A longitudinal study of online campaigning in the most digitally advanced society in the world

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Abstract

The internet has become a key battleground for political parties and candidates running for office. Using data from three consecutive parliamentary elections in Estonia, spanning across the last decade, we map the extent to which candidates make use of online campaign tools. The availability of candidate survey data over time enables us to evaluate how online campaigning has evolved in a country at the forefront of digitalisation. Our findings show that, despite a highly wired context, candidates still do not exploit the internet to its full potential. We observe a significant increment in candidates' presence on the web, but the effort remains limited in terms of the range of digital campaign tools used. In addition, we find that candidates' political profile has a limited influence on their digital proclivity, while young age and intensity of their overall campaign effort are stable predictors of it across the decade.

Keywords: Online campaigning, campaign effort, parliamentary elections, candidate studies, Estonia

Introduction

The internet has changed our lives profoundly. Unquestionably, it has also changed campaign practices. In a recent interview with the New York Times, Congresswoman Alexandria Ocasio-Cortez, speaking of the role of digital campaigns in the 2020 elections in the United States, claimed:

> *"[I] don't think anybody who is not on the internet in a real way in the Year of our Lord 2020 and loses an election can blame anyone else when you're not even really on the internet… If you're not door-knocking, if you're not on the internet, if your main points of reliance are TV and mail, then you're not running a campaign on all cylinders" [NYT – November 8th, 2020]*

Ocasio-Cortez summarises the complexity of campaigns and suggests that using a broad range of tools is essential to run competitive campaigns. Nowadays candidates routinely establish some form of online presence. Depending on the type of election, candidates' political profile, personal characteristics, party affiliation and political context, online campaign efforts can vary dramatically, from extremely sophisticated as in the Presidential races in the United States to rather amateurish ones in local council elections. That said, digital campaigning has allegedly become indispensable to viable contenders. The increase in internet penetration, the diffusion of smart mobile devices, and the spread of web 2.0 platforms suggests that aspirational candidates can no longer ignore the World Wide Web. Yet, we still have limited evidence speaking to whether this perception is indeed true. Is digital campaigning still a variable? Or, have we reached a saturation point where every candidate has established some form of online presence for their campaign? Have the characteristics of cyber-savvy candidates changed over the last decade? Are candidates exploiting the web it to its full potential?

This study addresses the above questions, exploring the over-time uptake of digital campaign tools among candidates running for office at parliamentary elections in Estonia.[1] In a literature largely dominated by US-centred studies, the case of Estonia is relevant in several respects. First, the country has been leading the way in the provision of digital services. It was named 'the most digitally advanced society in the world' by the Wired magazine.[2] Estonia has invested heavily in the development of an effective e-governance infrastructure with a remarkable level of adoption of e-services by citizens. For example, 99% of medical prescriptions are digital and 98% of tax declarations filed electronically (E-Estonia 2020). It is the first country to offer e-residency, a government-issued digital identity and status which provides access to Estonia's business environment (E-Residency 2021). Moreover, the internet is not only central to running public services and reducing bureaucracy, but also at the core of elections

[1] Our study does not extend to candidates' electoral success. For insights into the relationship between digital campaigning and electoral performance, see, for example, Koc-Michalska et al. (2016), Sudulich and Wall (2010), and Trumm (2021).
[2] https://www.wired.co.uk/article/digital-estonia.

in Estonia. The country introduced the option of voting online at its 2005 local elections, with internet voting rolled out for national parliamentary elections two years later. Over the last decade, the proportion of voters that cast their ballot online has almost doubled, from 24.3% in 2011 to 43.8% in 2019. This leads to the obvious question of whether candidates' uptake of online campaigning has matched the rise in internet voting. Second, data from the Estonian Candidate Study – surveying parliamentary candidates running for office in 2011, 2015, and 2019 – offer a distinctive opportunity to evaluate the extent to which individual-level digital campaign practices have changed over the span of a decade. Third, the parliamentary elections in Estonia are candidate-centred as the country uses a proportional electoral system with multi-member constituencies, and voters are required to cast their ballot for an individual candidate.[3] The evidence presented by existing studies of digital campaigning is mostly based on countries using majoritarian electoral systems and single member constituencies. The findings of this study will indicate whether, and how, existing insights are generalisable to proportional systems.

Our findings suggest that despite very high levels of digitalisation and institutional incentives to promote one's individual candidacy, there is still a notable minority of candidates who completely avoid campaigning online. We also find that the extent to which candidates utilise different forms of cyber-campaigning depends more on their demographics than political status, and that party differences which existed at the beginning of the decade – i.e., candidates from smaller parties were more active online at the beginning of the decade than those from bigger parties – faded away over time. Crucially, however, the number of digital tools candidates tended to use for electioneering remained limited throughout the decade. It is of course important to be cautious when generalising from a single county case study, but our empirical findings do imply that, even in a highly digitalised environment, while cyber-campaigning has unsurprisingly become increasingly prominent over the last decade, it is still not yet indispensable.

Digital campaigns over time

Over the last two decades, research has mapped the growing impact of digital technologies on political practices. Beginning with an almost solely US-based literature at the turn of the century (D'Alessio 1997, Margolis and Resnik 2000), we now have a good sense of how digital technologies are embedded and used also by parties across Europe (for an overview see Lilleker et al. 2017) and in the Asia-Pacific (Gibson 2004; Gibson and McAllister 2006, 2011). We also have increasingly detailed accounts of how voters experience political communication online (Aldrich et al. 2016), and how the supply and demand for digital communication can be reconciled (Vaccari 2013).

[3] While most candidates who get elected do so on the basis of their personal vote share, there are approximately a fifth of seats that end up being allocated to parties nationally, and awarded to candidates based on their position on their (closed) national party list.

The scholarship has described and explained variation in the use of digital campaign technologies across parties and candidates, national borders, and electoral contexts. Several studies address the extent to which online campaigning wins votes. While some early research found traditional campaign activities to be particularly effective (Fisher and Denver 2009), the link between online campaigning and electoral fortunes of parties and candidates has now been well-documented to hold in multiple electoral contexts. Sudulich and Wall (2010) find more extensive online campaigning to bring about electoral benefits in Ireland, Gibson and McAllister (2006; 2011; 2015) find similar trends in Australia, and Koc-Michalska et al. (2016) confirm these findings at European Parliament elections both in 2009 and 2014. A recent paper by Trumm (2021) shows that online and offline campaigns have roughly equal and positive effects on candidates' vote share at the 2019 parliamentary election in Estonia.

The wealth of knowledge accumulated since late nineties is remarkable. Yet, the extent of change over time has rarely been directly embedded in the design of the ever-growing body of studies focusing on online campaigning. There are of course a few exceptions, with Schweitzer (2011) documenting the evolution of parties' websites over time in Germany and Lilleker et al. (2016) exploring parties' digital strategies in the United Kingdom over six years (2008-2014) across local, national, and European Parliament elections. Centring their study around the use that different parties make of digital platforms, they find little evidence of parties taking full advantage of the vast capabilities of the internet. Moving beyond Europe, Gibson and McAllister (2015) investigate Australian candidates' use of traditional and digital media over the first decade of the millennium, observing a sizeable jump from 5% of candidates using the internet in 2001 to 55% in 2010.

Gibson's volume on digital electioneering (2020) is to date the most comprehensive longitudinal – as well as cross-national – assessment of cyber-campaign practices. She describes the evolution of digital campaigning as a four-step process, with parties having gone from experimenting with online campaign tools in the early days to running elaborate microtargeting operations based on cloud computing of big data. Our study brings additional insights to this matter, using a different source of data. Where Gibson (2020) relies on voter survey data, we evaluate over-time development with data on candidates' self-reported behaviour.

As internet penetration increases, individual candidates feel the need to launch some form of online presence, even if it remains limited in its diversity. In the United States, for example, 86% of candidates standing at the 2006 Congressional election had a campaign website (Gulati and Williams 2007). Yet, candidates in Europe embraced the internet at a much slower pace. Before the advent of web 2.0, the field was relatively uneven, with considerable proportions of candidates absent from the online scene altogether. As social media platforms offered a cost free and oven-ready space for distributing campaign information and ads, candidates and parties started using Facebook and Twitter for campaign purposes.

The advent of web 2.0 tools certainly modified the landscape of easy-to-use online options available to candidates. The plethora of new options facilitates the uptake of more, and possibly richer, forms of online campaigning.

To date, evidence on the relevance of candidates' personal and political profile to online campaigning is mixed. Gibson and McAllister's study of cyber-campaigning in Australia (2006) found that traditional predictors of electioneering did not explain digital activism among candidates in the early 2000s. On the other hand, Giebler and Wüst (2011), using data from the 2009 European Parliament election, found a strong incumbency effect and male candidates to be more likely to engage in cyber-campaigning. While originally the internet appeared to have been more appealing to men than women, Sandberg and Öhberg find that female candidates were more positive towards social media in the run up to the 2014 European Parliament election (2017). We take an over-time approach to evaluate the stability of the impact that candidates' personal and political characteristics such as age, gender, and incumbency have on cyber-campaigning.

While focusing on individual candidates, we nonetheless seek to add evidence to the debate on parties' approach towards digital campaigning. This debate largely revolves around equalisation versus normalisation patterns (e.g., Gibson and McAllister 2015; Margolis and Resnick 2000; Schweitzer 2011). The former is the contention that small, poorly resourced parties were faster at appreciating the benefits of campaigning on the web, but their advantage as first mover was only temporary. Large parties have subsequently caught up and normalised the competition on the internet by mobilising their greater resources, on the internet as much as elsewhere. The sequence of equalisation followed by normalisation characterised the first phase of cyber-campaigning as well as the second phase, when the first decade of the new millennium web 2.0 platforms became widespread. Gibson and McAllister (2015) documented candidates from small parties being once again faster at understanding and using such tools, suggesting a return to equalisation, while Koc-Michalska et al. (2014) show that, relative to 2007, minor candidates running at the 2012 French presidential election embraced new technologies more than their major counterparts. Our study examines whether the equalisation-normalisation cycle has been replicated in the Estonian context.

Expectations

The growing relevance of digital technologies for electoral purposes is unquestionable. Particularly in a highly digitalised environment such as that in Estonia, where internet voting is well-established, the expectation is that cyber-campaigning becomes nearly indispensable over time. Therefore, *we should observe an over-time decrease in the proportion of candidates with no online campaign presence. As time goes by, the differences among candidates should manifest mostly in the extent to which they*

choose to engage with a broad range of online campaign tools, rather than on whether they engage with the web at all.

Next to that, we seek to explore who is at the forefront of digital campaigning. We do so by means of a selection model, whereby we first examine who is most likely to establish an online campaign presence, and then what predicts the usage of multiple online campaign tools among those who are present on the web. In so doing, we set apart those who do not cyber-campaign at all from those who do, and for the latter group, we explain variation in the adoption of various online campaign tools.

We organise our expectations around the effects associated with candidates' campaign choices, political profile, personal characteristics, and party affiliation. First, candidates' broader campaign choices are likely to influence cyber-campaigning as there should be a certain level of cohesion in one's approach to electioneering. After all, the use of online tools is part of the overall effort candidates put in place to maximise their chances of winning a seat. *Candidates who choose to run more personalised, candidate-centred campaigns, as well as those who carry out more intensive campaigns – in terms of their overall campaign effort and the range of traditional campaign tools used – are expected to develop an online campaign presence and engage with voters through a broader range of online campaign tools*. Those whose campaign aim is to promote their own candidacy may use the web to boost their personal profile, given that it allows candidates to directly, and relatively cheaply, put forward their campaign messages, separate from their party's. Although technological developments make the use of social media both easier and cheaper, online chats with voters, podcasting and blogging still require time and dedication. Therefore, it is candidates who choose to commit more resource – such as time and effort – to promoting their candidacy, who are likely to also show greater campaign activism online. This is unlikely to vary over time.

With regards to candidates' political profile, *we expect incumbents and those in prominent positions within their party to have better access to their 'party machine' and its resources facilitating the development of an online presence*. In addition, frontrunners like *regional list leaders and those towards the top of their national party list are expected to engage with a broader range of online campaigning tools*, given that they are more likely to feel under pressure to come across technologically up-to-date and in touch with the latest trends. Both D'Alessio (1998) and Gibson and McAllister (2006) account for such pressure, which in times of web 1.0 translated into higher likelihood to launch a personal website. In the decade of 2010-2020, however, we expect it to go beyond simple presence and translate in engagement with multiple forms of cyber-campaigning. The reverse causation mechanism identified originally by D'Alessio (1998) contends that frontrunners would anticipate public scrutiny and put in place a sophisticated web presence to live up to these expectations. This is likely to be a constant of campaign processes and to not vary over time. We also anticipate that the type of the constituency one

runs in shapes her campaign choices and strategies. Existing evidence suggests that internet voting in Estonia tends to be more common in urban areas (Vassil and Weber 2011). Therefore, we foresee *candidates running in urban areas to be more likely to develop an online campaign presence and utilise a broad range of online campaign tools than their counterparts in rural constituencies*. This tendency should be stable over time.

Next, candidates' personal characteristics are expected to shape their approach to cyber-campaigning. Allik (2015) studies six parliamentary elections in Estonia (1992-2011) and finds that women are as likely as men to win a seat if they have an established public profile, while unknown female candidates are more likely to fail than their male counterparts. The web could provide a relatively easy resource for unknown candidates to promote their candidacy, and women should be more likely to resort to it when trying to establish their public profile as candidates. In fact, Sandberg and Öhberg (2017) find that Swedish female candidates value the web as a resource more than men, while Wagner et al. (2017) show higher usage of social media by female congressional candidates in the US. Campaigning online allows women to bypass traditional media, where coverage of them tends to be both lower in volume and less focused on competence (Heldman et al. 2005). Developing a dialogue with voters via social networks also cements the relationship between candidates and voters (McGregor 2018), which could be particularly advantageous to female candidates, who tend to be less established within their party and less known to the wider electorate. Female politicians have been traditionally underrepresented in Estonia and remain currently only 30% of sitting MPs. Therefore, *we expect female candidates to be more prone to online campaigning both in term of presence and number of tools used*. Using the web to boost electoral chances is a viable strategy for unknown candidates and we have no reason to identify any particular point of time over the course of the decade where things may have changed. Moreover, younger people tend to be more web-savvy and more comfortable using digital tools (Elena-Bucea et al. 2020). We have no reason to expect else among candidates. Therefore, *younger candidates should be more likely to establish an online campaign presence and utilise a broad range of online campaign tools*.

Finally, party type talks directly to the normalisation versus equalisation debate. Based on the literature reviewed above, *we expect candidates running for minor parties, in comparison to those standing for mainstream parties, to be more likely to campaign online at the beginning of the decade, but for these differences to fade away over the course of the decade as candidates from major parties catch up.* This is what Gibson and McAllister (2015) call the cyclical hypothesis and find in their longitudinal study of cyber-campaigning in Australia. Confirming whether this applies in a proportional electoral system as well would make the argument more generalisable.

All in all, we expect to see a party-level effect in line with the normalisation hypothesis, with differences in digital campaign practices across parties dissipating over time. When looking at the individual level, we expect electioneering effort, candidate status, and personal characteristics to affect the likelihood of campaigning online and the extensiveness of digital presence. Within a party-level normalised scenario, we expect differences to emerge at the individual level: candidates who are less likely to be established in the political area such as younger candidates and female candidates should be more likely to develop an online presence in the run up to an election.

Data and methods

The analyses presented in this paper rely on original survey data from the three most recent waves of the Estonian Candidate Study. These are comprehensive post-election surveys of candidates who stood at the 2011, 2015, and 2019 parliamentary elections in Estonia, using a largely common questionnaire.[4]

There are 181 candidates in 2011 (23% response rate), 245 candidates in 2015 (28% response rate), and 321 candidates in 2019 (29% response rate) who answered all questions relevant to this study. These samples are broadly representative of the full population of candidates at each of these three elections with regards to partisanship, constituency, and electoral performance.[5] Moreover, the proportion of female candidates in the samples is similar to their ratio in the respective population of candidates (26% versus 23% in 2011, 25% versus 27% in 2015, and 33% versus 32% in 2019), as is candidates' average age (47 versus 47 in 2011, 50 versus 51 in 2015, and 51 versus 50 in 2019).

Survey data from the Estonian Candidate Study, featuring candidates across the political spectrum and covering all constituencies, offer a useful research opportunity. They contain information on candidates, such as their campaign time and campaign aim, that cannot be extrapolated from other sources. It is important to note, however, that reliance on survey data also calls for some caution. Treating responses confidentially aims for candidates to feel at ease revealing their opinions and behaviour, but does not eliminate the possibility of socially desirable responses. Also, the data were collected through online surveys. While this secures consistency in survey mode, it is possible that the data may over-represent candidates who are generally more active online. That said, any selection bias resulting from survey mode is likely to be minimal given that parliamentary candidates in Estonia publish their emails ahead of the election, and the high levels of internet penetration and digitalisation in general in the society.

<u>Empirical strategy</u>

[4] The 2011 Estonian Candidate Study was more limited in its scope and did not include all the questions used in 2015 and 2019. That said, the variables used in this paper are based on questions featured consistently in all three surveys. The questionnaires are available at [link redacted to ensure anonymity].
[5] Further details about the samples are reported in Online Appendix A.

We model cyber-campaigning using a two-step Heckman selection model, where the first stage predicts the likelihood of establishing an online campaign presence, and the second stage explains the likelihood of adopting additional online campaign tools (among candidates who established an online campaign presence). We implement these models in parallel for all three elections covered in this study.[6]

Dependent variables

The core questionnaire of the Estonian Candidate Study contains questions on whether candidates used various campaign tools. With regards to cyber-campaign, candidates were asked whether they i) had a personal website, ii) uploaded audio-visual content online, iii) published online blogs, iv) campaigned on social media, and v) held web chats. While this is not an exhaustive list of online campaign activities that candidates can undertake, it does capture a broad range of options available to them, ranging from more passive online campaigning in the form of campaign websites to the active production of content on social media and interaction with voters through virtual chats. The dependent variables used in the multivariate models are formed based on responses to this block of questions.[7]

In the first step of the model, we use a simple binary measure of *online presence*. Candidates who utilise at least one of the above-mentioned online campaign tools are coded 1, and those who do not use any are coded 0. While existing evidence suggests that there is a link between digital activism and electoral performance (e.g., D'Alessio 1997; Gibson and McAllister 2006, 2011; Sudulich and Wall 2010), there are still candidates who do not seek to engage with voters online at all. This measure separates such candidates from the rest.

In the second step of the analysis – limited to those who engaged in some form of online campaigning –, the dependent variable *online campaign tools* is based on the sum of answers to the above-mentioned five options: i) personal website, ii) online audio-visual content, iii) blog, iv) social media, and v) web chats. This variable describes how many online campaign tools, from these options, a candidate used as part of her campaign. It ranges from 1 to 5, with higher values indicating engagement with a broader range of online campaign tools.

Explanatory variables

The analysis accounts for the potential effects associated with candidates' campaign choices, political profile, personal characteristics, and party affiliation. Beginning with campaign choices, *campaign aim* captures whether a candidate places emphasis on herself versus her party. It ranges from 0 'to attract as much attention as possible for my party' to 10 'to attract as much attention as possible for myself', with

[6] Additional robustness checks are reported in Online Appendix B.
[7] Additional descriptive information about all variables used is provided in Online Appendix C.

higher values indicating that the candidate opted for more personalised campaign messages. *Traditional campaign tools* describes how many traditional campaign tools, from the following options, a candidate used as part of her campaign: i) direct mail, ii) posters, and iii) traditional media ads. The measure ranges from 0 'none' to 3 'all', with higher values corresponding to a greater use of traditional campaign tools. *Campaign time* captures how many hours per week a candidate devoted to her campaign in the final month before the election, with higher values indicating greater overall intensity of one's campaign effort.

Next, we use indicators of candidates' political profile. *Incumbency* distinguishes between candidates who run as incumbents (coded 1) and those who run as challengers (coded 0). *Party office* is used to distinguish between candidates who held party office at the national or regional level at the time of the election (coded 1) from those who did not (coded 0). Three additional measures relating to the electoral context that each candidate faces are included. Although the electoral system in Estonia requires voters to cast their ballot for an individual candidate, and individual-level vote share determines the outcome for most candidates, a minority of mandates are distributed through closed national party lists.[8] It is plausible that the incentives for undertaking online campaigns vary across candidates who can be more, or less, hopeful of winning a seat by virtue of being placed high on their national party list. We account for the system of mandate allocation with the following. First, *regional list leader* distinguishes between candidates who are at the top of their party's constituency-level candidate list (coded 1) and those who are not (coded 0). It is likely that voters who have a preferred party, but not a preferred candidate within that party's candidate list, are likely to vote disproportionately for the candidate who leads their preferred party's constituency-level candidate list. Second, *national list position* captures candidate's position on her party's national candidate list, with candidates placed on positions one through to seven assigned the code that matches their list position, and all other candidates coded as eight.[9] Finally, *constituency type* describes whether a candidate is running in a 'city constituency' (coded 1) or a rural area (coded 0).[10] The nature of one's constituency – particularly the level of population density within it – may have a bearing on one's strategic calculations about the most efficient ways of campaigning.

[8] The allocation of mandates occurs in three stages. First, candidates who gain more votes than a simple quota in their constituency are awarded a seat. Second, parties that win at least 5 per cent of the nationwide vote receive an allocation of constituency seats based on their candidates' cumulative vote share in the constituency. These are awarded to candidates based on their intra-party ranking of vote share. Finally, the remaining seats are distributed to parties nationally, using the D'Hondt method, and awarded to candidates based on their position on the (closed) national party list.

[9] We group together candidates in national list positions eight and below as these candidates have no reasonable expectation of getting elected through the party list route, irrespective of what their exact position on their national party list is. This cut-off point reflects the fact that the lowest-ranked candidates who did get elected through the party list route in the decade preceding all three elections were ranked seventh on their national party list.

[10] The 'city constituencies' include Tallinn I, Tallinn II, Tallinn III, and Tartu.

With regards to candidates' personal profile, we account for gender, operationalised as a dichotomous measure, with male candidates coded 0 and *female* candidates coded 1, and *age* – in years – at the time of the election.

Finally, we capture candidates' party affiliation and distinguish between major and minor parties. *Large party* distinguishes between candidates from parties which have established organisational structures across the country and a stable electoral base (coded 1) and candidates of parties that do not (coded 0).[11]

Wired and unwired candidates

We begin by looking at the descriptive patterns of cyber-campaigning across the decade. Figure 1 presents the percentage of candidates who used each of the five online campaign tools and the percent of candidates who used at least one of these online campaign tools at each election in question.

The picture that emerges suggests that the overall level of online presence, as expected, increased over time. The proportion of candidates who used at least one online campaign tool rose from 71% in 2011 to 81% in 2015, and 87% in 2019. While the upwards over-time trend in candidates' adoption of online campaigning is unsurprising, finding that there are still candidates who do not consider the internet as a battleground is somewhat puzzling, particularly in a highly digitalised society where nearly half of the votes are now cast online. The proportion of candidates with no online presence at all may now be small, but the very existence of this group suggests that cyber-campaigning is not yet indispensable for every candidate.

It is important to note also that the over-time rise in the proportion of candidates with an online presence does not mean that all online campaign tools have become more commonly used by candidates. Counterintuitively, the proportion of candidates using online blogs declined from 23% in 2011 to 22% in 2015, and 13% in 2019. Similarly, the use of web chats declined from 30% in 2011 to 26% in 2019, while the increase in the proportion of candidates with a campaign website was relatively modest (from 28% in 2011 to 32% in 2019). Social media platforms went up from 60% in 2011 to 70% in 2015, and 80% in 2019, and use of audio-visual content increased considerably from 7% in 2011 to 31% in 2019. Patterns of increase associated with the latter are particularly intriguing: while the uptake of campaign websites and social media platforms increased steeply at the beginning of the decade, the use of online audio-visual content increased considerably in 2019 suggesting that these tools could be the future of digital campaigns.

[11] The established parties are the Estonian Centre Party, the Estonian Reform Party, the Social Democratic Party, Pro Patria (and Pro Patria and Res Publica as it was called prior to 2019 election), and the Conservative People's Party of Estonia. We code the Conservative People's Party of Estonia as established, despite being founded only in 2012, because it inherited the organisational structure and voter base from the People's Union of Estonia.

[FIGURE 1 HERE]

The over-time increase in the proportion of candidates with an online presence does not necessarily mean, however, that online campaigns are becoming more diverse in terms of the range of online tools used. Figure 2 shows the number of online campaign tools used by digitally active candidates at each election. Two patterns stand out. First, we observe very little over-time change. Second, it appears that online campaigns tend to remain very limited in terms of the number of online campaign tools used by candidates. Even at the end of the decade, the majority of candidates who were active online only used either one (38%) or two (30%) online campaign tools. Only about one-in-five used three, while only a combined 12% used either four (10%) or five (2%).

[FIGURE 2 HERE]

The picture painted in Figures 1 and 2 shows an overall increase in the adoption of social media and audio-visuals, but also a steady preference for a limited array of tools. Online campaigns have certainly become the norm, but there are still candidates who refrain from using the web. The intuitive assumption here is that candidates who do not establish any form of visibility on the web are 'paper candidates' – or list fillers – with no realistic chance of winning a seat; the lack of engagement with the web is part of the lack of engagement with the campaign in general. We explore whether this is the case by comparing the amount of time wired and unwired candidates spend campaigning ahead of the election day, and how many offline campaign tools they use (Table 1).

The patterns depicted in Table 1 suggest that digitally inactive candidates are consistently investing less time in their overall campaign effort than their digitally active counterparts. For example, in 2019, the latter spent on average an extra eight hours per week campaigning in the final month running up to the election day than the former. That said, unwired candidates are by no means completely switched off. In the case of the 2019 election, unwired candidates spent on average five hours per week on campaign activities. A similar picture emerges when comparing the use of traditional campaign tools. Candidates who are active online tend to use more offline campaign tools than candidates with no online campaign presence, but the magnitude of these differences is small. Although less dynamic, unwired candidates do engage in campaign activities and the lack of digital presence is not indicative of lack of campaigning as such. Consequently, low chances of success do not seem to provide a satisfactory explanation for lack of digital activity; the puzzle is more complex than one may expect. Small in size, and decreasing over time, the group of unwired candidates may disappear at the next election, but, as it stands, they are still playing their part in shaping how voters experience campaigns.

[TABLE 1 HERE]

Who is more active online?

We now turn to the multivariate Heckman selection models to explain variation in online presence (Models 1a-3a) and the number of online campaign tools used (Models 1b-3b).

Starting with online presence (Models 1a-3a), the effects associated with one's age and campaign effort stand out. The negative and significant coefficients for age show that, as expected, younger candidates are more likely to campaign online than their older counterparts. This effect is stable across all three elections, indicating that age is a consistent predictor of cyber-campaigning. Similarly, consistent effects are associated with candidates' campaign time, whereby the positive coefficients show that those who invest more hours electioneering are more likely to establish an online campaign presence. The relevance of candidates' campaign effort is further highlighted by the effects associated with traditional campaign tools. Although these effects do not show the same level of over-time consistency, they are significant at $p<0.1$ level in 2011 and at $p<0.01$ level in 2019. Younger candidates and those who run more intensive campaigns are consistently more likely to have at least some form of presence on the internet.

The impact of political profile appears to be limited. We do not find significant effects for incumbency or national list position at any election, while candidates holding party office were significantly more likely to have online presence in 2011, but not thereafter. Yet regional list pullers appear more likely to launch a web presence, confirming the intuition of D'Alessio (1997) on the anticipation of greater public expectations on them. Candidates running in urban constituencies were systematically more likely to develop online presence in 2011 than candidates in rural constituencies, but effect no longer reaches conventional levels of significance by 2015. If the urban-rural gap seems to close over time, the effects of gender – insignificant in 2011 and 2015 – change in 2019 when female candidates are significantly more likely to take up online campaigning. The positive and significant coefficient of 0.48 in Model 3a for gender hints at a reverse gap, with women more oriented to use digital campaigning.

Finally, we find some support for the normalisation thesis at the party level. The positive and significant coefficient of -1.34 in Model 1a for large party suggests that candidates from parties that had less established organisational structures were more likely to have an online presence in 2011 than those running for major parties. The significant differences for party type, however, fade away in both Models 2a and 3a. This lends further support for the normalisation scenario, whereby the proactivity of candidates from less established parties is eventually neutralised, as bigger parties catch up.

We turn our focus now to the second stage of the Heckman model and the number of online campaign tools candidates, who have some form of online presence, use. The picture here is less stable. Note first that age and campaign effort once again stand out as useful predictors. The negative coefficients for age – significant for 2011 and 2019 – indicate that older candidates are less likely to use a diverse range of online campaign tools, while positive coefficients for campaign time – significant for 2015 and 2019 – and traditional campaign tools – significant for 2011 and 2019 – suggest that the use of additional online campaign tools tends to be associated with spending more time electioneering and carrying out more complex offline campaigns, respectively, even if these effects are not quite as consistently present as they were in the first stage.

Candidates' political profile and personal characteristics are poorer predictors for the number of online campaign tools they utilise. No measure, besides age, has a significant effect in more than one election. Incumbents used a broader range of online campaign tools than challengers in 2015, but this could have been idiosyncratic. Neither regional list position nor inclusion in party national list seem to matter. The significant coefficient for constituency type in Model 1b shows that candidates who stood in urban constituencies in 2011 used a broader range of online campaign tools than those running in rural constituencies, but this is not the case in later elections. This mirrors the overtime effects detected in the first stage. The coefficients associated with gender fail to reach conventional levels of significance in all three models. While women were more likely than men to have some online presence at the end of last decade (Model 3a), the number of online campaign tools used by male and female candidates does not yet significantly differ (Model 3b).

[TABLE 2 HERE]

Discussion

This study has shown that while the internet is undeniably an important arena for electoral campaigning, it is not yet indispensable. Even in a highly digitalised society such as Estonia, candidates have not yet unanimously embraced campaigning on the web. The over-time trend suggests that the 2019 election might possibly be one of the last ones when such an occurrence takes place. Over the course of the last decade, the number of candidates running with no form of digital presence declined significantly. At the same time, however, the online presence candidates establish is not likely to make full use of the digital options available to them. Seventy percent of candidates still do not use more than two online tools and the trend has been remarkably stable over time. While a large and growing majority of candidates establish an online presence, those who fully engage with multiple digital tools during the campaign are still in a relatively small minority.

The unwillingness of many candidates to still fully embrace the plethora of digital campaign tools available to them also highlights the importance of not conflating electoral campaigns put in place by parties and those put in place by individual candidates. While parties have gone from experimenting with online campaign tools to running elaborate microtargeting operations based on cloud computing of big data (Gibson 2020), the increase in the adoption of online campaign tools seems to be much more muted among individual candidates.

When we look at who is more likely to engage with additional online campaign tools, we find no significance difference along the lines of party affiliation. Our first time point of 2011 indicates that candidates from smaller parties used to engage in richer online campaigning at the beginning of the decade, but by 2015 and into 2019 no significant differences could be detected any longer. This suggests that in Estonia, as much as elsewhere, larger parties have caught up and confirms normalisation patterns that emerged in plurality systems. Our evidence on the matter is based on the lack of substantial differences and, therefore, should be considered suggestive, rather than definitive. At the individual level, political status plays a moderate role in determining one's online activity either. Conversely, the amount of time candidates invest in campaigning is a stable predictor of digital campaigning. A significant gender difference in the likelihood of developing an online campaign presence emerges in 2019. While men may be more likely to engage with online platforms in general (Hargittai and Shaw 2015), this development adds further support to the growing body of evidence that female candidates have become to value web as a campaign resource more than their male colleagues (Sandberg and Öhberg 2017; Wagner et al. 2017). Possibly, female candidates – who tend to be less known – see the internet as a chance of equalising representation. Younger candidates may similarly see the internet as a viable channel to reach young voters and challenge *politics as usual* (Margolis and Resnick 2000).

As with every single country study, our findings may be limited to Estonia. The gap between the high level of digitalisation, in terms of access to government services and e-voting, and the low engagement with multiple online campaign platforms may be partially due to the forgiving nature of proportional electoral systems. That said, there could also be contextual aspects at play that might explain the surprisingly low uptake of digital campaign tools in Estonia. The small size of the country may facilitate traditional electioneering and access to traditional media. The aging population could be a disincentive to prioritise online over offline campaign activities. Yet, the Estonian case offers a window into the adoption and usage of cyber-campaigning in a proportional electoral system. Gibson (2020) finds that presidential elections are the optimal contexts to stimulate intense use of the web for campaign purposes. In proportional systems, where candidates do not need to secure plurality vote, the overall incentive to campaign fiercely, including on the web, is lower and our results suggest that ticking the web box may be more important than developing a multifaceted online strategy.

Our results suggest a symbolic, rather than tactical, use of online campaigning where candidates feel the need to establish some form of online presence without necessarily integrating multiple platforms in their electioneering effort. Cyber-campaigning in the most digital society in the world does not appear to live up to the expectations.

Tables and Figures

Table 1. Campaign activity of candidates with and without online presence

	Candidates		
	Online	Not online	N
Campaign time^			
2011***	23	12	181
2015***	17	7	245
2019***	13	5	321
Traditional campaign tools^^			
2011***	1.9	1.5	181
2015*	1.7	1.5	245
2019***	1.7	1.2	321

Note: *p<0.1, **p<0.05, ***p<0.01.

^ Mean hours per week spent campaigning.

^^ Mean number of traditional campaign tools used (range: 0-3).

Table 2. Determinants of candidates' online presence and number of online campaign tools used

	Online presence		
	Model 1a: 2011	Model 2a: 2015	Model 3a: 2019
Campaign aim	-0.00 (0.04)	0.04 (0.04)	-0.01 (0.04)
Traditional campaign tools	0.28* (0.15)	0.09 (0.14)	0.33*** (0.12)
Campaign time	0.02** (0.01)	0.03** (0.01)	0.04*** (0.01)
Incumbency	-0.59 (0.44)	-0.03 (0.42)	-
Party office	0.61* (0.32)	-0.07 (0.21)	-0.25 (0.31)
Regional list leader	1.53*** (0.55)	-0.15 (0.42)	-
National list position	-	-0.15 (0.16)	-
Constituency type	0.62** (0.30)	0.40 (0.25)	0.24 (0.23)
Female	0.19 (0.27)	0.01 (0.31)	0.48** (0.23)
Age	-0.05*** (0.01)	-0.05*** (0.01)	-0.02** (0.01)
Large party	-1.34*** (0.49)	0.23 (0.25)	0.10 (0.25)
Constant	2.61*** (0.75)	3.79** (1.58)	0.84 (0.59)
	Number of online campaign tools		
	Model 1b: 2011	Model 2b: 2015	Model 3b: 2019
Campaign aim	0.04 (0.04)	0.06** (0.03)	0.02 (0.02)
Traditional campaign tools	0.24* (0.14)	-0.13 (0.11)	0.25*** (0.08)
Campaign time	0.01 (0.01)	0.01** (0.01)	0.02*** (0.01)
Incumbency	0.23 (0.33)	0.67** (0.28)	-0.11 (0.26)
Regional list leader	0.36 (0.35)	0.40 (0.35)	0.38 (0.27)
National list position	0.01 (0.11)	0.14 (0.12)	-0.05 (0.09)
Constituency type	0.49** (0.21)	0.03 (0.21)	0.22 (0.14)
Female	-0.19 (0.24)	-0.07 (0.26)	0.19 (0.14)
Age	-0.03*** (0.01)	-0.01 (0.01)	-0.02*** (0.01)
Large party	-0.08 (0.32)	-0.14 (0.20)	-0.01 (0.15)
/cut1	-0.66 (1.05)	0.26 (1.65)	-0.70 (0.89)
/cut2	0.18 (1.04)	1.04 (1.61)	0.11 (0.86)
/cut3	0.97 (1.04)	1.82 (1.58)	0.92 (0.86)
/cut4	2.13** (1.07)	2.74* (1.55)	1.89** (0.86)
Observations	181	245	321
Censored observations	53	47	40
Uncensored observations	128	198	281
Log likelihood	-241	-338	-454

Note: standard errors in parentheses; *p<0.1, **p<0.05, ***p<0.01.

Figure 1. Uptake of online campaign tools over time

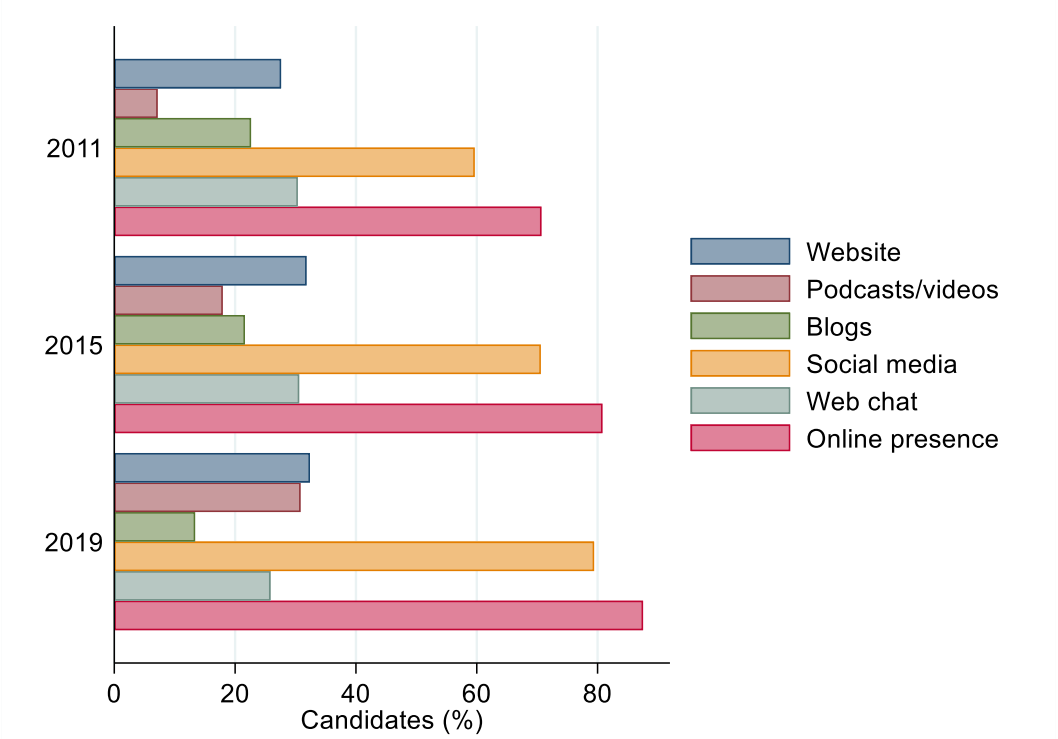
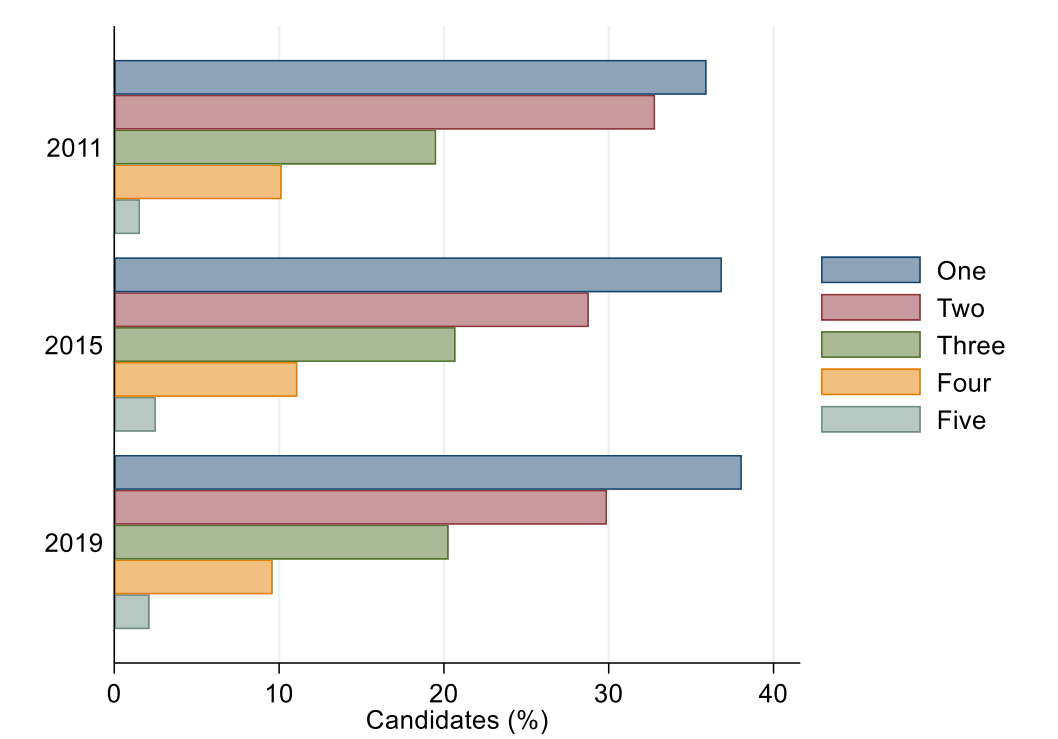


Figure 2. Number of online campaign tools used over time by candidates with online presence



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