlinear models.

Figure 5: The number of propositions and knowledge about the content of federal propositions



Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the propensity in percentage points to know the content of a specific *federal* proposition. Estimates are based on postvote survey data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of knowledge on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, perceived complexity, perceived importance, type of proposition and socioeconomic variables based on 163,012 observations (see also column III of Table 1).

Figure 5 indicates that knowledge is lowest if there is a high number of federal as well as cantonal propositions on the ballot. For federal propositions, the maximal differential between one proposition and four or more propositions is roughly 10 percentage points. In our most restrictive specification (Table 1, column III), the estimated difference in knowledge is roughly 8 percentage points between 1 proposition and 4 or more propositions on the ballot. This is sizable when compared to the 86% baseline probability of recalling the content of a proposal.

The comparison of a single proposition on the ballot relative to two propositions drives most of the relationship between the number of federal votes and knowledge about the content of the proposition. A single proposition on the ballot relates to a 6 percentage points higher likelihood of individuals knowing about the content, which is three quarters of the differential between 1 and 4 or more propositions. We also know that propositions put on the ballot alone tend to be more important and complex than other propositions (see Figures A.4 and A.6). Accordingly, the difference between vote weekends with just one proposal and vote weekends with more than one could either be because of a causal effect of the number of propositions or

because of the inherent difference of exclusively presented propositions.²⁵ Therefore, the comparison of 4 or more propositions to 2 propositions on the ballot might be a more appropriate comparison. This comparison, however, does not yield a statistically significant difference in the most comprehensive specification (see Table 1, column III). It is thus unclear whether there is a substantial reduction in knowledge which is causally attributable to a higher number of federal votes.

We are more confident in detecting a causal effect of the number of propositions on knowledge about a federal proposition when we use the variation in the number of concurrent cantonal propositions. For the arguably independently scheduled cantonal votes, the estimates are smaller: For more than five cantonal votes, the precisely measured negative effect is -2.2 percentage points ($se = 0.93$) on the individual propensity to reproduce the content of a federal proposition correctly. The effect, however, is relatively small given that in our sample 86% of citizens know about the content of a federal proposition. The slight decline in knowledge about the content of the propositions is most stable across specifications for 4 or more concurrent cantonal propositions.²⁶ However, only roughly 10% of the observations are from ballots that involved 4 or more concurrent cantonal propositions (see Table A.15). Accordingly, the negative effect on knowledge because of concurrent cantonal propositions affects only a small fraction of federal propositions. As an aside, when we take into account the number of cantonal propositions the coefficient estimates for the number of federal votes and the coefficients for the controls barely change, which does not suggest strategic scheduling of cantonal votes.

If we split the sample according to monthly income higher or lower than 7,000 Swiss francs, older or younger than 50 years, and graduates from a tertiary institution yes or no, we find that older people have slightly fewer problems reproducing proposition content if there are many concurrent cantonal propositions, while the correlations for the other groups do not differ substantially (for details, see Appendix A).

²⁵Taking into account complexity and importance as control variables may only partly attenuate the bias due to endogenous scheduling.

²⁶The decline is stable to the inclusion of differing sets of control variables and also when excluding individuals who did not turn out (for the corresponding results excluding nonparticipants, see Figure A.8, and Tables A.4 and A.5). The similarity of effect sizes across samples suggests that it is not selection to the ballot box that drives our results. In column IV of Table 1 we also control for proposition-specific effects of the federal votes, leading to no change in the estimates.

Table 1: Number of propositions and knowledge: Taking into account the complexity and importance of the propositions

Dependent variable: Reproducing proposition content [0/100]

Sample: Including nonparticipants

	I	II	III	IV
Number of federal propositions				
1	7.2461*** (2.2997)	5.8843*** (2.0830)	5.9169*** (2.0896)	
3	-0.1562 (1.6253)	-0.1206 (1.5324)	-0.1644 (1.5228)	
4 or more	-2.8493* (1.4947)	-2.1583 (1.3719)	-2.0326 (1.3644)	
Number of cantonal propositions				
1			0.3328 (0.4554)	0.0317 (0.3300)
2			-1.1259** (0.5647)	-1.3632*** (0.4353)
3			-0.4923 (0.6612)	-0.9025* (0.5319)
4			-1.8290** (0.7071)	-1.1027** (0.5415)
5 or more			-2.2461** (0.9335)	-1.7128** (0.7225)
Low complexity		22.2974*** (1.1748)	22.2748*** (1.1756)	20.0216*** (1.0912)
High complexity		12.9574*** (0.8882)	12.9634*** (0.8872)	12.1454*** (0.8332)
High impact		5.0486*** (0.4714)	5.0600*** (0.4700)	4.0724*** (0.3802)
Referendum	-2.7475** (1.0666)	-1.8640** (0.8609)	-1.8095** (0.8598)	
Mandatory referendum	-10.3577*** (2.0447)	-8.0176*** (1.6865)	-8.0107*** (1.6805)	
Counter proposal	-9.9267*** (2.8779)	-8.4477*** (2.3863)	-8.4532*** (2.3717)	
Postal voting	-3.0636*** (0.7188)	-2.9100*** (0.6208)	-2.8255*** (0.6029)	-2.6920*** (0.6176)
Socioeconomic variables	yes	yes	yes	yes
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	yes	yes	no
Proposition-specific effect	no	no	no	yes
R^2	0.059	0.091	0.092	0.140
Observations	169,186	163,012	163,012	163,012

Note: Ordinary least squares estimations. Average knowledge of proposition content by all respondents amounts to 76.3. Reference category for the number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: $*.05 < p < .1$, $** .01 < p < .05$, $*** p < .01$.

We also assess the relationship with respect to knowledge about the specific title of federal propositions (see Figure A.7 and Table A.3 in the Appendix). The results are similar to the ones for content but more pronounced. In particular, we observe larger drops in the ability to reproduce the title of a federal proposition with a higher number of propositions on the ballot. The effect is particularly large for the relatively rare instances of having 4 or more propositions on the ballot. While a normative interpretation is difficult as pointed out when describing the conceptual framework, we still consider knowing the content of a proposition as more important than knowing the title of a proposition for the quality of information aggregation and the representation of voters' preferences. Taken together, the evidence points to a lower level of knowledge about individual propositions in surveys taken after vote weekends if there were many concurrent votes on the ballot.

5.1.2 Turnout

Turnout is often taken as the main indicator for civic engagement. The results here rely mostly on administrative data (rather than on self-reported turnout). The dependent variable is cantonal-level turnout in percentage points for each federal proposition. We regress the turnout on indicator variables for the number of federal and concurrent cantonal propositions and control for canton-specific fixed effects, year-specific fixed effects, and the type of proposition. Table A.6 in the Appendix contains detailed regression outputs showing the results from the postvote survey data set and the administrative data set. In addition, Figure A.9 in the Appendix depicts the results from the postvote survey data.

Figure 6 shows the main estimation results for the administrative data. If anything, turnout does not decrease but slightly increases as the number of concurrent cantonal propositions rises. If there are five or more cantonal propositions, turnout is higher by a precisely estimated 1.9 ($se = 0.65$) percentage points, while the average turnout is 43.7 percentage points.²⁷ This finding might be due to a mobilization effect when more citizens are affected with a higher number of propositions on the ballot.²⁸ Independent of the exact interpretation, the finding for turnout does not indicate that citizens are overstrained.

²⁷When using the postvote survey data, we do not find statistically significant effects other than for 5 or more cantonal propositions. However, except for 3 or 4 concurrent cantonal propositions, all point estimates for the cantonal propositions are positive. The number of federal propositions shows a pattern that is similar to that for observations based on the administrative data.

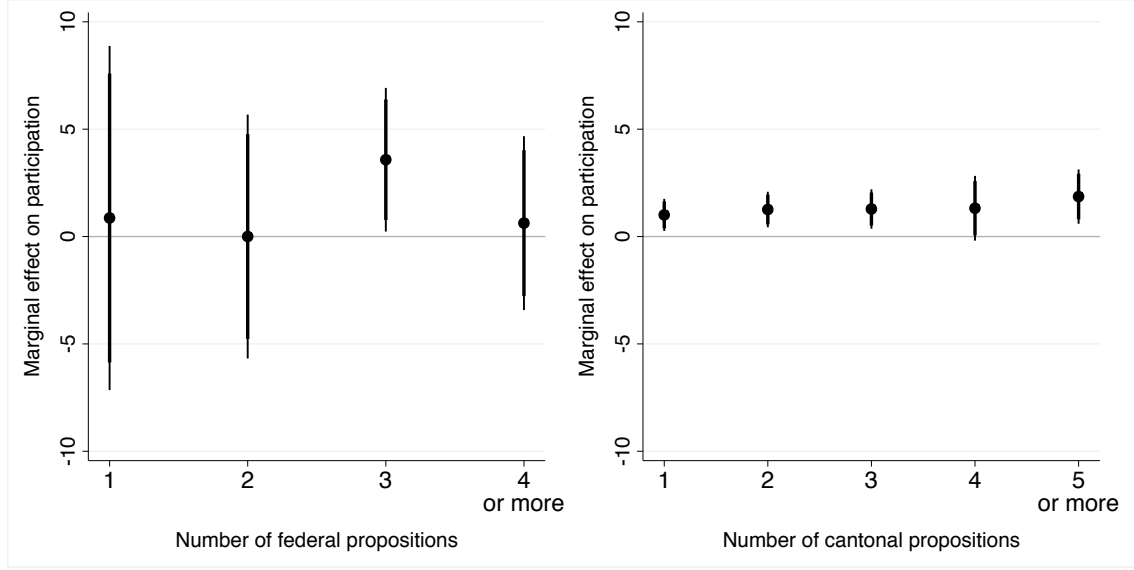
²⁸Alternatively, the pattern might also be due to a comparative reduction in voting costs for a specific proposition. Schmid (2016) carefully examines the latter argument. In detail, he investigates how changes in the calculus of voting affects turnout in national votes, by exploiting exogenous variation in concurrent cantonal elections. He finds that concurrent cantonal elections lead to higher turnout in votes on federal propositions.

In a related paper, Garmann (2017) examines the effect of the distance to the last election on turnout. The setting thus differs in a key aspect. Yet, Garmann (2017) also finds no effect of a close previous election on turnout in federal elections. He does find an effect on local elections. While the setting is different, this could imply that the effect of fatigue depends on the relevance of the election (Garmann, 2017). In our setting, survey evidence shows that citizens perceive federal propositions as important. Our findings are thus broadly consistent with the findings in Garmann (2017).

5.1.3 Blank Voting

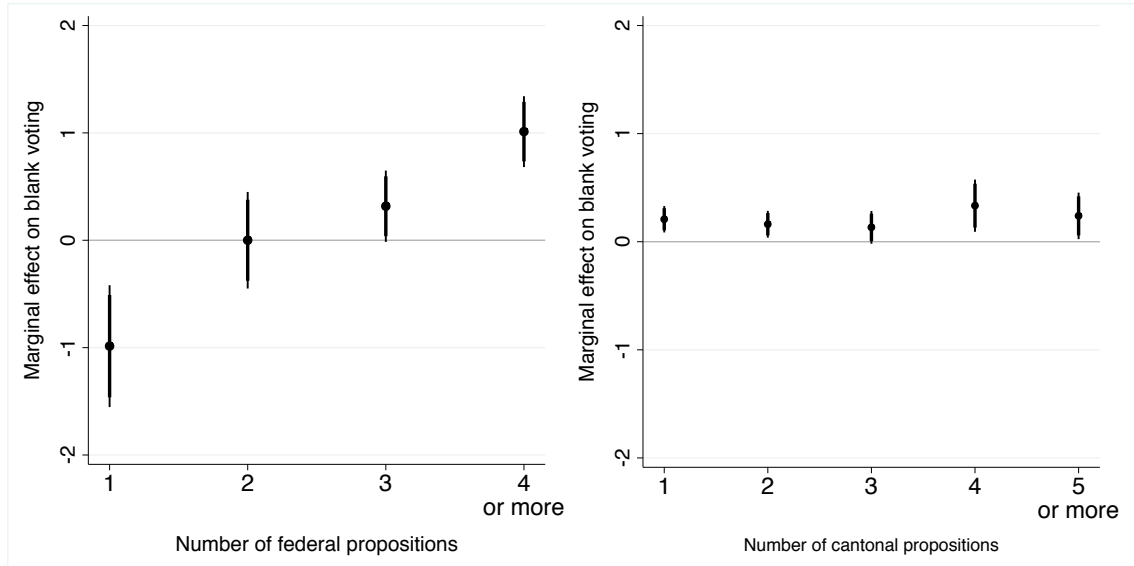
Instead of not turning out as the number of propositions on the ballot increases, voters could just leave all or some of the ballot cards empty if they feel uninformed or uncertain. For any observed blank voting, there are two potential interpretations, though. On the one hand, it might reflect the expression of discontent due to overburdening. On the other hand, the likelihood of having propositions on the ballot about which some voters care while others do not increases with the number of propositions on the ballot. From a normative perspective, the selective abstention of citizens with weak preferences on an issue might even be desirable as the outcome is more likely to be determined by citizens with strong preferences in favor or against a specific proposition.

Figure 6: The number of propositions and turnout in federal propositions (in percentage points), administrative data



Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on turnout in percentage points. Estimates are based on administrative data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of turnout on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, and type of proposition based on 7,080 observations (see also column III of Table A.6).

Figure 7: The number of propositions and blank voting in federal propositions, administrative data



Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the propensity in percentage points to cast a blank vote. Estimates are based on administrative data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of the share of blank votes on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, and type of proposition based on 7,080 observations (see also column III of Table A.7).

5.1.4 Decision Shortcuts

The act of voting can be broken down into two decisions: First, voters decide whether to participate. Second, they decide how to cast their vote. In this section, we concentrate on this second aspect and assess how the number of propositions on the ballot relates to what voters decide.²⁹

Voting for Change — We assess the impact of the number of propositions on the willingness to support reform (rather than to stick with the status quo), which is equivalent to voting yes for any proposition. The results are presented in Figures A.10 and A.11 as well as in Table A.9 in the Appendix. For the observed variation in the number of popular votes, we do not find consistent effects of citizens opposing (or supporting) change when exposed to many propositions.

This is in contrast to the findings in the recent work of Augenblick and Nicholson (2016) who show that people are more likely to opt for the status quo after they have decided on many ballot propositions presented at the beginning of a list in California. Augenblick and Nicholson (2016) examine a cognitive fatigue effect of having concurrent choices on the ballot, where the average number of choices ranges from 11 to more than 30 ballot propositions. We thus provide complementary evidence to their study in a US setting that is rather different from most European settings. Our results do not imply that choice fatigue à la Augenblick and Nicholson (2016) does not exist, just that choice fatigue does not seem to play a large role in the Swiss context.

Reliance on Party and Government Recommendations — Citizens might apply information shortcuts other than just saying no if they are overstrained. For instance, they might rely on endorsements, whereby recommendations of pole parties are especially relevant. To begin with, voting for pole parties does not per se imply lower quality votes, of course. We are rather interested in the mechanism that pole parties might have an easier time convincing voters if there are many propositions on the ballot as they may rely on simpler and more vigorous arguments than center parties. Another recommendation that citizens might be more likely to follow is one put out by the government. It is a simple cue capturing the majority position among the elected politicians.

Figures A.12 and A.13 in the Appendix indicate whether voters rely on arguments from the right-pole party when there are many propositions (for the full output see Table A.10). Whether there is just one or many propositions on the federal level,

²⁹Throughout this section, we rely on the result that turnout is not heavily affected by the number of propositions on the ballot. Note, however, that we estimate reduced form effects and it might well be that they are partly driven by changes in the composition of the electorate.

the endorsements of the largest party on the right, the Swiss People’s Party (SVP), receive similar support. The difference between one vote and four or more votes is small with a 0.49-percentage-point difference between them in the administrative data and not statistically different from 0 at $p < 0.1$. Moreover, it has to be noted that the SVP sponsors many initiatives and referendums (Leemann, 2015). These sponsored propositions are likely to be on the ballot if more than one proposition is voted on. Thus more informative as a test of the hypothesis that overstrained voters resort to recommendations of the strongest party on the right is the estimated effect of a large number of concurrent cantonal propositions. They are independent of the content and the sponsorship of the federal propositions. For them, there also seems to be no effect on following the pole party on the right.

We also study the relationship for the strongest pole party on the left, that is, the Social Democratic Party of Switzerland (SP). Figures A.14 and A.15 in the Appendix show the differences in support of propositions that were endorsed by the Social Democrats for different numbers of propositions on the ballot (for a detailed output see Table A.11). As in the case of the pole party on the right, the strongest party on the left is not better off with many propositions on the ballot. If anything, their recommendations are followed less when there are many federal propositions on the ballot. There is thus no evidence that citizens’ voting behavior is consistently more polarized with a higher number of propositions on the ballot.

Regarding the reliance on the recommendations of the government, Figures A.16 and A.17 in the Appendix summarize the results (for the full output, see Table A.12). The point estimates for the number of federal as well as concurrent cantonal propositions do not indicate a systematic relationship. If the content of the federal propositions is controlled for in column IV in Table A.12 for the administrative data, the coefficients for the number of cantonal propositions are always below 1 percentage point (and are rather precisely estimated). These findings are in contrast to earlier results by Stadelmann and Torgler (2013) and suggest that their findings are driven by observations toward the beginning of their historical time series.

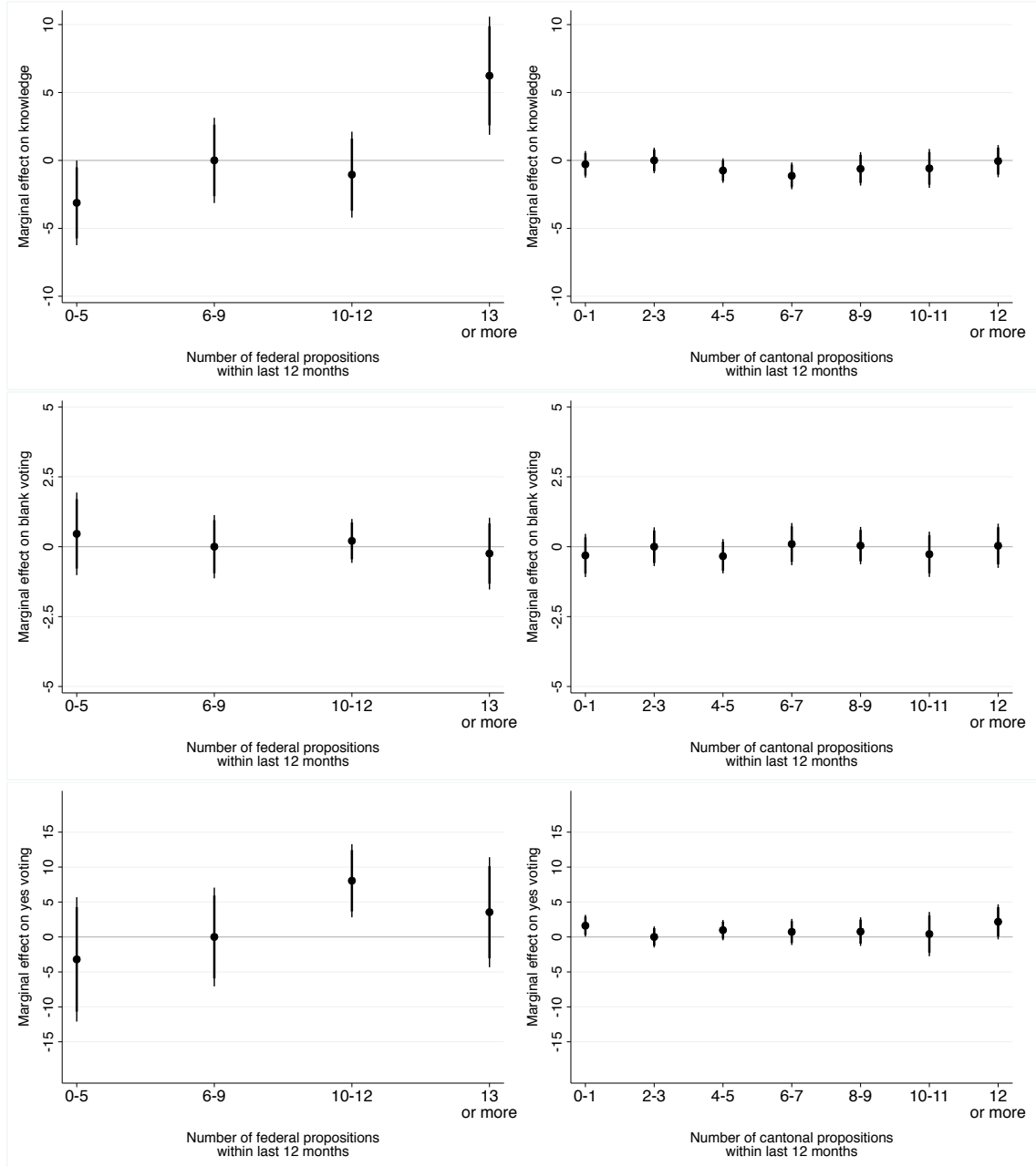
5.2 Effects of Previous Ballots

So far, we have concentrated on the contemporaneous effect of many propositions on the ballot. However, there may well be longer term effects. As mentioned above, citizens may, for instance, get politically more active if there was a higher number of recent votes due to the formation of a specific political human capital (or due to habit formation). Alternatively, citizens might become disenchanted with democracy if they feel overstrained by a high number of recent votes. To assess the relationship

between the number of recent votes and voters' decision making, we regress the outcomes of interest on the total number of federal and cantonal propositions within the last 12 months.

We explore the effect of a high number of propositions in the recent past on voter knowledge and voter behavior in terms of yes voting and blank voting. Figure 8 depicts the main results (see also Table A.13 in the Appendix). Our estimates suggest that citizens, if anything, become slightly more knowledgeable if there were many direct democratic votes within the last 12 months. With 13 or more propositions within the last 12 months they seem 5 percentage points more likely to know about the content of a specific proposition than if there were no propositions on ballots in the recent past. Moreover, there is some indication that the more propositions there were on recent ballots, the higher the propensity of people to vote for change rather than resorting to the status quo. There seems to be no substantial relationship between the number of propositions and blank voting. Overall, we do not find strong evidence for citizens being overstrained by a high number of recent ballot propositions.

Figure 8: The relationships between the number of recent propositions and knowledge of proposition content, blank voting, and voting for the status quo



Note: The figures show coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of recent propositions on the respective outcome variables. The reference categories are six to nine federal propositions and two and three cantonal propositions. The confidence interval shown for the reference level of propositions is the mean of the confidence interval width for the estimated effects of the adjacent categories. The dots are retrieved from a regression of individual knowledge of proposition content or individual voting behavior (blank or yes voting) on dummy variables for the number of current and recent federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, type of proposition, and socioeconomic variables (see also Table A.13). The sample contains all votes on the cantonal and federal level, not just concurrent votes.

5.3 Attitudes Toward Politics

We study the relationship between an active direct democracy and attitudes toward politics using reported interest in politics, perceived influence in politics, and satisfaction with democracy. Two different temporal perspectives are applied. On the one hand, we study attitudinal reactions to popular votes in the short run. On the other hand, we relate the reported attitudes to the compiled index of longer term exposure. In the data from the Swiss Household Panel, the same people are interviewed repeatedly, allowing the inclusion of individual-specific fixed effects in our specifications. We thus estimate relationships of the variation in exposure to direct democracy with attitudes over time within individuals.

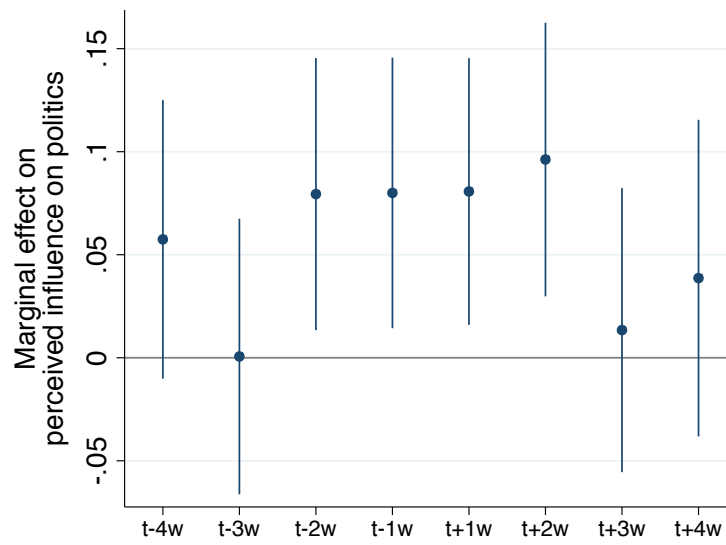
5.3.1 Short-term Exposure

Figures 9, A.22, and A.23 show the short-term effect of being exposed to a federal vote weekend. They depict the coefficient estimates from regressions of interest in politics, perceived influence in politics, and satisfaction with democracy on dummy variables indicating the distance to the federal vote weekend in weeks (± 4 weeks, see Table A.19 for the coefficient estimates).

The estimates indicate a pattern for interest in politics and perceived influence in politics. Interest in politics peaks in the week just after the vote weekend. The perceived influence in politics is higher within the four weeks around the vote weekend. While statistically insignificant, we also see a positive point estimate for satisfaction with democracy in the week immediately after a vote weekend. We do not find a different pattern when comparing vote weekends when there are 4 or more propositions on the ballot to vote weekends when there are less than 4 propositions on the ballot.³⁰ In sum, there is no evidence that citizens feel overburdened with the experience of the direct democratic process in the short term based on their attitudes toward democracy.

³⁰Results are available upon request.

Figure 9: Perceived influence on politics around federal vote weekends



Note: The figure shows coefficients of a regression of dummies that indicate the distance of the SHP interview date to the next federal voting weekend on the reported perceived influence on politics (see Table A.19, column 3). Reference category are all responses outside of the 8 week window around a federal voting weekend. Additional coefficients (not shown in the figure) are respondent fixed effects and year fixed effects.

5.3.2 Longer-term Exposure

We relate the exposure to the weighted sum of all federal and cantonal propositions in the last 12 months and the upcoming 30 days (as of the interview date) to the reported measures of citizens' efficacy in simple ordinary least squares estimations. Table 2 presents the results with the indexes included either in linear terms or as a second-order polynomial. In Figures 10, A.20 and A.21, the results for the specifications allowing a non-linear relationship are presented graphically.

Table 2: Exposure to Direct Democracy and Attitudes Toward Politics

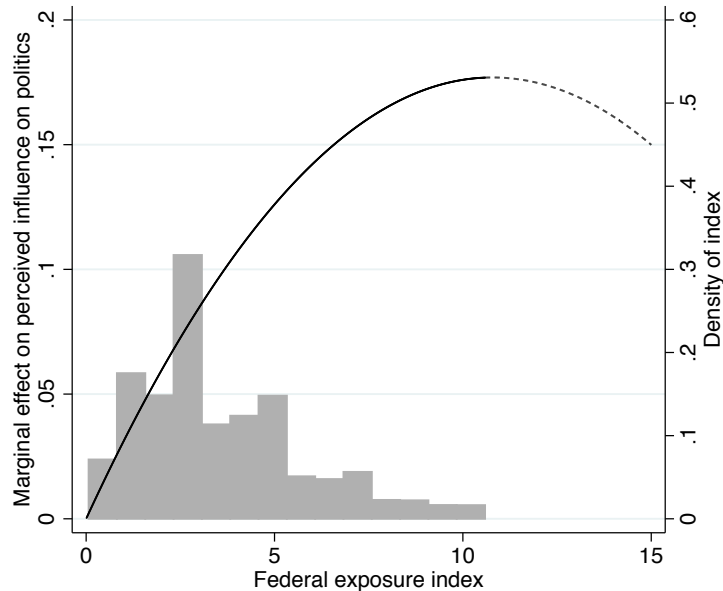
	Interest in politics		Perceived influence on politics		Satisfaction with democracy	
	I	II	III	IV	V	VI
Federal exposure index	0.0061 (0.0043)	0.0329* (0.0185)	0.0168*** (0.0062)	0.0336 (0.0255)	0.0207*** (0.0042)	0.0167 (0.0174)
Federal exposure index squared		-0.0025 (0.0017)		-0.0016 (0.0023)		0.0004 (0.0016)
Cantonal exposure index	-0.0010 (0.0029)	-0.0010 (0.0066)	-0.0063 (0.0040)	-0.0027 (0.0090)	0.0023 (0.0029)	0.0014 (0.0066)
Cantonal exposure index squared		0.0000 (0.0006)		-0.0003 (0.0008)		0.0001 (0.0006)
R^2	0.018	0.018	0.012	0.012	0.008	0.008
Observations	64,389	64,389	64,389	64,389	64,389	64,389

Note: Ordinary least squares estimations. The exposure index is the weighted sum of propositions in the last 12 month and upcoming 30 days from the date of the Swiss Household Panel interview based on all cantonal and federal votes (not just concurrent votes). Weights are linearly declining with the distance to the interview date. Figure A.18 shows the distribution of the index values. Dependent variables range from 0 (low) to 10 (high). Individual fixed effects estimation with socioeconomic control variables. Average stated interest in politics amounts to 5.77 out of 10. Average perceived influence on politics amounts to 3.89 out of 10. Average satisfaction with democracy amounts to 6.06 out of 10. Standard errors in parentheses are clustered at the individual level. Significance levels: * $.05 < p < .1$, ** $.01 < p < .05$, *** $p < .01$.

Political interest seems positively correlated up to an intermediate level with exposure to an active direct democracy. Perceived influence in politics tends to be higher during times in which citizens experience a high number of federal propositions. If the federal exposure index takes a maximum value of 10.5 rather than the minimum value of 0.1, the difference in perceived influence amounts to 0.18. Figure 10 presents the estimated relationship graphically together with a histogram indicating the variation of the exposure index and its density at different levels. In contrast to the federal exposure index, the exposure to cantonal propositions does not relate to corresponding changes in perceived influence.

Similarly, the results suggest that satisfaction with democracy tends to be higher during periods of particularly active direct democratic decision making at the federal level (with no sign of a decreasing marginal effect) but not at the cantonal level. The change in an individual's reported satisfaction with democracy amounts to 0.22 for the maximal change in the federal exposure index from 0.1 to 10.5. Relative to the mean level of 6.06, this is a change of 4%. In sum, for the variation in exposure to an active direct democracy experienced during the first decade of the 21st century, there is no evidence for a detrimental effect on attitudes toward politics. To the contrary, an intensive process at the federal level seems positively related to citizens' perceived influence in politics and satisfaction with democracy.

Figure 10: The effect of exposure to federal propositions on perceived influence on politics



Note: The figure shows the predicted effect of exposure to federal votes on self-reported perceived influence on politics. It also shows the observed distribution of the exposure index. The marginal effect of a federal exposure index of 2 is 0.059 (se = 0.042), of an index of 5 is 0.126 (se = 0.072) and of an index of 10 is 0.178 (se = 0.064). This figure is an illustration of the regression results in Table 2, column IV.

6 Concluding Remarks

Recent referendums in Europe and elsewhere have led to discussions about the future of democratic institutions in general and the role of direct democracy in particular. Some commentators worry about overstrained citizens while others emphasize that the direct democratic process is as demanding as it is rewarding. Citizens are invited to engage in politics by deciding about specific issues over and above electing representatives. From a politico-economic perspective, this requires that voters learn about the issues at stake and form reasoned opinions or at least find information shortcuts and recommendations they trust. Institutional conditions can help ensure the quality of the process. If the outcomes of referendums and initiatives are binding for the parliament, the decisions are taken seriously by the citizens as well. If there are no participation quorums, there is less of an incentive to sabotage the debate by calling for citizens not to participate in the direct democratic process. Free and diverse media allow citizens to learn about the propositions, and the media might themselves be strengthened by a democratic process that generates a higher demand for political information. Similarly, a civil society of people organized in formal and informal networks who discuss societal and political issues supports the functioning of the process but is itself strengthened by the means of direct democratic participation possibilities.

In this paper, we consider the condition of there being not too many propositions citizens are confronted with to decide. This complements arguments of too few or too irregular referendums, that is, that direct democracy works differently as a regular process from below than as a rare ad hoc process initiated from above. While the experience of direct democracy offers educative effects, there might be limits to how many issues citizens would want to handle, resulting in a decline of procedural as well as outcome utility. Our empirical assessment offers a framework that could be of general interest for the study of overstrained citizens. However, it is clearly shaped by the institutional context of Swiss direct democracy. In contrast, for example, to California, in Switzerland there are several polling days a year at both the federal and cantonal and sometimes also at the municipal level. The same number of propositions is thus dealt with rather differently, being spread over the year in Switzerland while concentrated on single election days in many other jurisdictions. This institutional feature might as such be an important safeguard against overstraining citizens.

For the observed variation in the number of federal and cantonal propositions on a single polling day and the exposure to an active direct democracy over a longer time period, we do not find systematic evidence for overstrained citizens. Using

comprehensive data on vote outcomes and attitudes, we document that citizens know the most about a proposition if it is exclusively put on the ballot. This is likely to reflect a deliberate decision of the Federal Council to secure full attention for propositions that are considered particularly important. Beyond that, we find that only with a relatively high number of federal and cantonal propositions on the ballot voters have less knowledge about federal propositions. Otherwise, the set of results suggests that a high number of propositions (as experienced in the Swiss context) does not impede the quality of decision making in federal level direct democracy. In particular, it does not increase voting for the status quo or the emulation of pole-party endorsements. To the contrary, a higher number of recent federal propositions is related to higher perceived political influence and satisfaction with democracy. This indicates a higher support of the direct democratic process if it is actively used within the observed range of exposure.

In the end, citizens decide about the extent of their own legislative competence (at least in the Swiss constitutional context) — they have *Kompetenz–Kompetenz* regarding the regulation of the direct democratic process. They decide about the scope of their direct democratic participation rights as well as the requirements for a proposition to qualify for a place on the ballot. This affects what issues get decided and how often citizens are asked to go to the polls. So far, the self-regulation of the system seems to have worked well. We submit to the citizens that currently there is little reason to worry about an overly intensive direct democratic process. However, we might reconsider this analysis if there are many more propositions in the future, for example, because committees are allowed to submit signatures electronically.

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Online Appendix

A. Knowledge About Content: Heterogeneity

It may well be that certain groups, for instance, older people, face a comparatively higher cost of acquiring information about additional propositions. Consequently, an active direct democracy could be harmful to the ability of specific groups to take part in the political process productively. We therefore look at whether the small aggregate effects of the number of propositions on the ballot mask heterogeneous reactions of groups differentiated by their income, age, and education. Figure A.1 depicts the effects of the number of federal propositions on knowledge. Results for the subpopulations high income, high age, and high education are presented in blue, whereas the effects for the comparison group (low income, low age, and low education) are depicted in black (for the complete regression output see Table A.1).

Panel a shows the differential effects for high- and low-income groups. High income corresponds to a monthly household income of more than 7,000 Swiss francs (approximately U.S. \$7,200). Median household income in Switzerland was 8,506 Swiss francs in the year 2004 (Bundesamt für Statistik, BFS). Although high-income voters know the content of a specific proposition more often on average, they are not less or more affected by more propositions being on the ballot. The differential reaction to the number of propositions on the ballot is small and imprecisely measured.

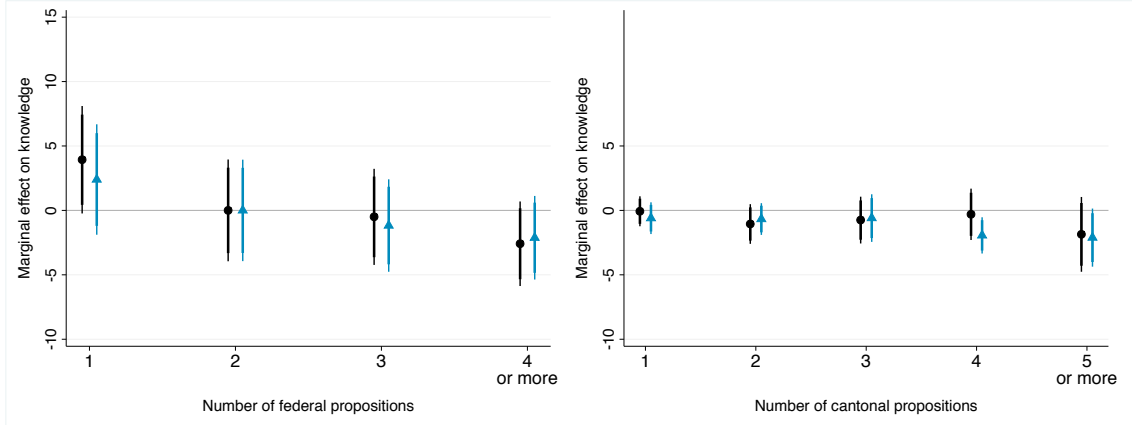
In the same vein, panel b depicts age differences in knowledge. People above the age of 50 years know about as much as those below that age, independent of the number of federal propositions on the ballot. However, if we examine effect of the number of cantonal propositions, a more nuanced picture emerges. On the cantonal level, older people seem to gather information comparatively more easily.

Panel c shows the estimates for high versus low education. High education corresponds to graduates from tertiary institutions, who make up a quarter of the voters in our data set. Highly educated voters have a 3.5-percentage-point higher propensity to know the content of a proposition on average. However, they do not seem to have an advantage in terms of gathering specific knowledge on propositions more easily as the number of propositions on the ballot grows.

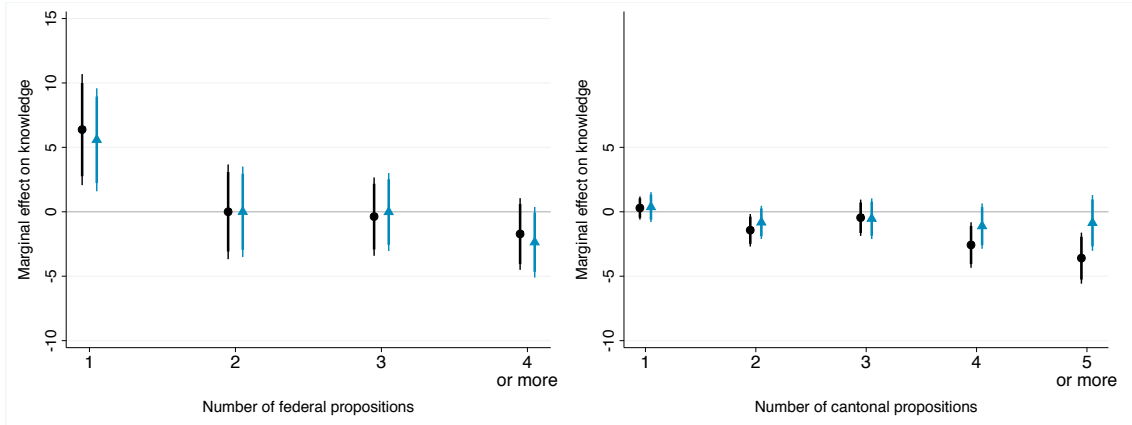
In summary, knowledge slightly decreases as the number of propositions grows. The measured effect sizes are very small compared with the average propensity to reproduce the propositions' content and also when compared to the positive effect on knowledge of just one proposition on the ballot. The overall finding seems not to indicate heterogeneity across major groups of the citizenry.

Figure A.1: The number of propositions and knowledge for different socio-economic groups

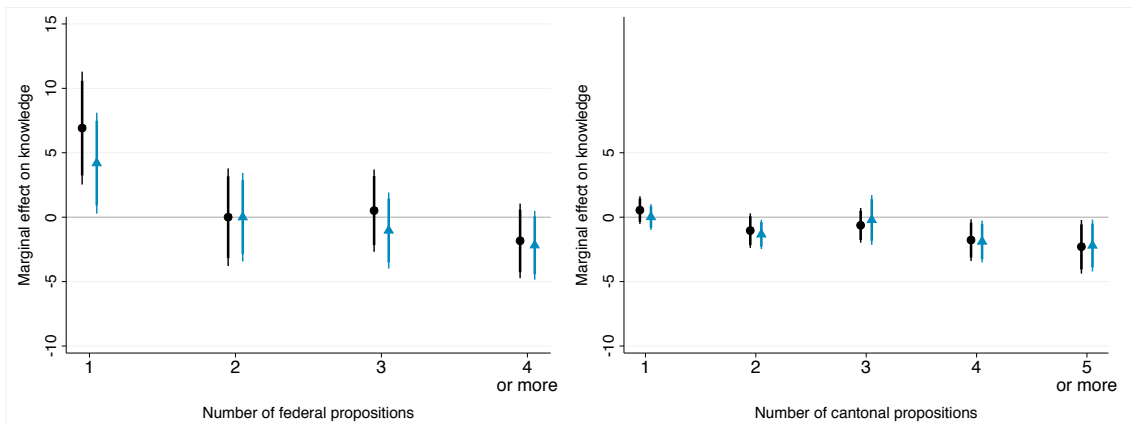
(a) Respondents above (blue bars) and below (black bars) average income



(b) Respondents above (blue bars) and below (black bars) average age



(c) Respondents above (blue bars) and below (black bars) average education



Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on knowledge. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of individual knowledge on dummy variables for the number of federal and cantonal propositions on the ballot, interacted with a dummy that indicates above-average income, age, or education. We control for canton-specific effects, year-specific effects, institutional variables, and socioeconomic variables (see also Table A.1).

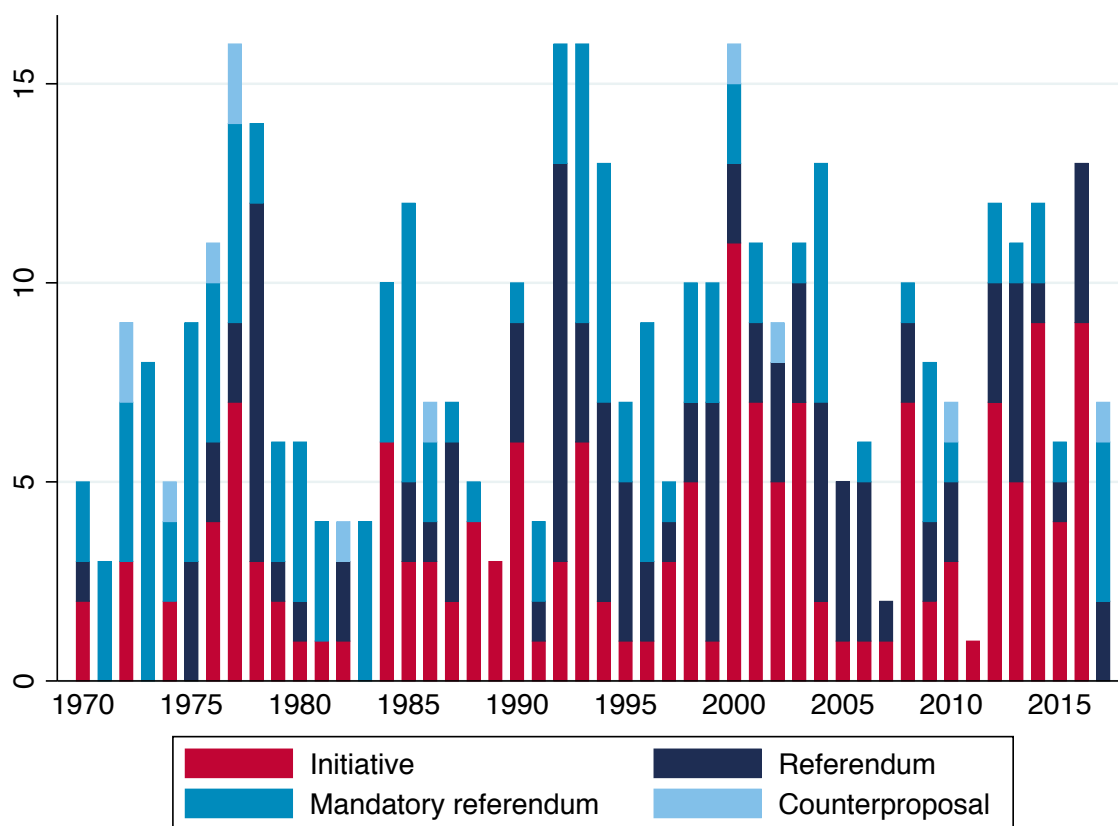
Table A.1: Number of propositions and knowledge: Differential effects for income, age, and level of education
Dependent variable: Reproducing proposition content [0/100]
Sample: Participants, postvote survey data

	High income	High age	High education
Number of federal propositions			
1	3.9325* (2.1277)	6.3783*** (2.1990)	6.9139*** (2.2337)
3	-0.5021 (1.9025)	-0.3750 (1.5508)	0.5085 (1.6295)
4 or more	-2.5880 (1.6739)	-1.7249 (1.4193)	-1.8389 (1.4757)
High income	2.5277*** (0.7060)		
High age		0.2713 (0.4906)	
High education			3.6410*** (0.8141)
Characteristic-specific interactions with number of federal propositions			
1	-1.5353 (1.0010)	-0.7886 (0.6549)	-2.7177** (1.2273)
3	-0.6731 (0.8219)	0.3590 (0.5541)	-1.5399 (0.9386)
4 or more	0.4668 (0.9435)	-0.6389 (0.6975)	-0.3413 (0.9236)
Number of cantonal propositions			
1	-0.0678 (0.5929)	0.2910 (0.4581)	0.5446 (0.5505)
2	-1.0555 (0.7855)	-1.4319** (0.6433)	-1.0445 (0.6812)
3	-0.7523 (0.9265)	-0.4610 (0.7179)	-0.6339 (0.6878)
4	-0.3042 (1.0168)	-2.5778*** (0.9008)	-1.7807** (0.8262)
5 or more	-1.8602 (1.4803)	-3.5977*** (1.0105)	-2.2988** (1.0602)
Characteristic-specific interactions with number of cantonal propositions			
1	-0.5355 (0.7654)	0.0765 (0.5551)	-0.5352 (0.6068)
2	0.3851 (0.8942)	0.6098 (0.6461)	-0.2908 (0.6422)
3	0.1565 (0.8624)	-0.0769 (0.7739)	0.4179 (0.9763)
4	-1.6348 (1.0991)	1.4653 (1.1216)	-0.1109 (0.9368)
5 or more	-0.2511 (1.2311)	2.7326*** (0.9947)	0.1013 (1.0878)
Institutional variables	yes	yes	yes
Socioeconomic variables	yes	yes	yes
Canton-specific effects	yes	yes	yes
Year-specific effects	yes	yes	yes
R^2	0.091	0.092	0.090
Observations	101,738	163,271	161,840
Mean of characteristic	0.35	0.45	0.30

Note: Ordinary least squares estimations. Average knowledge on propositions of participants amounts to 79.5. Reference category for number of federal propositions is 2. High income (age or education) indicates that the respondent's income (age or education) is above the sample mean. Income (age or education) is not included as a socioeconomic control variable if high income (high age or high education) is interacted with the number of federal propositions. The sample for the specification with the income interaction starts in the year 1995. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

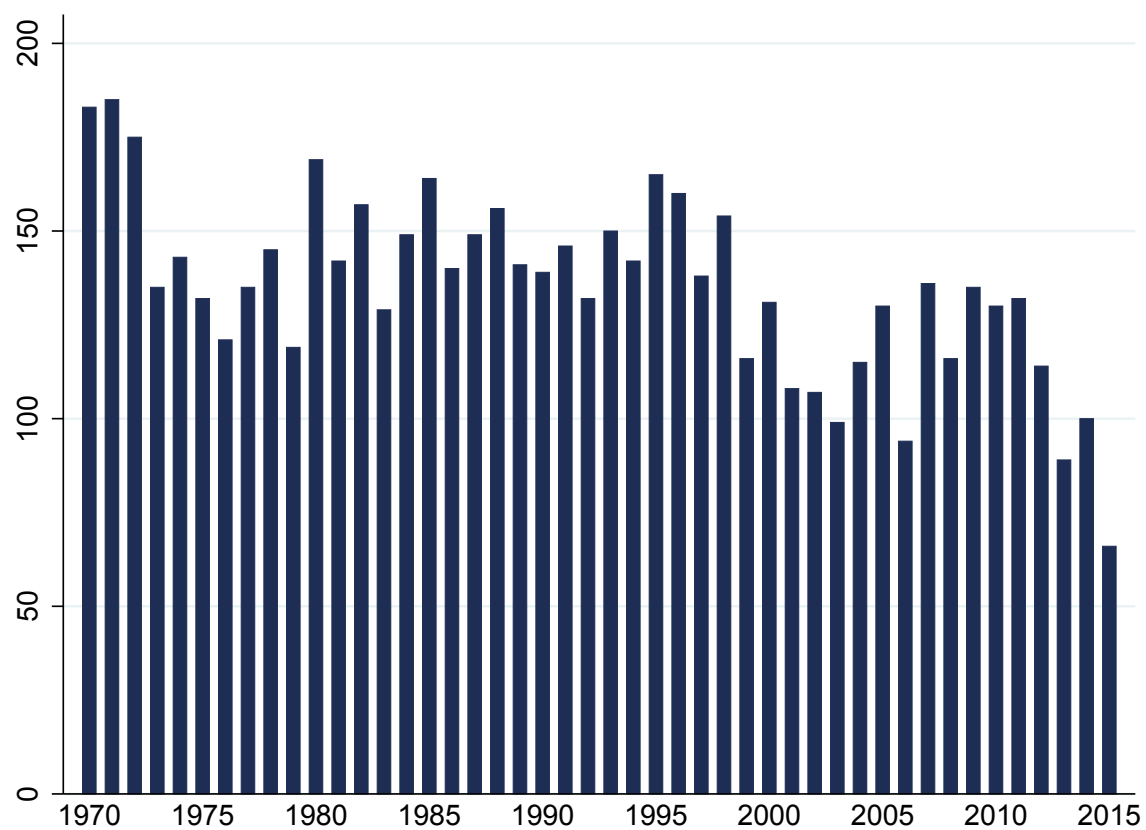
B. Supplementary Figures

Figure A.2: Number of national propositions per year, 1970–2017



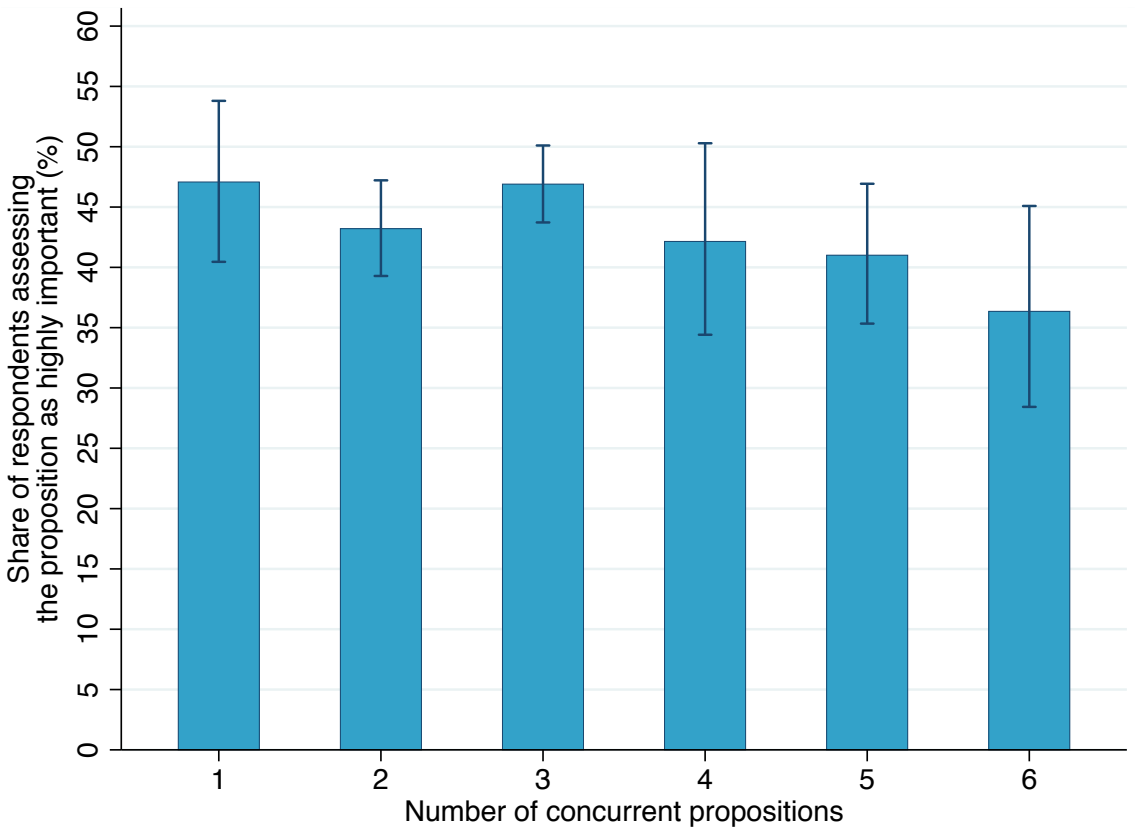
Data source: Database of Swiss Federal Referendums, Swiss Federal Statistical Office .

Figure A.3: Number of cantonal propositions per year, 1970–2015



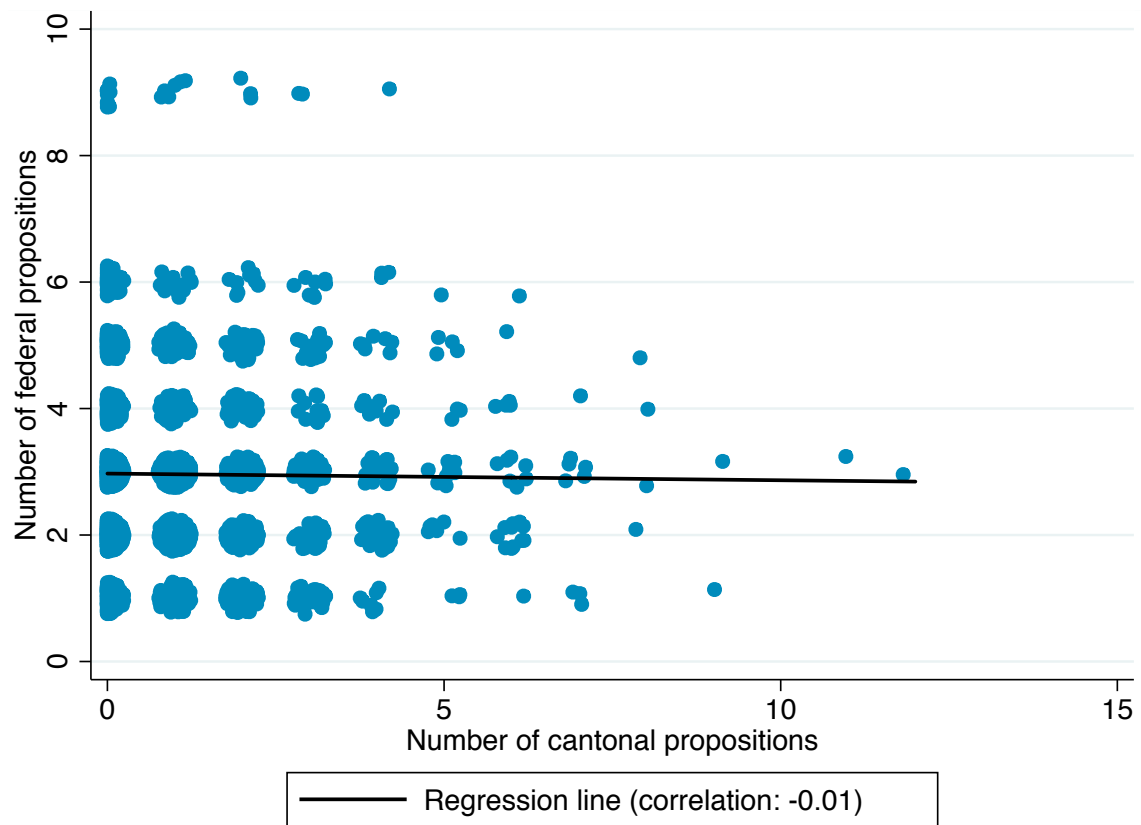
Data source: c2d, Centre for Democracy Studies Aarau.

Figure A.4: Perceived importance of federal propositions by the number of propositions on the ballot



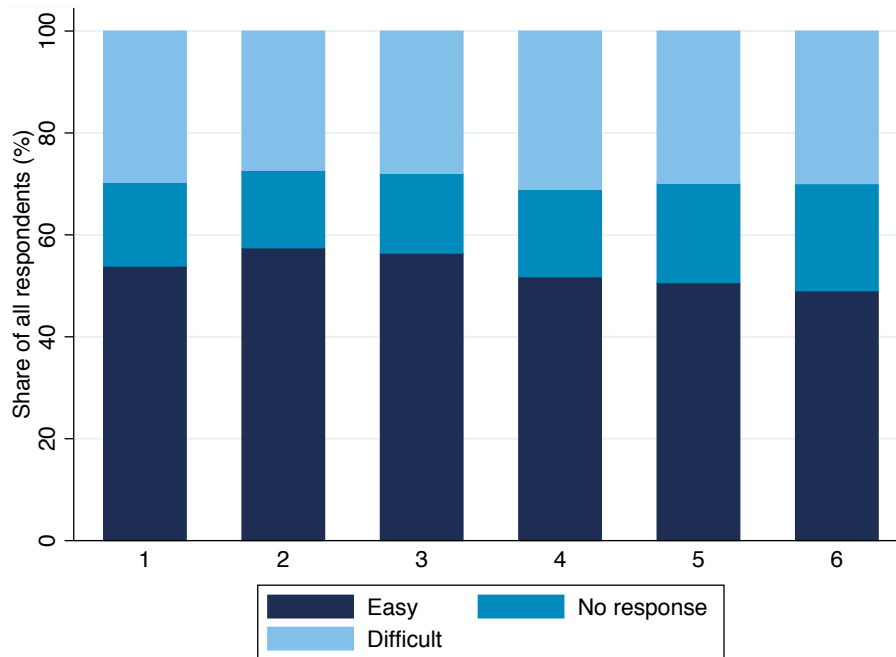
Note: The figure shows estimates of the mean perceived importance of federal propositions grouped by the number of concurrent propositions. The 95% confidence intervals are based on standard errors clustered on the level of polling days. There was one vote weekend with nine federal propositions on the ballot, which was subsumed under six federal propositions on the ballot.
Data source: VoxIt.

Figure A.5: Number of concurrent federal and cantonal propositions, 1970–2015



Note: The figure shows the number of federal and cantonal propositions per vote weekend. Each dot represents a vote weekend in a specific canton. Gaussian noise was added to increase visibility.
Data sources: Swiss Federal Statistical Office and c2d, Center for Democracy Studies Aarau.

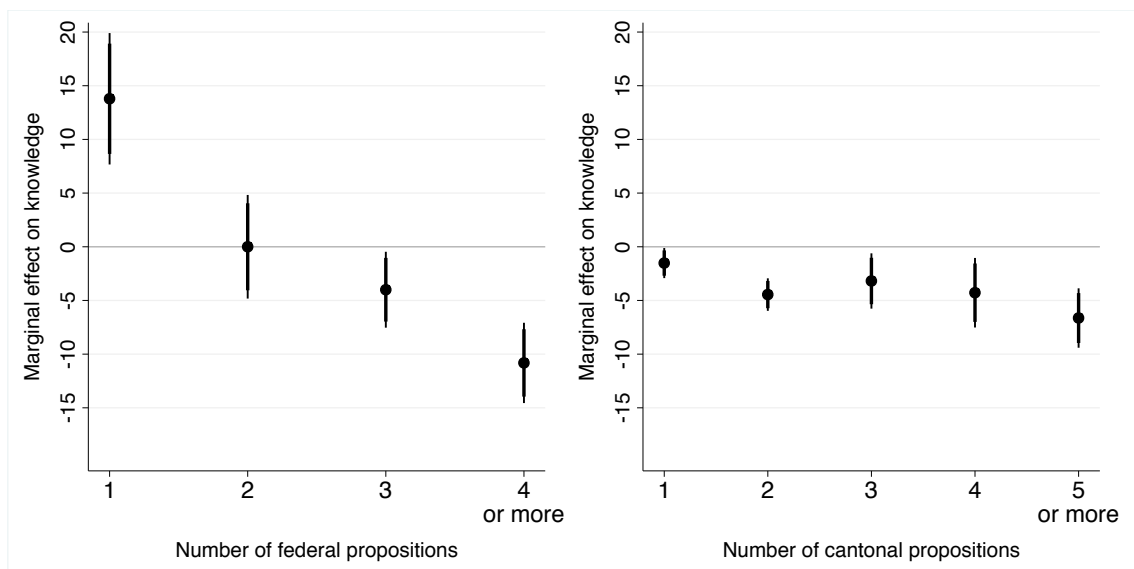
Figure A.6: Reported difficulties in assessing the consequences of propositions by the number of propositions on the ballot



Note: The figure shows the distribution of responses concerning the difficulties in assessing the consequences of a proposition, grouped by the number of concurrent propositions. There was one vote weekend with nine federal propositions on the ballot, which was subsumed under six federal propositions on the ballot.

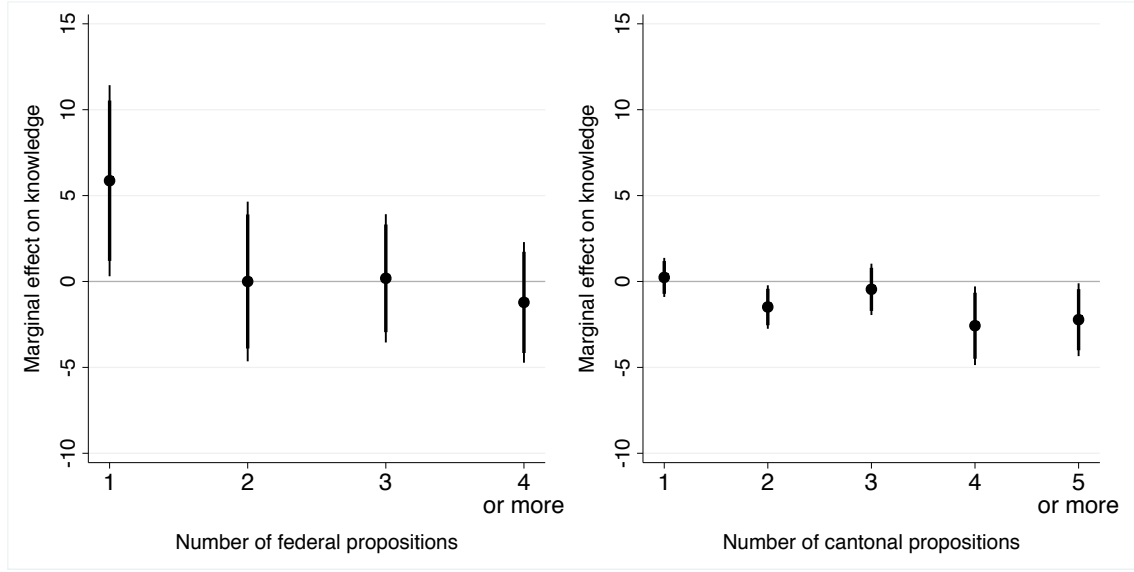
Data source: VoxIt.

Figure A.7: The number of propositions and knowledge about the title of propositions



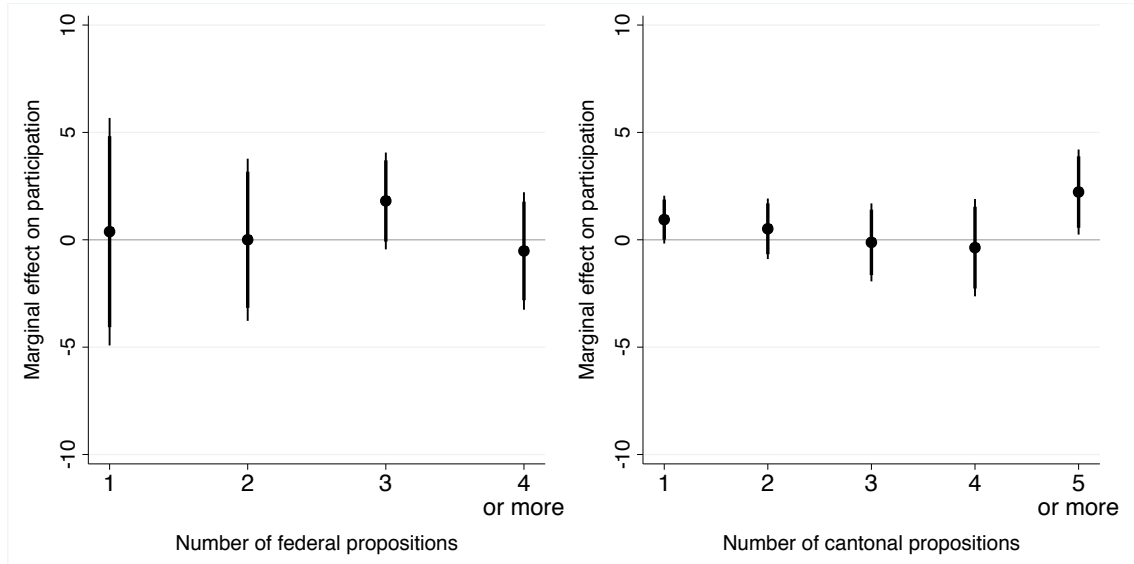
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the propensity in percentage points to know the content of a specific proposition. Estimates are based on postvote survey data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of knowledge on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, perceived complexity, perceived importance, institutional variables, and socioeconomic variables based on 168,524 observations (see also column III of Table A.3).

Figure A.8: The number of propositions and knowledge about the title of propositions, including nonparticipants



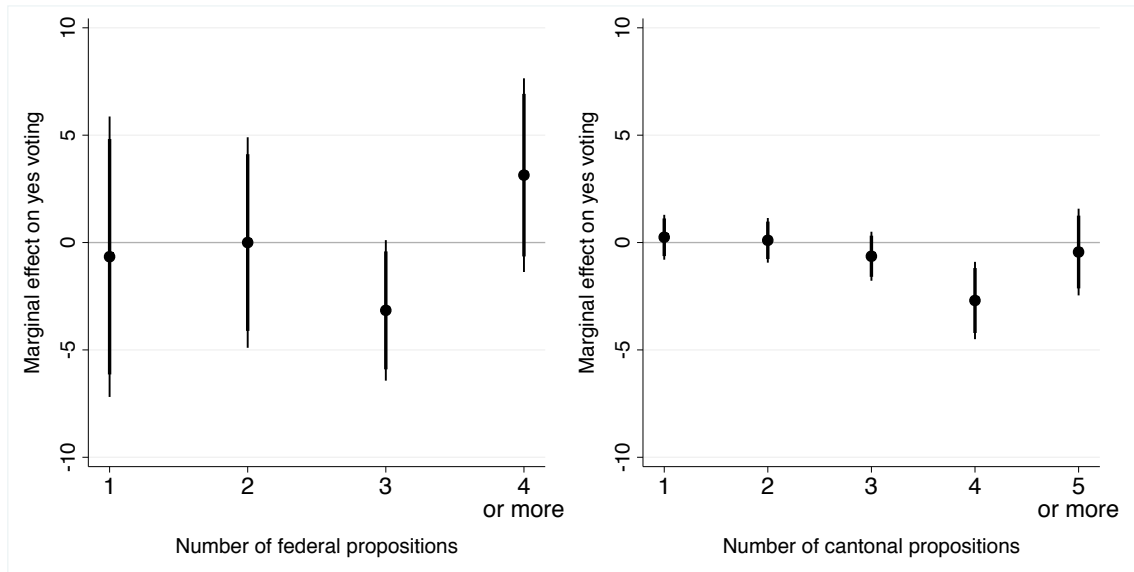
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the propensity in percentage points to know the content of a specific proposition. Estimates are based on postvote survey data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of knowledge on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, perceived complexity, perceived importance, institutional variables, and socioeconomic variables based on 251,317 observations (see also column III of Table A.4).

Figure A.9: The number of propositions and turnout in percentage points, postvote survey data



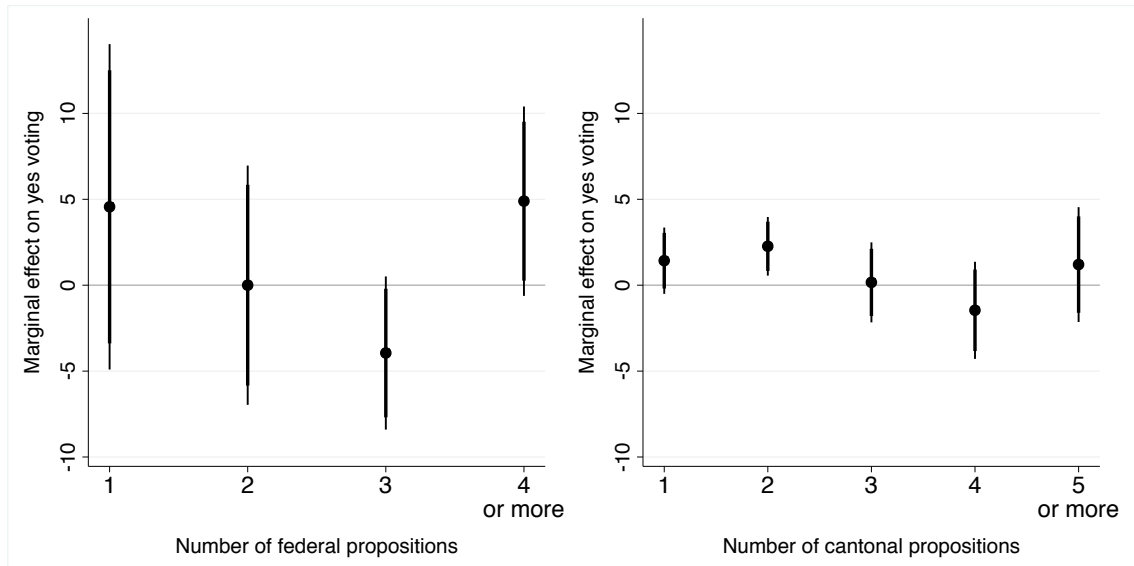
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on turnout in percentage points. Estimates are based on postvote survey data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of turnout on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, institutional variables, and socioeconomic variables based on 264,450 observations (see also column I of Table A.6).

Figure A.10: The number of propositions and the share of yes votes, administrative data



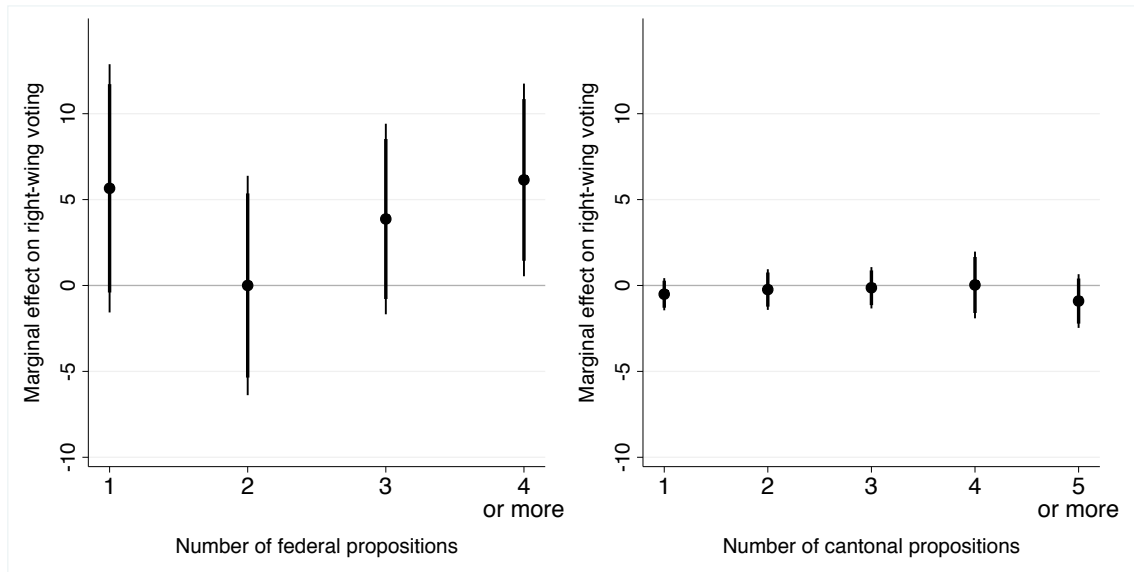
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the share of yes votes in percentage points. Estimates are based on administrative data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of the yes vote share on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, and institutional variables based on 7,080 observations (see also column III of Table A.9).

Figure A.11: The number of propositions and the share of yes votes, postvote survey data



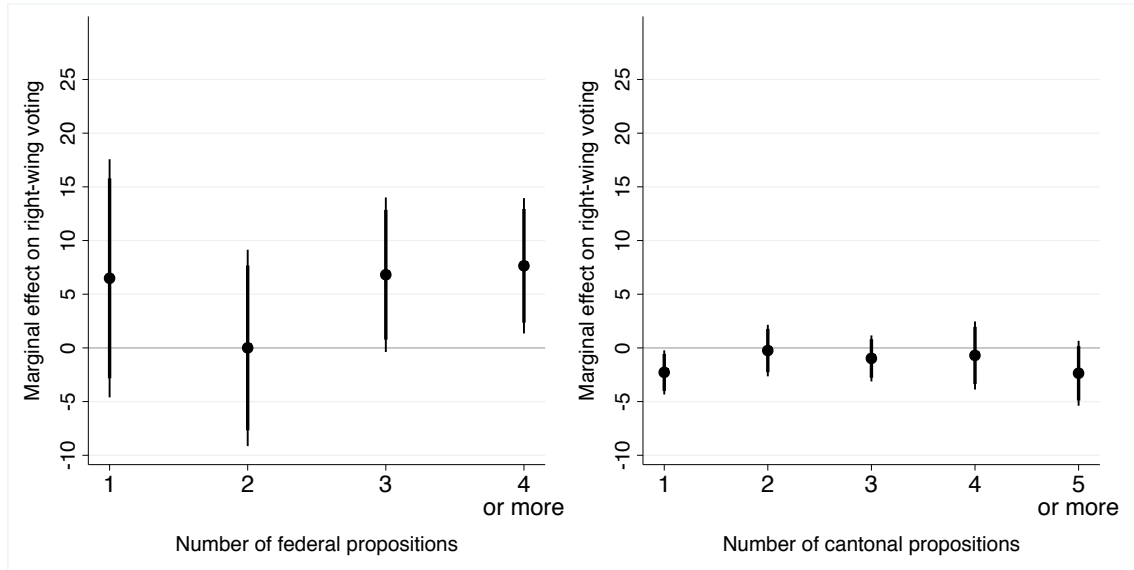
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the share of yes votes in percentage points. Estimates are based on postvote survey data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of the yes vote share on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, institutional variables, and socioeconomic variables based on 158,872 observations (see also column I of Table A.9).

Figure A.12: The number of propositions and support of right-wing recommendations, administrative data



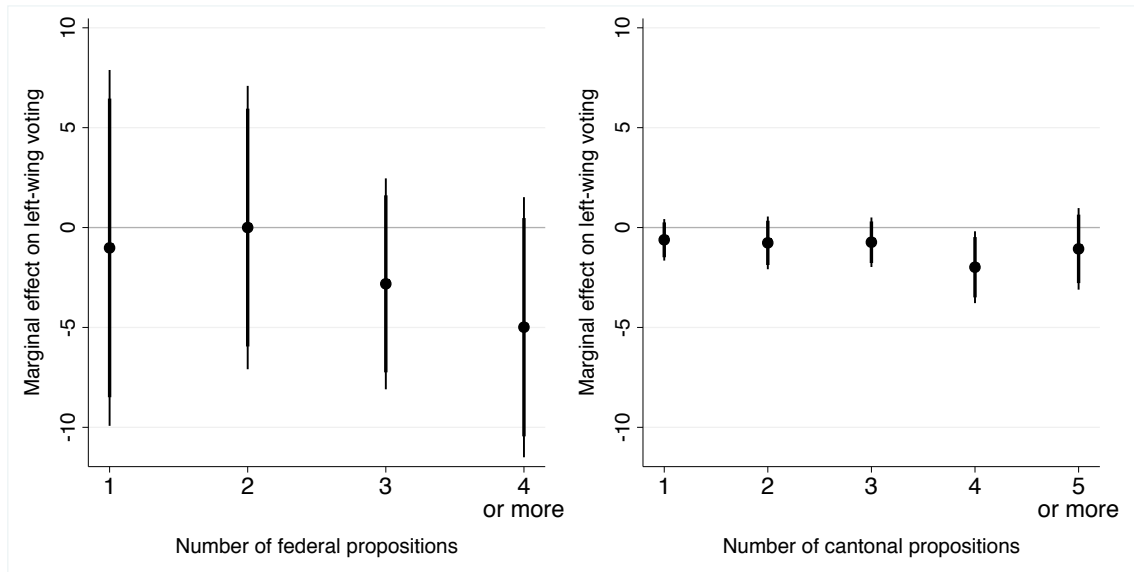
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the share of votes in percentage points that are in line with the vote recommendation of the right-wing Swiss People's Party (SVP). Estimates are based on administrative data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of the share of people voting in line with the voting recommendation of the SVP on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, and institutional variables based on 7,056 observations (see also column III of Table A.10).

Figure A.13: The number of propositions and support of right-wing recommendations, postvote survey data



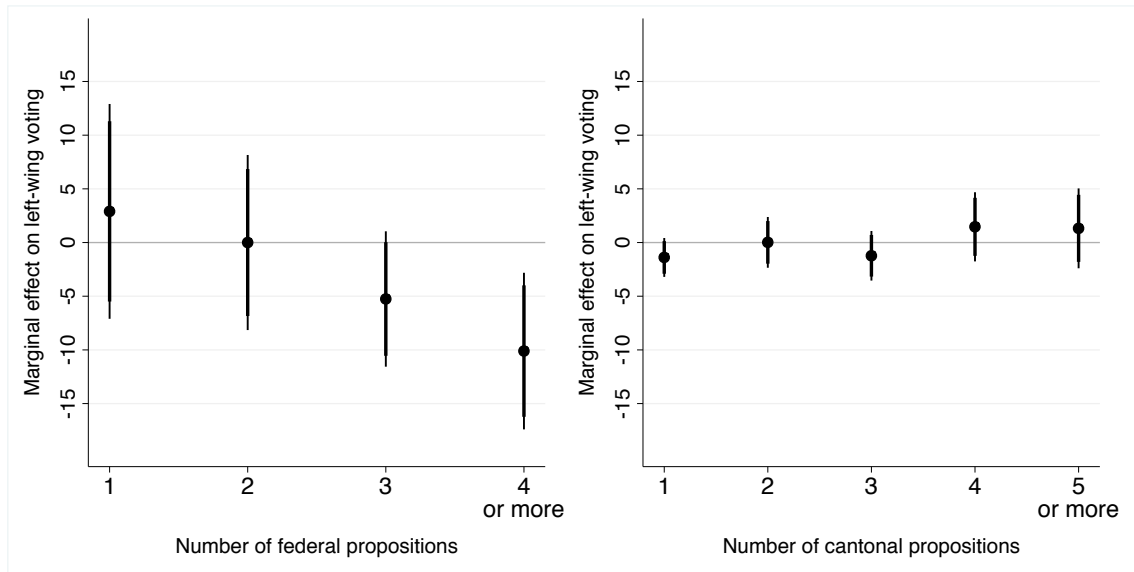
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the share of votes in percentage points that are in line with the vote recommendation of the right-wing Swiss People's Party (SVP). Estimates are based on postvote survey data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of a dummy for an individual vote in line with the SVP's recommendation on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, institutional variables, and socioeconomic variables based on 158,872 observations (see also column I of Table A.10).

Figure A.14: The number of propositions and left-wing support, administrative data



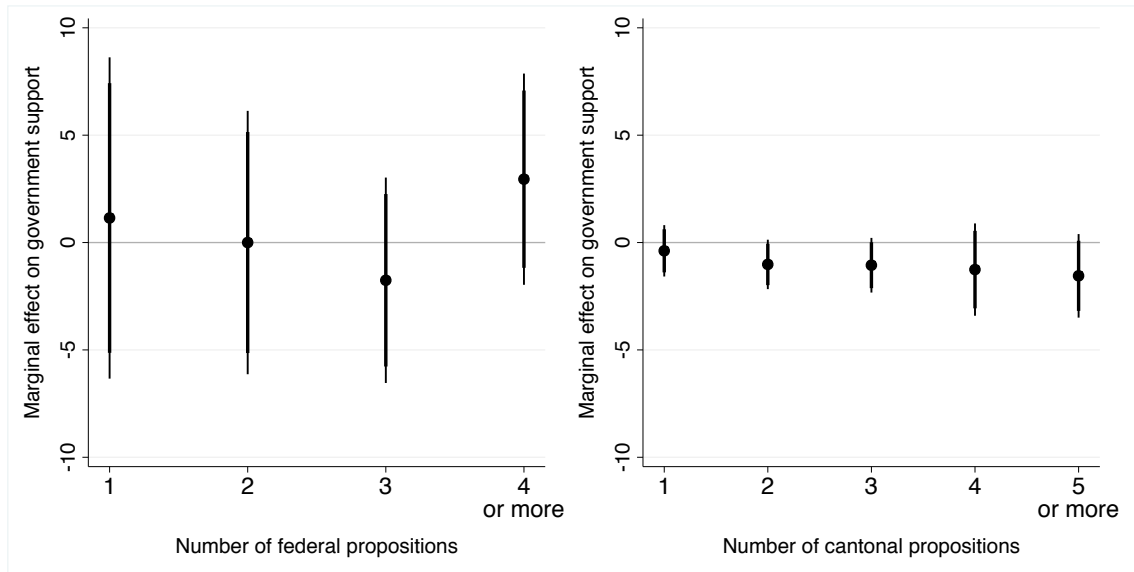
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the share of votes in percentage points that are in line with the vote recommendation of the left-wing Social Democratic Party of Switzerland (SP). Estimates are based on administrative data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of the share of people voting in line with the voting recommendation of the SP on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, and institutional variables based on 6,648 observations (see also column III of Table A.11).

Figure A.15: The number of propositions and left-wing support, postvote survey data



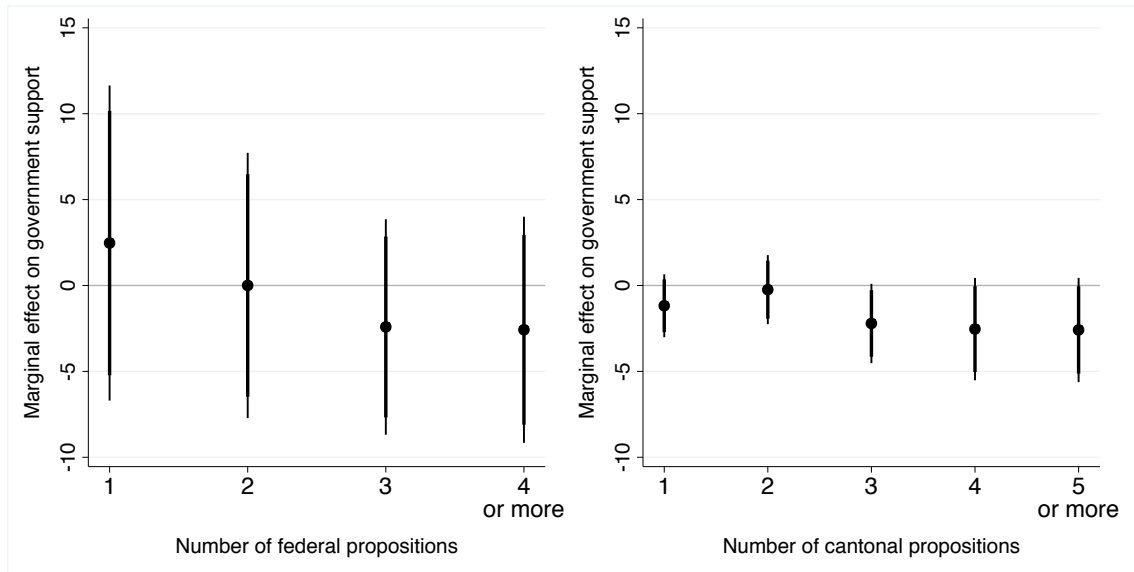
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the share of votes in percentage points that are in line with the vote recommendation of the left-wing Social Democratic Party of Switzerland (SP). Estimates are based on postvote survey data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of a dummy for an individual vote in line with the SP recommendation on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, institutional variables, and socioeconomic variables based on 158,872 observations (see also column I of Table A.11).

Figure A.16: The number of propositions and support of government recommendations, administrative data



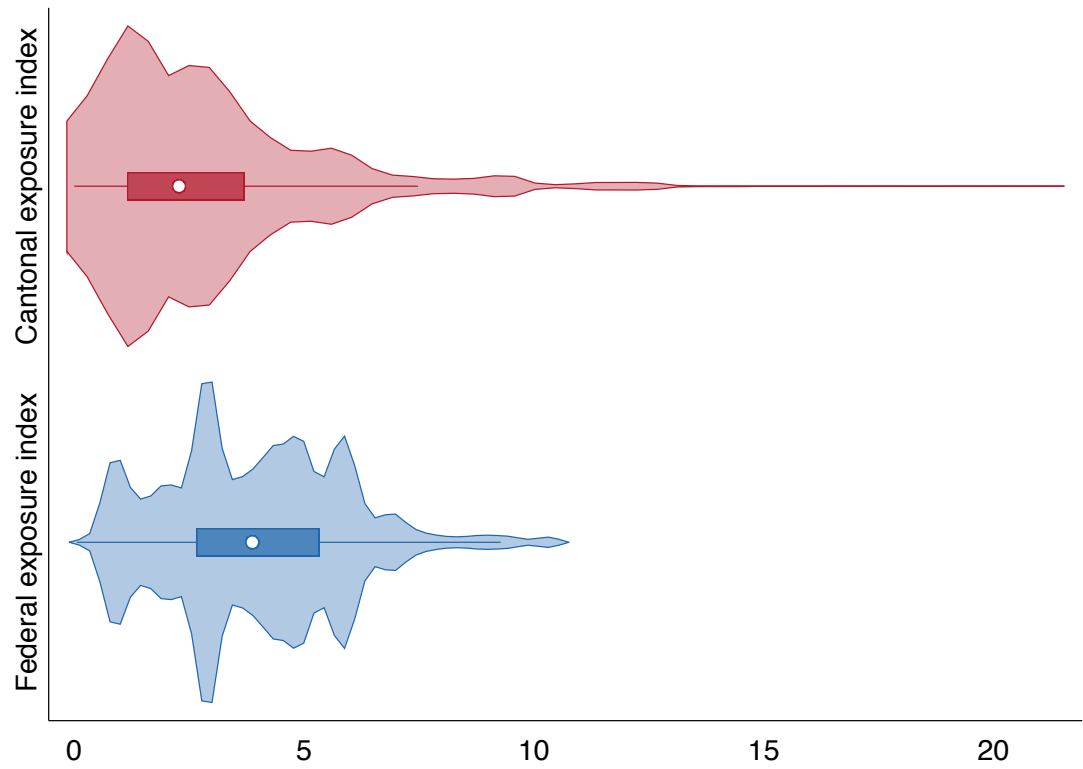
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the share of votes in percentage points that are in line with the vote recommendation of the federal government. Estimates are based on administrative data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of the share of voters following the governments voting recommendation on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, and institutional variables based on 7,008 observations (see also column III of Table A.12).

Figure A.17: The number of propositions and support of government recommendations, postvote survey data



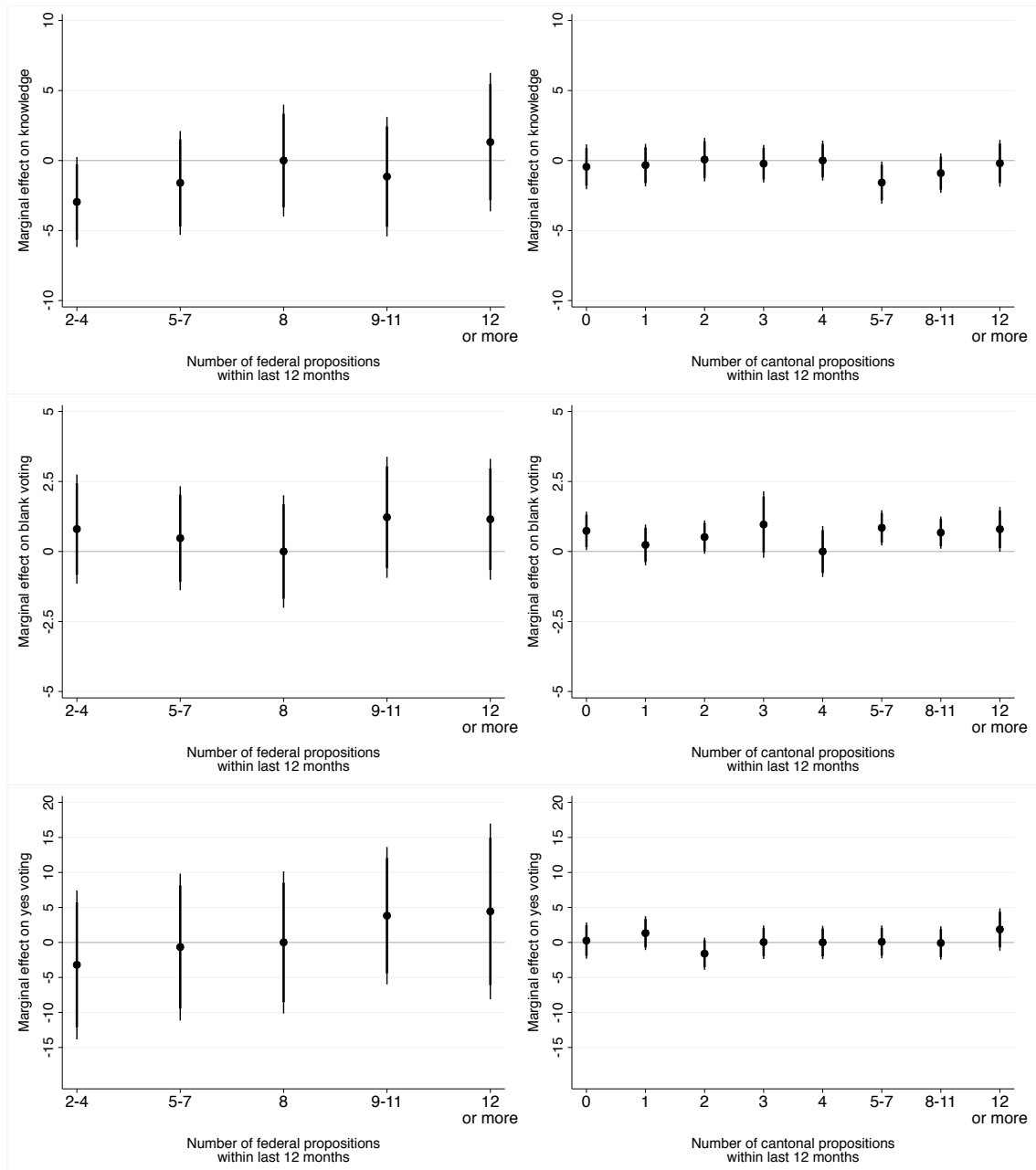
Note: The figure shows coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of propositions on the share of votes in percentage points that are in line with the vote recommendation of the federal government. Estimates are based on postvote survey data. The reference categories are two federal propositions and zero cantonal propositions. The confidence interval shown for the reference level of federal propositions is the mean of the confidence interval width for the estimated effects of three federal propositions and one federal proposition. The dots are retrieved from a regression of a dummy for an individual vote in line with government recommendation on dummy variables for the number of federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, institutional variables, and socioeconomic variables based on 158,872 observations (see also column I of Table A.12).

**Figure A.18: Indices for the aggregate exposure to popular votes over time:
Distribution of index values**



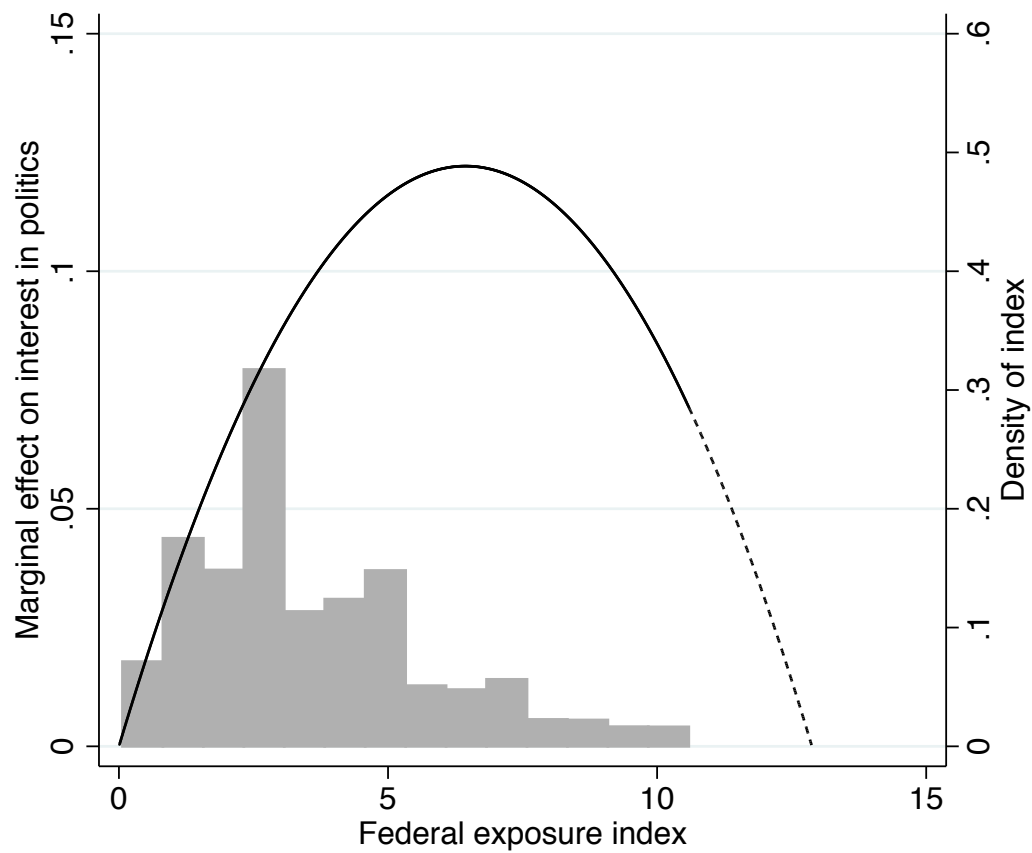
Note: The figure shows the distributions of exposure values assigned to Swiss Household Panel respondents, used in Table 2.

Figure A.19: The relationships between the number of recent propositions and knowledge of proposition content, blank voting, and voting for the status quo, alternative aggregation of number of propositions



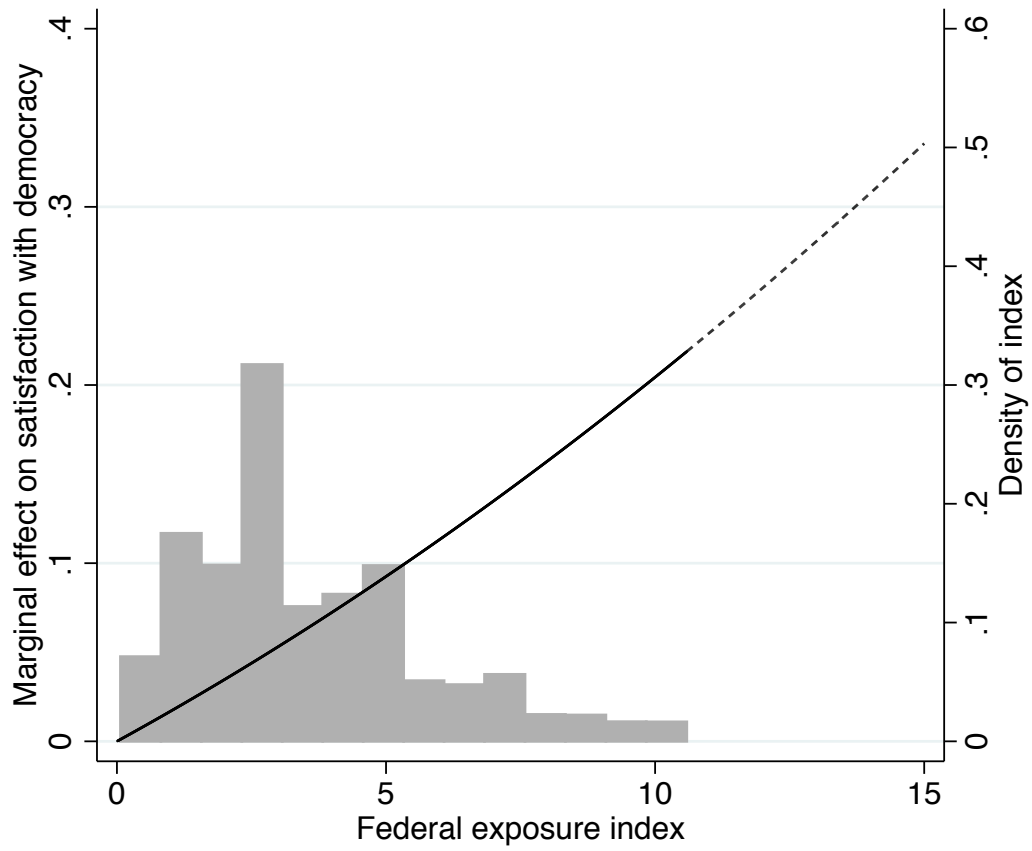
Note: The figures show coefficient estimates, 95% confidence intervals (thin lines), and 90% confidence intervals (thick lines) for the effect of the number of recent propositions on the respective outcome variables. The reference categories are eight federal propositions and four cantonal propositions. The confidence interval shown for the reference level of propositions is the mean of the confidence interval width for the estimated effects of the adjacent categories. The dots are retrieved from a regression of individual knowledge of proposition content or individual voting behavior (blank or yes voting) on dummy variables for the number of current and recent federal and cantonal propositions on the ballot while controlling for canton-specific effects, year-specific effects, type of proposition, and socioeconomic variables (see also Table A.14). The sample contains all votes on the cantonal and federal level, not just concurrent votes.

Figure A.20: The effect of exposure to federal propositions on interest in politics



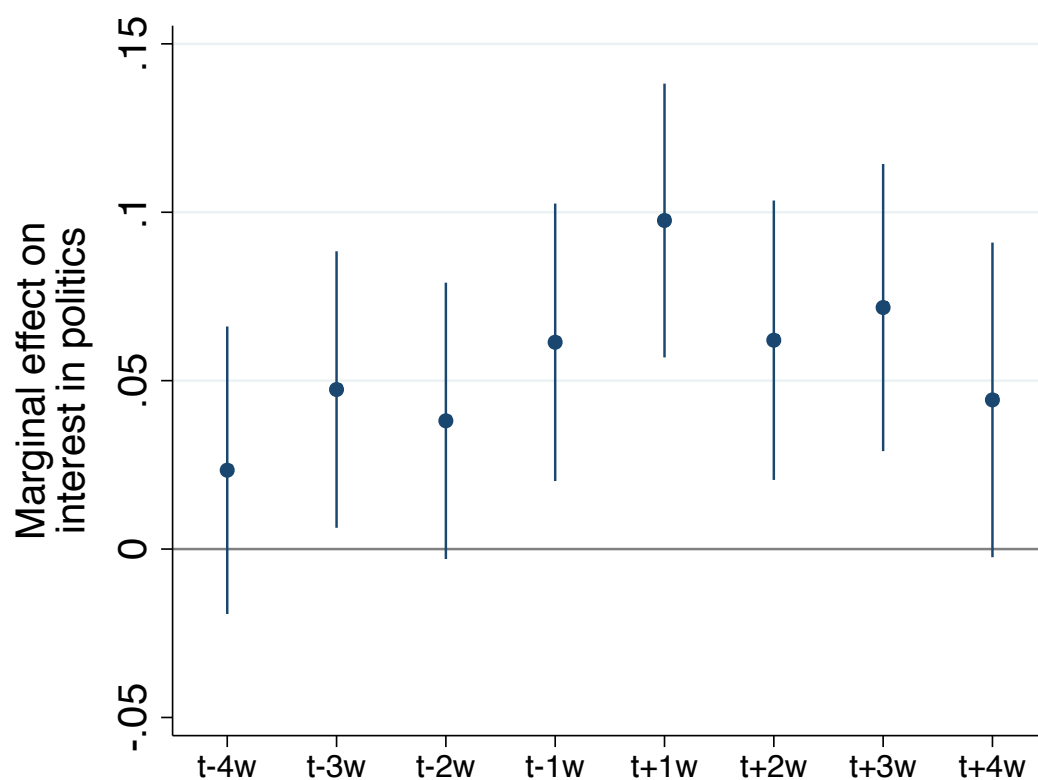
Note: The figure shows the predicted effect of exposure to federal votes on self-reported interest politics. It also shows the observed distribution of the exposure index. The marginal effect of a federal exposure index of 2 is 0.060 (se=0.030), of an index of 5 is 0.109 (se=0.052) and of an index of 10 is 0.081 (se=0.044). This figure is an illustration of the regression results in Table 2, column II.

Figure A.21: The effect of exposure to federal propositions on satisfaction with democracy



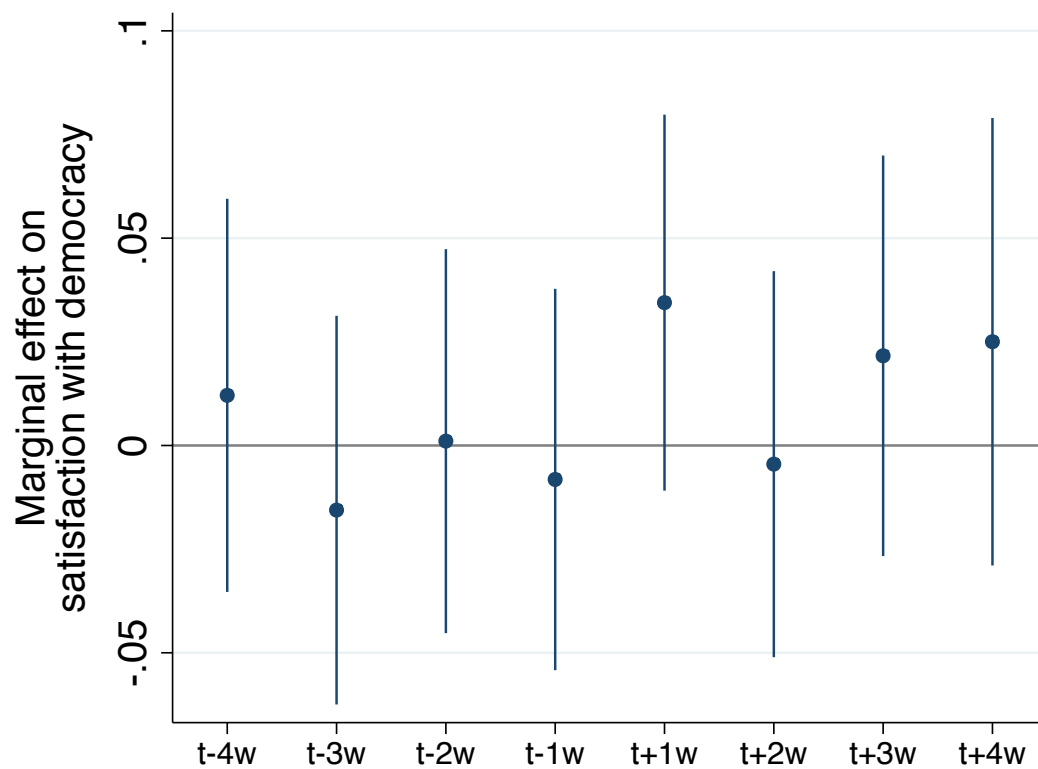
Note: The figure shows the predicted effect of exposure to federal votes on self-reported satisfaction with democracy. It also shows the observed distribution of the exposure index. The marginal effect of a federal exposure index of 2 is 0.024 (se=0.029), of an index of 5 is 0.074 (se=0.050) and of an index of 10 is 0.194 (se=0.043). This figure is an illustration of the regression results in Table 2, column VI.

Figure A.22: Interest in politics around federal vote weekends



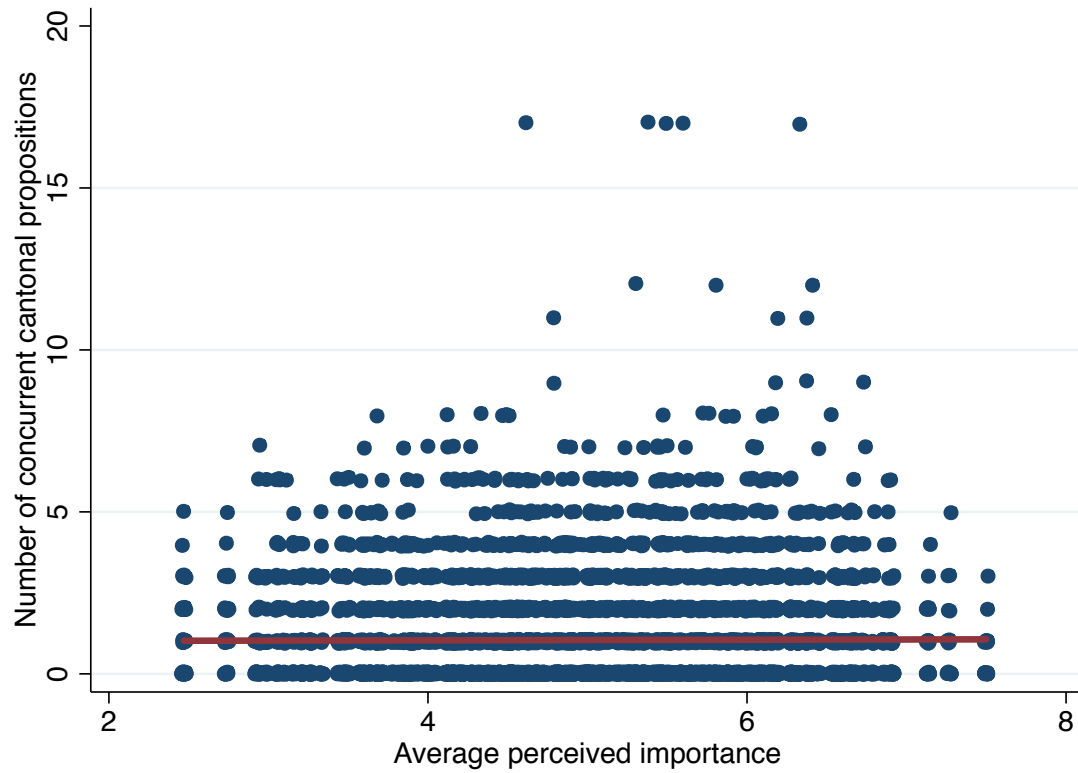
Note: The figure shows coefficients of a regression of dummies that indicate the distance of the SHP interview date to the next federal voting weekend on the reported interest in politics (see Table A.19, column 1). Additional coefficients (not shown in the figure) are respondent fixed effects and year fixed effects.

Figure A.23: Satisfaction with democracy around federal vote weekends



Note: The figure shows coefficients of a regression of dummies that indicate the distance of the SHP interview date to the next federal voting weekend on the reported satisfaction with democracy (see Table A.19, column 2). Additional coefficients (not shown in the figure) are respondent fixed effects and year fixed effects.

Figure A.24: Average perceived importance of federal propositions and number of concurrent cantonal propositions.



Note: The figure shows the average perceived importance of a federal proposition as reported by respondents in a canton with a certain number of concurrent cantonal propositions at the same voting weekend. Each dot represents the average assessment of a federal propositions by respondents in a canton. An OLS regression of average perceived importance of a federal proposition on a constant and the number of concurrent cantonal propositions yields a constant of 5.008 (with a standard error, clustered on the voting date, of 0.092) and a coefficient on number of cantonal propositions of 0.004 (se 0.011).

C. Supplementary Tables

Table A.2: Descriptive statistics for the variables from postvote survey and administrative data sets

	Individual data June 14, 1981 - June 14, 2015 285 federal propositions on 97 voting days				Aggregated data June 14, 1981 - June 14, 2015 295 federal propositions on 103 voting days			
	Mean	Standard deviation	Range	Number of observations	Mean	Standard deviation	Range	Number of observations
<i>Dependent Variables</i>								
Reproduce proposition title	66.10	47.34	0 / 100	264,437				
Reproduce proposition content	79.49	40.37	0 / 100	251,317				
Participation	64.01	47.99	0 / 100	264,450	44.57	10.41	13.8 - 87.2	7,080
Participation excluding blank voting	61.49	48.66	0 / 100	264,466	43.33	10.10	13.5 - 86.5	7,080
Blank	4.20	20.06	0 / 100	158,872	2.60	2.03	0.08 - 26.02	7,080
Yes	47.29	49.93	0 / 100	158,872	48.05	19.34	3.9 - 95.3	7,080
<i>Explanatory variables</i>								
Number of federal propositions	2.94	1.46	1 - 9	97 federal polling days	2.89	1.47	1 - 9	103 federal polling days
Number of cantonal propositions	1.10	1.53	0 - 17	2,050 cantonal polling days	1.06	1.51	0 - 17	2,472 cantonal polling days
Number of federal propositions within last 12 months	8.11	3.54	0 - 19	97 federal polling days	7.93	3.66	0 - 19	103 federal polling days
Number of cantonal propositions within last 12 months	4.38	3.88	0 - 27	2,050 cantonal polling days	4.41	3.83	0 - 27	2,472 cantonal polling days
<i>Institutional control variables</i>								
Initiative	0.428	0.496	0 / 1	285 propositions	0.418	0.494	0 / 1	295 propositions
Referendum	0.288	0.453	0 / 1	285 propositions	0.289	0.454	0 / 1	295 propositions
Mandatory referendum	0.214	0.411	0 / 1	285 propositions	0.221	0.416	0 / 1	295 propositions
Counterproposal	0.070	0.256	0 / 1	285 propositions	0.071	0.258	0 / 1	295 propositions
Postal voting	0.712	0.453	0 / 1	285 propositions	0.632	0.482	0 / 1	295 propositions
<i>Individual controls for importance and complexity of propositions</i>								
High impact	0.435	0.496	0 / 1	264,998				
Low complexity	0.540	0.498	0 / 1	291,613				
High complexity	0.290	0.454	0 / 1	291,613				
<i>Socioeconomic variables</i>								
Age	48.0	17.6	18 - 98	292,933				
Male	0.491	0.500	0 / 1	293,608				
Advanced education	0.300	0.458	0 / 1	291,039				
High income	0.347	0.476	0 / 1	185,587				

Note: Advanced education is for graduates from a tertiary institution. High income is for people with a household income of more than 7,000 Swiss francs per month.

Data sources: The dependent variables in the individual data set, the controls for complexity and importance, and the socioeconomic variables are from VoxIt (Kriesi, Brunner and Lorétan, 2017); the number of federal propositions and the dependent variables in the aggregated data set are from the Swiss Federal Statistical Office (SFS); information about the legal form of the propositions and government recommendations are from Swissvotes; the numbers of cantonal propositions are from c2d, Centre for Democracy Studies Aarau; information about the availability of postal voting is from Luechinger, Rosinger and Stutzer (2007).

Table A.3: Number of propositions and knowledge: Taking into account the complexity and importance of the propositions
Dependent variable: Reproducing proposition title [0/100]
Sample: Participants

	I	II	III	IV
Number of federal propositions				
1	14.9165*** (3.3550)	13.7215*** (3.2591)	13.7840*** (3.1215)	
3	-4.0059** (1.9981)	-4.0777** (1.8823)	-4.0012** (1.8027)	
4 or more	-11.4993*** (2.0338)	-11.1097*** (1.9971)	-10.8181*** (1.9074)	
Number of cantonal propositions				
1			-1.5183** (0.7154)	-1.6051** (0.6387)
2			-4.4524*** (0.7722)	-3.8067*** (0.7456)
3			-3.1868** (1.3139)	-3.0209** (1.2119)
4			-4.2791** (1.6525)	-3.8143*** (1.4310)
5 or more			-6.6379*** (1.4117)	-6.7312*** (1.1314)
Low complexity		13.4298*** (0.9867)	13.3506*** (0.9880)	11.3035*** (0.8993)
High complexity		8.5789*** (0.8289)	8.5699*** (0.8280)	6.7691*** (0.7847)
High impact		5.5874*** (0.6682)	5.6121*** (0.6640)	3.1343*** (0.4861)
Referendum	-1.0184 (2.0259)	-0.3603 (1.9081)	-0.0999 (1.9173)	
Mandatory referendum	-7.4064*** (2.2573)	-5.6475*** (2.1167)	-5.5398*** (2.0963)	
Counterproposal	-7.6017** (3.2789)	-6.7452** (3.1624)	-6.6515** (3.1101)	
Postal voting	-0.6165 (1.1200)	-0.3359 (1.1515)	-0.1942 (1.1089)	-0.0893 (1.1159)
Socioeconomic variables				
	yes	yes	yes	yes
Canton-specific effects				
	yes	yes	yes	yes
Year-specific effects				
	yes	yes	yes	no
Proposition-specific effects				
	no	no	no	yes
R^2	0.123	0.131	0.133	0.193
Observations	175,487	168,524	168,524	168,524

Note: Ordinary least squares estimations. Average knowledge of proposition title by participants amounts to 74.02. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

Table A.4: Number of propositions and knowledge: Taking into account the complexity and importance of the propositions
Dependent variable: Reproducing proposition content [0/100]
Sample: Including nonparticipants

	I	II	III	IV
Number of federal propositions				
1	7.2244* (3.8654)	5.8161** (2.8144)	5.8661** (2.8375)	
3	0.7794 (2.3539)	0.2118 (1.9164)	0.1836 (1.9047)	
4 or more	-1.6798 (2.3289)	-1.3862 (1.8017)	-1.2178 (1.7908)	
Number of cantonal propositions				
1			0.2361 (0.5798)	-0.1338 (0.3712)
2			-1.4868** (0.6454)	-1.7543*** (0.5184)
3			-0.4584 (0.7627)	-0.8601 (0.6052)
4			-2.5764** (1.1675)	-1.3866 (0.9320)
5 or more			-2.2258** (1.0811)	-1.9781** (0.7796)
Low complexity		34.2721*** (0.9882)	34.2521*** (0.9866)	32.1268*** (0.9732)
High complexity		20.7821*** (0.7606)	20.7946*** (0.7624)	20.5709*** (0.7428)
High impact		8.4074*** (0.5055)	8.4181*** (0.5050)	7.3185*** (0.4345)
Referendum	-3.1008* (1.5690)	-1.6575 (1.1259)	-1.6016 (1.1293)	
Mandatory referendum	-14.1229*** (2.5545)	-10.1844*** (1.8989)	-10.1604*** (1.8885)	
Counterproposal	-12.4742*** (2.9960)	-9.8295*** (2.4143)	-9.8422*** (2.3984)	
Postal voting	-3.4000*** (1.0008)	-3.6244*** (0.8205)	-3.5415*** (0.7971)	-3.2665*** (0.8075)
Socioeconomic variables				
	yes	yes	yes	yes
Canton-specific effects				
	yes	yes	yes	yes
Year-specific effects				
	yes	yes	yes	no
Proposition-specific effects				
	no	no	no	yes
R^2	0.102	0.186	0.186	0.231
Observations	273,868	251,317	251,317	251,317

Note: Ordinary least squares estimations. Average knowledge of proposition content by all respondents amounts to 79.49. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: $*.05 < p < .1$, $** .01 < p < .05$, $*** p < .01$.

Table A.5: Number of propositions and knowledge: Taking into account the complexity and importance of the propositions
Dependent variable: Reproducing proposition title [0/100]
Sample: Including nonparticipants

	I	II	III	IV
Number of federal propositions				
1	17.0564*** (3.9087)	15.4546*** (3.4570)	15.5440*** (3.3612)	
3	-2.0743 (2.4551)	-2.7983 (2.1060)	-2.5891 (2.0872)	
4 or more	-9.4770*** (2.5753)	-9.2958*** (2.3219)	-8.9761*** (2.2979)	
Number of cantonal propositions				
1			-0.9770 (0.6820)	-1.3488** (0.6284)
2			-3.5936*** (0.7594)	-3.4202*** (0.6927)
3			-2.9903*** (1.1358)	-3.0901*** (1.0859)
4			-2.2713 (1.6840)	-2.5538** (1.2342)
5 or more			-5.8456*** (1.2930)	-5.9361*** (1.0305)
Low complexity		28.7930*** (1.5446)	28.7658*** (1.5493)	27.4133*** (1.4883)
High complexity		19.9080*** (1.2091)	19.9374*** (1.2163)	19.0245*** (1.2027)
High impact		8.7787*** (0.6123)	8.7992*** (0.6077)	6.7049*** (0.4711)
Referendum	-2.6042 (2.0637)	-1.0691 (1.8218)	-0.8716 (1.8337)	
Mandatory referendum	-9.4036*** (2.3897)	-5.8570*** (2.0722)	-5.7635*** (2.0539)	
Counterproposal	-10.1837*** (2.8983)	-8.0012*** (2.8199)	-7.8708*** (2.7843)	
Postal voting	-0.2116 (0.9817)	0.1395 (1.0369)	0.2959 (1.0038)	0.3557 (1.0180)
Socioeconomic variables				
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	yes	yes	no
Proposition-specific effects	no	no	no	yes
R^2	0.133	0.181	0.182	0.234
Observations	290,894	264,437	264,437	264,437

Note: Ordinary least squares estimations. Average knowledge of proposition title by all respondents amounts to 66.10. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: $^* .05 < p < .1$, $^{**} .01 < p < .05$, $^{***} p < .01$.

Table A.6: Number of propositions and voting participation
Dependent variable: Voting participation [0/100] / [0-100]
Sample: Participants / full voting population, aggregated on cantonal level

	Postvote survey data		Administrative data	
	I	II	III	IV
Number of federal propositions				
1	0.3772 (2.7030)		0.8631 (4.0888)	
3	1.8078 (1.1504)		3.5760** (1.7061)	
4 or more	-0.5218 (1.3953)		0.6242 (2.0651)	
Number of cantonal propositions				
1	0.9394 (0.5677)	0.8670* (0.5043)	1.0059*** (0.3816)	0.9237*** (0.3448)
2	0.5115 (0.7189)	0.0256 (0.7085)	1.2579*** (0.4219)	0.9171*** (0.3233)
3	-0.1212 (0.9265)	0.4922 (0.8687)	1.2820*** (0.4677)	1.2425*** (0.3766)
4	-0.3670 (1.1567)	-0.9122 (1.0760)	1.3170* (0.7690)	1.3175** (0.6536)
5 or more	2.2233** (1.0108)	2.0240** (0.9881)	1.8600*** (0.6451)	1.7075*** (0.5431)
Low complexity	45.5090*** (0.8196)	45.6698*** (0.7727)		
High complexity	33.6388*** (0.7868)	33.1813*** (0.7631)		
High impact	12.0703*** (0.5778)	12.5664*** (0.5674)		
Referendum	0.5675 (0.7972)		-1.4048* (0.7928)	
Mandatory referendum	1.3355 (0.8541)		-2.2992* (1.1895)	
Counterproposal	2.1870** (1.0416)		-2.3567** (0.9230)	
Postal voting	4.7761*** (0.9597)	4.7136*** (0.9469)	5.7535*** (0.4982)	5.7843*** (0.4915)
Socioeconomic variables	yes	yes	no	no
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	no	yes	no
Proposition-specific effects	no	yes	no	yes
R^2	0.238	0.246	0.541	0.790
Observations	264,450	264,450	7,080	7,080

Note: Ordinary least squares estimations. Average turnout amounts to 64.01 in the individual data set and 44.60 in the aggregated data set. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

Table A.7: Number of propositions and blank voting
Dependent variable: Ratio of blank votes [0/100] / [0-100]
Sample: Participants / full voting population, aggregated on cantonal level

	Postvote survey data		Administrative data	
	I	II	III	IV
Number of federal propositions				
1	-2.3371*** (0.5368)		-0.9862*** (0.2895)	
3	0.3455 (0.3701)		0.3168* (0.1694)	
4 or more	1.8599*** (0.4351)		1.0116*** (0.1684)	
Number of cantonal propositions				
1	0.0191 (0.2149)	0.0524 (0.1866)	0.2076*** (0.0622)	0.2103*** (0.0497)
2	-0.2876 (0.3182)	-0.2940 (0.3095)	0.1616** (0.0632)	0.2522*** (0.0490)
3	0.1673 (0.3945)	0.2411 (0.3449)	0.1328* (0.0773)	0.2005*** (0.0715)
4	-0.0755 (0.4135)	-0.1726 (0.3453)	0.3334*** (0.1232)	0.3594*** (0.1085)
5 or more	0.0530 (0.4124)	0.1000 (0.3619)	0.2391** (0.1098)	0.3311*** (0.0840)
Low complexity	-17.5288*** (1.1148)	-16.8010*** (1.0610)		
High complexity	-12.5274*** (0.9925)	-12.0622*** (0.9476)		
High impact	-4.9934*** (0.4219)	-4.5354*** (0.3859)		
Referendum	1.3866*** (0.4155)		1.0203*** (0.1926)	
Mandatory referendum	1.6429*** (0.5088)		1.5214*** (0.2526)	
Counterproposal	1.2013 (0.7853)		0.3753* (0.1985)	
Postal voting	-0.1819 (0.3558)	-0.1818 (0.3545)	0.0204 (0.0589)	0.0039 (0.0590)
Socioeconomic variables	yes	yes	no	no
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	no	yes	no
Proposition-specific effects	no	yes	no	yes
R^2	0.074	0.090	0.485	0.813
Observations	158,872	158,872	7,080	7,080

Note: Ordinary least squares estimations. Average ratio of blank votes amounts to 4.20 in the individual data set and 2.60 in the aggregated data set. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

Table A.8: Number of propositions and turnout without blank voting
Dependent variable: Turnout excluding blank votes [0/100] / [0-100]
Sample: Participants / full voting population, aggregated on cantonal level

	Postvote survey data		Administrative data	
	I	II	III	IV
Number of federal propositions				
1	1.9403 (2.6902)		1.1998 (4.1430)	
3	1.5990 (1.0456)		3.2121* (1.7147)	
4 or more	-1.5123 (1.3018)		-0.0430 (2.0676)	
Number of cantonal propositions				
1	0.8892 (0.5523)	0.7922 (0.4990)	0.8486** (0.3640)	0.7900** (0.3250)
2	0.6607 (0.7158)	0.1963 (0.7095)	1.1409*** (0.4138)	0.7787** (0.3050)
3	-0.2282 (0.8022)	0.3235 (0.7985)	1.2169*** (0.4582)	1.1418*** (0.3631)
4	-0.2042 (1.0095)	-0.7399 (0.9521)	1.0341 (0.7537)	1.0646* (0.6128)
5 or more	2.0704** (0.9543)	1.8466* (0.9458)	1.6996*** (0.6279)	1.5202*** (0.5172)
Low complexity	46.8180*** (0.7385)	46.7262*** (0.7051)		
High complexity	32.4891*** (0.7524)	31.9565*** (0.7347)		
High impact	14.3149*** (0.6127)	14.5294*** (0.6037)		
Referendum	-0.3267 (0.6911)		-1.7580** (0.8004)	
Mandatory referendum	0.2869 (0.7673)		-2.8435** (1.2092)	
Counterproposal	1.2883 (0.8768)		-2.9834*** (0.8977)	
Postal voting	4.6146*** (0.9424)	4.5674*** (0.9328)	5.5704*** (0.4792)	5.6115*** (0.4709)
Socioeconomic variables	yes	yes	no	no
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	no	yes	no
Proposition-specific effects	no	yes	no	yes
R^2	0.252	0.258	0.526	0.799
Observations	264,466	264,466	7,080	7,080

Note: Ordinary least squares estimations. Average turnout excluding blank votes amounts to 61.49 in the individual data set and 43.35 in the aggregated data set. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

Table A.9: Number of propositions and yes voting
Dependent variable: Ratio of yes votes [0/100] / [0-100]
Sample: Participants / full voting population, aggregated on cantonal level

	Postvote survey data		Administrative data	
	I	II	III	IV
Number of federal propositions				
1	4.5621 (4.8322)		-0.6610 (3.3319)	
3	-3.9480* (2.2742)		-3.1596* (1.6694)	
4 or more	4.8902* (2.8118)		3.1374 (2.3012)	
Number of cantonal propositions				
1	1.4262 (0.9848)	0.8968 (0.5805)	0.2454 (0.5328)	0.4682 (0.3008)
2	2.2636** (0.8708)	0.5493 (0.4856)	0.1029 (0.5299)	0.1252 (0.3694)
3	0.1644 (1.1882)	0.2963 (0.6033)	-0.6391 (0.5824)	0.0704 (0.3888)
4	-1.4621 (1.4418)	0.2205 (1.0181)	-2.7005*** (0.9184)	-1.0372 (0.6733)
5 or more	1.2006 (1.7051)	1.1157 (0.9761)	-0.4426 (1.0301)	0.6725 (0.6776)
Low complexity	9.0238*** (1.1783)	9.5261*** (1.0774)		
High complexity	2.5982** (1.0309)	3.9327*** (0.9378)		
High impact	11.0144*** (1.0909)	10.5169*** (1.0699)		
Referendum	16.0728*** (2.5192)		17.5628*** (2.1857)	
Mandatory referendum	30.0693*** (2.8596)		27.7127*** (2.5497)	
Counterproposal	24.6225*** (5.2384)		24.6444*** (4.5027)	
Postal voting	-0.6518 (0.8102)	-0.5320 (0.7880)	0.4119 (0.4760)	0.2735 (0.5072)
Socioeconomic variables	yes	yes	no	no
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	no	yes	no
Proposition-specific effects	no	yes	no	yes
R^2	0.099	0.172	0.451	0.847
Observations	158,872	158,872	7,080	7,080

Note: Ordinary least squares estimations. Average ratio of yes votes amounts to 47.29 in the individual data set and 48.10 in the aggregated data set. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

Table A.10: Number of propositions and support of right-wing party recommendations

Dependent variable: Percentage of votes that followed recommendations of Swiss People's Party [0/100] / [0-100]

Sample: Participants / full voting population, aggregated on cantonal level

	Postvote survey data		Administrative data	
	I	II	III	IV
Number of federal propositions				
1	6.4824 (5.6581)		5.6550 (3.6859)	
3	6.8138* (3.6724)		3.8684 (2.8297)	
4 or more	7.6463** (3.2162)		6.1440** (2.8606)	
Number of cantonal propositions				
1	-2.2833** (1.0490)	0.3507 (0.5824)	-0.5092 (0.4781)	0.4041 (0.3264)
2	-0.2491 (1.2246)	1.0472** (0.5092)	-0.2380 (0.6038)	0.2434 (0.3521)
3	-0.9809 (1.0921)	0.7772 (0.6620)	-0.1335 (0.6139)	0.5655 (0.4686)
4	-0.7045 (1.6165)	1.0953 (0.9423)	0.0297 (0.9909)	0.4238 (0.6453)
5 or more	-2.3631 (1.5426)	1.3066 (0.8791)	-0.9070 (0.7974)	0.2708 (0.5440)
Low complexity	11.6787*** (1.0817)	11.1985*** (1.2025)		
High complexity	6.5667*** (0.8308)	7.0637*** (0.9602)		
High impact	-2.7829** (1.3373)	-1.9599* (1.0153)		
Referendum	-6.1428** (3.0905)		-7.6596*** (2.3970)	
Mandatory referendum	-1.8210 (3.8213)		-2.7464 (2.7789)	
Counterproposal	-13.0585** (6.0220)		-11.9086*** (4.0377)	
Postal voting	-0.4561 (0.8629)	-0.3136 (0.8210)	-0.3078 (0.5508)	-0.5014 (0.5041)
Socioeconomic variables	yes	yes	no	no
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	no	yes	no
Proposition-specific effects	no	yes	no	yes
R^2	0.054	0.160	0.233	0.807
Observations	158,872	158,872	7,056	7,056

Note: Ordinary least squares estimations. Average ratio of votes according to recommendation of the Swiss People's Party amounts to 52.52 in the individual data set and 58.57 in the aggregated data set. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

Table A.11: Number of propositions and support of left-wing party recommendations

Dependent variable: Percentage of votes that followed recommendations of Social Democratic Party of Switzerland [0/100] / [0-100]

Sample: Participants / full voting population, aggregated on cantonal level

	Postvote survey data		Administrative data	
	I	II	III	IV
Number of federal propositions				
1	2.9002 (5.1032)		-1.0188 (4.5439)	
3	-5.2591 (3.2163)		-2.8174 (2.6932)	
4 or more	-10.1095*** (3.7200)		-4.9894 (3.3214)	
Number of cantonal propositions				
1	-1.3879 (0.9238)	-0.5392 (0.5570)	-0.6142 (0.5301)	-0.4532* (0.2573)
2	0.0152 (1.2063)	0.1920 (0.5058)	-0.7669 (0.6733)	-0.4196 (0.3664)
3	-1.2331 (1.1779)	-0.6466 (0.6100)	-0.7349 (0.6325)	-0.8855** (0.3572)
4	1.4637 (1.6431)	0.5410 (0.8747)	-1.9859** (0.9170)	-0.3077 (0.5507)
5 or more	1.3206 (1.8974)	-0.0364 (0.9818)	-1.0674 (1.0414)	0.0076 (0.4986)
Low complexity	10.8328*** (1.1850)	10.7167*** (0.9901)		
High complexity	5.4374*** (0.9365)	6.1343*** (0.8911)		
High impact	7.4728*** (1.3617)	6.9447*** (1.0949)		
Referendum	4.1177 (3.0153)		7.7688*** (2.5432)	
Mandatory referendum	13.4217*** (4.4751)		17.8619*** (2.7813)	
Counterproposal	16.5588*** (4.5896)		19.7673*** (4.2033)	
Postal voting	0.9001 (1.0011)	1.1763 (0.8908)	0.7873 (0.6164)	1.0024* (0.5656)
Socioeconomic variables	yes	yes	no	no
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	no	yes	no
Proposition-specific effects	no	yes	no	yes
R^2	0.064	0.208	0.290	0.868
Observations	158,872	158,872	6,648	6,648

Note: Ordinary least squares estimations. Average ratio of votes according to recommendation of the Social Democratic Party of Switzerland amounts to 50.87 in the individual data set and 50.80 in the aggregated data set. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

Table A.12: Number of propositions and support of government recommendations

Dependent variable: Percentage of votes that followed government recommendations [0/100] / [0-100]

Sample: Participants / full voting population, aggregated on cantonal level

	Postvote survey data		Administrative data	
	I	II	III	IV
Number of federal propositions				
1	2.4711 (4.6787)		1.1432 (3.8166)	
3	-2.4145 (3.1999)		-1.7578 (2.4405)	
4 or more	-2.5801 (3.3586)		2.9498 (2.5091)	
Number of cantonal propositions				
1	-1.1811 (0.9336)	1.1196** (0.5389)	-0.3860 (0.6098)	0.2780 (0.3560)
2	-0.2425 (1.0252)	0.8203 (0.5234)	-1.0183* (0.5870)	-0.3624 (0.4227)
3	-2.2125* (1.1780)	0.0602 (0.6794)	-1.0563 (0.6493)	-0.5107 (0.4785)
4	-2.5401* (1.5202)	0.6624 (0.8751)	-1.2601 (1.0966)	0.2362 (0.7115)
5 or more	-2.5883* (1.5463)	0.8331 (0.9528)	-1.5508 (0.9924)	0.1673 (0.7987)
Low complexity	14.0840*** (1.1097)	14.0059*** (1.0226)		
High complexity	5.6864*** (0.9947)	7.1304*** (0.9097)		
High impact	0.5544 (1.2098)	1.4394 (1.1189)		
Referendum	-6.4586** (2.6752)		-10.3418*** (2.0184)	
Mandatory referendum	6.4052*** (2.3079)		-1.7323 (2.3343)	
Counterproposal	2.9510 (5.1238)		-4.3696 (4.2544)	
Postal voting	-0.0814 (0.8335)	-0.3739 (0.7782)	0.5871 (0.5286)	0.3017 (0.5216)
Socioeconomic variables	yes	yes	no	no
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	no	yes	no
Proposition-specific effects	no	yes	no	yes
R^2	0.041	0.112	0.243	0.754
Observations	158,872	158,872	7,008	7,008

Note: Ordinary least squares estimations. Average ratio of votes according to government recommendation amounts to 59.77 in the individual data set and 60.96 in the aggregated data set. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

Table A.13: Number of propositions and habit formation
Dependent variables: Knowledge of proposition content, blank voting, and yes
voting [0/100]
Sample: Participants. Individual postvote survey data

	Knowledge	Blank	Yes
Number of federal propositions			
1	4.3423** (2.0585)	-2.2472*** (0.5370)	2.5735 (4.4725)
3	-0.5422 (1.3518)	0.3695 (0.3665)	-3.1112 (2.4127)
4 and more	-1.2808 (1.1774)	1.8545*** (0.4484)	5.9235** (2.9035)
Number of cantonal propositions			
1	0.1103 (0.4342)	0.0229 (0.2190)	1.3830 (0.9626)
2	-1.1907** (0.5409)	-0.2600 (0.3060)	2.1037** (0.8150)
3	-0.6724 (0.6279)	0.2123 (0.3637)	0.3286 (1.0716)
4	-2.2352*** (0.7022)	-0.0027 (0.3818)	-1.8397 (1.3463)
5 and more	-2.1736** (0.8908)	0.1143 (0.4017)	1.1515 (1.5628)
Number of federal propositions within last 12 months			
2-5	-3.1252* (1.5890)	0.4609 (0.7538)	-3.2067 (4.5400)
10-12	-1.0485 (1.6131)	0.2087 (0.4009)	8.0439*** (2.6663)
13 and more	6.2345*** (2.2173)	-0.2448 (0.6551)	3.5443 (4.0153)
Number of cantonal propositions within last 12 months			
0-1	-0.2880 (0.4990)	-0.3118 (0.3945)	1.6153** (0.7935)
4-5	-0.7462 (0.4606)	-0.3398 (0.3133)	0.9774 (0.7402)
6-7	-1.1354** (0.5046)	0.0949 (0.3848)	0.7233 (0.9512)
8-9	-0.6226 (0.6271)	0.0394 (0.3415)	0.7669 (1.0421)
10-11	-0.5867 (0.7302)	-0.2711 (0.4129)	0.4168 (1.6177)
12 and more	-0.0514 (0.6048)	0.0341 (0.4038)	2.1650* (1.2801)
Low complexity	22.1120*** (1.1832)	-17.5183*** (1.1155)	9.2459*** (1.1820)
High complexity	12.9089*** (0.8870)	-12.5264*** (0.9914)	2.7338*** (1.0348)
High impact	5.1183*** (0.4630)	-5.0015*** (0.4202)	10.8820*** (1.0958)
Referendum	-1.9706** (0.8559)	1.4160*** (0.4350)	15.6385*** (2.6164)
Mandatory referendum	-8.7682*** (1.7496)	1.7056*** (0.5287)	30.1528*** (3.0018)
Counter proposal	-8.8871*** (2.3200)	1.2424 (0.7971)	24.6665*** (5.0796)
Postal voting	-2.6462*** (0.6233)	-0.1634 (0.3761)	-0.7459 (0.8337)
Socio-economic variables	yes	yes	yes
Canton-specific effects	yes	yes	yes
Year-specific effects	yes	yes	yes
R^2	0.094	0.074	0.102
Observations	163,012	158,872	158,872

Notes: OLS estimations. Average knowledge on propositions of participants amounts to 0.868, average ratio of blank votes amounts to 0.0398 and average ratio of yes votes amounts to 0.486. Reference category for number of federal propositions is 2 (reference category for cantonal propositions is 0). Reference category for number of federal propositions within last 12 months is 6-9 (reference category for cantonal propositions is 2-4). Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: * .05 < p < .1, ** .01 < p < .05, *** p < .01.

Table A.14: Number of propositions and habit formation
Dependent variables: Knowledge of proposition content, blank voting, and yes
voting [0/100]
Sample: Participants. Individual postvote survey data

	Knowledge	Blank	Yes
Number of federal propositions			
1	5.2300** (2.1922)	-2.6437*** (0.6073)	2.0439 (5.0791)
3	-0.2519 (1.5110)	0.1999 (0.3679)	-4.4508* (2.4209)
4 or more	-1.5301 (1.2605)	1.9058*** (0.4502)	5.8761** (2.9467)
Number of cantonal propositions			
1	0.1167 (0.4058)	0.0507 (0.2161)	1.5160 (0.9313)
2	-1.3748** (0.5625)	-0.1914 (0.2999)	2.1645*** (0.8198)
3	-0.5862 (0.6338)	0.2233 (0.3609)	-0.0169 (1.1166)
4	-2.1108*** (0.6611)	-0.0292 (0.3755)	-1.8872 (1.3995)
5 or more	-2.7758*** (0.8605)	0.1419 (0.3844)	0.8089 (1.3316)
Number of federal propositions within last 12 months			
2-4	-2.9612* (1.6388)	0.7998 (0.9941)	-3.2022 (5.4272)
5-7	-1.5968 (1.8924)	0.4729 (0.9468)	-0.6591 (5.3538)
9-11	-1.1493 (2.1791)	1.2211 (1.1021)	3.8227 (5.0040)
12 or more	1.3194 (2.5220)	1.1507 (1.1025)	4.4287 (6.4031)
Number of cantonal propositions within last 12 months			
0	-0.4448 (0.8181)	0.7353** (0.3503)	0.2580 (1.3223)
1	-0.3302 (0.7747)	0.2350 (0.3717)	1.3261 (1.2336)
2	0.0690 (0.7937)	0.5139* (0.3022)	-1.6096 (1.1685)
3	-0.2247 (0.6831)	0.9632 (0.6058)	0.0379 (1.2184)
5-7	-1.5762** (0.7707)	0.8455*** (0.3207)	0.0904 (1.1939)
8-11	-0.9028 (0.7179)	0.6746** (0.2945)	-0.0807 (1.2136)
12 or more	-0.1963 (0.8541)	0.7946* (0.4081)	1.8516 (1.5396)
Low complexity	22.2177*** (1.1797)	-17.5160*** (1.1140)	9.0260*** (1.1761)
High complexity	12.9165*** (0.8895)	-12.5147*** (0.9905)	2.6071** (1.0221)
High impact	5.0407*** (0.4683)	-4.9902*** (0.4246)	11.0355*** (1.0795)
Referendum	-2.1409** (0.8410)	1.4145*** (0.4343)	15.8364*** (2.6735)
Mandatory referendum	-8.3735*** (1.7823)	1.7326*** (0.5219)	30.1502*** (3.1130)
Counterproposal	-8.6211*** (2.3862)	1.2438 (0.7565)	24.6456*** (5.0632)
Postal voting	-2.6957*** (0.6309)	-0.1681 (0.3458)	-0.7730 (0.8142)
Socioeconomic variables	yes	yes	yes
Canton-specific effects	yes	yes	yes
Year-specific effects	yes	yes	yes
R^2	0.093	0.074	0.100
Observations	163,012	158,872	158,872

Note: Ordinary least squares estimations. Average knowledge of proposition content by participants amounts to 86.92, average ratio of blank votes amounts to 4.20, and average ratio of yes votes amounts to 47.29. Reference category for number of federal propositions is 2. Reference category for number of federal propositions within last 12 months is 8 (median of distribution). Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: *.05 < p < .1, **.01 < p < .05, *** p < .01.

Table A.15: Frequencies of observed number of cantonal and federal propositions

		number of federal propositions								Total
		1	2	3	4	5	6	7	9	
number of cantonal propositions	0	200	756	1,116	476	615	264	84	108	3,619
	1	72	314	468	204	230	54	49	54	1,445
	2	53	214	315	156	180	54	14	27	1,013
	3	37	86	177	60	105	30	21	18	534
	4	13	66	69	32	35	18	0	9	242
	5	3	22	36	8	20	6	0	0	95
	6	2	24	24	16	5	6	0	0	77
	7	3	0	15	4	0	0	0	0	22
	8	0	2	3	4	5	0	0	0	14
	9	1	4	3	0	0	0	0	0	8
	11	0	0	3	0	0	0	0	0	3
	12	0	0	3	0	0	0	0	0	3
	17	0	0	0	0	5	0	0	0	5
	Total	384	1,488	2,232	960	1,200	432	168	216	7,080

Table A.16: Number of propositions and knowledge.

Robustness-check: Main specification III including canton-year fixed effects

Dependent variables: Reproducing proposition content (column 1 and 3) / title (column 2 and 4)

Sample: Participants (column 1 and 2) / all respondents (column 3 and 4)

	table 1 (III)	table A3 (III)	table A4 (III)	table A5 (III)
Number of federal propositions				
1	5.9057*** (2.0772)	14.1186*** (3.1211)	5.7998** (2.8239)	15.7569*** (3.3462)
3	-0.1153 (1.5215)	-3.8806** (1.8159)	0.1137 (1.9083)	-2.5644 (2.0952)
4 and more	-1.9797 (1.3491)	-10.6953*** (1.9233)	-1.2672 (1.7879)	-8.9301*** (2.3160)
Number of cantonal propositions				
1	0.6045 (0.6540)	-1.5514 (0.9441)	0.4212 (0.8228)	-1.0319 (0.8342)
2	-0.9154 (0.7361)	-4.0261*** (0.8369)	-0.8346 (0.7963)	-3.2098*** (0.8221)
3	-0.3669 (0.7789)	-4.4462*** (1.3362)	-0.1424 (0.9692)	-3.5924*** (1.1465)
4	-2.4718*** (0.7230)	-4.6132*** (1.5247)	-3.5875*** (1.0036)	-2.8042 (1.7099)
5 and more	-1.9246* (1.0936)	-5.3636*** (1.6592)	-1.5177 (1.3341)	-4.6332*** (1.5735)
Low complexity	22.2970*** (1.1635)	13.3176*** (0.9951)	34.1868*** (0.9878)	28.7809*** (1.5106)
High complexity	12.9369*** (0.8592)	8.5980*** (0.8524)	20.7543*** (0.7363)	20.0458*** (1.1967)
High impact	5.0323*** (0.4729)	5.7124*** (0.6547)	8.3760*** (0.5075)	8.9020*** (0.6053)
Referendum	-1.8149** (0.8552)	-0.0435 (1.9116)	-1.5864 (1.1213)	-0.8499 (1.8297)
Mandatory referendum	-8.0513*** (1.6843)	-5.5069** (2.1080)	-10.2310*** (1.8851)	-5.7713*** (2.0636)
Counter proposal	-8.4504*** (2.3736)	-6.7666** (3.1099)	-9.8478*** (2.3865)	-7.8748*** (2.7850)
Postal voting	-5.6448*** (1.8484)	-4.9611** (1.9927)	-10.3346*** (2.5357)	-5.3641** (2.6273)
Socio-economic variables	yes	yes	yes	yes
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	yes	yes	yes
Canton-year fe	yes	yes	yes	yes
R^2	0.102	0.148	0.196	0.194
Observations	163,012	168,524	251,317	264,437

Notes: OLS estimations. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: * $.05 < p < .1$, ** $.01 < p < .05$, *** $p < .01$.

Table A.17: Number of propositions and voting behavior
Robustness-check: Main specification I including canton-year fixed effects
Dependent variable: Turnout / Blank / Turnout without blank / Yes votes
Sample: VoxIt Participants

	table A6 (I)	table A7 (I)	table A8 (I)	table A9 (I)
Number of federal propositions				
1	0.3082 (2.6690)	-2.3622*** (0.5327)	1.8848 (2.6563)	4.6810 (4.8160)
3	1.8299 (1.1244)	0.3424 (0.3680)	1.6333 (1.0262)	-4.0915* (2.2745)
4 and more	-0.5416 (1.3758)	1.8687*** (0.4384)	-1.5371 (1.2886)	4.7988* (2.7696)
Number of cantonal propositions				
1	0.5409 (0.7040)	0.2413 (0.2037)	0.4001 (0.6697)	1.8665 (1.3427)
2	0.9836 (0.7004)	-0.1032 (0.3155)	0.9992 (0.6926)	3.1236** (1.2889)
3	-0.3397 (0.8420)	0.0289 (0.6577)	-0.3274 (0.7462)	0.3329 (1.7360)
4	0.3244 (1.0793)	-0.0785 (0.4462)	0.4754 (0.9893)	-2.5854 (1.9422)
5 and more	1.8100* (1.0881)	0.0045 (0.4299)	1.7518* (0.9951)	0.9732 (2.2117)
Low complexity	45.2851*** (0.8346)	-17.4868*** (1.0903)	46.6185*** (0.7376)	8.8493*** (1.1737)
High complexity	33.5226*** (0.7794)	-12.4634*** (0.9641)	32.3846*** (0.7268)	2.3584** (1.0328)
High impact	12.0474*** (0.5593)	-4.9778*** (0.4047)	14.2913*** (0.5953)	11.0303*** (1.0819)
Referendum	0.5417 (0.7841)	1.3665*** (0.4154)	-0.3408 (0.6757)	16.0791*** (2.5263)
Mandatory referendum	1.3448 (0.8537)	1.6648*** (0.5103)	0.2855 (0.7637)	30.1229*** (2.8753)
Counter proposal	2.1707** (1.0389)	1.2168 (0.7749)	1.2462 (0.8824)	24.6570*** (5.2278)
Postal voting	-3.9176** (1.7567)	1.3423* (0.7897)	-4.4315*** (1.6121)	-7.6025 (6.1582)
Socio-economic variables	yes	yes	yes	yes
Canton-specific effects	yes	yes	yes	yes
Year-specific effects	yes	yes	yes	yes
Canton-year fe	yes	yes	yes	yes
R^2	0.250	0.083	0.263	0.109
Observations	264,450	158,872	264,466	158,872

Notes: OLS estimations. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: * $.05 < p < .1$, ** $.01 < p < .05$, *** $p < .01$.

Table A.18: Number of propositions and support for political wing parties
Robustness-check: Main specification I including canton-year fixed effects
Dependent variable: Vote in line with SVP / SP / Government
Sample: VoxIt Participants

	table A10 (I)	table A11 (I)	table A12 (I)
Number of federal propositions			
1	6.3747 (5.6734)	2.9843 (5.0473)	2.5942 (4.5945)
3	6.8682* (3.6832)	-5.2965 (3.1914)	-2.4557 (3.1667)
4 and more	7.6311** (3.1813)	-10.2715*** (3.6870)	-2.6690 (3.3249)
Number of cantonal propositions			
1	-3.7333** (1.4355)	-2.0112 (1.2238)	-1.9445 (1.2503)
2	-1.6160 (1.7370)	0.0975 (1.7256)	-0.5842 (1.3788)
3	-2.6596* (1.5433)	-1.2052 (1.7888)	-3.7967** (1.6257)
4	-0.7855 (1.9784)	1.1562 (2.1944)	-3.7787* (1.9454)
5 and more	-3.8236 (2.3369)	1.4417 (2.7676)	-4.1168** (2.0450)
Low complexity	11.6654*** (1.1146)	10.6821*** (1.1885)	14.0480*** (1.1038)
High complexity	6.5341*** (0.8585)	5.2621*** (0.9410)	5.6494*** (0.9961)
High impact	-2.7689** (1.3349)	7.4090*** (1.3592)	0.5199 (1.1849)
Referendum	-6.0141* (3.1041)	4.1095 (3.0381)	-6.4010** (2.6830)
Mandatory referendum	-1.7447 (3.8364)	13.3459*** (4.4913)	6.4504*** (2.2750)
Counter proposal	-12.8662** (6.0507)	16.5215*** (4.5836)	3.0123 (5.0936)
Postal voting	2.3177 (4.1932)	-10.7642 (7.6510)	2.2892 (4.9327)
Socio-economic variables	yes	yes	yes
Canton-specific effects	yes	yes	yes
Year-specific effects	yes	yes	yes
Canton-year fe	yes	yes	yes
R^2	0.063	0.073	0.053
Observations	158,872	158,872	158,872

Notes: OLS estimations. Reference category for number of federal propositions is 2. Standard errors in parentheses are adjusted for clustering at the level of polling days. Significance levels: * $.05 < p < .1$, ** $.01 < p < .05$, *** $p < .01$.

Table A.19: Short-term effects of federal votes on political attitudes
Dependent variables: interest in politics, satisfaction with democracy and perceived influence on politics [0/10].
Sample: All SHP respondents

	interest in politics	satisfaction with democracy	influence on politics
4 weeks before	0.0234 (0.0218)	0.0121 (0.0242)	0.0574* (0.0345)
3 weeks before	0.0474** (0.0209)	-0.0156 (0.0239)	0.0006 (0.0341)
2 weeks before	0.0381* (0.0209)	0.0010 (0.0236)	0.0794** (0.0337)
1 week before	0.0614*** (0.0210)	-0.0082 (0.0235)	0.0800** (0.0335)
1 week later	0.0975*** (0.0207)	0.0344 (0.0231)	0.0807** (0.0330)
2 weeks later	0.0620*** (0.0212)	-0.0045 (0.0238)	0.0962*** (0.0339)
3 weeks later	0.0717*** (0.0217)	0.0216 (0.0246)	0.0134 (0.0352)
4 weeks later	0.0443* (0.0238)	0.0250 (0.0275)	0.0387 (0.0392)
Constant	5.0985*** (0.0184)	5.8480*** (0.0177)	3.2132*** (0.0252)
Individual-specific effects	yes	yes	yes
Year-specific effects	yes	yes	yes
R^2	0.017	0.008	0.010
Observations	114,009	84,291	84,782

Notes: OLS estimations. Average interest in politics amounts to 5.49, average satisfaction with democracy amounts to 6.07 and average perceived influence on politics amounts to 3.70. Reference are all weeks outside of this time frame. Significance levels: * $.05 < p < .1$, ** $.01 < p < .05$, *** $p < .01$.