Article

The special case of Switzerland: Swiss politicians on Twitter

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Abstract
We analyse the use of Twitter in political communication in Switzerland because, in comparison with other democracies, Switzerland with its strong federalism, fragmented party system, small country size and semi-professional politicians can be seen as the least-likely critical case, thus creating unique conditions for the use of social media. The study investigates the individual characteristics of Swiss Members of Parliament that could influence social media usage. Thus, the study contributes to the debate about equalization and normalization with respect to Twitter as a relevant microblogging channel for political communication and to the significance of country-specific conditions for the adoption of innovations in political online communication. The study explains the shift from equalization towards normalization with the diffusion of innovations theory.

Keywords
Diffusion of innovations, equalization, microblogging, normalization, political communication, social media, Switzerland, Twitter

'I managed to not be on Facebook; it's my parliamentary assistant who reads my email messages, but Twitter seems to be inevitable!'

Translated first Tweet of 60-year old Robert Cramer from the Council of States in May 2014.

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Social media such as Twitter has changed political communication (Parmelee and Bichard, 2012). Twitter is one of the most popular and widely used microblogging platforms with more than 200 million users worldwide (Wickre, 2013). It offers users a way to publish messages of up to 140 characters in combination with a variety of multimedia content. The platform brings with it new possibilities of politician–citizen interaction. Interactivity is regarded as a concept that includes the structure of a medium, the communication context and the perceptions of users (Kiousis, 2002) and is usually referred to in the context of computer-mediated communication (McMillan, 2002), also when dealing with journalism (Marchionni, 2013). Twitter can be regarded as interactive because politicians can directly communicate with citizens without having to overcome the gatekeeping functions of traditional mass media. Also, a Twitter conversation can be perceived as a simulation of interpersonal communication. Twitter enables politicians to try to influence public opinion directly by reaching a potentially large electorate as well as to monitor public opinion more thoroughly (Conway et al., 2013). Moreover, those being addressed in tweets by politicians are not only citizens but also other actors, such as journalists.

This study analyses the adoption and use of Twitter by Swiss politicians on the national level (Members of the Federal Assembly [MFAs]). The use of Twitter in politics is often studied by focusing on a specific country (an overview about the countries studied is provided by Jungherr (2014)). Studies have shown that characteristics of a country's political system and institutional setting can be relevant for politicians' social media use and web campaigning (Gibson and Ward, 2002; Strandberg, 2008). A relevant category is the electoral system, with pluralitarian systems usually leading to a system with few parties and proportional systems leading to a multiparty system (Strandberg, 2008). Other factors are the democratic status of a country and, as a consequence, the diversity of voices in the public sphere (Strandberg, 2008) which can be enhanced if a political system entails a strong direct democracy. Also, political systems can differ with respect to the role of individual politicians. In strong party systems, individual politicians are usually less influential than in political environments with weaker parties (Strandberg, 2013).

Although these specifics appear to play some role, studies that focus on one country do not refer to them in great detail. In this study, we therefore analyse the use of Twitter in Swiss politics because Switzerland differs in some crucial ways from other countries in which the use of social media in politics is studied, for example, the United States, the United Kingdom, Australia or the Nordic countries. In comparison with these countries, Switzerland, with its strong federalism, fragmented party system, small country size and semi-professional politicians (Lijphart, 1999), can be seen as the least-likely critical case, that is, a case which mostly does not yield the same characteristics as the other cases under study, thus creating unique conditions for the use of social media. Studying Twitter use in such a political system evaluates to what extent characteristics of the political system need to be taken into account in the context of political social media use.

Studying Twitter adoption in a specific political system, the study investigates the individual characteristics of Swiss MFAs that could influence social media usage. Instead of only observing adoption as a dichotomous variable in a cross-sectional design (e.g. Gulati and Williams, 2013), we focus on the longitudinal adoption and the specific

aspects of social media usage, including the interaction with journalists (Hedman, 2014). The study contributes to the debate about equalization and normalization (Coleman and Blumler, 2009; Margolis and Resnick, 2000) with respect to Twitter in the context of the unique Swiss political system and to country-specific conditions on the adoption of innovations (Rogers, 2003) in online political communication.

Theoretical background and state of research

As the aim of this study is to analyse who picks up Twitter among Swiss MFAs and how they use the microblogging platform, focusing on who they are communicating with, we draw on the state of research related to political Twitter and other social media use in different countries. Although Twitter is a relatively new social media platform, a number of studies have dealt with its use in politics and electoral campaigns. Jungherr (2014) provides a comprehensive overview of studies examining which politicians have picked up Twitter, who does not use it and what the determinants are for its varying adoption (e.g. Golbeck et al., 2010), as well as of studies analysing the use of Twitter by those politicians and parties who have adopted it (e.g. Graham et al., 2013; Jackson and Lilleker, 2011). These studies analyse what kind of information politicians post on Twitter, how they interact with others via Twitter and how many or what kind of followers they have.

When it comes to the question of who is using Twitter and when the adoption of digital media in politics takes place, two lines of theory predominate: the debate about equalization versus normalization (Coleman and Blumler, 2009; Margolis and Resnick, 2000) and the theory of diffusion of innovations (Rogers, 2003). Advocates of the idea of equalization believe that, in online communication, the resources of political parties are less significant compared to the offline world. As a consequence, smaller and fringe parties are able to reach a larger audience, and thus, a more inclusive and ideal democratic discourse is possible (Castells, 2009; Coleman and Blumler, 2009; Gibson et al., 2008; Schweitzer, 2008). The idea of equalization was mainly prominent in the early and mid-1990s and was supported by empirical research because small parties could benefit from online campaigning despite their limited resources (Gibson and Ward, 1997). The equalization hypothesis is challenged, however, by the normalization hypothesis, which argues that differences between political parties and candidates in the real world are simply replicated on the Internet. The Internet is used mainly to disseminate information, and differences in professionalism, resources and visibility between major and minor parties and organizations in the real world are reflected in their Internet presence (Gibson et al., 2008; Schweitzer, 2008).

With respect to equalization or normalization, research typically focuses on determinants such as incumbency, party size and party ideology that matter for the adoption of social media in general and with Twitter in particular. Studies of these determinants differ between countries. For example, in Israel and Germany, newcomers in parliament usually make more frequent use of websites or other social media (Lev-On, 2011; Metag and Marcinkowski, 2012), but in Australia in 2004 and in Britain in 2005, incumbents were more likely to have a website (Gibson et al., 2008), and in Finland, incumbents used social media in the parliamentary elections more frequently than newcomers

(Strandberg, 2013). A tendency towards normalization would mean that politicians who are powerful in the offline world will likely dominate the political debate on Twitter (Jungherr, 2014). Jungherr (2014) states that most results rather underscore the tendency of normalization for Twitter. However, there are conflicting results in different countries. Conway et al. (2013) demonstrate that in the 2012 US primary elections, it was not the most important party nominees who tweeted most frequently during the elections but rather other less well-known nominees of the Republicans and Democrats. A meta-analysis by Strandberg (2008) shows that both tendencies, equalization and normalization, are tied to certain conditions that are country-specific and depend on the characteristics of the studies' methodology. For example, normalization is usually found in electoral systems that are favourable to major parties.

The second theoretical background we are drawing on is based on the diffusion of innovations theory (Rogers, 2003). Diffusion of innovations theory deals with questions about who decides to adopt an innovation at what time and to what extent. Regarding individual or demographic variables of parties and candidates, studies so far have demonstrated that age and gender affect politicians' Internet use. Younger candidates are more familiar with the Internet and make greater use of its potential (Gibson and McAllister, 2006). Older candidates are more reluctant to adopt social media tools (Gulati and Williams, 2013). Regarding gender, different social media tools such as blogs (Åström and Karlsson, 2013) or YouTube channels (Carlson and Strandberg, 2008) are adopted and used more often by male than by female politicians. These findings are in line with the well-known research on the diffusion of new technologies (Rogers, 2003). Rogers (2003) classifies different phases of adoption in which different groups of people adopt a new technology. These are innovators, early adopters, early majority, late majority and laggards. Innovators and early adopters which form the first two groups are usually young men who are venturesome and active. Research has shown that the adoption of social media among politicians and journalists usually follows the phases suggested by Rogers' theory (English, 2014; Gulati and Williams, 2013). The adoption of Facebook among US politicians has, as Gulati and Williams (2013) show, reached the late majority stage.

It seems to make sense that these two theoretical approaches – equalization/normalization and diffusion of innovations – can be linked and at least somewhat influence each other. The diverging results concerning normalization can possibly be explained with the implementation of cross-sectional designs in prior studies and the diffusion of innovation process. According to the theory, older people adopt a technology at a later stage of the process. Therefore, normalization should be observed at the late phases of the innovation process. It is likely that in most political systems, equalization can be observed at the beginning of the innovation process, but over time normalization becomes apparent. This phenomenon resembles the *regression towards the mean* (Bland and Altman, 1994) in statistics: if extreme groups of a population are observed, the next sample will most likely be nearer to the mean. The later in the adoption process the politicians are observed, the nearer are the variables to the mean of the population, which is the target value for normalization.

In terms of how politicians use Twitter and with whom they are communicating via Twitter, politicians in most countries mainly use Twitter as a unidirectional way of

disseminating information, and the level of interaction with others via Twitter, in the sense of simulating interpersonal communication or participating in reciprocal messages exchange (Kiousis, 2002), is still low (Graham et al., 2013). Politicians use Twitter to inform their voters about campaign or party events or as a tool for self-promotion (Jackson and Lilleker, 2011), but they do not fully make use of its interactive potential (Elter, 2013). Only a few studies analyse the Twitter network of politicians and the usage in political everyday life.

As research in other countries has shown, journalists are among those actors who are most frequently addressed by politicians on Twitter (Graham et al., 2013). Politicians can reach them easily on Twitter because journalists have a high adoption rate of social media (English, 2014; Hedman, 2014). Journalists, as gatekeepers, can have a strong impact on public opinion, and there is some evidence in countries such as the United States that Twitter has a direct impact on the reporting of journalists (Parmelee, 2014). Political Twitter networks can thus still be characterized as elite networks in which mainly political professionals, usually politicians and political journalists, interact with each other (Ausserhofer and Maireder, 2013).

In sum, most of the studies analysing Twitter in political communication deal with the use of Twitter during electoral campaigns in the United States and Europe. Those studies show that characteristics such as party membership, age and gender influence the adoption and use of social media and Twitter in particular. As the results of the studies vary depending on the country and its political system, however, we argue that focusing on Switzerland and its unique political system will further the understanding of the role of the political context for politicians' Twitter use.

The special case of Switzerland

Switzerland constitutes an interesting case for the analysis of Twitter in political communication, as its political system is unique. According to Lijphart (1999), the Swiss political system is a hybrid of a parliamentary and a presidential regime. The Swiss cabinet is elected by parliament, the Federal Assembly. The seven councillors who are de facto ministers and serve as collective heads of state 'stay in office for a fixed four-year term and cannot be dismissed by a legislative vote of no confidence' (Lijphart, 1999: 120). Most of the MFAs are not full-time professional politicians. The Swiss Federal Assembly (SFA) is a *militia* parliament, that is, its members serve as politicians but have other, non-political professions at the same time (Kriesi, 2001). MFAs have few resources because they usually do not serve as full-time politicians, and they have little to no personnel at their disposal. As most studies of Twitter use among professional politicians found that resources can be significant, this characteristic of the Swiss political system may be a decisive factor for Twitter use in Swiss politics because resources are scarce.

The Swiss direct-democratic system, with its electoral referenda and citizens' initiatives, reduces the significance of the role of the parliament in Switzerland. Switzerland has a very fragmented multiparty system, a stark contrast to countries such as the United States where Twitter use has been predominantly studied. In the national elections of 2011, 13 different parties won seats in the parliament. If one was to follow Strandberg (2008), the fragmented party system should favour equalization tendencies

in political online media use in Switzerland because the electoral system is not favourable to major parties.

Switzerland is one of the most decentralized countries with an extensive form of federalism, as the power is divided between the government, 20 cantons, 6 half-cantons and 2596 municipalities (Lijphart, 1999). In addition, with German, French and Italian being national languages, different linguistic regions exist in Switzerland, with the German-speaking part being the largest among them. Studies from majoritarian democracies such as the United States or Australia have shown that party affiliation mainly explains communication networks among politicians (Grant et al., 2010). An analysis of the political Twitter network in Germany, a decentralized and federal system, also reveals that politicians mostly communicate with politicians of their own party via Twitter (Plotkowiak and Stanoevska-Slabeva, 2013). As Switzerland is a small country, even more decentralized than Germany and divided into different linguistic regions, we can question whether this tendency also occurs or is even stronger in Swiss MFAs' Twitter networks.

These specific characteristics of the Swiss political system strongly affect MFAs' everyday work, their political campaigns and, ultimately, their adoption and use of new technologies such as Twitter. In Switzerland, 18% of the population uses Twitter, but most users are predominantly passive (Latzer et al., 2013). Presently, there is no analysis of the adoption and use of Twitter by individual Swiss politicians. A study by Klinger (2013) has shown that almost all of the major Swiss parties are active on Twitter and that larger parties with more resources not only use social media more often but also are more successful in generating resonance on social media, including Twitter. This study, however, is limited to the use of Twitter by parties and does not study individual politicians and their adoption of Twitter. With Switzerland being an extremely federalist country with strong regional differences in party politics, it is crucial, though, to focus on individual politicians and their Twitter adoption. Most studies focus on the use of social media and Twitter during elections. However, in the Swiss direct-democratic system the significance of national elections is limited. It is thus of interest to analyse the use of Twitter independently of electoral phases of intense political communication and extraordinary attention to the political sphere, instead of studying its role in everyday political work. Most studies analyse the adoption of social media as a dichotomous variable in a cross-sectional design (Gulati and Williams, 2013); however, we will, as Rogers (2003) recommends, analyse adoption of social media over time and focus more on individual characteristics of politicians and the structure of the electoral constituency, which can influence the usage of social media (Metag and Marcinkowski, 2012).

Research questions

The characteristics of its political system make Switzerland a very relevant case to study politicians' use of Twitter because country-specific characteristics have been proven to be crucial (Strandberg, 2008). Thus, our study deals with the question of to what extent Swiss politicians use Twitter. Besides studying adoption descriptively, we analyse the adoption process over time and study normalization or equalization tendencies in the adoption process, thus taking both theoretical approaches and their potential interdependencies into

account. We assume that, in contrast to other innovations, such as new crops, which served as the example in the pioneering work by Rogers (2003) and where adoption means either using new crops or not, social media adoption is more than just opening an account. Only an active user, who is regularly writing messages, can be interpreted as an adopter of the technology. Therefore, we analyse how Swiss politicians adopt Twitter by focusing on the way it is used. Our first research question addresses the Twitter adoption of politicians over time:

RQ1. To what extent are Swiss politicians using Twitter?

Additionally, we are interested in with whom Swiss politicians communicate on Twitter. We will analyse the communication among politicians because research in other countries shows that members of the same party are mostly communicating with each other. In Switzerland, different results can be possible because of the strong federalism and consensus democracy (Lijphart, 1999). Parties are always compelled to find a compromise in the policy process:

RQ2. With whom are Swiss politicians communicating via Twitter?

As journalists are usually among the most important actors on Twitter (Ausserhofer and Maireder, 2013; Parmelee and Bichard, 2012), we focus on the specific relationship between politicians and journalists. It can be assumed that journalists preferably follow the more active politicians on Twitter because they can receive more political information from them to use in their daily reporting. Successful interactions with journalists might indirectly influence public opinion. This assumption is based on research about agenda-building (Parmelee and Bichard, 2012). A study about Swiss journalists' use of Twitter has shown that journalists are regularly considering Tweets from politicians for their reports (Metag and Rauchfleisch, 2015). A journalist following a politician is a crucial precondition for agenda-building. Therefore, we inquire about which factors and personal characteristics of politicians can explain the number of following journalists of a politician on Twitter:

RQ3. Which factors explain the number of following journalists of a politician on Twitter?

Method and measurements

To analyse the Twitter adoption of Swiss politicians, all members of the SFA ($n = 246$) with a Twitter account ($n = 81$) were manually identified and combined with publically available data about the politicians. All data concerning the socio-demographic information and party affiliation of MFAs in this study were retrieved from the database of The Federal Assembly (2014). With the help of the R software environment, we collected different types of Twitter data from Twitter's Search Application Programming Interface (API). First, the basic information of all identified accounts was collected. Second, we gathered the follower relationships of those accounts; they can be either unidirectional or reciprocal. Third, all Tweets ever written by Swiss politicians ($n = 40,026$) until November

2013 were downloaded.[1] Statistical analysis and text mining were conducted within the R software environment.

To answer our first research question, we measured the activity level of politicians on Twitter with the number of messages per day as the dependent variable ($M = 0.5$, standard deviation [SD] = 0.63). Instead of analysing adoption only as a dichotomous variable, we analyse the adoption of Twitter based on the activity level of a user. We divided the total number of messages by a politician by the number of days since the politician opened his or her account. We considered age and gender as independent variables because they were significant predictors in other adoption studies (Åström and Karlsson, 2013; Gibson and McAllister, 2006). Furthermore, urbanization was included to represent the Swiss cantons in the form of a metric variable and as a possible proxy for cosmopoliteness, which is a main indicator for early adoption (Rogers, 2003). Rogers (2003) defines *cosmopoliteness* as 'the degree to which an individual is oriented outside a social system' (p. 290). In urbanized cantons, it is more likely that an individual is in contact with people outside of their own social system. Another predictor variable is incumbency, which is used as a binary variable. Party size (i.e. the number of party members) was included as a variable to account for the equalization versus normalization debate because official statistics on financial resources of parties and politicians are not available in Switzerland.

Furthermore, the accounts of users that are mentioned in a reply message were manually identified and classified by two human coders for subsequent analysis to address RQ2. To identify the accounts, the coders checked the self-description and the homepage links given in each account (e.g. Graham et al., 2013). The intercoder reliability for the classification was tested with a randomly selected subsample ($n = 100$). Overall, a good reliability could be achieved (Krippendorff's $\alpha = .79$).

To address our third research question, we calculated for each politician how many of his or her followers are journalists ($M = 71.9$, $SD = 50.2$) and used this information as the dependent variable.[2] The independent variables in the regression model are the same as in the model for RQ1, but, additionally, the number of days on Twitter was used as a possible predictor because it explains how well a user is connected on Twitter.

Results

Swiss politicians' general Twitter use

We first analysed the socio-demographic data of the 81 politicians on Twitter. Only a third (33%) of the 246 politicians in the SFA, consisting of the National Council (NC) ($n = 200$) and the Council of States (CoS) ($n = 46$), have a Twitter account: 69 politicians from the NC (85%) and 12 from the CoS (15%). Regarding gender, the proportion of women is slightly higher on Twitter ($n = 29$, 36%) than in the SFA ($n = 71$, 29%). In the CoS, the average age of the politicians at the time of sampling ($M = 56.3$, $SD = 7.3$) is almost the same as the average age of the CoS politicians on Twitter ($M = 55.6$, $SD = 8.3$). In contrast, the average age of NC politicians in parliament ($M = 51.7$, $SD = 10.2$) is higher than the average age of NC politicians on Twitter ($M = 47.1$, $SD = 11.1$). This finding already indicates that in Switzerland, politicians on Twitter are younger than all politicians in parliament.

Table 1. Politicians on Twitter per party compared with their real strength in parliament.

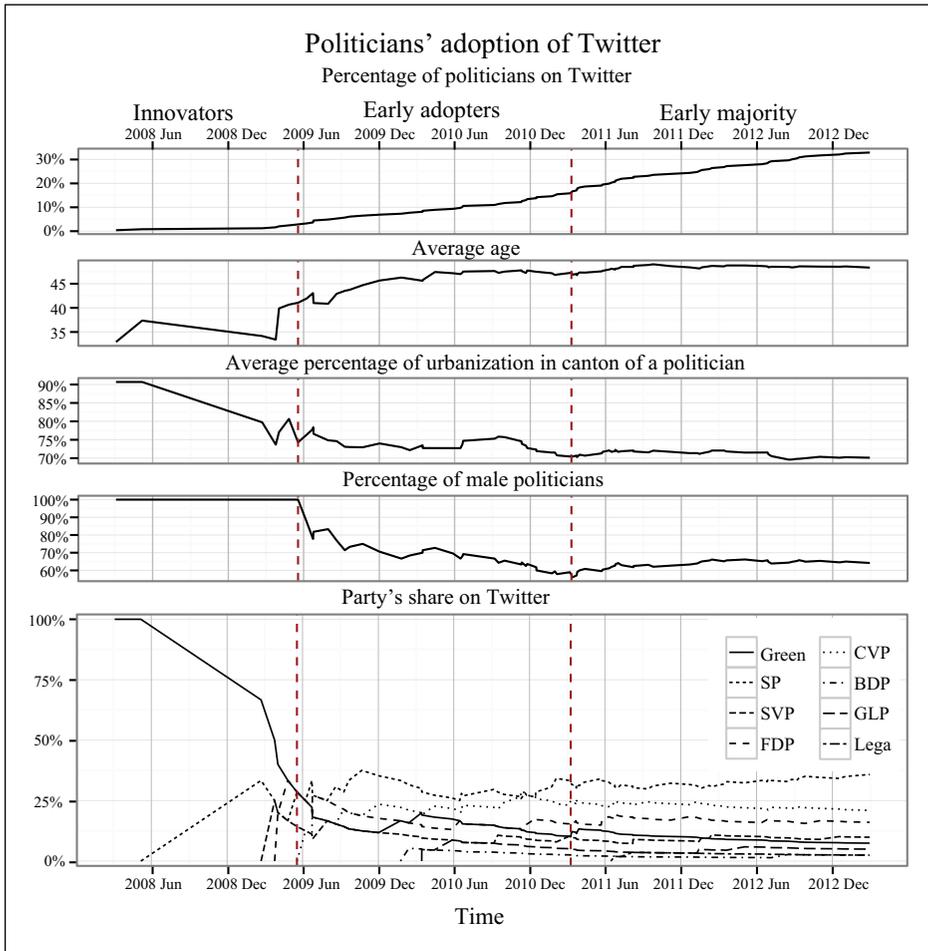| Party	Politicians on Twitter	Politicians in Swiss Federal Assembly	Representation on Twitter
SP	29 (35%)	57 (23%)	51%
CVP	17 (21%)	41 (17%)	41%
FDP	13 (16%)	41 (17%)	32%
SVP	8 (10%)	59 (24%)	14%
Green Party	6 (7%)	17 (7%)	35%
GLP	4 (5%)	14 (5%)	29%
BDP	2 (3%)	10 (4%)	20%
Lega	2 (3%)	2 (1%)	100%
Others	0	5 (2%)	–
Total	81	246	

SP: Sozialdemokratische Partei der Schweiz; CVP: Christlichdemokratische Volkspartei der Schweiz; FDP: Free Democratic Party; SVP: Schweizerische Volkspartei; GLP: Grünliberale Partei der Schweiz; BDP: Bürgerlich-Demokratische Partei Schweiz.

Based on the general information retrieved from their accounts, Swiss politicians on Twitter have, on average, five times more followers ($M = 1679$, $SD = 1945.4$) than accounts that they follow ($M = 324$, $SD = 405.54$), and they write a message, on average, every second day ($M = 0.5$, $SD = 0.63$). Out of all 40,026 messages posted by Swiss politicians, 5751 (14%) are retweets, 12,450 (31%) are replies, and 21,825 (54%) are normal tweets. An analysis of the aggregated number of messages written per day shows that politicians write significantly more messages ($t(1050) = 4.618$, $p < .001$) on days during one of the four parliamentary sessions (each of which is 3 weeks long) per year ($M = 46.83$, $SD = 33.67$, $n = 172$) than on other days during the year ($M = 34.83$, $SD = 24.35$, $n = 880$).[3]

Politicians from all major parties in Switzerland are represented on Twitter (see Table 1). The Social Democratic Party (Sozialdemokratische Partei der Schweiz [SP]) has the largest share of politicians on Twitter, followed by the Christian Democratic People's Party (Christlichdemokratische Volkspartei der Schweiz [CVP]) and the Free Democratic Party/ The Liberals (Freisinnig-Demokratische Partei/ Die Liberalen [FDP]). The Swiss People's Party (Schweizerische Volkspartei [SVP]) is currently the strongest party in the Swiss parliament but is only represented by 8 of 59 MFAs (14%) on Twitter, whereas all politicians of the Lega, a regional party of the canton Ticino, are on Twitter. The SP is highly overrepresented on Twitter in comparison with the other major parties in Switzerland (SVP, CVP and FDP).

Swiss politicians' adoption of Twitter

In order to analyse how Swiss politicians adopt Twitter over time, the exact date of adoption for each account was extracted through the Twitter API. The first Swiss politicians joined Twitter in 2008, just 2 years after the launch of the platform. Rogers' (2003) classification of the diffusion of innovation is used to exemplify the Twitter adoption. As full

Figure 1. Swiss politicians' adoption of Twitter. Phases are based on Rogers' (2003) adopter classification Innovators (2.5%), Early Adopters (13.5%) and Early Majority (34%) based on the share of politicians of the SFA on Twitter.

adoption by the population has not yet been reached, it is too early to classify the politicians according to Rogers' (2003) system solely on the mean and SD of the timespan of full adoption. Therefore, the share of politicians of the SFA who have adopted Twitter at a given time has been used as the main criteria to distinguish the different groups based on the assumption that full adoption could be achieved in the future. Nonetheless, the classification also closely follows the time intervals proposed by Rogers (2003). In the first phase, the *innovators* among the politicians on Twitter were all male, much younger than their peers in the SFA, from cantons with a high percentage of urbanization, and the Green Party as a rather small party was dominant on Twitter (see Figure 1). In the phase of the *early adopters*, the average age increased, the first women joined and the Green

Table 2. Ordinary least squares (OLS) with messages per day as dependent variable.

	Dependent variable

	Messages per day
Age as birth year	0.021** (0.006)
Gender (m = 1)	0.130 (0.139)
Urbanization of canton	0.008* (0.004)
Newcomer (1 = yes)	0.091 (0.144)
Party size	0.001 (0.002)
Constant	−42.01** (12.67)
N	81
R^2	.1681
Adjusted R^2	.1127
Residual SE	0.591 (df = 75)
F statistic	3.032** (df = 5; 75)

SE: standard error.
Unstandardized b with standard errors (SE) in brackets. Gender and newcomer as dummy variables, urbanization for the canton as percentage and party size (the number of party members in thousands).
*p < .05; **p < .01.

Party lost its advantage, whereas larger parties like the SP took the lead. In the next phase, the average age of the *early majority* is already a lot closer to the average age in the SFA and the Green Party reached with 7%, the same share as in the SFA. A large shift can be observed in the phase of the *early adopters*, and at the beginning of the phase of the *early majority* the mean of the population has almost been reached (e.g. age). The *early majority* phase started before the last national election (October 2011).

A multiple linear regression analysis is conducted to predict the activity level of politicians on Twitter and thus to explain what determines who really adopted Twitter actively. The activity level is measured as the number of messages per day. The results show that the politicians' ages (as birth years) significantly predict the number of messages written per day ($b = 0.021$, $t(75) = 3.31$, $p < .01$, $\eta_p^2 = .13$) while controlling for the effects of gender, newcomer in parliament (in 2011), the percentage of urbanization as a proxy for cosmopoliteness Base de données des cantons et des villes suisses (BADAC, 2014) in the canton of the politician and party size (see Table 2). Urbanization also significantly predicts the activity level on Twitter ($b = 0.008$, $t(75) = 2.14$, $p < .05$, $\eta_p^2 = .06$). The younger a politician is and the more urbanized his or her canton, the more messages he or she writes per day on Twitter. The other variables are not significant. Due to the small sample size and a few outliers with a very high volume of messages per day, we tested the significance of the predictors using bias-corrected and accelerated bootstrapping procedures (Davison and Hinkley, 1997). Regression coefficients were computed for each of the 50,000 bootstrapping samples. We found that the effects of age (lower limit confidence interval [LLCI] = 0.0076, upper limit confidence interval [ULCI] = 0.0355) and urbanization (LLCI = 0.0006, ULCI = 0.0167) were statistically different from zero using a 95% bootstrap confidence interval.

Table 3. Communication between members from the same party and members of a different party.

	Different party	Same party	Total
SP	486 (54%)	408 (46%)	895
CVP	463 (84%)	85 (16%)	548
FDP	155 (79%)	41 (21%)	196
SVP	104 (86%)	17 (14%)	121
Green Party	166 (74%)	59 (26%)	225
GLP	19 (100%)	0	19
BDP	28 (76%)	9 (24%)	37
Lega	5 (56%)	4 (44%)	9
Total	1426 (70%)	624 (30%)	2050

SP: Sozialdemokratische Partei der Schweiz; CVP: Christlichdemokratische Volkspartei der Schweiz; FDP: Free Democratic Party; SVP: Schweizerische Volkspartei; GLP: Grünliberale Partei der Schweiz; BDP: Bürgerlich-Demokratische Partei Schweiz.

Table 4. Replies inside of a region and outgoing.

	Espace Mittelland	Northwestern	Eastern	Ticino	Lake Geneva	Zurich
Inside	40 (15%)	96 (28%)	7 (11%)	15 (74%)	558 (75%)	267 (43%)
Outgoing	227 (85%)	241 (72%)	55 (89%)	4 (26%)	182 (25%)	358 (57%)
Total	267	337	62	19	740	625

Central Switzerland is missing because politicians from that region never wrote a reply and were never adressed by other politicians.

With whom are Swiss politicians communicating via Twitter?

In our second research question, we are interested in the interaction of politicians within their community and their communication with external actors via Twitter. All tweets written as replies ($n = 12,450$) were analysed to create communication networks. First, we only analyse communication between politicians ($n = 2050$). When comparing communication within a party to communication with members of different parties, the results show that the majority of the communication on Twitter is directed at members of a different party (see Table 3). This result contrasts with what was found in other countries such as Australia (Grant et al., 2010).

In a decentralized and federal system with different language regions like Switzerland, not only does the question arise about whether the communication on Twitter takes place mainly among politicians of the same party but also about whether communication is limited to certain geographical regions. Switzerland can be divided into seven larger regions (Bundesamt für Statistik, 2014): politicians mostly communicate with peers who tweet in the same language. Three-fourths of the communication in Ticino, the Italian-speaking part of Switzerland, and in the Lake Geneva region, the French-speaking part, is directed at politicians from the same region (see Table 4). In

Table 5. Only language regions: Ticino and Western Switzerland as Latin part.

	German	Latin
Inside region	1183 (92%)	579 (76%)
Outside region	108 (8%)	180 (24%)
Total	1291	759

the German-speaking regions, however, most of the communication is directed at politicians from other regions.

When further merging the different regions into language regions, however, it becomes clear that the German-speaking politicians also mostly communicate within their language regions and rarely write a tweet directed at a politician from the Latin part (Italian- and French-speaking) (Table 5).

While the Swiss regional and linguistic structure is mirrored on Twitter, it is still unclear with what kind of actors Swiss MFAs are actually communicating on Twitter. In a closer analysis of all reply messages (n = 12,450), the external actors were identified. All actors who were addressed by an MFA were manually identified (n = 2954). More than one actor could be addressed in one reply message. Replies were often part of short discussions among more than two people. Politicians addressed a user in their reply messages on Twitter 20,497 times. Local politicians received the most reply messages of all actors, followed by citizens, journalists and MFAs, which are also included as reference for comparison (see Table 6). MFAs received most messages per actor. These four groups already cover almost two-thirds (65%) of all actors addressed in the messages.

Journalists following politicians on Twitter

To answer our last research question, we analysed the number of journalists following MFAs on Twitter. Table 6 shows that journalists also constitute an important group of actors in the Swiss political Twitter sphere. On average, 71.9 (SD = 50.2) journalists follow every MFA, but in return, MFAs only follow an average of 40.9 (SD = 50.3) journalists. Overall, the ratio of journalists being followed versus journalists following is 1:1.75. We conducted a multiple linear regression analysis with personal and Twitter use characteristics of MFAs as predictors to explain the number of journalists following. The number of messages written per day was the main independent variable, and newcomer status in parliament, time on Twitter since registration in days and party size were control variables included in the model (see Table 7).[4] The results show that the number of messages written per day significantly explains the number of journalists following (b = 32.88, $t(76)$ = 4.31, p < .001, η_p^2 = .20) after controlling for the effects of newcomer, number of party size and time on Twitter since registration (b = 0.039, $t(76)$ = 3.42, p < .01, η_p^2 = .13). The more active an MFA is on Twitter, the more journalists will follow him or her. We tested the significance level of the predictors using bias-corrected and accelerated bootstrapping procedures (Davison and Hinkley, 1997). Regression coefficients were computed for each of the 50,000 bootstrapping samples. We found that the effects of messages per day (LLCI = 12.88, ULCI = 58.83) and days on Twitter since

Table 6. Overview of all actors being addressed in reply messages including the SFA politicians.

Actor	Number of actors	Number of replies	Number of replies per actor
Local politicians	454	4279	9.43
Citizens	865	3577	4.14
Journalists	376	3382	8.99
MFAs	63	2050	32.50
Media channels	226	1590	7.04
Professionals	202	1515	7.50
Lobbies/unions/NGOs	181	967	5.34
Art/entertainment/sports	160	948	5.93
Parties	87	559	6.43
Government	65	546	8.40
Twitter celebrities	24	254	10.58
Campaign channels	27	253	9.37
Experts	34	223	6.56
Enterprises	86	194	2.26
Foreign politics	88	130	1.48
Universities	16	30	1.88
Total	2954	20,497	

SFA: Swiss Federal Assembly; MFAs: Members of the Federal Assembly; NGOs: non-governmental organizations.

Table 7. Ordinary least squares (OLS) with number of journalists as followers as dependent variable.

	Dependent variable
	Journalists as followers
Messages per day	32.879*** (7.631)
Newcomer (1 = yes)	−8.990 (9.999)
Days on Twitter	0.039** (0.011)
Party size	1.191 (0.749)
Constant	−1.001 (21.051)
N	81
R^2	.3537
Adjusted R^2	.3197
Residual SE	41.42 ($df = 76$)
F statistic	10.4*** ($df = 4$; 76)

SE: standard error.
Unstandardized b with standard errors (SE) in brackets. Newcomer in parliament as dummy variable, time on Twitter since registration in days and party size (the number of party members in thousands).
**$p < .01$; ***$p < .001$.

registration (LLCI = 0.012, ULCI = 0.071) were statistically different from zero, using a 99% bootstrap confidence interval.

Discussion

The results of the analysis clearly reflect the specific characteristics of Switzerland's *militia* parliament, different linguistic regions and strong federalism. Our study underlines the need to attend to these political characteristics when studying political Twitter use and contributes to what we know about the use of online media in politics depending on characteristics of the political system.

Regarding the diffusion of innovations, on an individual level, the age of the politicians clearly predicts the activity level of politicians. This is also in line with the general Twitter adoption by Swiss politicians. The group of politicians who first joined Twitter was young, male, living in a highly urbanized canton and is actively using the technology. A possible explanation for the low activity level on Twitter of older politicians is the *me too* effect (Metag and Marcinkowski, 2012; Sudulich and Wall, 2009). Politicians open accounts because Twitter usage is a trend, but they are not actively using it. This finding is in line with the diffusion of innovation theory, because, according to Rogers (2003), innovators in the first phase of adoption are more likely to be cosmopolitan young individuals who have many contacts outside their immediate social environment. This is also an explanation for urbanization level as significant predictor for the activity level. Innovators also use Twitter more actively because their network consists of contacts that benefit from communication via Twitter.

Other results of our study shed light on the debate about normalization and equalization. The SVP, which is the strongest party in parliament, is underrepresented compared to the other major parties. This finding is in stark contrast to the ranking of the estimated budgets of the parties for electoral campaigns (Hehl, 2011). The SVP has the highest budget, whereas the SP, which is the leader on Twitter, has the smallest budget of the four major parties. To a certain extent, it can be suggested that financially weaker parties have stronger representation on Twitter because they have, on average, younger politicians (The Federal Assembly, 2014). Following this line of reasoning, the SVP is underrepresented (14%) compared to the overall Twitter rate of the Swiss population (18%) because they have, on average, the oldest party members. Overall, these results point to a tendency of equalization with respect to Twitter in Switzerland at the present moment.

In the internal reply networks, the special case of Switzerland becomes evident. Politicians usually communicate with other politicians from the same linguistic region. Party affiliation was not an efficient indicator for identifying a communication pattern. Swiss politicians communicate regularly with members of other parties but mostly with those from the same regional background. Thus, geographic factors have a stronger impact on communication than party affiliation.

A further analysis of the communication with external actors shows that most reply messages are directed at politicians at local level and at journalists, but citizens are also addressed quite often. Still, in the Swiss context, Twitter can be characterized as an elite network in which mainly political journalists, politicians and lobbyists interact with each other. In Austria (consensus democracy), a similar development could be observed

(Ausserhofer and Maireder, 2013). An explanation for Twitter being an elite network is the low penetration rate of Twitter in Switzerland.

The effect of Twitter on the press has not been analysed in this study, but the level of activity and the strong follower connections between journalists and politicians point to a possible agenda-building effect. The more active a politician is on Twitter, the more journalists will follow him. As the age predicts the activity level on Twitter, it can be suggested that younger politicians have a higher chance reaching journalists on Twitter because they are more active than are older politicians.

In this vein, our results demonstrate that the active use of Twitter is crucial to fully make use of its potential as a communication channel. In light of the normalization versus equalization debate, this finding means that, thus far, personal characteristics such as age are more important for the successful adoption of Twitter than other resources. By taking both theoretical approaches into account, our study demonstrates that in the beginning of the adoption process equalization tendencies are predominant.

So far, the results of the adoption process of Twitter among Swiss politicians over time possibly explain the shift from equalization towards normalization. Diffusion of innovations theory provides a suitable explanation for a shift towards normalization. This process resembles the *regression towards the mean* (Bland and Altman, 1994). Early adopters as an extreme group consist of young and male politicians from small parties, but their advantage erodes over time. Eventually more established politicians will also adopt Twitter.

The results of the special case of Switzerland as a least-likely critical case with strong consensus democracy are of significance for international comparative research. Switzerland, the United States, Australia and Germany are all federalist countries. However, there is, for example, a major difference between Switzerland (consensus democracy) and the United States and Australia (majoritarian democracies) in Lijphart's (1999) executive-parties dimension. This difference is also reflected in politicians' communication networks. In Switzerland, party affiliation does not explain communication between politicians, whereas in Australia and Germany, party affiliation explains a large share of the Twitter communication (Grant et al., 2010; Plotkowiak and Stanoevska-Slabeva, 2013). Our results indicate a possible influence of Lijphart's (1999) distinction between majoritarian democracies, in which one party has control over government, and consensus democracies, such as Switzerland, on the usage of social media in politics in a country comparison. Results of studies in other countries can be compared with Switzerland in a most different system design approach.

Our study has shed some light on the adoption of Twitter by Swiss politicians being driven by – among other factors – a politician's age. It is limited with respect to which other factors influence the adoption of Twitter, and, in particular, why some politicians do not make use of this new technology. Future research could complement our study by focusing on politicians who are not on Twitter and studying their motivation and individual determinants. Our results give a possible explanation for the shift from equalization to normalization in a country. Studies should consider diffusion of innovation theory and take the current phase they are focusing into account.

Finally, this study could be complemented by a content analysis of the tweets which were sent by Swiss politicians. What kind of information do Swiss politicians send via Twitter? Is it factual information about political events, or is it more dialogue-oriented

messages and attempts to start political debates? With such a content analysis approach, the deliberative potential of Twitter in the political public sphere in Switzerland can also be assessed.

Notes

1. Only one politician wrote more than 3200 messages, which is the maximum number of messages that can be extracted over the Twitter Application Programming Interface (API). For this politician, the most recent 3200 messages were extracted.
2. In addition to the manual identification of accounts, followers' usernames could be cross-checked with a list of journalists from Bauer (2012).
3. Tweets written from 2011 onwards were included in this analysis because since then the current Members of the Federal Assembly (MFAs) are in parliament.
4. The number of messages per day is also highly significant without the other predictor variables in the model.

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