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Digital Campaigning: Who Benefits?

An Analysis of the 2021 German Federal Election Campaign

May 2022

Abstract

The 2021 German federal election campaign offers a unique setting to investigate the impact of digital campaigning on the election result. Our analysis starts from the observation that the pandemic forced all parties alike to drastically reduce their campaign efforts involving personal interaction and resort to digital campaigning instead. However, parties are likely to differ substantially as regards a) their ability to run online campaigns (the supply side) and b) the receptiveness of their target electorates (the demand side) to such campaign efforts. Therefore, we ask: Which candidates have benefited the most from digital campaigning? Given that Greens and FDP have a substantially younger membership with higher expectations of politicians' social media communication, we expect these two parties to be particularly well-placed to run effective online campaigns and meet a receptive target electorate. In addition, the AfD has always been very active in the digital sphere because it needed to circumvent the low level of coverage by conventional media. Yet few studies examine how candidates' social media activities are related to their election results. Therefore, we will use the GLES candidate surveys – in particular the 2021st survey – to measure a wide range of digital campaign activities of constituency candidates and estimate its effect on electoral returns at the constituency level. As we know that not all candidates have answered the candidate survey, we will cross-validate this analysis with our own data set covering the Facebook, Twitter, and Instagram activities of all constituency candidates of parties that are represented in the 20th Bundestag.

Keywords

Germany ▪ constituency campaigns ▪ campaign organization ▪ personalization ▪ digitalization ▪ electoral success

Introduction

Election campaigns are no longer what they used to be. In the old days, they were about mass rallies in order to reach as many people as possible. Door-to-door canvassing and information stalls in the inner cities manned by the local candidates complemented a campaign logic that was geared towards contacting – and mobilizing – as many people as possible. Clearly, with the advent of TV this campaign style lost much of its functionality because potential voters could be reached more efficiently by TV ads. The proliferation of TV channels in the wake of private TV accelerated this trend. Internet-based campaigning, particular social media campaigning offered a new level of outreach couple with the vastly increased possibility of targeting voters more efficiently and directly. At the same time, however, we could notice a countervailing trend and all larger German parties rediscovered the effectiveness of door-to-door canvassing in the 2017 election campaign (<https://www.faz.net/aktuell/politik/bundestagswahl/warum-der-haustuerwahlkampf-wieder-so-modern-ist-15167606.html> ago).

The 2021 German federal election campaign was different. The pandemic forced all parties alike to resort virtual campaign techniques and suspend their newly acquired face-to-face campaign skills. However, parties are likely to differ substantially as regards a) their ability to run online campaigns (the supply side) and b) the receptiveness of their target electorates (the demand side) to such campaign efforts. Hence, the 2021 campaign offers a unique setting to investigate the impact of digital campaigning on the election result. We investigate this question by focusing on individual candidates and their campaign activities as this facilitates a large-N design. Using data from the German Longitudinal Election Studies (GLES) on campaign activities and our own Twitter data, we ask: Which candidates have benefited most from digital campaigning?

In recent years, an increase in social media use by German politicians can be observed, with politicians from different parties communicating differently. Social media are defined as ‘disentrained, persistent online channels of mass-personal communication that facilitate interaction among users’ (Kümpel, 2022, p. 225). Regarding the supply side, politicians of minor parties tend to use new digital tools more intensively to compensate for the lower media coverage they receive as it was expected by those formulating the equalization thesis (e.g., Gibson & McAllister, 2015). Moreover, politicians consider the demand side in their communication: Their social media strategies are also influenced by the kind of communication their followers might expect - the perceived audience expectations (Kelm, 2020).

Given that Greens and FDP have a comparatively young membership with arguably higher expectations regarding the social media communication of politicians, we expect these two parties were particularly well-placed to run effective online campaigns and meet a receptive target electorate

(Niedermayer, 2020). In addition, the AfD has always been very active in the digital sphere because it needed to circumvent the low level of coverage by conventional media.

It is plausible to expect that different campaign strategies leave their mark on electoral returns. Yet few studies examine how candidates' social media activities are related to their election results. Therefore, we will use the GLES candidate surveys – in particular the 2021st survey – to estimate the effect of digital campaign activities of constituency candidates on their electoral returns at the constituency level. As not all candidates have answered the candidate survey, we will cross-validate this analysis with our own data set covering the Facebook, Twitter, and Instagram activities of all Bundestag candidates of parties that are represented in the 20th Bundestag.

In a nutshell, our main argument is that the enforced push towards digital campaigning has benefitted some parties and their candidates more than others, and we will test this assertion at the constituency level, which will permit a very fine-grained analysis.

Digital Campaigning in Mixed-Member Electoral Systems

Winning elections is decisive for political careers and access to political power. However, while there is a longstanding debate about the personalization of election campaigns and voting behaviour at the national level, constituency campaigns and their electoral impact have attracted less attention. There are several reasons for this. For Germany, it was argued that personalized constituency campaigns are largely irrelevant for local electoral success, as party identification and the national party image determine vote choice (Nestler, 2014; Falter et al. 2000; Müller 1999). Moreover, constituency candidates were said to have little scope for individual decision-making and action. Instead, they would mainly implement the national campaign on the ground, as planned by national party headquarters (Kitzinger 1960). Therefore, 'succeeding research did not see any point in further investigating the constituency level' (Gschwend & Zittel 2015: 339).

The prevalence of the national level has been increasingly questioned as modern campaigns (Norris 2000) and party organizations changed (Carty 2004). Whiteley and Seyd (2003: 301), for example, conclude in their analysis of the effects of local campaigning on voting in the 1997 British general election 'that the image of the electoral-professional party as a well-organized "army" that obeys commands from the centre is misleading when applied to understanding party election campaigns'. Moreover, party identification has declined in Germany and other European countries (Arzheimer 2006), so there is a stronger incentive for personalized election campaigns. This incentive should be particularly relevant in mixed-member electoral systems, where voters have more than one vote and thus an incentive for ticket-splitting. Strategic voters can vote for their preferred party with the second vote and support a promising candidate with their constituency vote (1st vote) even if this candidate is not a member of their favoured party.

In the context of a wider debate on the personalization of politics (Rahat & Kenig 2018) scholarly attention on constituency campaigns has increased in recent years. This includes analyses of intra-party campaign management (Bukow & Angenendt 2019), the localization of constituency campaigns, i.e. the emphasis of local issues apart from national campaign issues (Thorlakson 2013; Farrell/Webb 2000; Karlsen & Skogerbo 2015), and the party-candidate relationship focusing on individualized campaigns and personalized communication strategies (Giebler & Wüst 2011; Zittel & Gschwend 2007, 2008).

Conceptually, we need to distinguish two dimensions of candidate-centred campaigning: While personalization refers to campaigns that are tailored to individual politicians and often moulded by them, privatization refers to the personal side of politics, including a range of personal characteristics and their private conduct of life (Pruysers et al. 2018). In other words, political competency would fall under personalization whereas emphasis on personality traits or appearance would be privatization.

Empirically, there were contradictory results on whether privatized or personalized election campaigns pay off in electoral terms, not least because these two dimensions are often not kept separate – and, to be sure, they tend to mingle empirically. Pappi and Bräuninger (2014: 340) argue that strategic voting could be more important than privatized voting for electoral success in constituencies: As candidates from smaller parties have a lower chance of winning constituencies, the party label of promising candidates instead of their apolitical characteristics may be decisive from a voter's perspective. This perspective is supported by findings of Moser and Scheiner (2005) and Herrmann and Pappi (2008) for Germany. More recent findings, on the other hand, show that voters in Germany do show personalized voting behaviour if they are motivated to do so: 'German voters are ready to personalize their votes, if they are asked to do so, if constituency candidates actively engage in personal vote seeking behaviour in their campaigns' (Zittel & Gschwend 2015: 340). That non-political candidate characteristics can positively affect electoral success in the constituency is also shown by findings that candidates' doctorate (Schneider & Tepe 2011) and physical attractiveness are honoured by voters (Rosar et al. 2008). Results for Belgian constituency campaigns point in a similar direction: 'candidates who aim to attract attention for themselves rather than the party [...] score better' (van Erkel et al. 2017: 384). The decision in favour of a personalized or privatized campaign strategy depends on the financial resources of candidates, which enable them to organize and conduct their election campaign autonomously without national party support. Party type may also play a role: Candidates from former catch-all parties organize their constituency campaigns more often without national party support than niche party candidates (van Erkel et al. 2017; Bukow & Angenendt 2019).

The Impact of Digital Campaigning

Our analysis links the debate on the personalization or privatization of constituency campaigns and asks whether digitalized election campaigns pay off electorally for constituency candidates. In this respect, the Corona pandemic has led to different adaptive strategies in parties (Poguntke et al. 2021: 15-16). Most prominently, we are observing a shift into the digital sphere. For example, some of the German parties gained media attention when conducting their party councils (small party congress) online. However, digital technologies were changing the very nature of parties even before the pandemic. The pandemic should accelerate a trend that had already begun in the late 1990s when internet communication technologies (ICT) were implemented in party organizations (Römmele 2003). In this early phase of digitalization, parties mainly used the intranet to simplify administrative processes within their organization and to coordinate different party branches (Hanel & Marschall 2014; Römmele 2003: 10). In election campaigns, the intranet has served as an important tool for the party in central office to provide the party on the ground with campaign material and information (Lilleker et al. 2011). Nevertheless, it remains an empirical question whether the Corona pandemic boosted digitalization and whether the digitalized form of personalized campaign strategies is promising.

Previous studies on the impact of ICTs on electoral success have come to different conclusions, showing that candidates' use of web 2.0 tools, such as blogs or social networking sites, are stronger related to their electoral success than web 1.0 tools or websites. Pioneer work was conducted by D'Alessio (1997), who has shown that candidates in the 1996 U.S. congressional election received more votes if they had a website. This positive relationship was unexpected, as very few people used these websites in the 1990s. Therefore, D'Alessio (1997) suspected that websites might be a proxy for the quality of the whole campaign and may have a mobilising effect on electoral participation or that candidates ahead in the polls are more likely to set up a website (reverse causality). Latimer (2007) found similar results in the 2002 mid-term elections and Wagner and Gianous (2009) for Democratic candidates in the 2006 congressional elections. A positive correlation is also observable in the analysis of the use of web 1.0 tools in elections in European countries, such as Ireland (Sudulich & Wall, 2010), Poland (Koc-Michalska et al., 2014), and the Netherlands (Jacobs & Spierings, 2016). However, opposing findings are also present, e.g. in the 2006 elections in Kansas and North Carolina (Rackaway, 2007), the 2007 Australian elections (Gibson & McAllister, 2011), the 2010 Dutch general election (Jacobs & Spierings, 2016), or the 2011 Danish election (Hansen & Kosiara-Pedersen 2014).

For elections in Germany, empirical results are also contradictory: Running a website was not positively associated with candidates' electoral success in the 2009 local election and the 2020 state election in North Rhine-Westphalia, but it was in the 2009 national election (Marcinkowski & Metag, 2013). In the 2012 state election in North Rhine-Westphalia, a website only positively influenced the

election result for CDU candidates, which indicates differences between parties (Flemming & Marcinkowski, 2014). Consequently, we can assume that the influence of (web1.0) digital campaigning varies between different countries, periods, and even within a country. The findings thus highlight the importance of taking the social or political environment into account, which may moderate the impact of digital campaigns.

Several studies have indicated that candidates' use of web 2.0 tools, such as blogs or social networking sites, are more strongly related to their electoral success than web 1.0 tools or websites (e.g. Rackaway, 2007; Gibson & McAllister, 2011; 2015). More recent studies focus on the electoral impact of candidates' Twitter and Facebook use: In the 2010 Dutch election, candidates who used Twitter in their campaign received slightly more preferential votes than those who did not (Kruikemeier, 2014). Moreover, the more interactively candidates used Twitter, the better their election results were (Kruikemeier, 2014). A theoretical explanation could be that interactive communication might induce the feeling that politicians are more responsive to citizens' interests, which might lead to stronger vote intentions (Lee & Shin, 2012).

However, the analysis of web 2.0 campaign elements also shows contradictory results in the overall view: Candidates' outreach on Twitter was associated with more preferential votes in the 2010 and 2012 Dutch elections (Jacobs & Spierings, 2016) as well as in the 2011 election in New Zealand (Cameron et al., 2016). However, in the 2015 Swiss federal election, candidates' Twitter activities and the resonance of their tweets were not related to electoral success (Kovic et al., 2017). The same holds for the 2015 and 2017 U.K. elections (except for the positive effect of tweet frequency) (Bright et al., 2020). In Germany, having a Twitter account and the number of Twitter followers were also not positively associated with the electoral success of candidates in the 2010 and 2012 state elections in North Rhine-Westphalia (Flemming & Marcinkowski, 2014; Marcinkowski & Metag, 2013). However, there was a positive relationship between the number of tweets and the election results of minor party candidates in the 2012 election (Flemming & Marcinkowski, 2014).

Compared to Twitter, previous studies less frequently considered the impact of candidates' Facebook use, even though many more people use Facebook for political information than Twitter (Geese & Hees, 2021; Newman et al., 2021). Some studies, e.g. on the 2015 Swiss federal elections (Kovic et al., 2017) and the 2014 Hungarian national elections (Bene, 2018), have shown that the intensity of Facebook use was not related to election outcomes but reactions to posts were (Bene, 2018; Kovic et al., 2017). In the 2018 Israeli municipal elections, candidates' number of Facebook posts, fans, and likes are positively related to candidates' vote share (Lev-On & Steinfeld, 2021). The number of Facebook friends was also positively related to candidates' electoral success in the 2011 election in New Zealand (Cameron et al., 2016) and in the 2015 election in Finland (Vepsäläinen et al., 2017). For Germany, previous studies support that a Facebook account on its own did not affect electoral success.

Instead, the number of Facebook followers pays off (Marcinkowski & Metag 2013; Flemming & Marcinkowski 2014). From a theoretical point of view, a 'two-step' process is therefore reasonable (Gibson & McAllister 2015; Sudulich & Wall 2010): Accordingly, social media has no direct impact on followers, but through followers' interaction with content, social media content has an impact on followers' friends.

It is probably not very surprising that both the research on the personalization of campaigning and on the impact of social media campaigning have yielded contradictory results. For one, social media are a moving target in that they change quickly. Furthermore, their usage differs widely between countries. Similarly, the investigation of personalized campaigns suffers from the fact that campaigns are highly context-bound which makes comparisons difficult – simply because political contexts and candidates are different. We cannot fully solve this problem with our study. Inevitably, it can only deal with the social media which are currently in use and they may be obsolete in a few years' time. However, we can control for much of the context effects by our large N study which follows the logic of a most different systems design. By including as many individual constituency campaigns and candidates as possible we maximize the context variance. Hence, if we find effects of social media campaigning we can be reasonably sure that these are not spurious effects caused by specific contexts.

Digital Campaigning in the 2021 Bundestag Elections

What are the effects of the supposed trends towards digital campaigning? As we have already pointed out, this study focuses on the constituency level as this has thus far not been in the spotlight of research. In addition, it offers itself to a large-N research design and promises to provide substantial insights as the parties involved are substantially different as regards their age profiles which arguably is a crucial variable when it comes to the receptiveness of digital campaigning.

Our first and simple empirical question refers to the degree of change between 2017 and 2021. Clearly this does not require much theoretical reasoning. On one hand, four years are a long time in the digital age which means that we can expect a 'natural' increase in the use of digital campaign techniques simply because the relevant technology has developed further and related media and communication channels have either proliferated or increased their usage. On the other hand, the pandemic has worked as an external shock (Harmel & Janda, 1994) which is likely to have changed parties' organizational routines such as their campaign styles. The dangers associated with physical presence and close contact will have led parties to intensify their digital campaigns while reducing campaign techniques involving physical presence (Poguntke et al., 2021). Furthermore, we expect that the growth of social media usage will have grown even more as they offer particularly suitable ways of directly contacting and engaging a large number of voters. German Politicians also perceive this advantage (Kelm et al., 2019). Furthermore, over time, politicians have become increasingly aware that

they can reach and influence multipliers such as journalists with their social media activities (Kelm et al., 2019), which is why we expect that politicians might focus their digital efforts primarily on social media.

H1a The use of digital campaigning by constituency candidates has increased between 2017 and 2021.

H1b The use of social media by constituency candidates will have grown more than general digital campaigning between 2017 and 2021.

It goes almost without saying that this should have an effect on the electoral results. All other things being equal, constituency candidates should achieve better results if they manage to increase the presence through intense digital campaigning and, in particular, through engaging with voters via social media.

H2 The intensity of digital campaigning is positively associated with better results for the constituency vote (Erststimme).

In ordinary times, the effect of digital campaigning could partially be neutralized by conventional, but often digitally supported, campaign techniques such as mass rallies, door-to-door canvassing or information booths on the market squares (Kefford et al., 2022). In other words, even in the digital age parties might still be successful using traditional campaign techniques especially if their respective electorate is not mainly composed of so-called digital natives. It follows from this that in times of a pandemic when face-to-face techniques are largely unavailable, digital campaigning is particularly successful.

H3 The effect of digital campaigning was stronger in 2021 than in 2017.

To be sure, the expected effects will not be equal for all parties. Arguably, two mechanisms will work to amplify the positive effects of digital campaigning. First, parties on the fringes of the political spectrum can normally not expect to receive the equal coverage by the mainstream media. Hence, their usage of digital campaign techniques should be particularly effective – simply because they find it harder to reach potential voters through conventional media channels. In Germany, this applies to the AfD.

Second, party audiences differ as regards their age profiles and are hence likely to also differ regarding their receptiveness to digital campaigning. While it has been suggested that parties increasingly diversify their membership formulae (Scarrow, 2015; Gauja 2015), it may suffice here to simply distinguish between members and potential voters as relevant target groups of campaign communication. Members are particularly relevant as the ones who are likely to spread whatever message they receive from their candidate. Furthermore, they may be mobilized to engage directly in the campaign. Hence, digital campaigning should have stronger effects if a party's membership is relatively young and hence receptive to digital communication. Similar effects are at work within the electorate at large. Younger voters are known to be more attentive to digital campaigning which means that parties targeting younger voters should benefit particularly from digital campaigning. In Germany, this applies to FDP and the Greens which both have a relatively young membership base and electorate.

- H4 The candidates of AfD, FDP and Greens benefit more from digital campaigning (per unit of media activity)

Method

To test the hypotheses, four data sets are used. First, we collected the number of candidates in each constituency, political and demographic information about the constituency candidates and the final results of the constituency candidates of the 2017 and 2021 German federal election published by the Federal Returning Officer (2021). Second, we rely on the 2017 candidate survey of the German Longitudinal Election Study (GLES; Roßteutscher et al., 2018). Third, we rely on the 2021 candidate survey of the GLES (Roßteutscher et al., 2022). By using both candidate surveys, we are able to observe differences between 2017 and 2021. However, the candidate surveys have a few shortcomings: a) not all candidates have participated in the surveys (self-selection); b) the candidates were only asked *whether* but not *how* they used digital platforms; c) their digital activities were based on self-reported assessments and not on their actual activities. Therefore, we rely on a fourth data set. This dataset contains the Twitter, Facebook and Instagram usage of the constituency candidates, which we collected using a quantitative content analysis. In the following, the data sets and measurements are described.

Target Population

Each data set focuses the constituency candidates of the parties that are represented in the Bundestag after the election. This includes the constituency candidates of CDU/CSU, SPD, Greens, FDP, AfD, The Left, and additionally the SSW for 2021. Constituency candidates of other parties and the list candidates of the parties included in our study therefore are not considered respectively removed from the GLES data sets for 2017 and 2021.

Election Results

The final results of the 2017 and 2021 federal elections published by the Federal Returning Officer (2021) are used to measure the success of the constituency candidates. In our analyses, we will use both a) the relative share of first votes and additional b) the relative share of second votes¹ for each constituency candidate in their respective constituency.²

Candidate Surveys

The candidate surveys (Roßteutscher et al., 2018; 2022) are part of the Comparative Candidate Survey project. Candidates whose parties have entered the Bundestag with parliamentary group status were invited to participate (CDU/CSU, SPD, Greens, FDP, AfD, The Left). ...

Content Analyses

After the federal election 2021, we manually coded whether a constituency candidate was active on Facebook, Twitter, and/or Instagram. We have defined constituency candidates as actives if they had a verified account from which they had sent at least one post, which were set up before April 2021 and still existed in February 2022. In addition, we manually coded, among other things, how many posts the candidates published on the platforms and how many followers each of them had.³

To finalize the content analysis data set, we added for each of the constituency candidates the electoral results, the party affiliation, the region of the constituency, the number of opponents in the constituency, information about the candidate's gender and age, his or her political importance, and his or her membership of Bundestag at the time of 2021 general election. In total, the final data set

¹ In the German federal election, each voter can cast two votes. With the first vote, voters can elect the local representative of their constituency. The second vote is used to elect a party list. This vote determines the relative strength of each party in the parliament.

² All empirical analysis reported in the following are also replicated with the absolute number of first votes and second votes as dependent variables, but without substantial other findings.

³ We used this additional information to analyse the association between constituency candidates' social media use and the election results more deeply than the models presented in the following section. But in general, the results only confirm the reported findings. Because of this it is wasted to report them too.

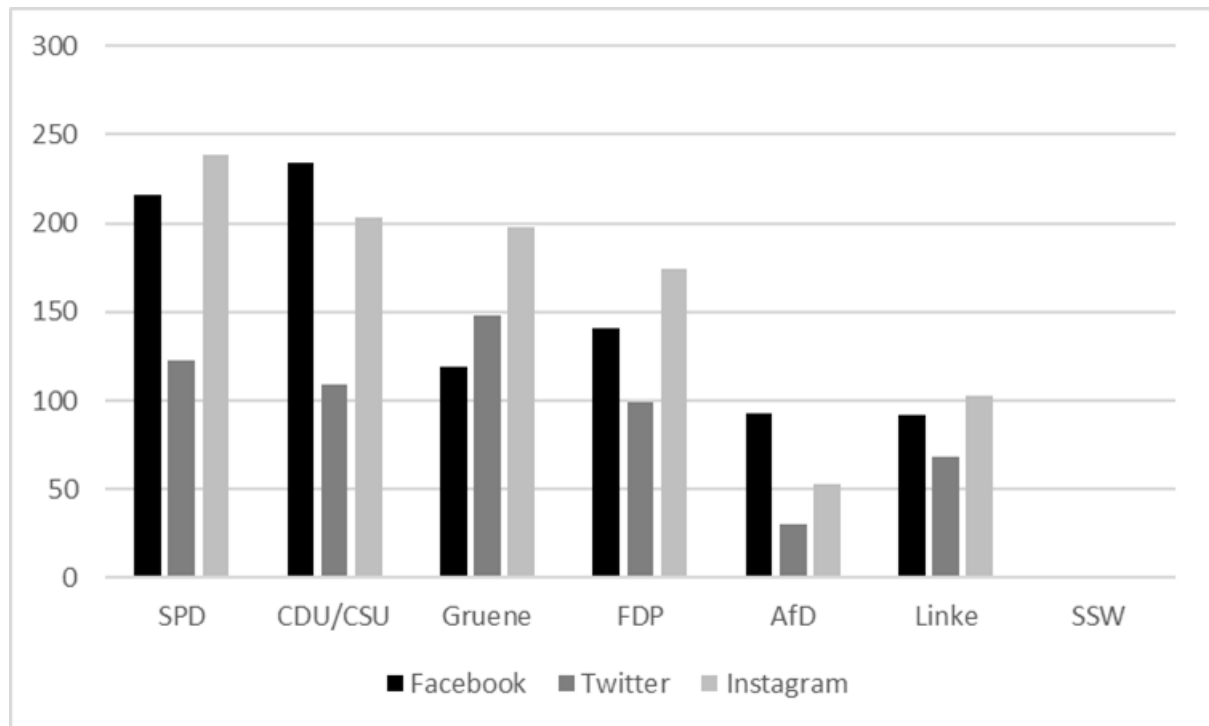
includes all relevant information for the 1,790 persons of the target population. This includes 299 each for CDU/CSU, SPD, Greens and FDP; 296 for The Left, 293 for the AfD and six for the SSW.

Results

Currently, we are unable to test H1a, H1b and H3 because the data set for the GLES candidate study 2021 is unfortunately not yet available.

The results of our content analysis show that many of the 1,790 constituency candidates used Facebook, Twitter, and Instagram for campaigning in the 2021 federal election campaign (Figure 2; see also Schmidt, 2022). In total, 970 candidates had a profile on Instagram, 850 on Facebook and 578 on Twitter. There are differences in the use of social media platforms between the parties. Instagram was the most widely used social media platform among candidates of SPD, Greens, FDP, and The Left. Candidates of the CDU/CSU and the AfD primarily used Facebook as campaigning tools. Candidates of the Greens used Twitter more often than their competitors. Only one of the six SSW constituency candidates used Twitter, none of them used Facebook or Instagram. Taken together, the absolute numbers indicate that the constituency candidates of the various parties had different levels of presence on different social media platforms. The candidates of the smaller parties were by no means represented more frequently on the platforms than those of the larger parties.

Figure 2 Constituency Candidates' use of Facebook, Twitter and Instagram by party memberships



Notes: Entries are absolute cases; SPD: Social Democratic Party; CDU/CSU: Christian Democrats; Gruene: Green Party; FDP: Liberal Party; AfD: Right Wing Populist Party; Linke: The Left; SSW: South Schleswig's Voters Union (Party of the Danish and Frisian Minorities in Germany).

Data source: Own data collection.

We calculated linear regression models to test whether digital campaigning is positively associated with better results for the constituency vote in the federal election 2021 (H2). The vote share of the constituency candidates served as dependent variable, candidates' use of Facebook, Twitter and Instagram served as independent variables. The effects were controlled by candidates' party membership, the number of candidates' opponents in the constituency, his or her age and gender, whether the candidate held an important position in German federal politics, and whether the candidate was already member of the federal parliament.

The first model (Table 2) explains 79.1 percent of the variance of the candidate's vote share. The results show that candidates who used Instagram ($B = .87, p < .01$) or Facebook ($B = .50, p < .10$) achieved a higher vote share than their competitors who did not. The use of Twitter, on the other hand, did not result in better election results ($B = .44, ns$). Thus, H2 can be partially supported.

The second model is calculated to test whether candidates of AfD, FDP and Greens benefit more from digital campaigning than their competitors (H4). Therefore, we added interaction terms between candidate's party membership (1 = party membership AfD, FDP or Greens, 0 = other party membership) and social media use. The explained variance of the second model did not change

compared to the first model. As the interaction terms show no significant association with the vote share, we have to reject H4.

Although we cannot identify a significant interaction term, the effects could differ across parties. Thus, we calculated a third model, in which we test the extent to which candidates benefit from social media use relative to candidate from their own party who did not engage in such campaigning ('intra-party competition'). The explained variable of vote share ranged between 17.8 percent (FDP) and 71.1 percent (AfD). The results show that constituency candidates of the SPD ($B = 2.91, p \leq .010$), the AfD ($B = 1.53, p \leq .050$) and The Left ($B = .68, p \leq .100$) have benefited from Instagram use compared their candidates from the same party who did not use Instagram. Constituency candidates of the Greens who used Facebook during the election campaign ($B = 1.22, p \leq .100$), and especially those who used Twitter ($B = 2.26, p \leq .001$), performed better in elections than their colleagues from the same party. Arguably, these effects indicate that the potential electorates of individual parties differ as regards their receptiveness to specify social media outlets. In other words, candidates who intensely use those social media which are popular among their potential constituency can expect higher electoral returns.

To check the robustness of the analyses, we have calculated additional linear regressions. In these additional models, (a) candidate's absolute number of votes and (b) the vote share of the candidate's party in the respective constituency ('Zweitstimme') were used as dependent variables. In terms of candidates' absolute votes, the result does not differ significantly from the presented results. In terms of the vote share of the secondary vote, we can observe a positive effect of the interaction term between the party membership and Twitter usage ($B = 1.01, p \leq .05$). Moreover, Facebook use has no significant effect on the secondary vote in intra-party competition among the Green Party.

Table 2 Linear regression models of the vote share of constituency candidates at the German general election 2021

	all parties		SPD	CDU/ CSU	Greens	FDP	AfD	Left
	Model 1	Model 2				Model 3		
Facebook	.50 ⁺	.90 [*]	.39	.35	1.22 ⁺	.22	-.34	.39
Twitter	.44	.15	-.46	.46	2.26 ^{***}	.11	-.89	.25
Instagram	.87 ^{**}	1.02 [*]	2.91 ^{**}	.59	.49	.03	1.53 [*]	.68 ⁺
Facebook x (Greens FDP AfD)		-.76						
Twitter x (Greens FDP AfD)		.66						
Instagram x (Greens FDP AfD)		-.30						
Candidate's party membership (RC: CDU/CSU west)								
CDU/CSU east	-8.61 ^{***}	-8.59 ^{***}		-8.23 ^{***}				
SPD west	-1.62 ^{***}	-1.61 ^{***}						
SPD east	-5.63 ^{***}	-5.55 ^{***}	-3.18 ^{**}					
Greens west	-13.24 ^{***}	-12.85 ^{***}						
Greens east	-20.28 ^{***}	-19.98 ^{***}			-7.38 ^{***}			
FDP west	-19.56 ^{***}	-19.11 ^{***}						
FDP east	-19.99 ^{***}	-19.58 ^{***}				-.85 ^{**}		
AfD west	-19.60 ^{***}	-19.20 ^{***}						
AfD east	-7.12 ^{***}	-6.67 ^{***}					12.94 ^{***}	
Left west	-24.00 ^{***}	-23.79 ^{***}						
Left east	-16.55 ^{***}	-16.41 ^{***}						7.85 ^{***}
SSW	-23.01 ^{***}	-22.66 ^{***}						
Number of candidate's opponents in the constituency	-.20 ^{***}	-.20 ^{***}	-.82 ^{***}	-1.10 ^{***}	1.03 ^{***}	-.04	-.54 ^{***}	.28
Candidate's age (RC: ≤ 29 years)								
30 - 39 years	.70	.71	2.72 ⁺	1.91	-.25	.52	1.03	.18
40 - 49 years	1.11 [*]	1.10 [*]	3.64 [*]	2.42	-.74	.83 [*]	.03	.59
50 - 59 years	.72	.71	2.98 ⁺	.84	-.95	.93 [*]	1.84	.53
≥ 60 years	.34	.34	2.57	-.83	.69	.50	.05	1.10 ^{**}
Candidate's gender: female	-.53 [*]	-.52 [*]	-2.27 ^{**}	-1.02	.71	-.50 ⁺	.39	.08
Candidate holds an important position in German federal politics	3.02 ^{***}	3.69 ^{***}	4.83	2.14	5.38 [*]	6.46 ^{***}	8.07 ^{***}	3.82 ^{**}
Candidate is already member of the Bundestag	3.59 ^{***}	3.02 ^{***}	5.14 ^{***}	4.63 ^{***}	2.64 ^{**}	1.26 ^{***}	-.25	1.40 ^{**}
Intercept	28.21 ^{***}	27.91 ^{***}	29.48 ^{***}	36.25 ^{***}	1.99	8.26 ^{***}	12.80 ^{***}	-.39
adj. R ² in %	79.1 ^{***}	79.1 ^{***}	25.6 ^{***}	44.2 ^{***}	46.2 ^{***}	17.8 ^{***}	71.1 ^{***}	68.4 ^{***}
N	1,790	1,790	299	299	299	299	293	296

Notes: Entries are unstandardized regression coefficients; +: $p \leq 0.100$; *: $p \leq 0.050$; **: $p \leq 0.010$; ***: $p \leq 0.001$; (Greens|FDP|AfD): Dummy variable for Candidates Membership in Green Party, Liberal Party or Right Wing Populist Party; SPD: Social Democratic Party; CDU/CSU: Conservative Party; Greens: Green Party; FDP: Liberal Party; AfD: Right Wing Populist Party; SSW: South Schleswig's Voters Union (Party of the Danish and Frisian Minorities in Germany).

Data source: Own data collection.

Discussion

Our analyses show that digital campaigning by constituency candidates is associated with better election results. Candidates from different parties use social media platforms with different intensities, which also results in different effects of this usage per party. This is a noteworthy contribution to research on the effects of digital campaigning, as many studies, especially with a German context, could not detect similar effects. One reason could be that the special circumstances of the 2021 federal election, in particular the restrictions imposed by the fight against COVID-19, led to a stronger effect of digital activities. Another reason could be that previous studies did not take Instagram usage into account. However, Instagram use has the strongest correlations with election results across party lines.

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