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Party digitalization and website features: a comparative study of party organizations

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Abstract: The emergence of new digital tools has brought about a revolution in party organizations. However, the existing literature is still lacking comparative studies that utilize comprehensive theoretical frameworks and consider variations in the supply-side of party digitalization. This paper addresses both shortcomings by turning the spotlight on party websites. By relying on data from the Political Party Database, we delve into the determinants of website functionalities across a spectrum of diverse political parties. Our findings underscore that parties with less centralized leadership and affiliated to the left of the ideological spectrum tend to display websites with a broader range of functions. Moreover, younger parties also tend to present more complex websites, although this effect is mitigated by their electoral strength. Notably, a common thread among most parties is the use of their websites for mobilizing human and financial resources, while interactive features remain less prevalent.

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Introduction

There is little doubt that the emergence of Internet has important effects on politics. Facing a widespread crisis of legitimacy and a shortage of key resources, political actors (in particular, but not only, party organizations) have used new digital tools to replace or improve traditional procedural functions (e.g. Gerbaudo, 2018; Lioy et al., 2019). Electoral campaigning has also experienced tremendous transformations, with a growing proportion of citizens using Internet to access official campaign information or to engage in some types of political activity (Dommett et al., 2020; Gibson, 2015; Kluver et al., 2007). Last but not least, with the emergence of Web 2.0 tools, parties may adopt multiple channels and flows of information and communication, thus lowering the barriers to participation and making it easier for users to respond to the content created by the host (Bordsall 2007).

In this paper, we contend that the Internet has emerged as the 'fourth face'[1] of party organizations today. We assert the need to explore this intricate dimension, acknowledging both its autonomy and its dynamic interaction with other faces of party organization. To enhance our comprehension of the digital dimension within political parties, we focus our attention on the analysis of party websites. As Vaccari put it (2013: 35), 'official websites provide a good baseline proxy for how parties and candidates employ the larger suite of rapidly evolving tools that are now at their disposal, and the ones that will become available in the near future'.

With the rise of social media, the role played by party websites has been mostly neglected. However, websites are a key feature of party organizations and they play an essential role in the party digital environment. Indeed, political websites present interesting features for parties given the fact that they lower the costs of publishing large-scale information (compared, for example, to individual or candidate websites) and enable the senders to maintain control of the conveyed message without intermediators (such as journalists or pundits). Empirical research on party websites using a bottom-up

perspective also indicates that this digital tool has a significant impact on political behavior (Gibson and McAllister, 2006; Ward et al., 2003), particularly for the mobilization of new groups (e.g. younger audience, see Norris 2003; Lusoli and Ward 2004). Websites are a fundamental tool for the functioning of political parties, allowing these organizations to directly present their messages to the public, mobilize supporters during and between campaign periods, and engage in dialogue and debate with both supporters and members (e.g. Følstad et al., 2014; Gibson et al., 2013). In sum, party websites are seen as a vital component of a comprehensive online strategy for communication and mobilization, which may also include unofficial party blogs, political candidate websites, general-purpose social networking sites, and microblogging.

This paper seeks to elucidate the functions of political party websites and conduct a systematic analysis of website design across diverse political parties[2]. Additionally, our objective is to discern the party-related factors that are linked to website functions. Therefore, the main research question is: what are the key determinants that explain the complexity of party websites? Overall, this study aspires to make three significant contributions. First, we elaborate an analytic framework for exploring political party websites and emphasize their pivotal role in the evolving digital landscape of party organizations. Second, we aim to refresh empirical insights by investigating how website functionalities differ among different parties. Beyond merely identifying variations in website functions, this study introduces novelty by testing new hypotheses, aiming at unravelling the influence of party-related factors. To this end, we rely on the most comprehensive dataset available on party organizations, namely the Political Party Database (PPDB), to systematically analyze party websites across distinct political settings.

The rest of the paper proceeds in four steps. First, we discuss the role of party websites in the new digital era, their importance for the functioning of party organizations and their impact on party change in the 21st century. This will assist us in formulating hypotheses that will serve as a guide for our empirical analysis. Second, we describe our data and the operationalization used to facilitate a comprehensive cross-party analysis of website functionalities. Third, we conduct an empirical examination directed towards identifying the primary factors that account for the varying functions of these websites among diverse political entities. Finally, we conclude with a discussion of the broader implications of our findings, particularly in the context of party transformation and the ongoing digital evolution of party organizations.

Party websites and the fourth face of party organizations

Conventional wisdom suggests that the evolution of party organizations is intrinsically tied to advancements in political communication tools and the accessibility of information technology. The rapid proliferation of the Internet has led political scholars to conceptualize the emergence of a new party model, often referred to as the 'cyber party,' 'digital party,' or 'networked party' (Deseriis, 2020; Gerbaudo, 2019; Margetts, 2006). This new party type aims to use participatory platforms to incentive members' engagement and to deepen democracy through the possibility to discuss and vote policy proposals, to select party elites and to participate in debates and referendums. Empirically, this paradigm has proven especially relevant in explaining the success of pioneering experiments in e-party democracy, exemplified by the Pirate Parties. Originating in Sweden in 2006, these parties underscored the potential of the Internet to democratize political processes, encouraging direct citizen participation and promoting open, decentralized decision-making structures as alternatives to the hierarchical structures of mainstream political parties. The logic of a fluid (or 'liquid') democracy was further developed by new parties like Podemos, Five Star Movement (M5S) or *La France Insoumise* (LFI), which have made a widespread use of Internet to replace intermediate political bodies and bureaucratic procedures used to enroll and mobilize citizens, thus presenting innovative functions of Internet and new features compared to previous movement parties given the lower procedural costs for their members (Vittori, 2022).

Rather than assuming the emergence of new party type, we propose a new analytical framework that conceptualizes the digital sphere as a new face of party organizations. Although we agree with Gerbaudo (2019) that the mode of organization of party depends to a great extent on the mode of production of that time, we depart from the idea that there is a complete replacement of old/traditional party structures with new digital devices. As Fitzpatrick notes (2021), the extent to which parties invest in the digital dimension depends on several factors, such as their (human and financial) resources, political culture, institutional framework and party system features. In other words, changing environmental conditions and the strategic choice of political elites urge scholars to investigate this variation.

Aligned with the literature on party models, we posit that the surge in digital communication is not a transient phenomenon; rather, it has structurally altered the characteristics and functions of party organizations. This new 'digital face' encompasses distinct human and financial resources, hierarchies, communication flows, a blend of integration/specialization mechanisms, and tools for coordination with other elements of party organizations. This implies not only the organizational migration of some functions towards the digital sphere, but also the emergence of new party roles (e.g. digital campaign agent, Dommett et al., 2020) and structures (e.g. digital headquarters, Gerbaudo 2017). There exists a complexity beyond what the literature on party replacement or migration suggests, underscoring the necessity for more theoretical and empirical research to unveil this evolving reality.

This new face is composed of four main elements (Figure 1). The central element is based on the party website, which is managed and controlled by party headquarters or party elites (Farmer and Fender, 2005; Gibson and Ward, 2000). The reasons to examine party websites rely not only on the fact that this was the first tool to emerge in the digital era (e.g. Margolis and Resnick, 1999; Newell, 2001), but also because it has a pivotal role in articulating Internet devices and exploring the potentialities of new ICT. According to data gathered within the World Information Access Project, the proportion of political parties with a website has exponentially increased since the turn of the millennium. In 2000, 27% of the world's political parties had a website, and by 2007 48% of the world's political parties did (Howard and Chadwick 2007, 432). In the present day, virtually all political parties utilize websites as a means to connect with their supporters and promote their agendas. While party platforms are often employed for internal purposes and are not readily accessible to the general public, websites serve as the vehicle through which parties establish their online presence and form the backbone of their digital environment. Indeed, websites serve as the cornerstone of digital party infrastructure, enabling members to access online platforms and intranets (e.g. Gibson et al., 2003; Norris, 2003). These websites also function as data repositories, facilitating internal coordination and serving as valuable tools for collecting supporter data, including email addresses, contacts and preferences. Furthermore, websites play an important symbolic function by creating new social identities and strengthening partisanship. Although there are other elements contributing to the digital realm of political parties (see below), we argue that party websites are the fundamental cornerstone of the 'fourth face' of party organizations.

The second element of the digital dimension consists of multimedia content, such as livestreaming, blogs, podcasts or pre-recorded materials that are then broadcasted through Internet (e.g. Foot and Schneider, 2006; Gibson et al., 2003). With the emergence of Facebook in 2004, a third component came out through the creation of social media and networks. Finally, a fourth element is based on the use of specific platforms, used through Internet or mobile phones and created by political parties with various purposes (decision-making, entertainment, etc. see Biancalana and Vittori, 2023). The interplay among the four elements of the digital face is variable, contingent on factors like the origin of party organizations, ethos, resources, and the strategic decisions made by party elites. A recent study on the main conservative parties in Germany and United Kingdom provides an example of the interaction between websites and social media (Facebook), showing a high level of media congruence between the two tools (Borucki and Fitzpatrick, 2021).

Figure 1: about here

Figure 1 also illustrates how the digital face may interact with other party faces. While some parties may prioritize an outward use of new ICTs, party organizations may opt for optimizing the bureaucratic functioning by using Internet-related devices to manage intra-party life. In the first case, the digital component is intricately connected to the party central office, specifically for the management of party staff and the coordination of party structures. The second aspect refers to the interplay between the digital face and the party on the ground, exemplified by the integration of offline and online methods for activities such as communication with voters or member mobilization. This idea is developed by Scarrow's (2015) notion of 'multispeed' membership, which implies that citizens may connect to parties not only through traditional modes, but also through new channels without the need of intermediaries or party bureaucracies, as in the case of 'audience public'. This justifies the autonomy of the digital sphere, which complements (or replaces) extant faces. The distinction between 'inward' or 'outward' functions is key for understanding the characteristics of the fourth face of party organizations and its interaction with other dimensions of party organizations. As in the case of the traditional party models, the relative power balance between the four faces of a political party may change[3]. This is an empirical matter that needs to be addressed, calling for the need to specify the operationalization of this new component.

This study focuses on party websites as a proxy for the analysis of the 'fourth face' of party organizations. This is because not only party websites display a wide range of functionalities (both outward and inward), but these elements intrinsically interact with other party faces. As political communication scholars highlighted, party websites were firstly used by political parties mainly with the purpose of improving their communication with the electorate (e.g. Gibson and Ward, 2002; Norris, 2003; Wall and Sudulich, 2010). From this viewpoint, party websites were responsible for the new phase of electoral campaigns. This outward function can be seen, for example, through the availability of information regarding party's policy positions and action. Parties use their website to create an image that want communicate to other actors, such as media, the electorate and political actors (e.g. Rutter et al., 2018). Parties can choose specific web providers to generate a strong online appearance, through a user-friendly website that provides links to other important digital environments. Transparency is also another important feature for the public image of parties and consists of displaying key information related to structures, decisions and procedures. In addition to connecting citizens to arenas for political debate, party websites provide means for interacting with the electorate, and as such, they are expected to enhance citizens' political engagement and participation.

Party websites may also play important inward functions. First, they have a deliberative scope by fostering discussion of political issues with other players within the party. Second, parties may use websites to receive policy feedback and input on specific issues. Third, websites can be used as a way to collect financial resources. As Fitzpatrick notes (2021: 31), 'web-based tools provide scope to circumvent conventional fundraising tactics within the country-specific contexts'. Fourth, websites can be used to recruit staff, members or candidates, as well as to increase party activism (Pedersen and Saglie, 2005). Finally, these digital tools may facilitate membership management and coordination of party structures. As observed by Margetts (2006: 532) in the 'cyber party' model, 'websites can be used to link up local or sectoral units of decentralized parties and could be used to good effect in making coalition arrangements intelligible to the electorate'.

Some studies pioneered the empirical analysis of party websites, illustrating to what extent online politics has changed the internal functioning of parties (e.g. Gibson and Ward, 1999; Lusoli, 2005; Newell, 2001; Schweitzer, 2008). Norris, for instance, surveyed party websites in Europe at the very beginning of the 21st century, emphasizing that most of these tools were not only top-down channels of information and propaganda,

but they were also used as a tool to facilitate 'bottom-up' communication from citizens to politicians (Norris, 2003). Indeed, websites presented many features that allowed parties to receive feedback and inputs in terms of policy formulation and to stimulate mobilization of support.

Vaccari (2013) provided one of the most valuable and comprehensive contributions to the study of party websites by examining how parties and candidates structure their websites. The analysis considered three dimensions: information (one-way distribution of contents), participation (two-way online interactions) and delivery (accessibility and updates). Looking at election campaigns in seven Western democracies, this research found that information and top-down dissemination of content were not predominant features as early literature claimed. This reassessment suggests that digital politics evolves according to accumulated experience and technological availability. Despite the balance between information and participation, the most developed dimension refers to delivery, i.e. managing and updating the website on a day-to-day basis. This finding is understandable if we consider the specific period in which data was collected, characterized by a strong pressure to invest in digital technologies and a fast-growing expansion of Internet users. Yet, the overall picture is still one of limited interaction capacity of most websites, a finding also confirmed by other comparative studies (Kruikemeier et al., 2015). Last but not least, the supply (and design) of party websites varies significantly across countries and parties.

Overall, if we look at the literature on party websites we can identify two main shortcomings. First, most of these studies are noticeably outdated. Recent investigations into the digitalization of political parties have predominantly focused on social media, often overlooking the enduring significance of party websites. Second, many findings stem from case studies or comparisons limited to a small number of established democracies. This raises questions about the extent to which websites vary across parties in diverse political contexts. Additionally, contradictory findings are rather common and this relates principally to the fact that different measures to examine websites have been used, and in some cases even distinct methodologies. As mentioned in the introduction, this study aims to move this debate a step forward by not only conceptualizing the 'digital face' of party organizations, but also by testing new hypotheses and conducting a more comprehensive and systematic analysis. As explained in the methodological section, this paper endeavors to expand the scope of comparison by surveying a diverse array of parties from around the world.

Determinants of party website functionalities: hypotheses

What might explain the complexity of party websites by including more diversified functionalities? There are many variables that we could conceivably test for relationships with websites' complexity. Although we need to account for country-differences, we focus on party-level variables and we discuss their potential impact on websites. Macro factors are mainly considered as control variables and will be discussed in the methodological section.

A key issue addressed by scholarly literature is whether Internet equalized or normalized inter-party competition, that is, whether major parties continue to dominate the digital sphere. Empirical studies on supply-side of digital platforms based on the analysis of websites seem to confirm the 'normalization' scenario, meaning that major parties tend to display more complex websites (Ward and Gibson 1999; Gibson et al. 2003; Semetko and Krasnoboka 2003). Looking at the supply side, studies found that bigger parties tend to have greater incentives to create websites with a broader range of functionalities, especially in terms of mobilization (Cardenal, 2011; Kruikemeier et al., 2015). Given extant research, our first hypothesis claims the following:

H1 (party size): Bigger (mainstream) parties tend to present more complex websites than minor parties.

Another relevant hypothesis refers to party age. This can be interpreted as a rough measure for party institutionalization. We can expect that younger parties are more prone to make a more extensive use of party websites (Galais and Cardenal, 2017; Raniolo et al., 2021). The reason is twofold. Firstly, the lack of previous organizational legacies facilitates the development of party websites as a means to replace costly bureaucratic structures and obsolete ICT. Secondly, new parties may use the Internet to circumvent the established media, which is usually more likely to cover established or mainstream parties. Overall, both elements contribute to fostering more radical or disruptive innovations, expanding the functions played by party websites. As Margetts (2006) emphasized, younger parties can use Internet as a way to compete more effectively with traditional parties and to recalibrate potential bias in terms of institutional resources or

media visibility. A recent study on party websites in Iberian countries confirm the propensity of newly created parties to present higher levels of website digitalization (González-Cacheda et al., 2022). Based on these arguments, our second hypothesis posits the following:

H2 (party age): younger parties are likely to display more complex websites than older parties.

We can also argue that age and party size are related aspects, thus they only impact the complexity of websites when we consider their interaction. Indeed, some minor parties born in recent decades are able to rival the supply of mainstream parties in terms of website functionalities and levels of interactivity. This is the case, for instance, of green parties (Conway and Domer 2004; Schweitzer 2008) and far right actors (Bratten 2005; Caiani and Parenti 2009). These findings suggest that fringe parties[4], particularly those in opposition and originating in a digital environment, are inclined to have more complex websites. The logic behind that is twofold. On the one hand, they are more familiar with new ICT and they are faster in adopting digital tools in a more comprehensive and wide-ranging approach. On the other, the creation of well-developed websites allows them to bypass the traditional media, which usually facilitate mainstream parties' visibility to the detriment of challenger or minor parties. Therefore, we can formulate the following hypothesis:

H3 (party size and age): fringe parties created in recent decades are likely to display more complex websites than older and larger parties.

However, it should be noted that younger organizations do not necessarily imply greater grassroot participation of higher levels of internal democracy. New ICT can also be used to strengthen the centralization of decision-making powers and forms of top-down disintermediation (e.g. Ignazi, 2017; Scarrow et al., 2022). One key feature of party organizations is therefore the degree of centralization-decentralization of key decisions and the distribution of power in terms of resources. Recent empirical studies suggest a trend towards increasing concentration of power in leaders' hands, thus reinforcing the sphere of autonomy and the power of party leaders (Calise, 2015; Poguntke and Webb, 2005). As Raniolo et al. (2021) have emphasized, the internal distribution of power has

important implications for the use of ICT and the features of party organizations. Parties with more powerful leaders tend to reinforce direct links between the party leadership and followers, favoring a process of disintermediation. Previous empirical analysis on party websites based on specific case studies seem to confirm this association (Sudulich, 2013; Wall and Sudulich, 2010). As a consequence, we expect the following:

H4 (leadership centralization): parties with higher levels of leadership power tend to display more complex websites compared to less centralized organizations.

Empirical evidence also suggests that ideology matters in terms of how parties use digital tools. Generally speaking, left-wing parties seem more committed to foster citizens and members' engagement and are also more sensitive to the issue of intra-party democracy (Ignazi 2017). Indeed, this difference was found also in the analysis of party websites. Traditional leftist party families tend to provide sites that aim not only to inform citizens, but also to facilitate engagement and interactive dialogue, while right-wing parties are considered to be more likely to use a top-down approach based on more controlled information (Lilleker and Malagon 2010; Lilleker et al. 2011). In addition, comparing several parties in different European countries, Vaccari (2013) found that left-wing parties are more open to facilitate online interaction on their webpages than right-wing parties.

H5 (ideology): Left-wing parties tend to display websites with a wider range of functionalities.

Data, operationalization and methods

This work relies on data collected within the framework of the Political Party Database (Poguntke et al., 2020, Poguntke et al., 2016). More specifically, our dataset covers 268 parties in 51 countries. We exclude from the original dataset only those parties for which we have missing information on key variables related to party websites (see Table A2 in the appendix). Our large set of countries comprise democratic, nondemocratic and hybrid political regimes. It also features big and small, unitary and federal, rich and poor states across all five continents. Therefore, the relatively large

number of countries can be considered, to a large extent, representative of the whole world.

Regarding the operationalization of our dependent variables, the PPDB dataset comprises nine indicators that measure website functionalities (Table 1). The first dimension refers to the possibility of joining the party through the website, while the second is based on the presence of a special 'members only' section. The third indicator considers whether the website solicits donations and the fourth dimensions focuses more specifically on on-line donations. The fourth variable assesses the possibility of supporters to sign up and to help with specific tasks. There are also three indicators that examine citizens' engagement by soliciting some kind of input or feedback, for example through surveys, discussion (blog, forum, etc.) or general comments. Finally, the last dimension refers to the inclusion of links to social media. All variables have been operationalized through dichotomous categories (yes/no)[5].

These indicators cover the basic dimensions associated with the function performed by websites, namely information, mobilization and interactivity. First, all party websites are designed with the aim to provide information, and this happens nowadays especially through social media. Although most websites provide a 'static' information (such as party history, statutes, electoral manifestos, etc.), 'dynamic' information happens when websites allow information to flow in the cyberspace, for example through sharing and promoting links and content via social media. Second, websites intend also to mobilize key resources, for example in terms of members or money. Finally, interactivity is one of the key features of Web 2.0 and it can be defined as 'those features that allow website visitors to interact with each other and the site host' (Kruikemeier et al., 2015; see also Lilleker et al., 2011). As a two-way process, this attribute may entail a vertical communication (between party organization and user) or horizontal interactions (between website users).

We follow Gibson and Ward's (2000, 2002) approach, which is based on an inductive process to examine website functions or features. This is a more flexible method that allows the websites to speak for themselves, rather than on how each researcher interpreted the meanings of different categories. To examine the relationship between these indicators, we perform a factor analysis. The final result provides three solutions, indicating that, for the cases included in this paper, there are different components. In particular, we can distinguish between mobilization, interactivity and social media. This is generally in line with the functions highlighted by the scholarly literature and the

empirical analysis of websites based on content analysis, at least for the first two dimensions. Whether websites display links to social media is an important indicator that was not included in previous studies and provides interesting information on the connection between different digital platforms.

Given the fact that some dimensions are strictly related, we use two distinct operationalizations of our dependent variables. The first is based on the overall index of website functionalities. This is an additive index that considers the nine indicators included in the PPDB. We also use an alternative dependent variable by relying on the sub-dimensions identified in the factor analysis. Therefore, we use the average of the items associated with the two main components, namely mobilization and engagement/interactivity. Descriptive statistics for our dependent variables are available in the appendix (Table A1).

Table 1: about here

Operationalization of independent variables

We test how the potential factors highlighted in the theoretical framework correlates with our dependent variables. Starting from party size, we use two distinct operationalizations. The first is the percentage of seats obtained in national elections. This allows us to distinguish between three categories of parties, mainly major, minor and fringe parties. As it is difficult to establish a *a priori* threshold, we divide the sample in three equal groups (fringe parties are below 5% of seats obtained in the lower house of the national legislature, minor parties are between 5% and 16%, large parties above 16%). However, this measure is very sensitive to electoral oscillations. Therefore, we opt for an alternative operationalization that is based on membership size. This is an important indicator of party type, with important implications in terms of mobilization and communication.

To empirically test the ideological positioning hypothesis, we use the expert coding of party ideological orientations included in the PPDB. This variable distinguishes eleven main categories, namely radical left, social democrats, greens, liberal, green, Christian democrats, conservatives, agrarian parties, right-wing and extreme right, regionalist and ethnic parties. This operationalization allows not only to covering the left-

right orientation across a very diverse range of issues, but - most importantly – to compare party ideology across different contexts.

Finally, we also consider two important variables. The first is party age, measured through the year of funding[6]. The second is leadership power, which is an indicator of the internal distribution of power. We followed Poguntke et al.'s approach (2016) by creating an additive index of leadership power that relies on nine items included in the PPDB (see Table A2). These items comprise a wide range of indicators, such as leaders' accountability, their rights and obligations and their position within party hierarchies.

To control for differences in party resources, we employ two different indicators. Money is a crucial resource for party maintenance and persistence. Therefore, we use party funding as a measure of resource structure. Parties usually rely on both public and private subsidies. This information is included in the PPDB, and we choose the logarithm of total income as a proxy for party financial resources. However, this indicator presents the problem that the access to state resources varies according to national legislation on the matter. Consequently, it is wise to use an alternative operationalization based on party staff, that is, the number of permanent employees employed by party organizations.

Control variables

To assure the robustness of our findings we control for some macro-level variables earlier studies identified as relevant for explaining the 'supply-side' digitalization of political parties. The first is the democratic trajectory, since party system institutionalization and the consolidation of the electoral process make inter-party competition more stable, which is an important factor that fosters the development of party websites. To measure democratic trajectory we use the Freedom House index, which captures global levels of political rights and liberties across a wide range of countries[7]. Second, we control for Internet penetration, as the extent to which citizens have access to Internet stimulates parties do develop digital tools to interact with potential supporters. For this variable, we rely on available data, namely internet penetration rate by country provided by the World Bank. We also use data from the same organization to control for socio-economic development, using as indicator GDP per capita.

Methods

Our data includes parties nested within countries. Accordingly, we need a modelling strategy that considers that our units of analysis are not independent from each other. Although multilevel models are most suited to model effects of system level variables adequately, we decide to use regression analysis with robust standard errors for two main reasons. The first is that we have very few cases that do not allow us to obtain reliable estimation for both the party and the system level. The second is that we focus on the impact of party-related variables rather than on the impact of country characteristics. However, our results are robust even if we opt for alternative modelling strategy[8].

Results

We start our empirical analysis of party websites by describing the overall complexity of these platforms. As depicted in Figure 2, there is a variation in the functionalities executed by party websites. The most prevalent characteristic is the display of links to social media accounts. Overall, contemporary party websites serve the function of facilitating communication flows and establishing connections across different platforms. This confirms the importance of the digital environment and its growing diversification compared to the Web 1.0 era, as well as the idea of party websites functioning as party connectors (Borucki and Fitzpatrick, 2021; Koger et al., 2009). The second most common characteristic consists of displaying membership option, that is, to facilitate the recruitment of new members (76.8% of websites). However, the possibility to obtain financial resources is also a widespread feature, as approximately 60% of websites contains solicitation of donations, while 44% of the parties provide the possibility to make on-line donations. Finally, interactivity features are less common, which confirms the findings from previous studies that two-way communication is not a priority for party organizations.

Figure 2: about here

Overall, a relative majority (24.3%) of the surveyed parties allow for five features in their website. Parties displaying two, three or four functionalities of their webpage present roughly the same proportion (17%). A small minority of party organizations

(7.2%) present just one feature, whereas 5.6% of the parties present more than seven functionalities. The Spanish Socialist Party (PSOE) is an example of high levels of supply-side digitalization, while the Democratic and Christian Union in Slovakia (SDKÚ-DS) lies at the opposite pole with its website allowing for only one function.

Table 2 compares website functionalities of major, minor and fringe parties. The test for difference of means suggests that there are no clear divisions in terms of party size. In most cases major parties present a higher level of complexity, but there is not a clear hierarchy between bigger, medium and smaller parties. Even when we consider the sub-category of interactivity, differences among groups are not statistically significant. However, in this case fringe and minor parties seem to display richer (i.e. more complex) websites, reporting slightly higher means than major parties. It is difficult to compare these results with previous findings given differences with regard to data, case selection and operationalization. Be as it may, our analysis does not indicate a clear association between party size and the digitalization of party organization. Overall, it suggests that, at least in terms of parties' electoral strength, a trend towards 'equalization' applies, with no predominance of bigger parties.

Table 2: about here

Table 3 shows website complexity according to the ideological positions of the parties. Overall, the findings present a very mixed picture, suggesting that it is difficult to find systematic differences across party families. These data tend to contrast with empirically based hypotheses regarding the predisposition of left-wing parties to implement more developed websites (Vaccari, 2013). Greens display above-average levels of website complexity, while moderate or centrist party families present very similar scores. Yet, if we look in more detail to the sub-component of our index related to interactivity, we can find some interesting differences. Websites affiliated with ethnic and extreme-right party organizations present higher levels of two-communication tools, while agrarian parties do not prioritize this specific functionality. Nevertheless, drawing broader conclusions necessitates rigorous statistical testing to validate the hypotheses posited earlier.

Table 3: about here

To better explain how website complexity varies across parties and political settings, we create a model composed of eight main components. We use a variable gauging party size, based on two distinct operationalization, namely as the proportion of votes in the national parliament and the magnitude of party membership. We also include ideological (left-right) orientation and party age[9]. In addition, the model considers leadership centralization and the overall amount of party income at the national level. Finally, we control for country differences including GDP per capita, level of democracy (Freedom House index) and Internet penetration. The final model also contains country dummies, which allow us to capture the differences between countries[10].

Looking at the results, Table 4 shows that party size matters, but the negative coefficient indicates that parties with higher levels of electoral support tend to display less complex websites. This finding is contrary to our first hypothesis, which associates bigger parties to websites with a wider range of functionalities. This result seems to suggest that when the goal is to reach a broader audience and when the party benefits from a more robust institutional position that gives it more visibility, party organizations do not invest in developing particularly complex websites. It might also be the case that larger, mainstream parties are more inclined to embrace a diverse array of digital tools and rely on external actors. This tendency could potentially limit the necessity to incorporate additional functionalities into their websites.

Moving to the impact of party age, our results confirm the expected relationship, namely the fact that young parties are more likely to show websites with a wider range of functionalities. Its impact achieves standard levels of statistical significance, thus confirming our second hypothesis. However, if we look at the interaction between party age and size, the results show a positive coefficient, meaning that the joint effect of the two independent variables (age and party size) slightly offsets the negative impact that each of these factors exerts on the dependent variable. This means that bigger and older parties are also likely to display higher levels of website complexity, thus mitigating the impact that these variables have on party digital supply when considered separately. However, the magnitude of the coefficient for the interaction term and its level of significance suggest that this impact is relatively small, but it is still important to emphasize that this interaction modifies the relationship between the two dependent variables and the range of website functionalities.

According to our theoretical expectations, ideology and leadership centralization are also party-related features that may affect the complexity of websites. The findings

confirm these expectations, although their impact does not always work as hypothesized. Indeed, our index of leadership centralization significantly affects the extent to which parties design their websites with more or less functionalities, but the coefficient shows a negative relationship, indicating that more centralized parties display less complex websites. This may be explained by the use of social media as a way to directly connect leaders with their supporters. It can also be related to the higher visibility that leaders have when concentrating important organizational powers, thus strengthening the identification between parties and their leaders (for example, by creating a specific profile for the party leader).

In line with previous studies, ideology is also salient. Thus, left-wing parties display a wider communication platform, including more functionalities compared to other party organizations (H5 confirmed). We also examine whether ideologically extreme parties are inclined to have websites with a greater number of functionalities (see Model 3). The findings are statistically significant and indicate that more extreme parties tend to exhibit less complex websites. In other words, moderate parties are more likely to feature websites with a richer set of functionalities, aligning with the outcomes observed across distinct party families.

Financial and human resources also display a significant impact on website functionalities. On the one hand, parties with larger membership base are more likely to display more complex websites. The fact that party organizations have to communicate to a larger base of support might explain the necessity to have a richer and more effective website. On the other, parties with less financial resources are more likely to display more complex websites (Model 2). This finding is intriguing as it diverges from results observed in more advanced democracies. Our survey of parties across diverse environments reveals that less affluent parties are more inclined to develop websites that incorporate a greater number of functionalities[11].

Lastly, it is noteworthy that macro-level country characteristics play a crucial role. Certain disparities among parties are linked to resource inequalities, specifically the divide between affluent and less affluent nations. In this context, we observe a positive correlation between GDP per capita and website complexity, indicating that wealthier countries tend to exhibit higher levels of digitalization. Additionally, technological development plays a significant role, as evidenced by the positive and statistically significant coefficient associated with the rate of Internet penetration. This finding

confirms the idea that divergent levels of technological development across countries contribute to cross-country disparities in the digital politics supply side.

Table 4: about here

To obtain a more comprehensive understanding of website functionalities and to check the robustness of our findings, we conduct additional tests for two distinct indices. The first index is associated with the dimension of mobilization, while the second centers on interactivity. The outcomes yield notably divergent results (Table 5). The coefficients for the first index are consistent with prior findings, affirming the significant role of party-related attributes. Notably, our analysis reveals that leadership centralization and age have a discernible impact on the extent of mobilization exhibited by party websites. Older parties are less likely to offer members' recruitment or funding through Internet, and the same applies to more centralized party organizations. Compared to the broader index of website functionalities, the remaining variables present a weaker impact, but the direction remains the same. Left-wing and moderate parties tend to develop more complex websites, whereas smaller parties are more prone to rely on online mobilization. Finally, our control variables (membership size and party income) also achieve statistically significant levels.

However, when we use the interactivity index as the dependent variable, the model's ability to predict deliberative features of party websites was poor. This could be attributed to the fact that there was much less variation for this variable and to lack of specification of our model. Additionally, the findings suggest that macro or party-related variables may not be sufficient to explain this type of website functionalities. Therefore, further investigation is necessary to determine what factors foster interaction through website platforms, in particularly by looking at the characteristics of the electorate or political institutions.

Table 5: about here

Conclusion

With this paper we hope to provide new insights into the theoretical understanding of party digitalization and the impact of Internet on party organizations, as well as to provide new empirical findings to the discussion. This study approaches the issue of party website functionalities as an indicator of the new 'digital face' of political parties, focusing on the importance of party-related variables to account for the variations in website complexity. We also argue that party websites should be studied to fully appreciate the organizational dynamics of contemporary political parties.

Exploration of the data from the PPDB project suggests that most party websites display some basic functionalities. In general, the most common feature is based on providing the link to social media platforms. We also find that resource mobilization (members' recruitment and funding) are common tools provided by party websites, while engagement is generally less frequent. The overall picture of website development throughout the 21st century suggests that supply-side digitalization of parties has not suffered deep and radical changes. Indeed, the main features of todays' websites seem very similar to what earlier studies found at the beginning of the century, focusing more on informative functions than interaction or deliberation. Probably, this result is due to the fast-growing development of new digital platforms and the increasing diversification of digital ICT that led parties to concentrate their effort to gain visibility through these new arenas to the detriment of the expansion of more traditional Internet devices. These findings do not imply that party websites lack relevance within the digital realm of party organizations. Rather, they suggest that the rapidly increasing significance of new digital tools such as social media and platforms has deterred parties from prioritizing the development of web 2.0 devices. This is something that future research needs to investigate more systematically if we want to have a more comprehensive picture of the 'fourth face' of party organizations.

However, we found significant variation across parties. We wished to identify the main correlates of website features, focusing particularly on party-related variables. The findings indicate that parties with a larger membership are more likely to display more complex websites, while parties with broader electoral support tend to show websites with fewer functionalities. We also ascertain whether younger parties differ in the features of digital platforms and the results confirm our initial expectations, as well as recent empirical studies (González-Cacheda et al., 2022; Raniolo et al., 2021). We also expect that left-wing parties are more prone to have more complex websites. Our findings substantially support this hypothesis. Finally, our results tell us that centralization of

leadership power does not favor the adoption of party websites with more functionalities. By contrast, parties that centralize power in leaders' hands seem less likely to employ a wide range of advanced communication tools through their website. This is an intriguing finding and can be interpreted in a number of ways. It may be the case, first, that leadership-centered parties do not need sophisticated websites, as party labels and identities can overshadow the main figure of the party. Second, it might equally be the case that more centralized parties prioritize websites for internal coordination, thus fostering inward activities to the detriment of more interactive functions. Third, it can depend on the party ethos, which means that less decentralized party organizations do not value the possibility of websites to facilitate interaction and engagement.

Although this was not the main goal of the paper, we found that country characteristics also matter. First, socio-economic development is related to more complex websites, as higher levels of GDP per capita are associated with higher levels of party digitalization in the web. Second, technological conditions – measured though the rate of Internet penetration – are positively correlated to the functionalities displayed by party websites. Our extensive case selection, encompassing highly diverse countries, could elucidate why these results differ from Vaccari's study (2013), which found that macro-level characteristics across countries were not significantly linked to website functionalities. According to our analysis, different levels of socio-economic development can shape the supply-side of party digitalization. From this viewpoint, we need more studies examining how different national contexts influence party organizations to create (and use) websites with specific characteristics.

Despite the important findings highlighted in this paper, there are also some limitations concerning the empirical analysis. As referred in the theoretical framework, websites are only one of the multiple tools that parties can use in the digital environment. Hence, these findings should be supplemented with an analysis of additional dimensions, such as personal (candidate) websites or social media platforms. A second limitation is that we limit our empirical analysis to the 'supply-side', leaving outside demand-side analyses, that is, how voters and members engage with parties through websites. It would be interesting to see to what extent party supporters make use of digital tools through websites and the degree of responsiveness of parties. Last but not least, this paper provides a 'snapshot' of party websites and it was not possible to consider updated data. It would be interesting to look at the longitudinal evolution of party websites and to examine the transformation of the 'supply-side' over time. From this standpoint, studies

adopting a long-term approach suggest that the use of websites shifted from the 'normalization' to the 'equalization' scenario in a short time span (Gibson and McAllister, 2015; Russmann, 2020). This calls for the need to collect more evidence regarding the evolution of digital tools within party organizations.

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[1] This idea aims to extend the three-dimensional approach elaborated by Katz and Mair (1993), which distinguish between the 'three faces' of party organizations (party on the ground, party central office and party in public office).

[2] In this text, we use website functionalities or website complexity as synonymous.

[3] As we focus on party organizations, this analytical framework does not include candidates' websites. The growing personalization of politics has fostered the emergence of websites of individual politicians. It also worth mentioning that the digital sphere is continually evolving, driven by technological advancements, changing user behaviors, and economic and regulatory factors, with important effects on party organizations.

[4] See the 'Data, operationalization and methods' section for the operationalization of fringe parties.

[5] Only the first variable ('joining') is not dichotomized in the original codebook. For sake of comparability, the three modalities related to 'yes' (complete, partial or other) have been recoded into one category only.

[6] In cases characterized by significant and long discontinuities of the political regime, we consider the modern form of the party. Examples of this situation are the Croatian Peasant Party or the Bulgarian Socialist Party, among others.

[7] We also use V-Dem scores, but the results are virtually the same.

[8] There is an on-going debate about the best methodological strategy when analyzing clustered data. We computed also multilevel models and could not find differences regarding effect direction, significances and relative effect size.

[9] In case of ideology, we group the originally eleven categories in two distinct variables: left-wing parties (including communists, social democrats and greens) and right-wing parties (Christian democrats, liberals, conservatives and right-wing parties). Both variables are dichotomous (1:left; 0: other; 1: right; 0:other).

[10] The models do not present serious problems of multicollinearity among predictor variables. The highest VIF score is 2.76, which indicates the lack of potential issues with interpreting the coefficients of the regression models.

[11] We also assess the influence of the number of permanent staff members employed at the national level. However, this variable does not yield significant effects on party websites. Additionally, the presence of missing data limits the number of valid cases. Finally, it's worth noting that data on permanent staff may not be considered highly reliable.

Figure 1. The digital components of party organizations

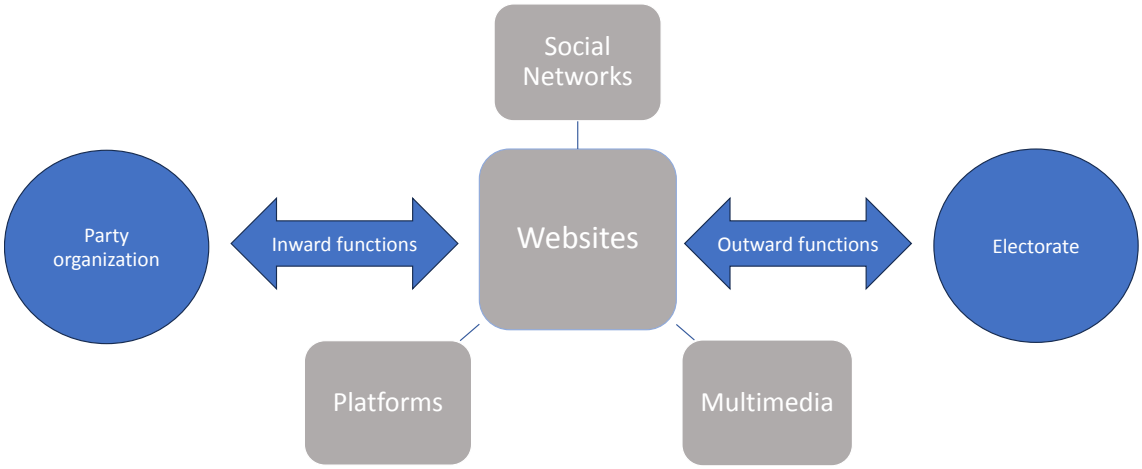
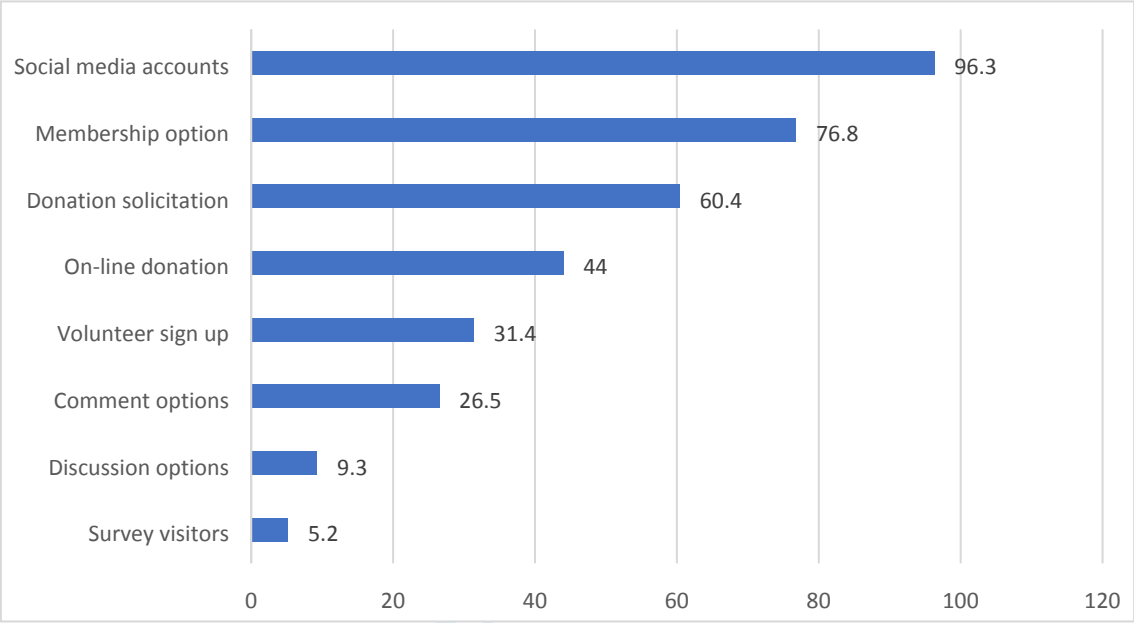


Figure 2: Website functionalities (%)



Source: Political Party Data Base.

Table 1. Indicators and dimensions for website complexity (dependent variables)

Indicators	**Dimension**
Website: Mobilization	
Membership option	Inward
Member only section	Inward
Donation solicitation	Inward
On-line donation payment	Inward
Volunteer sign up	Inward
Website: Interactitvity	
Survey visitors	Outward
Discussion options	Outward
Comment options	Outward
Website: Social media	
Social media accounts	Outward

Note: See Table A2 for the results of the factor analysis. Note that the differentiation between 'inward' and 'outward' is indicative, as a single functionality may be linked to both dimensions.

Table 2. Website functionalities of major and minor parties

	Whole website index			Website interactivity index		
	Mean	N	s.d.	Mean	N	s.d.
Fringe	3.99	88	1.56	2.66	92	.58
Minor	3.61	79	1.77	2.65	83	.59
Major	4.05	84	1.71	2.48	93	.75
Total	3.88	251	1.68	2.60	268	.65

Source: PPDB.

Table 3. Website functionalities by party ideology

	Whole website index			Interactivity		
Party family	Mean	N	Std. Dev.	Mean	N	Std. Dev.
Communists or Left Socialists	3.83	24	1.63	2.68	25	.69
Social Democrats	4.0	45	1.80	2.54	50	.71
Greens	4.63	19	1.38	2.68	19	.58
Christian Democrats	4.12	17	1.54	2.56	18	.51
Conservatives	3.74	31	1.79	2.59	34	.74
Liberals	4.15	41	1.84	2.60	43	.66
Agrarian/Farmer's Party	4.17	6	1.17	2.43	7	.53
Right-wing (populists)	3.21	24	1.47	2.56	27	.64
Far right (extreme right)	3.40	5	1.52	2.80	5	.45
Regionalist	3.89	9	2.09	2.78	9	.44
Ethnic	2.50	8	1.60	2.88	8	.35
Total	3.89	251	1.68	2.60	267	.64

Source: PPDB.

Table 4. Regression analysis of party website complexity

	Model 1		Model 2		Model 3	
	B	s.e.	B	s.e.	B	s.e.
Party seats (%)	-.014	.011	-.021*	.013	-.020	.012
Party age (log)	-.359*	.167	-.344*	.188	-.422**	.190
Party age * seats	.0001*	.000	.0001*	.000	.0001*	.000
Leadership centralization	-1.681**	.655	-1.57**	.723	-1.761**	.696
Left_parties	.381	.342	.619*	.359	-	-
Right_parties	.167	.329	.366	.342	-	-
Extreme parties	-	-	-	-	-.595**	.285
Membership size (log)	.150*	.060	.234**	.078	.258***	.078
Party income (log)	-	-	-.106**	.048	-.08**	.047
Country GDP	.0001***	.000	.000**	.000	.0001**	.000
Freedom House Index	.017	.018	-.005	.021	-.005	.021
Internet penetration (WB)	.017	.017	.044**	.021	.045**	.020
Country dummies	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
(Constant)	1.184	.1826	1.201	2.184	1.192	2.166
N	(159)		(159)		(162)	
R-squared	.33		.40		.06	

Note: *p<.10; ** p<.05; *** p<.01

Table 5. Regression analysis for distinct components of party website functionalities

		Mobilization			Interactivity	
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Party seats (%)	-.013 (.009)	-.018 (.011)	-.020* (.011)	-.001 (.005)	-.001 (.005)	-.001 (.005)
Party age (log)	-.403*** (.145)	-.416** (.167)	-.354** (.165)	-.065 (.072)	-.005 (.079)	-.013 (.078)
Party age * seats	.0001* (.000)	.0001 (.000)	.0001* (.000)	.0001 (.000)	.0001 (.000)	.0001 (.000)
Leadership centralization	-1.818*** (.570)	-1.835*** (.613)	-1.698*** (.634)	-.155*** (.287)	-.127 (.290)	-.182 (.300)
Left_parties	.282 (.297)	-	.562* (.315)	-.050 (.148)	-	-.064 (.149)
Right_parties	.161 (.286)	-	.419 (.300)	.018 (.143)	-	.027 (.142)
Extreme parties	-	-.444* (.251)	-	-	.078 (.119)	-
Membership size (log)	.122* (.052)	.225*** (.068)	.207*** (.069)	-.029 (.026)	-.025 (.032)	-.021 (.033)
Party income (log)	-	-.096*** (.041)	-.117*** (.042)	-	-.018 (.019)	-.014 (.020)
Country GDP	.0000*** (.000)	.0000*** (.000)	.0000*** (.000)	.0000 (.000)	.0000 (.000)	.0000 (.000)
Freedom House Index	.010 (.016)	-.008 (.018)	-.008 (.019)	-.003 (.008)	.000 (.008)	.000 (.008)
Internet penetration (WB)	.027* (.015)	.037* (.018)	.036* (.018)	.011 (.007)	-.005 (.009)	-.005 (.009)
Country	yes	yes	yes	yes	yes	yes
(Constant)	-.181 (1.588)	1.048 (1.916)	1.048 (1.916)	2.224*** (.797)	3.445*** (.890)	3.473*** (.893)
(N)	(159)	(159)	(159)	(162)	(162)	(162)
R-squared	.33	.39	.40	.09	.06	.06

Note: *p<.10; ** p<.05; *** p<.01