Check for updates

Approaching the Unknown. The COVID-19 pandemic, political parties and digital adaptations: party élites' perceptions in Italy and Spain

Davide Vittori[1]* and Oscar Barberà[2,3]

[1]Université Libre de Bruxelles, Brussels, Belgium, [2]Departament de Ciència Política i de l'Administració Pública, University of Valencia, Valencia, Spain, [3]European School of Political and Social Sciences (ESPOL)-Lab, Université Catholique de Lille, Lille, France

During COVID-19 politics was radically transformed. Even though parliaments, parties, and parliamentary groups continued working, they did so mainly through digital means. Our aim is to investigate how political parties and their élites reacted to those changes. For this aim, we launched a pilot survey among party élites in Spain and Italy. We use descriptive statistics and multivariate OLS regressions to answer to our research questions. Our results point out that parties quickly adapted to executive online meetings, but meetings of other (representative) organs were far less frequent. As for the élites' adaptation and in particular privacy concerns, we find that socio-demographic characteristic of the élites matter and being member of a digital party are not crucial determinants, as we expected. Ideology, on the contrary, play a much relevant role, with right-wing élites being more concerned about privacy. Finally, younger and more educated respondents are more favorable toward moving some parties' activities in the on-line sphere.

KEYWORDS

digital parties, élite survey, Spain, Italy, digitalization, COVID-19, political parties

Introduction

The COVID-19 pandemic changed the habits of individuals, organizations and institutions (Ryan, 2020, 2021). So far, the academic literature on the impact of COVID-19 has focused mainly on the legislative arena and in particular on political institutions and actors (Bar-Siman-Tov, 2020; Malloy, 2020; Reniu and Messeguer Sánchez, 2020; Brack et al., 2021). The scholar research has also discussed how several party families, mostly from the radical right family, adapted their discourses or communication strategies during the pandemic (Falkenbach and Greer, 2020; Schwörer and Fernández-García, 2022; Wondreys and Mudde, 2022). However, nor the extent to which political parties have adapted their organization to the COVID-19 related necessities, nor the perceptions of the party élites or members to such transformations have been properly analyzed by comparative studies.

Political parties compete in elections, elect officials, have internal statutes, rules and habits that regulate their daily life. During the first stages of the COVID-19 pandemic it

was impossible for most political parties in Western countries to fulfill their key political functions through in-presence meetings: they could not organize conventions, elect party leaders, or approve their programmes. While political parties' digitalization was on its way before COVID-19, several political parties were lagging behind in the transition to the digital sphere (Raniolo et al., 2021). COVID-19 forced political parties to quickly adapt to the unexpected external shock imposed by the lockdowns. Party leaders hold improvised press conferences from their homes, party executive boards had to be held online. Thematic, or local branch meetings had also to be organized digitally. More broadly, party strategies and daily functioning had to be moved to the digital sphere or be postponed or canceled. By early 2020, that was quite an organizational challenge because digital participation platforms implemented within most political parties were designed for written deliberations and voting, not for the deliberative and socializing needs of their party élites and its active membership (Barberà et al., 2021). While political parties coped with the COVID-19 disruption with diverse technical or organizational solutions, these digital shifts, to the best of our knowledge, have not been systematically analyzed by the comparative literature.

This paper provides some first exploratory evidence of how several political parties in Southern Europe faced the COVID-19 pandemic through the use of digital solutions. However, with the existing lack of empirical studies, a systematic assessment to such question is unrealistic. Instead, this work proceeds through a narrower approach: its aim is to provide some hints of how such swift transformations were perceived by the party élites and to point out which were the main drivers of their perceptions. This seems particularly relevant because party changes can hardly occur without the consent of the party élites. Knowing their stance on externally-imposed digital shifts can help us understanding in what ways parties will adapt to digitalization processes in the future and which factors might hinder these processes. Our research relies on an online pilot survey conducted by the authors right after the end of the first wave of the pandemic, by early summer of 2020. The survey targeted the party élites of the most relevant political parties (e.g., those with seats in parliament) at both the national and regional level in Italy and Spain. Our results show that some digital tools were implemented quickly than others, and that the different perceptions (and future prospects of digital use) of the party élites have mostly been driven by socio-demographic features.

This paper is divided into six sections. The first one summarizes the state of the art of party digital adaptation of before the pandemic and the second tries to address the main questions linked to such new and unexpected phenomenon. Then, the paper turns into a justification of the case selection and a discussion on the main methodological challenges of the online survey This section concludes with the discussion of the main models used in the empirical section. The fourth one examines some key descriptive results of the survey that are afterwards explored a bit more in depth. The fifth section is then devoted to explaining some of the élites' perceptions through some statistical models. The paper ends with a short conclusion.

Parties and digital adaptation: democratic innovations and organizational challenges

Parties adapt to the external environment, and their changes depend on, but are not always determined by, the technological transformations in the society (Raniolo et al., 2021). To stick to an impressionist evolution since WWII, parties have coped with the massification of the communication (e.g., television), with the widespread use of surveys and other statistical methods to know the opinion of the electorate (Panebianco, 1988). The emergence of digital technologies have enabled new forms of political participation (i.e., connective action) and political repertoires that are indeed altering the way political actors organize, mobilize and compete/collaborate (Bimber et al., 2012; Bennett and Segerberg, 2013; Margetts et al., 2015; Chadwick and Stromer-Galley, 2016; Karpf, 2016; Dommett and Temple, 2018).

So far, most of the literature has approached the consequences of technological innovations among parties in terms of normalization or equalization of political competition (Ward and Gibson, 2009). The latter indicates that new parties, being less restrained by previous organizational structure, should benefit the most from new technologies, while older parties find more resistance to party change. The first approach preconized that financial and human resources allow the main parties to ultimately maintain a competitive advantage compared to new actors. However, it is still unclear to what extent digital technologies have effectively been able to equalize political competition (Gibson and Mcallister, 2015).

In Southern Europe, such technological transformations generally coincided with the breakthrough of new actors in the political system, which heavily influenced and promoted contagion effects on established parties. One of the most well-known cases is the business-firm party Forza Italia led by the media tycoon Silvio Berlusconi. Forza Italia is a political party with a very thin organization and with almost no intermediary organizational bodies: the party owed its success in the 1990s to its leader and his widespread presence in the national TV (Hopkin and Paolucci, 1999; Calise, 2011). Since then, the mediatization of Italian politics was massively influenced by Berlusconi's party success (Campus, 2010). By the mid-2010s, genuinely new parties, such as Podemos, Movimento 5 Stelle and the Pirate parties, also promoted a new wave of contagion effects due to their use of digital tools for organizational purposes (Deseriis, 2020a; Vittori, 2020; Raniolo et al., 2021).

In the last years, a growing body of literature has started to explore the consequences of digital technologies as enablers of intra-party political participation (Scarrow, 2014). A recent contribution looking at the digital strategies of several political parties in Southern Europe before the pandemic pointed out that new and usually left-wing oriented parties tend to implement more radical and disruptive reforms in terms of internal participation. Old and usually right-wing parties tend to implement small shifts in the digital sphere, mainly related to either symbolic reforms in the internal organization or to external communication innovations (Raniolo et al., 2021). On the same vein, analyzing the digital platforms of new and highly digitalized parties, Deseriis defined

two digital party's ideal-types, the platform party and the networked party (Deseriis, 2020a,b). The former is highly centralized and with asymmetric power between the leader and the ranks. The latter is more decentralized and focused on the idea of bottom-up deliberative democracy. By the late 2010s, the most successful digitalized parties (Podemos and Movimento 5 Stelle), provided a wide array of affordances for members, but the overall turnout in the direct decision-making procedures were constantly below 50% (Deseriis and Vittori, 2019).

The increasing use of digital technologies is also raising other crucial challenges for parties and their role in representative democracy. In this regard, relying too much on organization and participation platforms (OPPs) might be counterproductive for the functioning of core dimensions of intra-party democracy, but also for trust in party democracy in general. For example, the intensive use of digital technologies for participation raises important privacy and security issues. In digital platforms owned by parties, some party officials might have access to personal and even voting data unless a third organization is not in charge of guaranteeing anonymity. For platforms owned by private organizations, the issue of the privacy of the data (conversations, chats, voting) is even more pressing: if the data are transferred to and owned by private companies, then not only anonymity of voting might not be granted, but also conversations (some of them not intended for public disclosure) might not be secret (Barrat and Pérez-Moneo, 2019; Orozco González, 2021).

The pandemic disruption and the party élites' perceptions of the digital transformation

The previous section has summarized the main findings from the emerging literature on political parties' efforts and challenges to enable intra-party political participation through digital technologies. The COVID-19 pandemic and the subsequent lockdowns posed an even bigger defy because, as stated in the introduction, it forced most Western political parties to move to the digital sphere to continue their everyday activities. So far, the literature has paid scant attention to what where the main digital shifts triggered by such external shock. To what extent the pandemic accelerated the move toward the online sphere? What were the main dimensions involved? Were there differences between parties? Which were the perceptions of the members and party élites? This section provides some general expectations about how and why party élites have coped differently with a few key dimensions of the digital shift during the COVID-19 pandemic: the organization of online meetings and debates; the implementation of online voting procedures; and, related to all of that, the emergence of privacy (and security) concerns. Our aim is essentially conceptualizing the determinants of élites perceptions of digital adaptation's processes.

Following classical assumptions of historical institutionalism, our framework of analysis departs from the idea that at, an organizational level, transforming in-presence meetings, deliberations and voting into their equivalent online was shaped by organizational path dependencies (Hay and Wincott, 1998). In this regard, the adaptation might have been easier for new parties that started building their digital infrastructures and participation platforms since the mid-2010s (Bennett et al., 2018). The same line of reasoning can be applied to other parties that also relied on an intensive use of digital instruments, although mostly for external communication and electoral campaigning. Even if they did not invest in the technology, their staff and party officials could have been more adapted to closely related technologies. That is why there might be differences, which we control for in our models, between parties that had already introduced Online Participation Platforms (OPPs) within their organization or, at least, have already used digital tools to perform essential party functions and parties which have not implemented such tools.

Our first expectation, which is related to the élite adaptation to (forced) shift to the digital, concerns privacy issues. Privacy during COVID-19 was a major problem for Western democracies: apps for tracking population movement were highly controversial and questioned the safety of data collection (OECD, 2020). For political parties, we assume privacy was an issue as well. Online meetings hosted by either an internal platform or by a for-profit private one (e.g., Zoom, Teams, Webex etc.) could easily raise questions about *who controls the controllers* and who manage the data, the recording and, potentially, the votes expressed online. Virtual meetings can be subjected to hacking, votes can be potentially manipulated or made public or disclosed to the administrators of a meeting. Most importantly, despite the growing regulation of GDPR related law in national contexts (Orozco González, 2021), data safety (or the perception of it) could have been a matter of concerns for most parties. Confidentiality and secrecy are often necessary for parties to elaborate their strategy or, simply, to know the opinion of the different internal party agencies. Thus, we wonder whether the élites of the parties trusted the tools they had to use and what did they think about the future of these ways of organizing once the pandemic will be over. The literature in this regard is scant. That is why we exploratively look at the interplay between the belonging to digitally friendly parties and the concern with privacy. As explained in the previous paragraph, we expect that the party élite of digitally friendly parties will be less concerned with privacy than least digitally friendly parties. This could be due to several reasons: because they trusted the way their political parties managed the digital data, because they were aware of the type of information stored by the party, or even because they did care less about privacy as such. Unfortunately, the survey did not control for individual attitudes toward privacy, but it focused on the party-based privacy issue. The literature on party digitalization still lacks a comprehensive analysis of élites perception of privacy-related risks. So, our hypothesis is mainly explorative. That said, we expect that:

Hypothesis 1: The party élite of digitally friendly parties will be less concerned with privacy than other party élites.

The party élites' socialization in digital participation experiences within their parties might also have shaped their experiences. That is why, for the élites of digitally friendly parties, we expect the adaptation to be marginal, if present at all. If such adaptation process is swift, this might also mean that such party élites will have strong preferences for holding future party activities online. To the contrary, we expect to find a much more difficult

adjustment and more reluctance from the élites of less digitally friendly parties. To the best of our knowledge, only a handful of studies have started to inquire the extent to which OPPs have been already introduced in mainstream parties (Biancalana, 2022; García Lupato and Meloni, 2023). That is why we expect that:

Hypothesis 2: The party élites of digitally friendly parties will have stronger preferences for holding future activities online.

Regardless of their party digital socialization, the digital skills of the party élites probably also played an instrumental role in facilitating or hindering their digital adaptation and future preferences (Norris, 2001; Pedersen and Saglie, 2005; Vaccari, 2013). Such studies have pointed out the relevance of socio-political inequalities accessing online political information. In this regard, we believe that generational and educational factors might play a significant effect on such a swift shift. For that reason, we posit that young and educated people find it easier to interact with digital technologies and, thus, might be less worried for privacy issues and be more prone to use them in the future. That said, we acknowledge that not many people were experienced to a fully digital working environment and, thus, the context of the survey might have also reduced the educational and generational gaps. Still, despite this potential limitation, we stick to the literature pre-COVID-19 findings in hypothesizing that:

Hypothesis 3a: Young and educated party élites are less concerned about privacy issues than other groups.

Hypothesis 3b: Young and educated party élites are more favorable toward holding digital party activities in the future.

Case selection and methods

Case selection

For our explorative design, we opted for selecting countries which can be considered similar in several respect. We opted for comparing Spain and Italy for three main reasons: firstly, they are Southern European countries with similar levels of socio-economic development and internet penetration. Secondly, both countries were severely hit by the Great Recession and had to implement severe austerity policies during the 2010s: this critical juncture was followed by big waves of social unrest and mobilization that led to the emergence of new challenger parties such as the Italian Movimento 5 Stelle (Five Stars Movement) or the Spanish Podemos (We Can). Both heavily relied on digital technologies to promote new forms of intra-party participation and electoral competition (Bosco and Verney, 2014; della Porta et al., 2017; Morlino and Raniolo, 2017; Mikola, 2018). These parties were frontrunners of a digitalization process that not only influenced other anti-establishment political parties (Barberà et al., 2021), such as La France Insoumise in France or Alternativiet in Denmark. In both countries, other parties tried to adapt to these disruptive innovations, by implementing new digital affordances to expand political participation of party members (Raniolo et al., 2021).

Thirdly, both countries implemented similar policies to counter COVID-19 spread. The main public health strategy in both countries was the implementation of strict and very long lockdowns starting in mid-March and ending by late June 2020. Both health

strategies paralyzed most of the economic and social face-to-face activities. That was also translated to the institutional arena where some regionals elections were suspended and most of the parliamentary activity at the national and regional level was also severely disrupted. Many institutions had to rely on new technologies that had been hardly implemented before to facilitate digital deliberation and remote (online) decision taking (Reniu and Messeguer Sánchez, 2020). This drastic shift in the digitalization of political parties was taken for granted and hardly reported by the press, mostly focused in both countries on the dramatic human toll of the pandemic and other health issues.

The adoption of digital technologies by the political parties of these two countries during the pandemic and the attitudes of their political élites toward it might be relevant to understand what happened in other European countries with similar levels of digitalization. More importantly, it can give a hint of what might have happened in other countries that were also severely hit by the pandemic and their political parties had to adapt even more abruptly to such an external shock. Although the paper just focuses on political parties, some of the conclusions might even be able to be extended to other political organizations based on membership (trade unions, civil society organizations, etc.).

The survey

To answer our research questions, we targeted the party élites of the main Italian and Spanish political parties. Our conceptualization of the party élite included the main representatives and key staff members at the parliamentary and extra-parliamentary face of each party present at both the national and regional arenas. We opted to include national and regional arenas for one main reason: in both countries regional and national assemblies had both policy responsibilities related to COVID-19. National and regional assemblies and, thus, party élites at the national and regional level, had to adapt to the new situation. Moreover, this solution gave us the possibility to increase our sample and increase the overall number of respondents.

We designed an online survey through Limesurvey in Spanish, Catalan and Italian. The survey was aimed to gather information on how the party élites perceived the digital shift of their parties during the 2020 pandemic, but also to know their personal feelings and expectations on the role of digital tools for intra party activities. The survey had 34 questions divided in different sections. The first one started with the frequency of online meetings held by several agencies of their political party (party executive, parliamentary group, etc.) since the pandemic and to what extent that was a novelty. Then turned to the next sections focusing on which medium were the meetings held (video conferences, email exchange, chats, etc.), and what kind of activities took place in such meetings (briefings, debates, collective writing, ballots, etc.). The following one was devoted to ask questions on the use of online voting, and on their respondents' perceptions on the potential drawbacks that might have. The last two sections were mostly focused on perceptions. The first one inquired on the relevance of several problems related to online meetings, to what extent online meetings could be better or worse than face-to-face meetings, and

under which circumstances that could happen. The last one asked which digital tool would be used in the future, to what extent any of them could replace face-to-face meetings, and what kind of activities would be more likely carried out online in the future. A translation in English of the full questionnaire is available in the Appendix B.

We selected all political parties that had at least one representative at either the national or the regional level in both Italy and Spain. Our population, the party élite, was composed by elected representatives at national and sub-national levels. Such population is not easy to establish (see, for example, Di Virgilio et al., 2015). In its most broad conception, it might include all the party executive members at either the national or regional level, the party staff working with the party executive, all the national and regional parliamentarians of each party, and the party staff working with the parliamentary party group. Our educated guess is that such broad population would be of around 3,000 people in both Italy and Spain.[1] In its most restricted conception, the population would be the people most directly involved in the day-to-day organization of the party central organization and the parliamentary group (at either the national or regional levels). These representatives and party staffers oversee all the information requests and are probably closely connected to the leading figures of the parliamentary and extra-parliamentary organization.

We aimed to survey those elected representatives and/or the party staff most closely working with digital tools. We thought that they would be more interested in replying to our questions. We estimated that such group (e.g., our sample) would be around 1,000 elected representatives from both countries.[2] To reach them, we collected the contact emails of the party central organization at both the national and at the regional level.[3] For example, in Spain that meant around 19 contact emails for each of the 6 state-wide parties plus the contact emails of 27 non-state-wide parties. We did the same with the contact emails of the parties' parliamentary groups at both the national and the regional level to improve the chance of getting individual responses from elected representatives. In Italy we contacted the national central office of the parties as well as the elected MPs for which an email account was available. In the cover letters sent to the party central organizations and the parliamentary groups we kindly asked that the survey was distributed and answered by elected representatives and/or the party staff most closely working with digital tools.

Overall, in Spain around 260 emails were sent. In Italy about 800 emails were sent, but around 250 returned because the address was not existent or because the mailbox of the recipient was full. The survey started once the lockdowns were over in both

---

1 For each country we come to this number by adding all the national parliamentarians; the party executive boards; the regional parliamentarians and the party regional executive. Unfortunately, we could not reach all regional executives who were not elected, because of the lack of functioning email addresses.

2 Two members from the party central organization at each territorial level and a similar figure for the parliamentary groups at each territorial level. Due to the difficulties estimating the population, that was not a probability sample.

3 Vox is not always organized at the regional level, hence we also collected the contact email addresses of its 51 district organizations.

countries. The first emails were sent by the end of June 2020 in Spain and by mid-July in Italy. In both countries three remainders were sent every other week. The survey was active till the end of July in Spain and early September in Italy. Emails are indeed a suboptimal solution due to inherent limitation of this instrument and the several inactive institutional email addresses at the time of fielding our survey. However, that was the main instrument at our disposal to reach party élites of different parties during the pandemic without using other techniques (such as snowball effect), which would have biased our sample.

We gathered 168 valid responses to the questionnaire. The number of respondents is biased toward Spain: overall 104 respondents come from Spain and 64 from Italy. The response rate is, thus, approximately around 10% for both countries. The distribution of respondents per political party is available in the Appendix (Table 2A). Overall, more men (72) than women responded to the survey (43) (53 respondents refused to answer to this question). The majority of the respondents belong to center-left parties (111 respondents), while 59 to either center or center-right parties. 36 respondents were born before 1989, 38 from 1970 to 1979, 33 from 1969 to 1959, and only 5 respondents were +62 years old. The overwhelming majority of the respondents (89) has a university degree or a PhD. While our sample is biased toward younger respondents, which is not surprising due to the CAWI method we employed, it is not biased in terms of respondents' educational level, since MPs on average hold higher educational levels compared to the other citizens (Best and Higley, 2018). We are also aware of the limitation of using elite samples (Kertzer and Renshon, 2022). At the same time, we are confident that the explorative nature of our analysis makes our sample robust enough to draw some preliminary analysis on the élite perceptions during the COVID-19 pandemic.

Statistical models

The first part of the analysis (Figures 1, 2) provides basic descriptive statistics on the frequency of different online meetings, weighted by the political parties' belonging of the respondents, in order to avoid overrepresentation from members of the same party.[4] As we have more respondents coming from specific left-wing parties in Spain and Italy, the weights allow us to overexpose left-wing respondents over right-wing ones and to balance out difference within respondents of the same party. This part will provide some evidence of the shift experimented by the different political organizations from Spain and Italy during the pandemic. The second part of the descriptive analysis focuses on individual level's data and, for that reason, we do not control for party membership, something we account for in the regression models in Tables 1, 2. The descriptive statistics here show the party élites' preference on problems regarding the privacy of the data (from

---

4 The wording of the question was: Could you tell me whether your party's organs have held online meetings? How frequently? The respondents could choose for the highest executive organ and the highest representative organ of the party between several options ranging from weekly base, on a bi-weekly base, on a monthly base, sporadically, once or less.
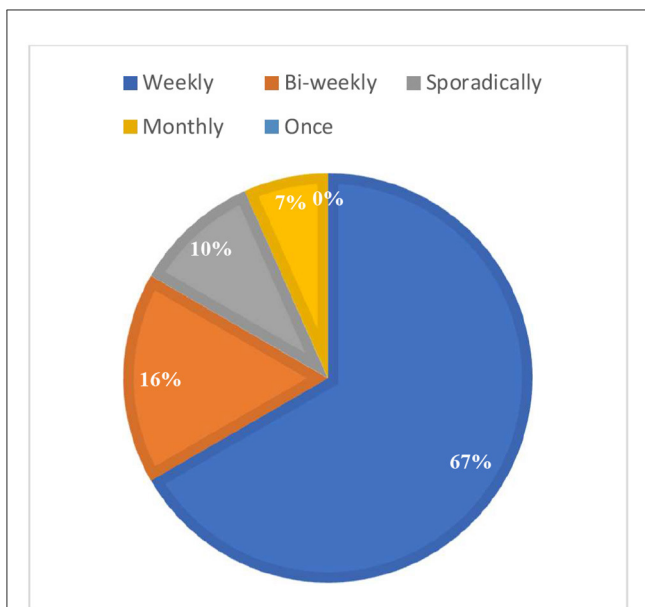
FIGURE 1
Frequency of the online meetings held by the executive organ during March–June 2020 (weighted by political parties belonging).
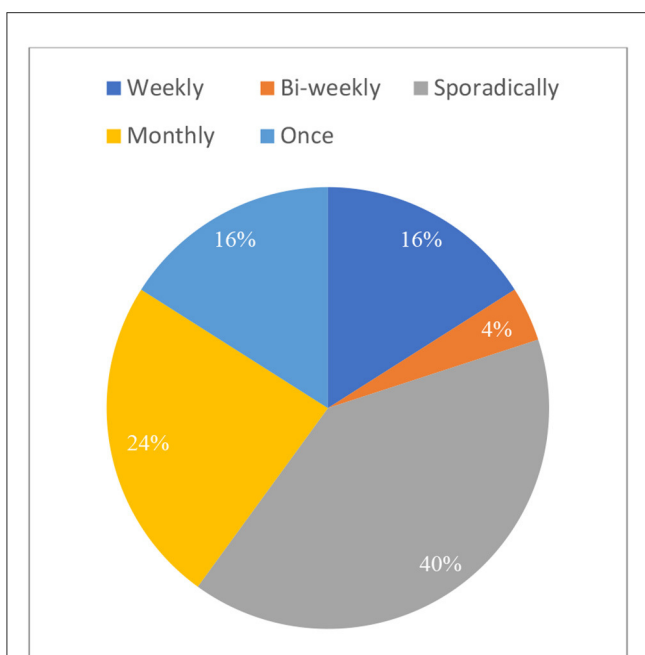

FIGURE 2
Frequency of the online meetings held by the representative organ during March–June 2020 (weighted by political parties belonging).

asked to parties' élites their concern about privacy issues on a 5-points scale ranging from "Not at all concerned" to "Very concerned."[5] The questions are related to: people from outside the party having access to data (and sensitive information) stored in the platform (Model 1), people from within the party having access to data (and sensitive information) stored in the platform (Model 2), the manipulation of the data by people from outside and from inside the party (Model 3 and Model 4), the possibility that some votes are left uncounted during a digital vote (Model 5) or that unauthorized people get access to the voting procedure (Model 6) and, finally, the disclosure of sensitive data (Model 7). In all models the main independent variables is dummy variable distinguishing between whether the respondent belongs to a digitally friendly party, i.e., parties that have incorporated OPPs for the functioning of their political parties (coded as 1), or not (coded as 0).[6] The details of the party classification are available in Table 1A in the Appendix. To test HP3a and HP3b in our model we include as independent variables the following socio-demographic covariates: education[7] and age. We also include a dummy variable to control for the gender of the respondents. Finally, we also control for self-placement in the left-right scale of the respondents, and we add dummy variable to control for country difference (two categories, Spain and Italy).

Finally, the third part of the analysis (Table 2) focuses on the perceived pros and cons of shifting specific party functions in the online sphere. As for the previous section, we run four multivariate OLS regression, whose dependent variable is represented by the response to the question on whether the specified function would be better performed if run online instead of offline.[8] The response is an ordinal scale going from "Far worse" (=1) to "Far better" (=5). The question is the following: "To what extent is the use of online meetings for the following activities better or worse than traditional face-to-face meetings?" We ask respondents their opinion on the following tasks: (a) informing or receiving information, (b) debating, (c) voting, (d) drafting or preparing documents. The independent variables remain the same.

---

5   The wording of the question was: Experts point out that ensuring the security of online voting can have drawbacks. Could you indicate your level of concern about these issues in a five points scales going from "Not at all concerned" to "Very concerned."
Model 1: The possibility of outsiders gaining access to personal voting data. Model 2: The possibility of party insiders gaining access to personal voting data. Model 3: The possibility of outsiders manipulating the results. Model 4: The possibility of party insiders manipulating the results. Model 5: The possibility that some votes may not be counted. Model 6: The possibility for unauthorized persons to vote. Model 7: What might happen with voting data in the future.

6   The question is framed as follows: "On a scale where 1 is far left and 10 is far right, where would you place yourself?"

7   We re-categorized the education variable as a numeric ordinal variable, from the lowest level of education to the highest: the categories are Primary education, Secondary education, High School, University, Postgraduate or PhD.

8   The exact wording is the following: could you indicated to what extent the following activities would be better performed in the online modality instead of the offline one.

external hacks), and the use of offline or online meetings for deliberation and voting that are going to be used later on for the second and third part of the analysis.

The second part of the analysis (Table 1) focuses on the privacy problems within parties. We run a series of multivariate OLS regressions, using privacy questions as dependent variables. We

TABLE 1 Determinants of the party élites perception of privacy issues related to the digital shift.

	External data access	Internal data access	External data manipulation	Internal data manipulation	Uncounted votes	Unauthorized vote	Data disclosure
(Intercept)	0.865	0.741	−0.152	−0.767	0.999	0.519	0.478
	(0.758)	(0.753)	(0.807)	(0.753)	(0.748)	(0.714)	(0.776)
Gender: women (ref. man)	−0.559	−0.133	−0.479	−0.529	−0.185	−0.451	−0.695*
	(0.295)	(0.290)	(0.311)	(0.290)	(0.293)	(0.277)	(0.303)
Education	−0.268	−0.014	−0.068	0.149	−0.301	−0.187	−0.285
	(0.162)	(0.162)	(0.174)	(0.162)	(0.160)	(0.154)	(0.175)
Age	−0.084	0.028	0.130	0.072	−0.084	−0.033	−0.114
	(0.127)	(0.128)	(0.137)	(0.128)	(0.126)	(0.123)	(0.130)
Self-placement	0.211*	0.196*	0.318***	0.318***	0.198*	0.269***	0.233**
	(0.084)	(0.083)	(0.088)	(0.083)	(0.083)	(0.078)	(0.085)
Digital party (ref. digital)	0.464	0.234	0.277	0.139	0.739	0.434	0.750*
	(0.379)	(0.373)	(0.400)	(0.373)	(0.380)	(0.360)	(0.371)
Country: Spain (ref. Italy)	1.038**	−0.020	0.704	0.730*	0.432	0.818*	1.145**
	(0.348)	(0.344)	(0.369)	(0.345)	(0.343)	(0.327)	(0.372)
R-squared	0.130	0.067	0.137	0.162	0.105	0.139	0.162
N	113	112	112	111	112	111	101

OLS multivariate regressions. Significance: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

TABLE 2 Determinants of the party élites' online vs. offline preference.

	Informing	Debate	Voting	Elaborating documents
(Intercept)	1.576*	2.816***	1.949**	2.150***
	(0.735)	(0.562)	(0.630)	(0.575)
Gender: women (ref. men)	0.237	0.362^	0.412^	0.305
	(0.286)	(0.218)	(0.243)	(0.221)
Education	−0.185	−0.224	−0.077^	−0.033
	(0.181)	(0.120)	(0.133)	(0.123)
Age	0.004	−0.032	−0.036	−0.293**
	(0.121)	(0.093)	(0.103)	(0.098)
Self-placement	0.022	−0.002	−0.071	0.083
	(0.081)	(0.062)	(0.071)	(0.063)
Digital party (ref. digital)	0.177	0.070	−0.093	0.123
	(0.320)	(0.278)	(0.323)	(0.282)
Country: Spain (ref. Italy)	1.260**	−0.740**	0.548	−0.013
	(0.372)	(0.259)	(0.287)	(0.265)
R-squared	0.152	0.173	0.109	0.125
N	92	114	109	112

OLS multivariate regressions. Significance: $***p < 0.001$; $**p < 0.01$; $*p < 0.05$; $^p < 0.1$.

Party digitalization and élites' perceptions in Italy and Spain: a first exploratory analysis
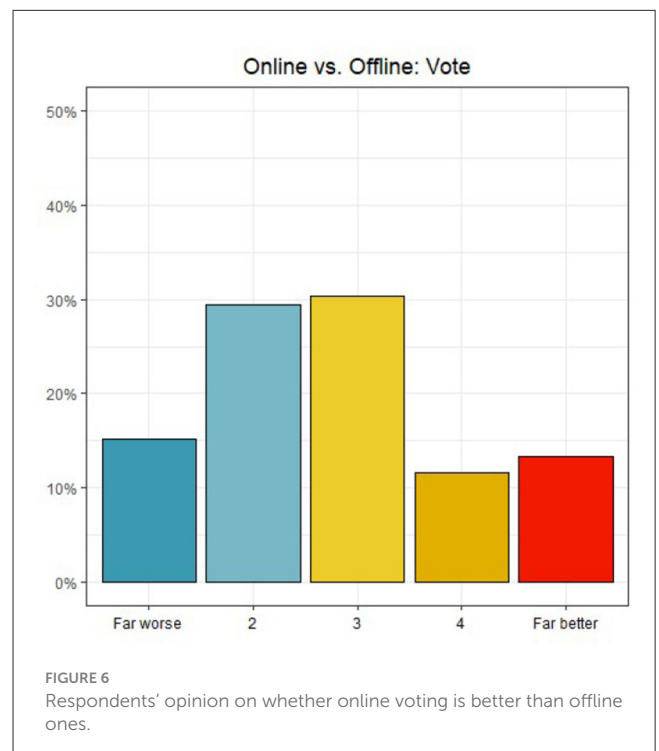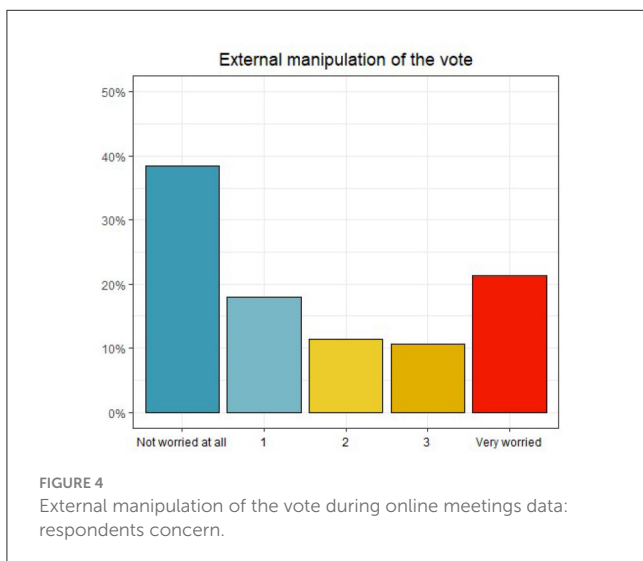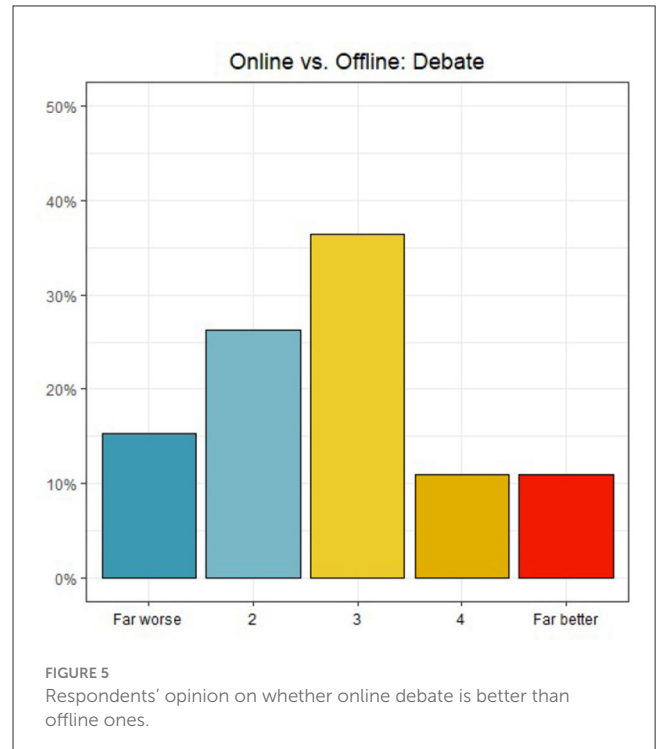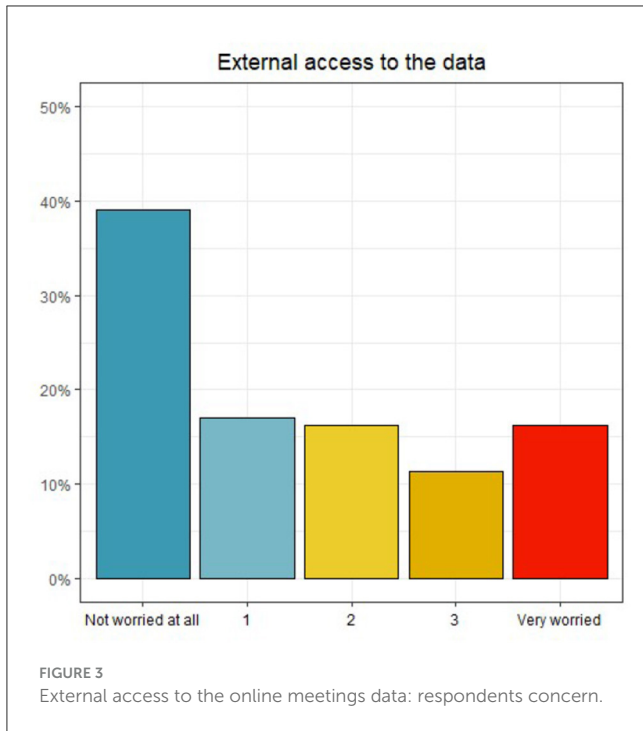
This section is devoted to providing a general overview of the party élites' account of the activities during the 2020 pandemic and their perceptions. Data from Figures 1, 2 has been weighted by the political parties' belonging of the respondents. Figure 1 shows that the parties' executive organ activities were not interrupted during the pandemic: more than 80% of the respondents of the parties under analysis reported that meetings were held on either a weekly or a bi-weekly basis during the pandemic. Figure 2, on the other hand, shows that the representative organ of the party met online more sporadically. However, given the nature of the two organs, this difference is not surprising: the representative organ has a less intensive agenda, is generally composed by the most senior party officials (eventually, hundreds in the largest parties) and meets more irregularly. The party statutes leave considerable leeway in this regard, but many parties hold them quarterly. In fact, holding online meetings of their representative organs probably points out that some parties solved complex logistic challenges in order make their party leaders accountable and enforce their internal rules. Spanish and Italian political parties held those meetings offline before the pandemic, only very minor digital innovations were reported till then. In this regard, having almost 44% of the respondents reporting that representative organs met once per month or more (weekly or bi-weekly) shows the magnitude of the crisis and the need of the party leaders to keep their most senior figures informed about their activities.[9]

We also provide descriptive statistics for the main privacy problems associated with online meetings, in particular the use of the personal data of the meeting (Figure 3) and vote manipulation (Figure 4) by third parts. The results show that there is a higher concern for the latter than for the former. However, in both cases the absolute majority of the respondents showed very few concerns about privacy issues. This might either indicate a high trust on their political parties' ability to prevent external hackings or a more carefree perception of the relevance of the problem. Since no major scandals were reported by that time in Italy or Spain, the first interpretation could be more plausible than the second one.

Finally, we show the descriptive statistics related to the online vs. offline debate. We asked respondents whether they think some of the functions (providing information, debating, voting and elaborating documents) are better performed in the online sphere than in the offline sphere. Figures 5, 6 show the results for the two most important functions of the party, i.e., one related to deliberation (debate) and one related to voting. We acknowledge that the timing of the fielding of our survey might have biased the results. And yet, we do find some interesting findings such as 40% of the respondents having unfavorable views ("far worse" plus "somewhat worse" answers) on the possibility of having an online debate and online voting. Such change of habits, i.e., moving to the online sphere crucial functions for the parties, seems that was met with some resistance by a group of the party élites of both countries.

---

9   A descriptive overview of the meetings held by Spanish political parties during the spring of 2020 can be found in Barberà (2020).

FIGURE 3
External access to the online meetings data: respondents concern.

FIGURE 5
Respondents' opinion on whether online debate is better than offline ones.

FIGURE 4
External manipulation of the vote during online meetings data: respondents concern.

FIGURE 6
Respondents' opinion on whether online voting is better than offline ones.

Explaining party élites' perceptions and preferences on the digital shift

This section is focused on the determinants of the party élites' perceptions of the pandemic digital shift and their preferences for holding future online or off-line activities. As stated in the theoretical framework, we expect that the party élites of digitally friendly parties will be less concerned with privacy than the élites of less digitally friendly parties (Hypothesis 1). In addition, we posit that the party élites of digitally friendly parties will be more in favor of using them in the future (Hypotheses 2). Finally, we suggested that young and educated party élites will have less privacy concerns than other groups and be more prone to use digital activities in the

future (Hypothesis 3A and 3B). Table 1 present the results of the OLS regressions for the privacy issues.

Firstly, our dummy variable distinguishing between the élite belonging or not to a digitally friendly party does not produce any significant effect. As a matter of fact, digitally friendly party members appear to be less skeptical about privacy issues, as stated in our Hypothesis 1. However, the coefficient is not significant in

all models we take into consideration here. The only exception is data disclosure where we find a statistically significant distinction between the two groups, with non-digital parties' élite much more concerned about data disclosure than digital parties' one.

It is also worth pointing out that the main socio-demographic variables (gender, education, age) are not relevant to understand the privacy concerns of the Italian and Spanish party élites (Hypothesis 3a). One of our controls, gender, only plays a role regarding data disclosure. Women seem more worried about that than men, but this is only relevant in one of the models and not the other ones, which might be connected to other factors not explored in the model. The country of reference also plays an important role when external data access and data disclosure are mentioned, and less relevant when internal data manipulation or unauthorized vote are discussed. It does not seem to be an easy explanation of why is this is the case: a tentative and very explorative explanation might be that M5S digital platform have been severely criticized for the lack of transparency (Wired, 2019) and for the bugs detected in its digital platforms (HuffPost, 2019). This might have raised concerns among other élites about the safety of the digital platforms.

We did not provide formal expectations on ideological self-placement, which we considered as a control variable in our models. Still, this variable is significant in all models, albeit with different degrees of significance: it is, thus, worth expanding the discussion about this variable. Despite the not very extended database, the result points to an interesting trend, i.e., leaning toward the right-wing pole increases the privacy concern. In particular, the right-wing élite is much more concerned about external data manipulation, internal data manipulation and the possibility that unauthorized people would vote online, when parties organize online voting session. In all three cases the coefficient is larger and significant at $p < 0.001$ (third and fourth model) and at $p < 0.01$ (sixth model). Overall, the right-wing élite is also more skeptical about shifting fundamental tools for the party decision-making in the online sphere. This might be due to the fact that the right-wing élite is less used to these types of technology or to the fact that it is more skeptical of online technology in general. Unfortunately, our data do not permit to inquire further about the causes of this overall right-wing skepticism about digitalization and privacy issues.

Table 2 presents the results of the multivariate regressions in which our dependent variable is the preference for holding online or offline meeting in the future. As we noted for the previous model related to privacy issues, we do not find here a statistically significant difference between the élites of digitally friendly and non-digitally friendly parties (Hypothesis 2). That might be due to the fact that the surveys were conducted at the early stages of the pandemic and people had not clear views on the topic as the middle positions show in Figures 3, 4, but also because after the first wave of lockdowns there was a growing widespread digital fatigue.

Regarding the socio-demographic variables considered, for which we provide a formal expectation. We find that, in general, only age impacts on one specific aspect, that is document elaboration (Hypothesis 3b). For this activity only, the younger élites are more prone to accept that online tools will replace off-line ones. Even though we cannot inquire further, this might be due to the fact that young people are in general more familiar with sharing documents technologies and thus more prone to have favorable opinions on this tool than older élite. Education is significant at

$p > 0.1$ level only for voting, in line with what we hypothesized in Hypothesis 3b. Turning to our controls, we find that women are more willing than men in shifting voting online (Model 2) and more willing to debate online (Model 3), maybe because they see that as an opportunity to avoid gaps in their engagement in party activities. Contrary to the previous results, here ideology does not play a role: left-wing élite is not more optimistic about the replacement of off-line activities.

Interestingly, the country of reference also plays a role when explaining the preferences for holding future online or off-line informing and debate activities. Spanish party élites are more in favor of using digital technologies to be informed from the party than their Italian counterparts. On the other hand, they are more skeptical than the Italian party élites on the relevance of the digital for debating. While it is admittedly difficult to explain why it is the case, we can hypothesize that for the debating feature role played by M5S digital platform in shaping how deliberative democracy has been put in place might have influenced the overall judgment of other parties' élites about this function of the digital platform: M5S deliberative tools were rather limited and mostly top-down oriented (Mosca, 2020), so it might be the case that this experience might have affected how the élites perceive the functioning of deliberative democracy within digital platform. However, when it comes to informing, the real-world experience with online meeting might have been pre-eminent compared to evaluation of other experiences from other parties. Still, this does not explain why Spanish élite is more skeptical than the Italian one. We acknowledge that this interpretation is rather limited: further research on this specific aspect is required.

Conclusion

Online participation platforms (OPPs) have incrementally been adopted by several political parties since the mid-2010s. The early adopters were mostly challenger parties such as Podemos and the Five Stars Movement inspired by connective actions promoted by new social movements emerged after the Great Recession. In some party systems, particularly in Southern Europe, some left mainstream parties tried to cope and started their own adaptation processes allowing new forms of digital participation and affordances. But this pattern was uneven and not generalized. In fact, many Western political parties were reluctant to move key deliberative and participatory functions to the digital. And then, by early 2020 the first wave of the COVID-19 pandemic severely hit most European countries and forced lengthy and strict lockdowns of the population. Such an external shock forced political parties to move online or to postpone all political activities for months. Most of them quickly adapted their external and internal communication strategies. In many cases, this was connected to the implementation of new forms of digital participation.

This paper has explored how political parties in Italy and Spain coped with the COVID-19 pandemic, through an online survey to their political elites. Many of them organized online meetings of their main party executive boards and key representative party agencies. We have shown that most of them were able to do that on quite frequent basis (weekly for the party executives, more

sporadically for the representative bodies), even if that was a novelty for most of them.

The other main objective of the paper has focused on the determinants of the Spanish and Italian party élites' perceptions and preferences on party digitalization. Contrary to our expectations, we did not find any significant difference between party members belonging to digital parties and party members belonging to other parties. This finding is worth inquiring in future research, as our analysis is mainly explorative: our guess, with the data at our disposal, is that COVID-19 has had an enormous impact on all political parties and all political élites. Regardless of the party digitalization, the instruments which parties could have access to were limited (e.g., private owned platforms for meeting) and, thus, the overall experience might have been similar. That is why our data do not suggest a marked difference in terms of élites perception of the privacy issue, which appears to be much more shaped by ideology than party belonging (Hypothesis 1) and socio-demographic characteristics (Hypothesis 3a). On the other hand, socio-demographic characteristics and, in particular, education and age do play a role in shaping élite preferences for online future activities (voting and elaborating documents), thus lending some support to the idea that there exist a (admittedly small in our data) generational and educational gap, when it comes to the future of digitalization within political parties. Further research is nonetheless needed in this regard, as our sample is rather limited and did not give us the possibility to explore these findings further.

The COVID-19 pandemic disrupted the economic, social and also political faces of our day-to-day lives. In this regard, it might be conceptualized as an external shock forcing firms, interest groups, voluntary associations and political parties to radical adaptation and change into a peculiar unknown: the digital sphere. We still know little of what happened in these arenas: what challenges have been faced in the past months? Have emerged new digital divides? What are the perceptions of party members and party élites on such swift digital shift? Will political parties take advantage to strengthen their links with their members and affiliates? This paper has tried to shed some light on some of these questions. Of course, our study has some limitations because is based on two Southern European countries were some intra-party digital innovations started to be implemented way before the pandemic. Our data might present a bias in this regard, particularly when compared to other countries with more stable party systems and more cautious approaches to the digital shifts. The moment in which the data was collected, at the first stages of the pandemic, might also have influenced the results. By then most parties probably relied on *ad-hoc* solutions to keep their organizations alive. Over the duration of the pandemic some learning effects and organizational improvements might have also been implemented and that might has also have changed the attitudes toward the digital in several parties. Our study also presents some limitations due to the number of people involved in the study. Future replications of our study should try to address such limitations by engaging more with the party central organizations and expanding our survey to new countries in order to expand the scope of the analysis.

Data availability statement

The raw data supporting the conclusions of this article is available in the repository Zenodo using the following DOI: 10.5281/zenodo.8411046.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Funding

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpos.2023.1005385/full#supplementary-material

References

Barberà, O. (2020). "La crisis del COVID-19 y la aceleración de los procesos de transición digital en los partidos políticos," in¿*Política confinada? Nuevas tecnologías y toma de decisiones en un contexto de pandemia*, eds J. M. Reniu, and J. V. Messeguer Sánchez (Cizur Menor: Thomson Reuters Aranzadi), 341–360.

Barberà, O., Sandri, G., Correa, P., and Rodríguez-Teruel, J. (2021). *Digital Parties. The Challenges of Online Organisation and Participation.* Cham: Springer. doi: 10.1007/978-3-030-78668-7

Barrat, J., and Pérez-Moneo, M. (2019). *La digitalización de los partidos políticos y el uso del voto electrónico.* Cizur Menor: Thomson Reuters-Aranzadi.

Bar-Siman-Tov, I. (2020). *Parliamentary Activity and Legislative Oversight During the Coronavirus Pandemic — A Comparative Overview.* Bar Ilan University Faculty of Law Research Paper No. 20–06.

Bennett, W. L., and Segerberg, A. (2013). *The Logic of Connective Action: Digital Media and the Personalization of Contentious Politics.* New York, NY: Cambridge University Press. doi: 10.1017/CBO9781139198752

Bennett, W. L., Segerberg, A., and Knüpfer, C. B. (2018). The democratic interface: technology, political organization, and diverging patterns of electoral representation. *Inf. Commun. Soc.* 21, 1655–1680. doi: 10.1080/1369118X.2017.1348533

Best, H., and Higley, J. (2018). *The Palgrave Handbook of Political Elites.* London: Palgrave Macmillan. doi: 10.1057/978-1-137-51904-7

Biancalana, C. (2022). *Political Parties and the Challenge of Disintermediation: Rhetoric and Practices of Organisational Change in Italy.* Baden-Baden: Nomos. doi: 10.5771/9783748912644

Bimber, B., Flanagin, A. J., and Stohl, C. (2012). *Collective Action in Organizations: Interaction and Engagement in an Era of Technological Change.* New York, NY: Cambridge University Press. doi: 10.1017/CBO9780511978777

Bosco, A., and Verney, S. (2014). *Elections in Hard Times: Southern Europe 2010-11.* Abingdon and New York, NY: Routledge.

Brack, N., Costa, O., and Marié, A. (2021). The European Parliament and Covid-19. organisational adaptations and their implications on parliamentary activity. *Zeitschrift für Parlamentsfragen.* 4, 848–863. doi: 10.5771/0340-1758-2021-4-844

Calise, M. (2011). *Il partito personale. I dui corpi del leader.* Roma: Laterza.

Campus, D. (2010). Mediatization and personalization of politics in italy and france: the cases of berlusconi and sarkozy. *Int. J. Press/Politics.* 15, 219–235. doi: 10.1177/1940161209358762

Chadwick, A., and Stromer-Galley, J. (2016). Digital media, power, and democracy in parties and election campaigns: party decline or party renewal? *Int. J. Press/Politics.* 21, 283–293. doi: 10.1177/1940161216646731

della Porta, D., Fernández, J., Kouki, H., and Mosca, L. (2017). *Movement Parties Against Austerity.* Cambridge: Polity.

Deseriis, M. (2020a). Digital movement parties: a comparative analysis of the technopolitical cultures and the participation platforms of the movimento 5 stelle and the piratenpartei. *Inf. Commun. Soc.* 23, 1770–1786. doi: 10.1080/1369118X.2019.1631375

Deseriis, M. (2020b). Two variants of the digital party: the platform party and the networked party. *Partecipazione e Conflitto.* 13, 896–917. doi: 10.1285/i20356609v13i1p896

Deseriis, M., and Vittori, D. (2019). Platform politics in Europe | the impact of online participation platforms on the internal democracy of two southern European parties: podemos and the five star movement. *Int. J. Commun.* 13, 19. Available online at: https://ijoc.org/index.php/ijoc/article/view/10804

Di Virgilio, A., Giannetti, D., Pedrazzani, A., and Pinto, L. (2015). Party competition in the 2013 Italian elections: evidence from an expert survey. *Govern. Oppos.* 50, 65–89. doi: 10.1017/gov.2014.15

Dommett, K., and Temple, L. (2018). Digital campaigning: the rise of facebook and satellite campaigns. *Parliam. Aff.* 71, 189–202. doi: 10.1093/pa/gsx056

Falkenbach, M., and Greer, S. L. (2020). Denial and distraction: how the populist radical right responds to COVID-19 comment on "a scoping review of prr parties' influence on welfare policy and its implication for population health in Europe." *Int. J. Health Policy Manag.* 10, 578–580. doi: 10.34172/ijhpm.2020.141

García Lupato, F., and Meloni, M. (2023). Digital intra-party democracy: an exploratory analysis of podemos and the labour party. *Parliam. Aff.* 76, 22–42. doi: 10.1093/pa/gsab015

Gibson, R. K., and Mcallister, I. (2015). Normalising or equalising party competition? assessing the impact of the web on election campaigning. *Polit. Stud.* 63, 529–547. doi: 10.1111/1467-9248.12107

Hay, C., and Wincott, D. (1998). Structure, agency and historical institutionalism. *Polit. Stud.* 46, 951–957. doi: 10.1111/1467-9248.00177

Hopkin, J., and Paolucci, C. (1999). The business firm model of party organisation: cases from Spain and Italy. *Eur. J. Polit. Res.* 35, 307–339. doi: 10.1111/1475-6765.00451

HuffPost (2019). *Il Garante della privacy europeo contro Rousseau: "Può avere bug.* Available online at: https://www.huffingtonpost.it/2019/02/26/il-garante-della-privacy-europeo-contro-rousseau-puo-avere-bug_a_23678370/ (accessed September 25, 2023).

Karpf, D. (2016). *Analytic Activism: Digital Listening and the New Political Strategy.* New York, NY: Oxford University Press. doi: 10.1093/acprof:oso/9780190266127.001.0001

Kertzer, J. D., and Renshon, J. (2022). Experiments and surveys on political elites. *Ann. Rev. Polit. Sci.* 25, 1–26. doi: 10.1146/annurev-polisci-051120-013649

Malloy, J. (2020). The adaptation of parliament's multiple roles to COVID-19. *Can. J. Polit. Sci.* 53, 305–309. doi: 10.1017/S0008423920000426

Margetts, H., John, P., Hale, S., and Yasseri, T. (2015). *Political Turbulence: How Social Media Shape Collective Action.* Princeton, NJ: Princeton University Press. doi: 10.2307/j.ctvc773c7

Mikola, B. (2018). *New party organizations and intra-party democracy : a comparative analysis of the five star movement and podemos* (PHD Dissertation). Budapest, Central European University.

Morlino, L., and Raniolo, F. (2017). *The Impact of the Economic Crisis on South European Democracies.* Cham: Springer International Publishing. doi: 10.1007/978-3-319-52371-2

Mosca, L. (2020). Democratic vision and online participatory spaces in the Italian Movimento 5 Stelle. *Acta Politica.* 55, 1–18. doi: 10.1057/s41269-018-0096-y

Norris, P. (2001). *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide.* Cambridge: Cambridge University Press. doi: 10.1017/CBO9781139164887

OECD (2020). *Tracking and Tracing COVID: Protecting Privacy and Data While Using Apps and Biometrics.* Available online at: https://www.oecd.org/coronavirus/policy-responses/tracking-and-tracing-covid-protecting-privacy-and-data-while-using-apps-and-biometrics-8f394636/ (accessed September 25, 2023).

Orozco González, M. (2021). La utilización ilícita de datos de carácter personal por los partidos políticos. *Actualidad Civil.* 7, 1–23.

Panebianco, A. (1988). *Political Parties: Organization and Power.* Cambridge: Cambridge University Press.

Pedersen, K., and Saglie, J. (2005). New technology in ageing parties. internet use in Danish and norwegian parties. *Party Polit.* 11, 359–377. doi: 10.1177/1354068805051782

Raniolo, F., Tarditi, V., and Vittori, D. (2021). "Political parties and ICTs. between tradition and innovation," in *Digital Parties. The Challenges of Online Organisation and Participation,* eds O. Barberà, G. Sandri, P. Correa, J. Rodríguez-Teruel, J. (Cham: Springer), 181–204. doi: 10.1007/978-3-030-78668-7_10

Reniu, J. M., and Messeguer Sánchez, J. V. (2020). *¿Política Confinada? Nuevas tecnologías y toma de decisiones en un contexto de pandemia.* Cizur Menor: Thomson Reuters Aranzadi.

Ryan, J. M. (2020). COVID-19: *Global Pandemic, Societal Responses, Ideological Solutions.* Abingdon and New York, NY: Routledge. doi: 10.4324/9781003142089

Ryan, J. M. (2021). *COVID-19: Social Consequences and Cultural Adaptations.* Abingdon and New York, NY: Routledge. doi: 10.4324/9781003142065

Scarrow, S. E. (2014). *Beyond Party Members: Changing Approaches to Partisan Mobilization.* Oxford: Oxford University Press. doi: 10.1093/acprof:oso/9780199661862.001.0001

Schwörer, J., and Fernández-García, B. (2022). Populist radical right parties and discursive opportunities during Covid-19. blame attribution in times of crisi. *Z Vgl Polit Wiss.* 16, 545–570. doi: 10.1007/s12286-022-00540-w

Vaccari, C. (2013). *Parties and the Internet in Digital Politics in Western Democracies. A* comparative study. Baltimore, MD: Johns Hopkins University Press, 48–56. doi: 10.1353/book.27233

Vittori, D. (2020). The impact of populism on party organization? a study of four Southern European "populist" parties. *Eur. Polit. Soci.* 21, 53–71. doi: 10.1080/23745118.2019.1602925

Ward, S., and Gibson, R. (2009). "European political organizations and the internet: mobilization, participation, and change," in *Routledge Handbook of Internet Politics,* eds A. Chadwick, and P. N. Howard (London and New York, NY: Routledge), 25–39.

Wired (2019). *Il Garante della privacy ha multato Rousseau per le sue falle di sicurezza.* Available online at: https://www.wired.it/attualita/politica/2019/04/04/garante-privacy-rousseau-sicurezza-votazioni-online/ (accessed September 25, 2023).

Wondreys, J., and Mudde, C. (2022). Victims of the pandemic? European far-right parties and COVID-19. *Natl. Pap.* 50, 86–103. doi: 10.1017/nps.2020.93