

# Voting in the Echo Chamber? Patterns of Political Online Activities and Voting Behavior in Switzerland

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## Abstract

Understanding the political consequences of digitalization is among the key challenges for modern societies. A pressing issue is the question whether political online activities make individuals more close-minded and less willing to consider alternative arguments. We examine this question using a peculiarity of the Swiss electoral system – the possibility to split votes – as a behavioral outcome measure. We argue that political online activities might either make individuals less likely to split votes (“echo chamber”-argument) or more likely to spread their votes across parties (“deliberation”-argument). Empirically, we use data from the Swiss Election Study Selects 2019 to test these arguments. The results of a hierarchical logistic regression analysis do not support any of the conflicting arguments. Yet, additional analyses suggest that political interest moderates the relationship between online activities and vote splitting: political interest makes online activists more likely to split votes.

## Zusammenfassung

Eine grosse Herausforderung für moderne Gesellschaften besteht darin, die politischen Folgen der Digitalisierung zu verstehen. Zentral ist hierbei die Frage, ob online ausgeübte politische Aktivitäten dazu führen, dass Menschen weniger offen für andere Meinungen und alternative politische Argumente sind. Wir nutzen eine

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Besonderheit des Schweizer Wahlsystems, um diese Frage zu untersuchen: die Möglichkeit des Stimmensplittings („Panaschieren“). Somit können wir untersuchen, ob politische Aktivitäten im Netz und das Verhalten an der Wahlurne zusammenhängen. Wir argumentieren, dass online ausgeübte politische Aktivitäten entweder die Wahrscheinlichkeit des Stimmensplittings verringern („Echokammer“-Argument) oder erhöhen („Deliberation“-Argument) können. Empirisch überprüfen wir diese Argumente anhand der Daten der Schweizer Wahlstudie Selects 2019. Die Ergebnisse einer hierarchischen logistischen Regressionsanalyse stützen keines der gegensätzlichen Argumente. Zusätzliche Analysen deuten jedoch darauf hin, dass politisches Interesse die Beziehung zwischen online ausgeübten politischen Aktivitäten und Stimmensplitting moderiert: Wer politisch interessiert und gleichzeitig online aktiv ist, ist eher geneigt, Stimmen zu splitten.

### Résumé

Comprendre les conséquences politiques de la numérisation est un défi important pour les sociétés modernes. Une question urgente est de savoir si les activités politiques en ligne rendent les gens moins ouverts à des opinions et arguments politiques divergents. Nous examinons cette question en nous appuyant sur une particularité du système électoral suisse - le panachage, c'est-à-dire la répartition des voix entre plusieurs partis. Nous soutenons que l'activisme politique en ligne peut soit rendre les gens moins enclins à répartir leurs voix (argument de la « chambre d'écho »), soit plus enclins au panachage (argument de la « délibération »). Les résultats d'une analyse statistique basée sur les données de l'étude électorale suisse Selects 2019 ne corroborent aucun des deux arguments. Néanmoins, les analyses suggèrent que l'intérêt politique modère le lien entre l'activité en ligne et le panachage.

### KEYWORDS

Internet, online activism, political behavior, social media, vote splitting

## INTRODUCTION

Within the past years, social media and the Internet more generally have become an increasingly relevant source of political information and an important arena for political activities (Shin & Thorson, 2017). While almost everyone makes use of the Internet for everyday matters on a daily basis, it has also overtaken other media as source for political information (Latzner et al., 2020). Particularly during election campaigns, voters use social media and online platforms to gain information about parties and candidates and to express their own political positions. It is argued that a medium “that provides the public with the information it needs quicker, cheaper, or in a more convenient form is likely [...] to change patterns of behavior” (Tolbert & McNeal, 2003: 175). In times of debates about increasing polarization, it is an important question what these behavioral changes induced by the increasing relevance of the Internet and social media look like and whether they strengthen or rather undermine democratic processes. More precisely, how do online activities relate to political attitudes and behavior? Do political online activities lead to echo chambers that create closed political mindsets and ultimately increase opinion polarization? Are online activists no longer open to considering alternative political standpoints, to “hear the other side”? Or do political online activities strengthen deliberation and the openness to alternative political viewpoints? Finally, how does this all play out in political behavior at the ballot box? We address these issues and open questions by studying the link between political online activities and vote splitting in the Swiss national elections 2019.

If online activities increased voters’ attitudinal segregation but also the segregation between those who consume news and information online and those who do not, this would be a serious democratic concern (Flaxman et al., 2016). Knowing, processing, and deliberating divergent political views can be considered a core element of liberal democracy (Downs, 1957; Huckfeldt et al., 2004; Mutz, 2006). Accordingly, the question of how citizens build their opinion and in how far their selection of specific, maybe biased, information affects opinion formation, has a long history in electoral research (e.g., Festinger, 1957; Fischer et al., 2005; Zaller, 1992). While the increase in online news was then expected to encourage the creation of echo chambers or filter bubbles, these fears have accentuated with the recent shift towards social media (Allcott & Gentzkow, 2017). On the contrary, there is hope that social media and online platforms will make opposing political arguments more accessible (Garrett et al., 2013; Shaw & Benkler, 2012). This – so the assumption – could support deliberation and overcome political divides. Even though numerous studies have asked whether the use of the Internet and social media has changed citizens’ media diet and opinion formation for the worse or the better, the existing knowledge is still inconclusive (Dubois & Blank, 2018).

Against this background, our study goes beyond previous research in four important ways. First, while many articles focus on attitudinal consequences, we study the behavioral consequences at the ballot box. Considering a peculiarity of the Swiss electoral system, we study whether voters who actively engage with politics online are more or less likely to split their votes across different parties. We use this unique factor of the Swiss electoral system (Selb & Lutz, 2015), which can be seen as a maximum variant of preferential voting (Lutz, 2011), as a novel behavioral measure. While a voter may split votes for various reasons, e.g., strategically, because she is undecided between two parties or because she knows and likes specific personalities from different parties, we expect the likelihood of vote splitting to also be related to a voter’s degree of openness towards various political positions and parties. In this vein, a voter wrapped up in his preferred party’s echo chamber will very likely *not* cast a vote for another party. Conversely, a voter who

has been exposed to various arguments and positions is more likely to perceive several parties or at least single candidates from different parties as eligible and, thus, to consider vote splitting. Second, most of the existing evidence stems from the United States and Great Britain. Due to their majoritarian electoral systems, these societies are more prone to polarization. Thus, evidence from Switzerland as the prototype of consensus democracy will indicate to what extent earlier findings on the political consequences of digitalization can be generalized across different political contexts. Third, previous studies have typically focused on specific online platforms like Facebook or Twitter (Bakshy et al., 2015; Barberá et al., 2015; Blank, 2017; Himelboim et al., 2013). These might vary concerning their degree of polarization and the extent to which they contribute to the creation of echo chambers. Moreover, this supply-side perspective neglects that most individuals engage with and receive information from various sources (Dubois & Blank, 2018). Focusing on the online engagement of individual voters independently from specific platforms enables us to receive a more general measurement of political online activities. Lastly, the phenomenon of splitting one's vote is an under-researched topic in the Swiss case. From a comparative perspective, the issue has been addressed distinguishing between horizontal (i.e., voting for different parties when several equivalent offices are contested) and vertical (i.e., voting for different parties at the, e.g., regional and national level) vote splitting (Burden & Helmke, 2009).<sup>1</sup> The Swiss variant of vote splitting among different parties within elections to the same representative body, i.e., the lower chamber of the national parliament, has only been discussed from an institutional and descriptive perspective (Bühlmann et al., 2016; Linder & Mueller, 2017). To the best of our knowledge, no study exists examining the individual determinants of vote splitting (in the Swiss context).<sup>2</sup> Hence, we will also present important evidence on the determinants of vote splitting in Switzerland.

To assess the link between online activities and vote splitting, we use data from the panel module of the Swiss Election Study Selects 2019. It includes a comprehensive measure of respondents' online activities (e.g., discussing politics online, sharing and commenting on political information), which enables us to identify political online activists.<sup>3</sup> Moreover, the data set includes an individual measure of vote splitting across parties and political camps. This measure will serve as the dependent variable. We thereby assume that vote splitting across parties and political camps is less likely for voters with polarized opinions and a closed mindset. If political online activists and those who do not engage in political online activities were systematically different in their likelihood to split their votes, this could be seen as an indication that online activities strengthen opinion polarization.

Our findings do not support this general conclusion. There is no overall relationship between political online activities and vote splitting in Switzerland. Yet, this overall non-finding covers a group-specific pattern driven by voters' level of political interest. Whereas political online activities relate to a significantly lower likelihood to split votes among voters with a low general interest in politics, among the political interested, online engagement is positively associated with vote splitting.

<sup>1</sup>Additionally, for mixed electoral systems, like the German electoral system, the strategic aspects of ticket splitting are extensively discussed in the literature (see e.g., Blais & Degan, 2019; Gschwend, 2007; Herrmann & Pappi, 2008). In the Swiss consociational democracy with its over-sized government, strategic considerations are less likely to be a reason for vote splitting.

<sup>2</sup>As an exception, the study by Ladner et al. (2012) may be mentioned. They find that the use of the Swiss Vote Advice Application Smartvote increases the likelihood that a voter splits votes.

<sup>3</sup>"Political online activists" are in our case individuals who carry out a political activity, like posting or sharing information, online. The term "activists" does not refer to activists in social movements in our article.

## THEORETICAL BACKGROUND

In this section, we present our theoretical considerations arguing that political online activists differ in their likelihood to choose candidates from different party lists (“panaschieren”) compared to voters who do not actively engage with politics online. In the following, we focus on two mechanisms that could explain such a difference: First and related to the literature on preferential voting (see, e.g., Spierings & Jacobs, 2014), the difference in the likelihood of choosing candidates from different party lists could be the result of varying campaign effects for those who engage with political information online. Second, political online activists could behave differently in elections because they *are* different, namely concerning their political resources and attitudes. This second perspective is particularly relevant because we define political online activists as individuals who actively engage with political information online (“online activists”). Thus, passively consuming political information during the campaign is not sufficient. Rather, we are interested in those individuals that share, post or comment on political content. Therefore, we integrate arguments and findings from the literature on campaign effects with those on online activism. In the following, we elaborate on these arguments.

### Online and offline campaign effects compared

The role of political campaigns on electoral outcomes has been an intensively studied issue in electoral research (Rady & Johnston, 2006; Schmitt-Beck & Farrell, 2002). Campaigns are supposed to influence voters in mainly two ways (Brady et al., 2006; Dermont & Stadelmann-Steffen, 2018; Holbrook & McClurg, 2005): First, a campaign can unfold a persuasive or information effect, i.e., voters receive new information on the candidates or parties, based on which voters form and potentially change their opinion. Second, campaigns can have a mobilizing effect, e.g., by sensitizing voters for the elections and the importance to cast a vote (for their preferred party). We argue that both mechanisms can differ depending on whether or not voters are exposed mainly to online campaigns and engage with political information online during a campaign.<sup>4</sup>

### Persuasive effects

Against the background of the growing importance of the Internet, the persuasive effect of online communication and information has received increased scholarly (and public) attention over the last decades. In this context, some scholars have warned early on that, in an online context, exposure to news and political information will strongly depend on ideology-based selectivity and, thus, lead to a confirmation bias where citizens only consume information that is congruent with their initial view (Galston, 2003; Sunstein, 2001). Hence, this point of view is related to the expectation that an online environment would strengthen previously identified structural and motivational mechanisms leading to selective exposure and motivated reasoning (Huckfeldt et al., 2004; Taber & Lodge, 2006).

Moreover, the spread of social media in recent years may have further increased the relevance of selective exposure and echo chambers. One reason is the way individuals receive

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<sup>4</sup>Varying online and offline campaign effects could also relate to the “supply-side” of campaign activities, namely how parties use, e.g., social media to contact voters and provide them with partisan information (Aldrich et al., 2016; Fowler et al., 2021). In the present study and due to our focus on voters’ behavior, we concentrate on the “demand-side”, i.e., how voters use and react to online information. We discuss supply-side aspects where they are directly relevant for the demand-side argumentation.

and engage with information. While at the beginning of the Internet era, individuals still needed to actively seek information online, in times of social media, information is literally brought to them – and it is strongly pre-selected. Several authors emphasize that news consumption strongly depends on what friends like and share, but also on the content individuals see based on algorithms (Bakshy et al., 2015). In contrast, reading discrepant information means that this content needs to be searched for explicitly, something that only a minority chooses to do (Bakshy et al., 2015). The latter becomes especially unlikely, given that individuals might often not be aware that they are in an echo chamber (Gillani et al., 2018). Furthermore, the social media structure is very different from previous (online) media technologies, mostly because biased content can much more easily spread and, thus, few persons may reach and influence a much broader partisan audience (Allcott & Gentzkow, 2017). While it has been argued that fact-checking online could be an effective tool to reduce such misinformation and to increase political knowledge (Fridkin et al., 2015; Wood & Porter, 2019), in a real-world scenario, this may be of little help, since exposure to fact-checking is likely to be biased as well. Shin and Thorson (2017), in this context, show that “partisan selective sharing” by a small but highly active group of Twitter users has the potential to further polarize the online audience and even reduce individual trust in fact-checking.

However, the idea that increasing online information is associated with stronger selective exposure is not uncontested. Some authors point to the opportunities of online environments to foster deliberation. In particular, it is argued that the supply of (diverse) information – both congruent and counter-attitudinal – is just much larger in an online context (Dubois & Blank, 2018: 730), which could facilitate cross-cutting dialog (Shaw & Benkler, 2012), a core element of a well-functioning liberal democracy (Huckfeldt et al., 2004). In any case, according to this strand of literature, the greater choice in online information does not necessarily lead to more selective exposure but, conversely, it could be assumed that exposure to pro- and counter-attitudinal information is positively correlated (Garrett et al., 2013), i.e., is larger in an online context both concerning pro- and counter-attitudinal information. For the US context, Garrett and co-authors (2013) indeed find no evidence that the digital information environment at the beginning of the millennium has led to a “turn towards avoidance”, but rather that those individuals who consume explicit one-sided information also tend to look out for discrepant information.

## Mobilization effects

Campaigns can not only influence election outcomes by affecting citizens’ opinion formation, but also by mobilizing voters, i.e., motivating them to actually cast a vote for their preferred party (Holbrook & McClurg, 2005). When it comes to the question of whether and how online mobilization differs from traditional offline activities, one of the most prominent expectations is that the Internet and, more recently, social media offer parties and candidates more personalized and cost-effective ways to engage with voters (Aldrich et al., 2016).

However, evidence on the scope and effectiveness of such online mobilization is mixed. Some authors emphasize that personal contact, e.g., door-to-door mobilization, is the “gold standard” to reach and mobilize voters, with online mobilization by parties reaching a smaller audience than traditional offline methods (Aldrich et al., 2016). Conversely, others argue that due to low costs, online mobilization may be broader in scope (Vaccari, 2017). Moreover, the comparative study by Magalhães et al. (2020) suggests that online mobilization is effective, i.e., increases voter turnout (Tolbert & McNeal, 2003). Interestingly, however, the boost effect is

greatest in voters who have been mobilized both online *and* offline. This supports the notion by Vaccari (2017) that online mobilization does not happen in a vacuum. In particular, online mobilization will make less of a difference in a context where citizens are already strongly engaged.

## Characteristics of political online activists

While the literature on campaign effects discussed above mainly focuses on individuals who engage online with politics more broadly, in this article we focus on those individuals within this group who assume a more active role. Hence, we also have to consider that these political online activists might just be a different group of people with different participatory resources and potentially even attitudes compared to non-activists.

Several studies analyze the determinants of online participation (Anduiza et al., 2010; Best & Krueger, 2005; Feezell, 2016) and mobilization (Krueger, 2006) and find that traditional resources for political participation like education, income, or age are not directly correlated with online participation and mobilization. Yet, these classical determinants of participation are related to political interest, Internet access, and Internet skills, which are in turn strong predictors of online activities. While these findings do not nourish the hope of those who expected that online mobilization could reduce participatory inequalities compared to traditional mobilization activities (Vaccari, 2017), they do suggest that online political activities might require somewhat different skills than offline activities, not least of course because the former are computer-based (Anduiza et al., 2010: 364).

Related, another strand of research has focused more strongly on attitudinal attributes that make online engagement more likely. In this vein, Kaye and Johnson (2002) document that political trust, interest in politics, political efficacy, electoral participation but also partisanship are positively related to using the Internet to search for information. Swigger (2013) concludes that online activities and attitudes towards basic democratic values are positively correlated in younger cohorts. While these studies are not conclusive on whether Internet use is the reason for these differential attitudes or rather a “symptom” of sharing according attitudes, they document that voters engaged online are different not only concerning the political information they receive or how they are reached by campaign activities but also related to more fundamental democratic values.

## Political online activities and vote splitting

What the discussion has shown so far is that voters who engage with political campaigns online and their “offline counterparts” may be affected by varying campaign effects, namely online activists may be exposed to stronger and more homogeneous persuasion for one particular view and with more personalized mobilization. Moreover, they may be involved in more personalized campaign activities by parties and candidates. Furthermore, the two groups may also vary *ex-ante*, i.e., have different political skills and attitudes that make them more (or less) likely to be active online. However, it is yet another question whether and how these differences actually have electoral consequences, i.e., lead to different electoral preferences and, eventually, behavior. For example, Strandberg (2013) concludes for the Finnish context that social media use in the campaign was low compared to more traditional channels, and its impact on voting even lower.

We argue that vote splitting is a suitable phenomenon to investigate the electoral consequences of political online activities. In Switzerland, for the elections to the lower chamber of

the national parliament, which is elected based on a proportional electoral rule, voters can adapt their electoral (party) lists in two ways.<sup>5</sup> They can choose to cast one or two votes for the same candidate on a list, and they can put candidates from different political parties on their electoral list. The latter can be considered a variant of concurrent, horizontal vote splitting (Burden & Helmke, 2009). We argue that vote splitting can be conceived as a proxy for political open-mindedness because it captures the willingness of voters to split their vote among candidates from different parties. While voters may do so for ideological or candidate-related reasons, in any case, vote splitting demonstrates their willingness to deprive their preferred party of individual votes. We proceed with applying the two mechanisms of online activities elaborated above to formulate hypotheses on the varying likelihood of vote splitting among voters who engage and voters who do not engage in political online activities.

First, summarizing the literature on news consumption and engagement with political information in a digital and, most importantly, social media world, there are reasons to believe that persuasion effects are likely to occur when individuals engage in political activities online. The political information individuals receive and consume online can be expected to be more homogeneous and more partisan than information people receive via more traditional news channels like newspapers, TV, or radio. One-sided and congruent information has been shown to have a stronger persuasive impact (Chong & Druckman, 2007; Matthes, 2012). If online activists are more likely to engage with such homogeneous information, this may lead to a stronger conviction that the preferred party's position is the only "true" one. As a result, they should be less likely to split votes among different parties.

Second, we argue that next to persuasion effects, mobilization effects via social media and online platforms might also play a role in the Swiss context. In the Swiss electoral system, mobilization is key in various respects. Parties have to make sure that voters cast their ballots in a first step and that they concentrate their votes on the party's own candidates in a second step. Additionally, the possibilities to split votes across parties and concentrate votes on single candidates incentivizes candidates to launch personalized campaigns. These personalized features of the Swiss electoral system are important with regard to online mobilization effects. Hitherto, documented evidence for online mobilization effects mainly stems from the United States and Great Britain, which might be related to the majoritarian electoral systems in these countries and the focus on single candidates in according elections (Aldrich et al., 2016). We argue that these effects are also likely to occur in Switzerland because of the personalized features of the electoral system. Candidates have an interest in establishing personal links and/or making themselves visible beyond their party's general campaign activities to increase their chances to gain some votes beyond their own party base (Selb & Lutz, 2015; Tresch et al., 2020: 53). Using online tools and channels to do so seems particularly attractive since these are much cheaper than traditional offline campaigning (Magalhães et al., 2020; Vaccari, 2017). As a result, we expect online activists to be more strongly mobilized from and for candidates of their preferred party through personalized, visible online activities ("echo chamber"-argument).

Hence, applied to the case of vote splitting in the Swiss national elections to the lower chamber of parliament, both campaign mechanisms can be used to formulate the following hypothesis:

*H1: Political online activists are less likely to split their vote among candidates from different parties.*

However, based on previous research on persuasive campaign effects, we can formulate a contrasting expectation as well. As discussed above, generally, the internet offers a much larger

<sup>5</sup>Note that voters' opportunities to actually adapt their electoral list depend on the number of seats their home canton has in the national parliament (i.e., in the lower chamber). We will account for this in our empirical analysis.

supply of diverse information (Dubois & Blank, 2018: 730), and thus facilitates exposure to pro- and counter-attitudinal information (Garrett et al., 2013). Moreover, many opportunities exist for cross-cutting dialog (Shaw & Benkler, 2012), for example for exchanging with people that one would not “meet” in the offline world. Based on this view, it can, thus, be hypothesized that vote splitting is more likely if voters are engaged online. This argumentation seems to be particularly realistic in view of the literature on the characteristics of online activists. Given that online participation is positively correlated with specific (digital) skills as well as higher political interest, political efficacy, and more liberal democratic values (Kaye & Johnson, 2002; Swigger, 2013), it can be assumed that online activists are particularly likely to use the opportunities provided by the internet and, eventually, to choose candidates from different party lists (“deliberation”-argument).

*H2: Political online activists are more likely to split their vote among candidates from different parties.*

Finally, the group differences between people who engage in political online activities and their “analog” counterparts raise the question of whether political attitudes and predispositions might affect the way citizens engage in political activities and for what purpose. Thus, attitudes and predispositions might moderate the relationship between political online engagement and vote splitting. Two different aspects of a person’s political stance need to be distinguished. On the one hand, political interest can be expected to affect the degree to which individuals might enjoy the possibility to engage with different political opinions, i.e., benefit from the “high-choice media environment” (Dubois & Blank, 2018: 731) the Internet offers. Dubois and Blank (2018) indeed show that political interest decreases Internet users’ likelihood to end up in an echo chamber. On the other hand, the ideological position may involve a contrasting mechanism. For party supporters, online activities might mainly serve the purpose of campaigning for their party. Additionally, strong partisans are known to be more likely to engage in motivated reasoning (Bartels, 2000; Mutz, 2007). Citizens with extreme ideologies might have a higher possibility to follow specific sites and blogs that strengthen their preexisting viewpoints.

Summarizing, we assume that the relationship between online activities and vote splitting is contingent on political factors:

*H3a: The likelihood that political online activities are positively related to vote splitting increases with higher levels of political interest.*

*H3b: The likelihood that political online activities are negatively related to vote splitting increases with the extremity of political ideology.*

*H3c: The likelihood that political online activities are negatively related to vote splitting increases with the strength of partisanship.*

## RESEARCH DESIGN

### Data

To study the link between political online activities during the election campaign and vote splitting, we use data from the Swiss Election Study Selects 2019. In particular, we make use of the panel module of Selects (2020). Starting in May 2019 (wave 1: 20<sup>th</sup> May – 8<sup>th</sup> July 2019), respondents were surveyed three times using an online survey. Wave 2 was fielded during the campaign (wave 2: 2<sup>nd</sup> September – 17<sup>th</sup> October 2019) and wave 3 was launched

after election day (wave 3: 21<sup>st</sup> October – 9<sup>th</sup> December 2019). The panel study aims to observe citizens' behavior and attitudes during the campaign. Its sample is based on a random sample drawn by the Federal Statistical Office using their sampling frame SRPH. 7'939 online interviews were completed in the first wave which represents a response rate of 31 percent. In the third wave, 5'125 interviews were completed (65 percent of the first wave) (Tresch et al., 2020).

In our analysis, we combine data from wave 1 and wave 3, as sociodemographic and basic political variables were included in wave 1, while our core variables were fielded in wave 3. Furthermore, we add macro variables on the cantonal level to the survey data. These include the number of seats in the National Council, i.e., the lower chamber of the national parliament, allocated to the various cantons and the main language spoken in the canton. Since vote splitting, our main dependent variable, is only possible in cantons that vote on at least two seats, we exclude cantons with only one seat from our analysis (Uri, Obwalden, Nidwalden, Glarus, Appenzell Ausserrhoden, and Appenzell Innerrhoden). The deletion of these small cantons and case-wise deletion of observations with missing values leaves us with 2'948 respondents in 20 cantons who are included in our analysis.

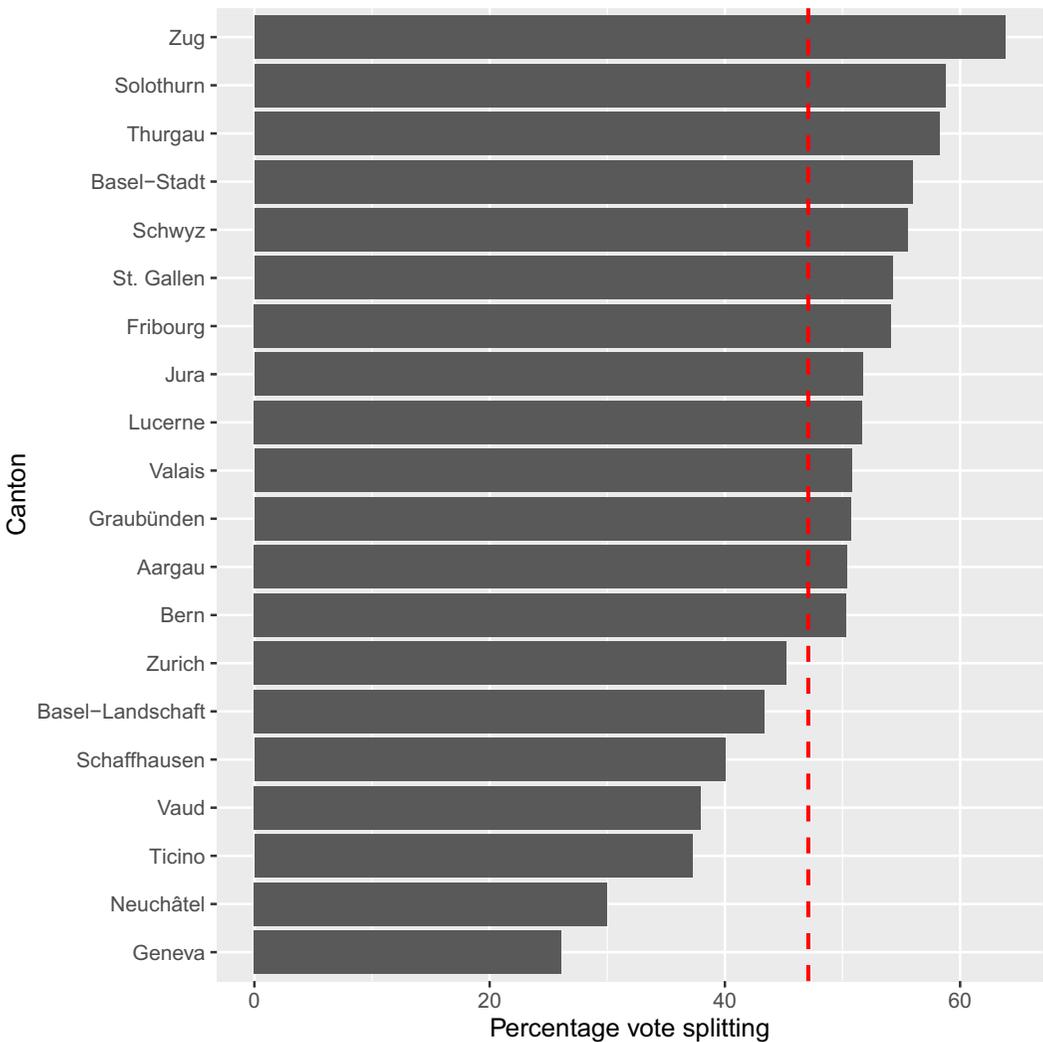
## Measurement

Our main *dependent variable* is vote splitting. We measure vote splitting using a dichotomous variable capturing whether respondents have modified the voting list by voting for candidates from different parties. Figure 1 depicts the share of voters who have split their vote across parties per canton. On average, almost every second voter in the 20 cantons split the vote. The cantonal variation implies that a hierarchical model accounting for the nested structure of our data is reasonable (see below) but it also implies that vote splitting is not a mere function of a canton's size and thus the practical opportunities to split the vote.

We are interested in measuring whether vote splitting is correlated with political online activities that have the potential to make citizens either more open- or more close-minded. Hence, we use a new measurement from the Swiss Election Study to capture political online activities during the campaign as our central *independent variable*. It includes discussing political issues with others online, commenting on an online news article or blog post, forwarding or reposting political content, or posting your own thoughts on a political issue. Figure 2 gives an overview of how prevalent these various activities are in Switzerland. Given the public and scientific discourse on the increasing importance of social media and the Internet, the descriptive findings might be surprising. The majority of citizens state that they have never engaged in these activities during the campaign. One out of four has discussed with others online or forwarded content. Only one out of five respondents has commented on posts or posted their own thoughts on political issues. Thus, the boundary line is actually between those who somehow engage with politics online, and those who do not do so at all. Therefore, we have created a dichotomous variable that serves as the main dependent variable. It captures whether a respondent has engaged in any of the four activities or not. Figure 3 illustrates the share of online activists across the cantons. On average, about 42 percent of the respondents in the 20 cantons report that they engaged in at least one of these online activities during the election campaign.

To estimate the link between online activities and vote splitting, we control for potential confounders. We include sex (dichotomous variable), age (continuous variable), and education (dichotomous variable)<sup>6</sup> as sociodemographic factors as well as the frequency of offline political discussions (categorical variable), political interest (categorical variable), closeness to a

<sup>6</sup>While we initially used three educational levels (Tertiary, secondary II, secondary I), the number of observations in the lowest education group was so small that we decided to merge the two levels of secondary education.



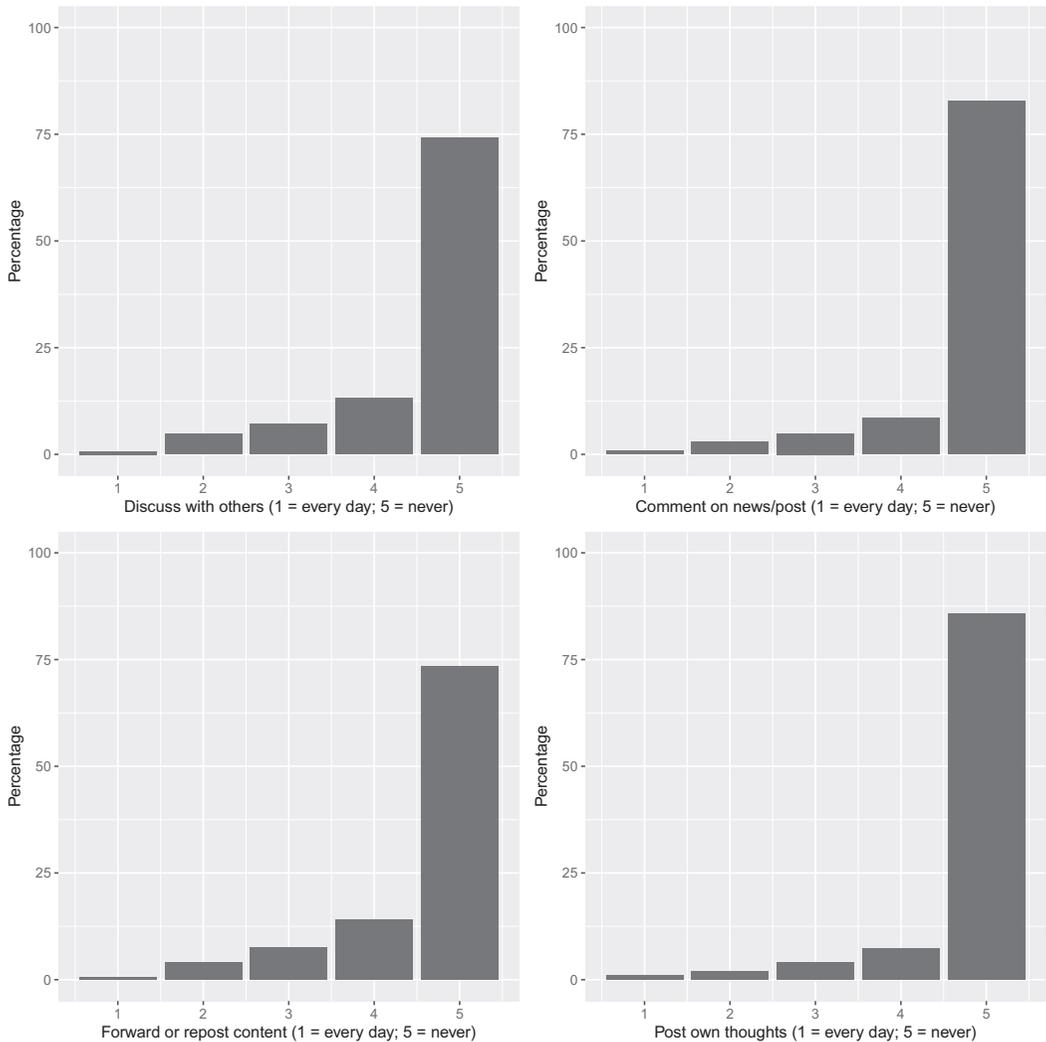
**FIGURE 1** Vote splitting across the Swiss cantons

*Note:* Dashed vertical line illustrates the overall mean; own calculations based on Selects (2020)

party (dichotomous variable), ideology (continuous variable), and extreme ideology (continuous variable) as political factors. Finally, we control for the number of seats in the National Council per canton and language region. Table A1 in the Appendix shows summary statistics of all variables and Figure OA1 in the Online Appendix illustrates the correlations of the individual-level variables.

## Method

Since our dependent variable is dichotomous, we estimate logistic regression models. To account for dependencies among respondents from the same canton who are acting within the same political context and to estimate the role of cantonal factors correctly, we apply a hierarchical modeling strategy. Thus, we estimate hierarchical logistic regressions with random intercepts. To test for group-specific effects of online activities, we further present models with

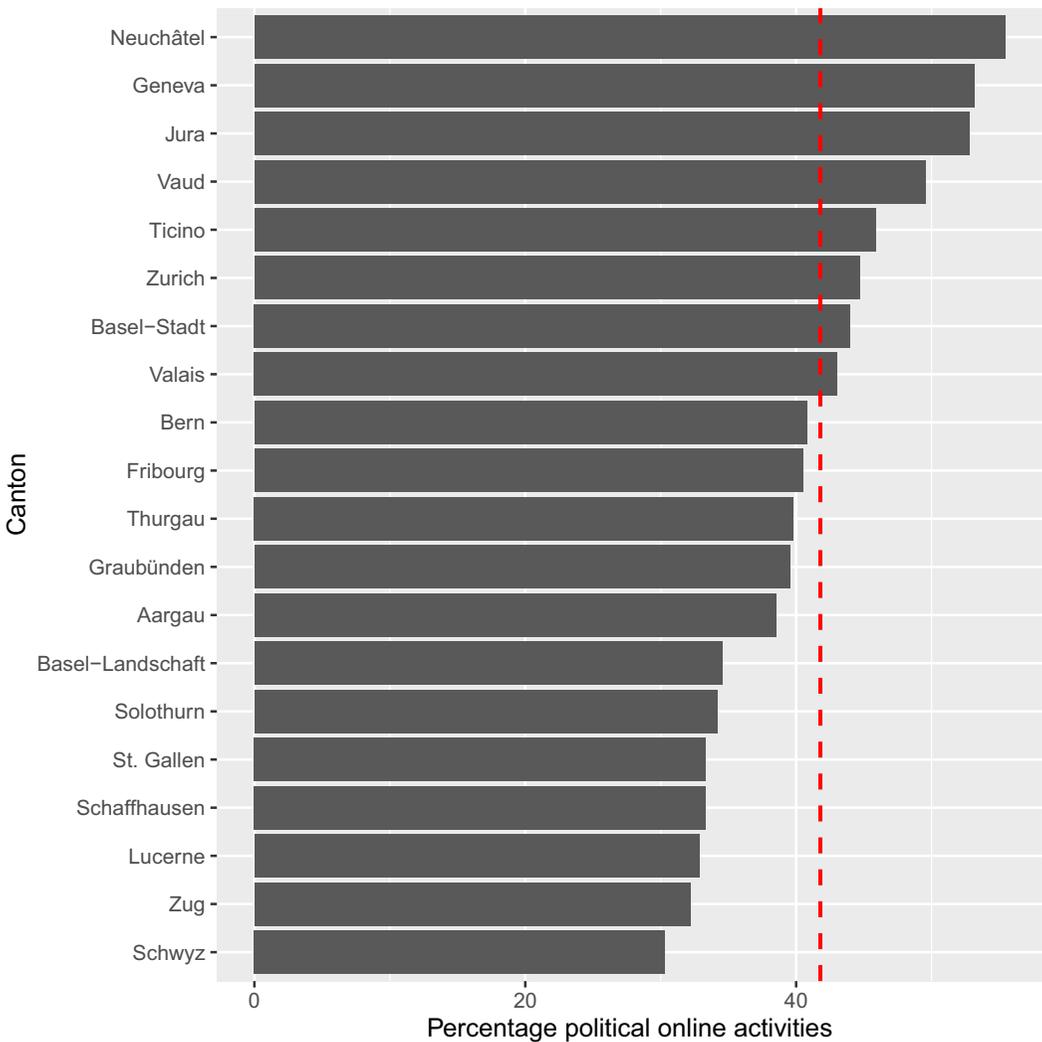


**FIGURE 2** Political online activities  
*Note:* Own calculations based on Selects (2020)

interaction terms. Thereby, we focus on the moderating role of political factors (political interest, closeness to party, ideology, and extreme ideology).

## EMPIRICAL RESULTS

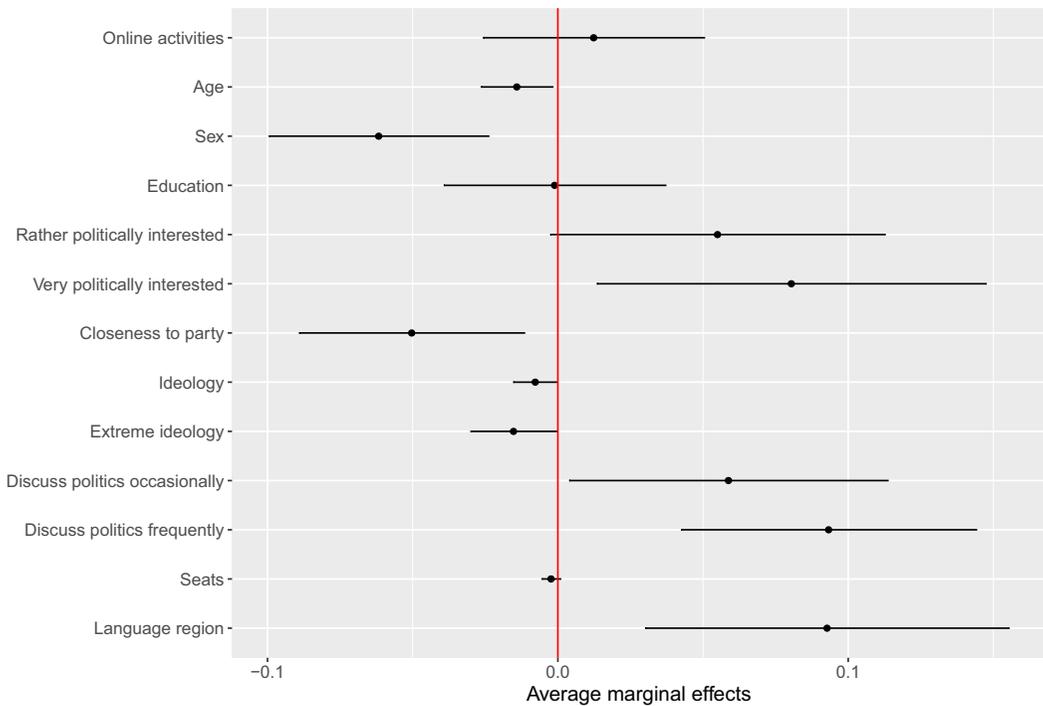
To begin with, we focus on the link between political online activities during the 2019 election campaign in Switzerland and vote splitting. Table A2 in the Appendix shows the full results of the hierarchical logistic regression model (Model 1). For the sake of a more illustrative interpretation of these results, Figure 4 illustrates the average marginal effects calculated based on Model 1. It shows that political online activities and vote splitting tend to be positively correlated, but this relationship is not significant. Thus, neither hypothesis H1 nor hypothesis H2 can be confirmed. There is no empirical support for the assumption that online activists do find themselves in echo chambers, which makes them less likely to split their vote. At the same



**FIGURE 3** Political online activities across the Swiss cantons  
*Note:* Dashed vertical line illustrates the overall mean; own calculations based on Selects (2020)

time, neither do online activities seem to substantially increase vote splitting, e.g., by exposing voters to more diverse information and strengthened deliberation.

Furthermore, the results indicate that vote splitting is mainly driven by political factors and less so by sociodemographic ones. Men are about 6 percentage points less likely to split their vote than women are. While there is no clear pattern across educational groups, older voters are less likely to split votes. Most clearly, political discussions in person matter for vote splitting. A person who discusses politics occasionally or frequently is more likely to split votes than an individual who seldom discusses politics (plus 6 and 9 percentage points, respectively). Moreover, political interest is positively correlated with vote splitting. Compared to individuals who are not (or rather not) interested in politics, very interested citizens are 8 percentage points more likely to vote for candidates from different parties. In addition, citizens who feel close to a party are less likely to split their vote (minus 5 percentage points). Concerning ideology, right-leaning citizens and citizens who place themselves at the extremes of the political spectrum are less likely to split their vote. Finally, vote splitting is more common in Swiss



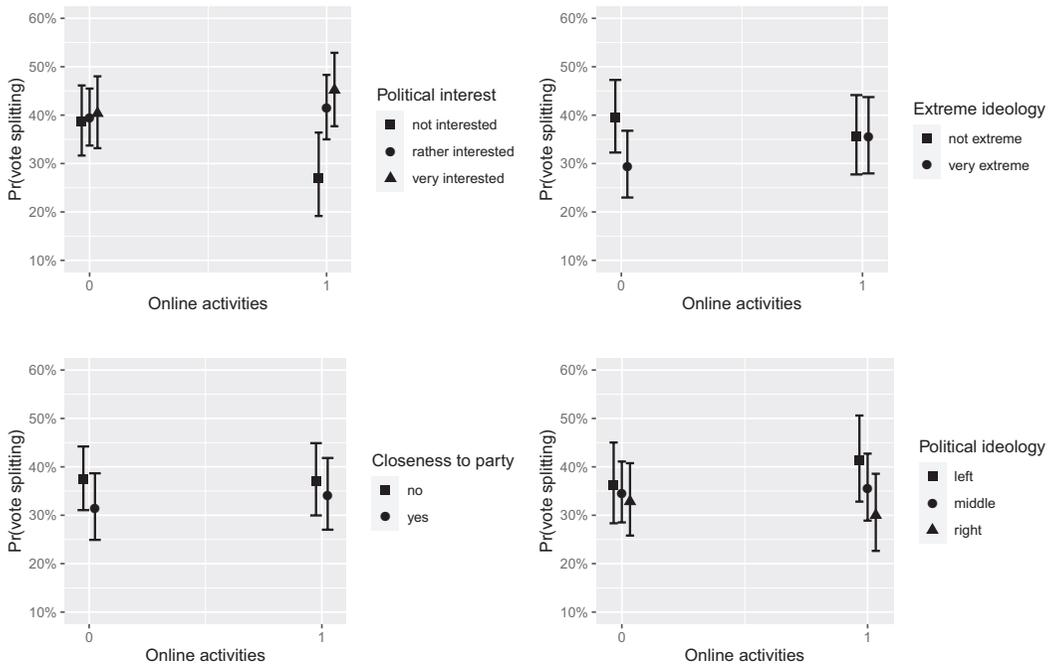
**FIGURE 4** Political online activities and vote splitting (Average Marginal Effects)

*Note:* Average marginal effects calculated based on a hierarchical logistic regression model with vote splitting (dichotomous variable) as the dependent variable, full model shown in Table A2 (Model 1), data: Selects (2020). Dots illustrate average marginal effects, horizontal lines show 95% confidence intervals.

German cantons (plus 9 percentage points). Interestingly, the number of seats that citizens vote on in a canton is not systematically related to vote splitting.

Although we do not find support for an overall link between political online activities and vote splitting, this does not rule out the possibility of group-specific relationships. It is likely that individuals are affected differently by their online activities dependent on other factors. Consequently, positive and negative mechanisms – as suggested by our contrasting hypotheses – might cancel each other out and lead to our null finding. The first analysis has shown that political factors drive vote splitting particularly. As an additional analysis shows, these factors are also significantly related to engaging in political online activities (see Figure OA2 in the Online Appendix). Therefore, and to test the remaining hypotheses, we integrate interactions into our models to see whether these political factors moderate the role of online activities (see Models 2 to 5 in Table A2 in the Appendix).

These estimations show that the interaction effect between political online activities and political interest is significant. Thus, political interest moderates the link between online activities and vote splitting. This lends support to hypothesis H3a. We do not observe significant interactions with ideology, extreme ideology, and party closeness. Figure 5 illustrates the interactions using predicted probabilities. The upper left panel shows the significant interaction of political interest and online activities (Model 2 in Table A2 in the Appendix). For those who do not engage in political online activities, the likelihood to split votes is around 40 percent, independent of their level of political interest. For online activists, however, the level of political interest makes a difference. Online activists who are not or rather not interested in politics only have a 26 percent



**FIGURE 5** Political online activities and vote splitting – Interaction models

*Note:* Predicted probabilities based on hierarchical logistic regression models with vote splitting (dichotomous variable) as the dependent variable and interaction effects, full models shown in Table A2 (Models 2-5), data: Selects (2020). Dots illustrate predicted probabilities; vertical lines show 95% confidence intervals.

probability to split votes. Conversely, the likelihood to split votes is significantly higher among those online activists who are rather politically interested (about 42 percent) or very politically interested (about 45 percent).<sup>7</sup> This indicates that online activism has some potential to polarize voters' political behavior if they are not politically interested. Our findings support the view that these individuals are more likely to find themselves in echo chambers providing them with one-sided information, and thus decreasing the likelihood to split votes among candidates from different parties. Conversely, this is not the case for politically interested individuals, who might be more open to digesting varying information and arguments when they engage online. As Figure 5 illustrates, the other political factors do not significantly moderate the patterns of online activities and vote splitting.

## Additional analyses

To dig deeper into the presented results and to check whether they are robust against alternative specifications of variables and models, we conduct additional analyses. First, we consider an alternative specification of the independent variable, second, we use a more detailed measure of vote splitting, third, we estimate linear probability models and, fourth, we integrate the role of online campaign activities on the cantonal level.

<sup>7</sup>Figure OA3 illustrates the distributions of political interest across the two groups. It shows that still 10 percent of the political online activists report that they are not or rather not interested in politics. In the conclusion, we discuss what this combination of low interest and political online activities implies.

To begin with, we use a categorical variable instead of a dichotomous variable to measure political online activities. The categorical variable indicates the intensity of online activities and, thus, distinguishes between engaged and highly engaged activists. Table OA1 in the Online Appendix presents the results of this additional analysis. It shows that the intensity of engagement is less relevant. The dividing line is not between engaged and highly engaged individuals but between those who are politically active online and those who are not.

Second, we take a nuanced look at vote splitting by measuring whether individuals split their vote within or across party families. Since we argue that vote splitting is a proxy for political open-mindedness, a more detailed measure is also descriptively interesting in the first place. Figure OA4 in the Online Appendix shows the distribution for this detailed measure. It supports our argument that vote splitting is an indicator of political open-mindedness because the majority of the vote splitters divide the votes across party families. The results of the ordered logit regression using the categorical indicator of vote splitting as the dependent variable support our findings (Table OA2 in the Online Appendix). There is no general pattern between political online activities and vote splitting. However, the relationship varies depending on the level of an individual's political interest.

Third, we estimate linear probability models to check whether the findings also hold in this alternative framework. As Table OA3 in the Online Appendix shows, a linear estimation approach corroborates our results.

Finally, we incorporate a measure of online campaign activity on the cantonal level as an additional context variable in our analyses. Our theoretical reasoning refers to campaign activities and campaign effects in various respects. Given that electoral campaigns in Switzerland are mainly cantonal campaigns, variation in campaign intensity across cantons could affect our results. As a measure thereof, we use the average number of tweets by candidates per day during the campaign in the various cantons (Gilardi et al., 2020). The results show that cantonal online campaign intensity is not related to the likelihood of vote splitting and it does not change our findings regarding the link between political online activities and vote splitting (Table OA4 in the Online Appendix).

## CONCLUSIONS

In this article, we examine the link between political online activities and vote splitting in the Swiss national elections 2019. The possibility to vote for candidates from different parties is one of the peculiarities of the Swiss electoral system. We argue that this peculiarity offers an interesting measure to investigate the behavioral consequences of political online activism. While vote splitting can occur for various reasons, it requires a general openness to spread votes across different parties. A voter wrapped up in his preferred party's "echo chamber" would probably not consider several parties as eligible and, thus, is less likely to cast a vote for a candidate from another party. Building on political behavior and political communication research, we argue that political online activities, such as discussing with others online, commenting on posts, sharing content, or posting own thoughts on political issues, could be associated with individual behavior at the ballot box. Following the argument that citizens mainly engage with information that confirms their preexisting viewpoints ("echo chamber"-argument), we assume that political online engagement makes people more close-minded and decreases the likelihood of vote splitting. Yet, one can also argue that social media and other online platforms offer the possibility to "hear the other side" and to encounter a wide range of political viewpoints ("deliberation"-argument). From this perspective, the possibilities for deliberation and, thus, the engagement with diverse arguments and information, are supposed to increase the likelihood of vote splitting. Moreover, the theoretical assumption that online

activities require specific skills suggests that online activists may also be more willing to make use of these opportunities, which might increase the likelihood of vote splitting.

We test these arguments empirically using data from the panel module of the Swiss Election Study Selects 2019. It includes a measurement of political online activities as well as of vote splitting and, thus, is perfectly suited to examine the link between these two aspects of political behavior. Our hierarchical logistic regression models reveal that there is no general, significant relationship between political online activities and vote splitting. In the first place, this is an important non-finding, as there is no empirical support for the notion that political online activities make people generally close-minded in a way that they would no longer be willing to split votes across different parties. This corresponds to recent findings from the US showing that Americans on average consume moderate news media online and that echo chambers only exist for relatively few people (Guess, 2021). Additional analyses in our study, however, show that the non-relationship between online activities and vote splitting is only part of the story. The association between political online activities and vote splitting is moderated by political interest. For online activists who exhibit a low level of political interest, we observe a significantly lower propensity of vote splitting than for their non-activist counterparts. Hence, this lends support to the idea that online activism has some potential to create echo chambers, and relatedly to decrease the likelihood to vote for candidates from different parties. However, this is not the case for (rather or very) politically interested online activists whose probability to split votes does not differ from voters who are not active online. Yet, if we compare politically interested and non-interested online activists, the interested ones are more likely to split votes. In other words, political interest seems to prevent online activists from ending up in echo chambers.

Our findings contribute to the growing literature on the consequences of social media and political online activities. We provide novel evidence on vote splitting as a behavioral rather than an attitudinal outcome and consequence of political online activism. From a societal perspective, our findings bear two important messages. First, social media and political online activities do not necessarily undermine the diversity of opinions in a society. Overall, engaging with politics online does not prevent citizens from considering alternative political viewpoints and, eventually, vote splitting. However, a prerequisite for this positive conclusion is a general interest in politics. If citizens are not generally interested in politics but only get involved selectively online, they seem to be less willing to deal with different perspectives. Particularly in highly politicized times, like election campaigns or the Covid-19 pandemic, individuals that are generally not very interested in politics might be mobilized and drawn into political online activism. Since the data we use was collected during the 2019 Swiss election campaign, it is not surprising that only one out of ten political online activists in the sample states that she is not or rather not politically interested. Second, thus, our findings also imply that online engagement has the potential to increase polarization between politically interested and less interested voter groups. Societal and political actors, therefore, need to think about ways to amplify political interest among the politically uninterested or to facilitate this group's access to diverse political online contexts to counter tendencies of increasing political polarization. Political education, better communication of political processes and decisions, or new forms of participation are tools that could possibly increase political interest among these parts of the population.

Despite these contributions, the shortcomings of our study should be kept in mind. We can only present correlational evidence. To establish the causal link between online political activities and vote splitting contingent on political interest and to understand the mechanisms, more research is needed, e.g., applying experimental approaches. Furthermore, more nuanced measures of political online activism are necessary to fully test our theoretical arguments. With the data at hand, we do not measure the substance and content of an individual's political online activities. However, this would be necessary to understand whether

a person really encounters opposing political opinions online, for instance. Having more nuanced data on the activities, their content, and related changes in political attitudes would also allow us to test the hypothesized mechanism of open- or close-mindedness in a more direct and specific way. Moreover, our measure of political online activities is a very simple dichotomous one and we do not consider whether citizens also engage with politics in any other form, e.g., whether individuals combine (various) online activities with offline activities or whether they just engage with politics online (Dubois & Blank, 2018). The findings for our control variable measuring in-person discussions, however, show that this offline activity is strongly correlated with vote splitting. Yet, this could also mean, following previous research (Ackermann & Manatschal, 2018; Vissers & Stolle, 2014), that online and offline activists differ already before they enter the political arena. Thus, future research should take a more nuanced perspective on political online activities and study how they interact with political offline activities.

Nevertheless, we provide another piece of evidence that social media and political online activities are neither a danger nor a cure for democracy: whether they are more likely to unfold their positive or negative effects depends on the prerequisites of the users. According to our findings, these prerequisites seem to be rather cognitive and less ideological ones. We find no evidence that ideological position, extreme ideology, or closeness to a party change the patterns of online political activities and vote splitting. However, political interest seems to be a necessary condition for online activists to use the opportunities of the Internet for accessing diverse information instead of ending up in echo chambers. Hence, societies should think about ways to invest in the cognitive skills of their citizens to overcome political divides.

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## OPEN RESEARCH BADGES



This article has earned Open Data and Open Materials badges for making publicly available the digitally-shareable data necessary to reproduce the reported results. The data is available at <https://osf.io/ftkzc/>.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available via FORS at <https://forsbase.unil.ch/datasets/dataset-public-detail/16968/2078/>, <https://doi.org/10.23662/FORS-DS-1184-1>. The R-script to reproduce the analyses is uploaded to the OSF-repository of the corresponding author: <https://osf.io/ftkzc/>.

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## SUPPORTING INFORMATION

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## APPENDIX

TABLE A1 Descriptive Statistics

Variable	Description	Mean/ Share	SD	Min	Max
Vote Splitting	Dichotomous Variable Coding: 1 if “Modification of voting list“ (W3_f12010) = yes AND “Did R give votes to candidates from different parties (panachage)?” (W3_f12023) = yes 0 if “Modification of voting list“ (W3_f12010) = no OR “Did R give votes to candidates from different parties (panachage)?” (W3_f12023) = no	0.47	-	0	1
Online Activities	Dichotomous Variable Coding: 1 if “Discussed politics and public affairs with others online“ (W3_f12620b) = yes (= every day, at least once a week, at least once a month or less than once a month) OR “Commented on an online news story or blog post to express an opinion about a political or social issue” (W3_f12620c) = yes OR “Posted or reposted content related to a political or social issue” (W3_f12620d) = yes OR “Posted own thoughts or comments on political or social issue” (W3_f12620e) = yes 0 if “Discussed politics and public affairs with others online“ (W3_f12620b) = no (= never) AND “Commented on an online news story or blog post to express an opinion about a political or social issue” (W3_f12620c) = no AND “Posted or reposted content related to a political or social issue” (W3_f12620d) = no AND “Posted own thoughts or comments on political or social issue” (W3_f12620e) = no	0.42	-	0	1
Age	Continuous Variable Age in years (W1_age) scaled by 10 <i>Note:</i> Variable is centered for the regression analysis.	5.39	1.58	2.2	9.5
Sex	Dichotomous Variable Gender (W1_sex) Coding: 1 = male, 0 = female	0.53	-	0	1
Education	Dichotomous Variable R's highest level of education (W1_f21310) Coding: 1 = Tertiary Education (W1_f21310 = 10, 11, 12 or 13) 0 = No Tertiary Education (W1_f21310 = 1, 2, 3, 4, 5, 6, 7, 8 or 9)	0.51	-	0	1
Political discussions	Categorical Variable Political discussions in person (W3_f12620a) Coding: 0 = seldom (W3_f12620a = 4 or 5) 1 = occasionally (W3_f12620a = 3) 2 = frequently (W3_f12620a = 1 or 2)	0.22 0.26 0.52	- - -	0 0 0	1 1 1

TABLE A1 (Continued)

Variable	Description	Mean/ Share	SD	Min	Max
Political interest	Categorical Variable				
	Political interest (W1_f10100)				
	Coding:				
	0 = Not/ Rather not interested (W1_f10100 = 3 or 4)	0.19	-	0	1
	1 = Rather interested (W1_f10100 = 2)	0.56	-	0	1
	2 = Very interested (W1_f10100 = 1)	0.25	-	0	1
	0.42	-	0	1	
Closeness to party	Dichotomous Variable R feels close to a party? (W1_f14000) Coding: 1 = yes, 0 = no				
Ideology	Continuous Variable Left-right self-placement (W1_f15200) Coding: 0 = left, 10 = right	5.01	2.46	0	10
Extreme ideology	Continuous Variable Based on variable "Ideology" Coding: 0 = moderate (Ideology = 5), 4 = extreme (Ideology = 0, 1, 9 or 10)	1.90	1.32	0	4
Seats	Continuous Variable Number of seats in the National Council in the canton <i>Note:</i> Variable is a contextual variable on the cantonal level.	9.70	8.30	2	35
Language region	Dichotomous Variable Main language spoken in the canton Coding: 1= German, 0 = French or Italian <i>Note:</i> Variable is a contextual variable on the cantonal level.	0.65	-	0	1

TABLE A2 Regression Analysis – Political Online Activities and Vote Splitting

	Model 1	Model 2	Model 3	Model 4	Model 5
(Intercept)	-0.21 (0.20)	-0.04 (0.21)	-0.14 (0.20)	-0.19 (0.20)	-0.29 (0.21)
Online activities (1 = active)	0.05 (0.08)	-0.54* (0.24)	-0.17 (0.14)	-0.01 (0.11)	0.22 (0.17)
Age	-0.06* (0.03)	-0.06* (0.03)	-0.06* (0.03)	-0.06* (0.03)	-0.06* (0.03)
Sex (1 = male)	-0.26** (0.08)	-0.26** (0.08)	-0.26** (0.08)	-0.26** (0.08)	-0.26** (0.08)
Education (1 = tertiary)	-0.00 (0.08)	-0.01 (0.08)	-0.00 (0.08)	-0.01 (0.08)	-0.00 (0.08)
Rather politically interested (Ref. Not politically interested)	0.23 (0.12)	0.03 (0.15)	0.23 (0.12)	0.23 (0.12)	0.23 (0.12)
Very politically interested (Ref. Not politically interested)	0.33* (0.14)	0.07 (0.18)	0.33* (0.14)	0.33* (0.14)	0.33* (0.14)
Closeness to party (1 = close)	-0.21* (0.08)	-0.21* (0.08)	-0.21* (0.08)	-0.27* (0.11)	-0.21* (0.08)

TABLE A2 (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
Ideology (10 = right)	-0.03*	-0.03*	-0.03	-0.03*	-0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Extreme ideology (4 = extreme)	-0.06*	-0.06*	-0.11**	-0.06*	-0.07*
	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)
Discuss politics occasionally (Ref. Discuss politics seldom)	0.24*	0.27*	0.26*	0.25*	0.25*
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Discuss politics frequently (Ref. Discuss politics seldom)	0.39***	0.40***	0.39***	0.39***	0.39***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Seats	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Language region	0.38**	0.38**	0.38**	0.38**	0.38**
	(0.13)	(0.14)	(0.13)	(0.13)	(0.13)
Online activities * Rather politically interested		0.62*			
		(0.26)			
Online activities * Very politically interested		0.73**			
		(0.27)			
Online activities * Extreme ideology			0.11		
			(0.06)		
Online activities * Closeness to party				0.13	
				(0.15)	
Online activities * Ideology					-0.03
					(0.03)
AIC	3998.34	3994.76	3996.87	3999.61	3999.06
BIC	4088.08	4096.46	4092.59	4095.32	4094.78
Log Likelihood	-1984.17	-1980.38	-1982.44	-1983.80	-1983.53
Num. obs.	2929	2929	2929	2929	2929
Num. groups	20	20	20	20	20
Var: (Intercept)	0.04	0.04	0.04	0.04	0.03

Note: Hierarchical logistic regression models, data: Selects (2020). Standard errors in parentheses. Levels of significance: \*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05