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The literature on the internet and participation has expanded significantly over the past decade.¹ Questions posed have centered largely on issues of mobilization and whether use of digital communication tools is widening the pool of those engaging with political actors and processes, or simply deepening and reinforcing patterns of bias that already exist across groups in society. While the new information and communication technologies have been tied by some scholars to the emergence of new types of elite challenging and direct forms of political activity (Stolle et al. 2005; Hay, 2007; Marien et al. 2010) much of the empirical investigation has focused on the link between internet use and engagement in the formal arena of representative politics (Krueger, 2002; Johnson & Kaye, 2003; Tolbert and McNeal, 2003; Larson, 2004; Gibson et al., 2005; Moy et al. 2005; Jensen et al., 2007; Mossberger et al. 2008; Quintilier and Vissers, 2008; De Zuniga et al, 2009; Pasek et al., 2010; Verba et al. 2010). To date, although not uniformly positive, these studies have in general indicated increasing support for positive, albeit small effects at the individual level, particularly for information-related uses of the new media (Boulianne, 2009).

Part of the problem in studying this topic and a primary reason we argue for its mixed and inconsequential findings has been the lack of agreement on the subject of study and particularly the indicators used to assess cause and effect. Analyses have either tended to look for effects of internet use measured in a binary manner on varying measures of offline participation or examined predictors of an ad hoc range of online participation items such as emailing a politician, signing an online petition, or discussing politics with others online. As such it has been difficult to detect a consistent and cumulative picture of mobilization effects. In this paper we develop our earlier work conducted in the UK 2010 General Election where we specified several underlying dimensions or latent constructs within e-participation, ranging from more passive engagement activities such as looking for online news and information to undertaking more formal campaign activities for a political party (Gibson and Cantijoch, 2011). Using structural equation modelling we then examined the predictors of these types of online political behaviour and their impact on the likelihood to vote (Cantijoch et al. 2011). The results were interesting in that they supported the view that information seeking is a significant stimulus to offline participation and that a newer social media-based 'e-expressive' participation centering on posting and sharing informal campaign content is emerging online.

In this current study we seek to progress that work by utilizing a new data source – an online pre and post-election panel study of UK voters – that tests again for the existence of our three types of campaign e-participation and the impact of these online activities during the election on a range of political activities other than voting, three months following the election. To do so, the paper is divided into three main sections. The first section below outlines in more detail the current status of research into internet and participation and particularly work in this area within the UK and the context for online politics in the 2010 election. We then set out

specification of the dimensions of e-participation in the UK election campaign based on our prior work, and the relationships we expect to observe between these modes and subsequent post-election political activities. In the final section of the paper we empirically examine our assumptions through a series of models of e-participation that combine our e-participation types at time t with their covariates (also at time t) and their predicted impact on post-election political behaviours (time $t+1$). The work contributes to the literature by first confirming that mobilizing effects can be attributed to online political activities. Second we demonstrate that these activities are multi-dimensional in that they cluster into distinct patterns of behaviour with different implications in terms of subsequent non-election forms of online political engagement.

The Internet and Participation

Studies of the relationship between internet use and political engagement at the individual level have grown considerably over the past decade. Early studies maintained at best an ambivalent stance on the question with a number of studies pointing to negligible or even negative effects as digital participation patterns replicated and worsened biases in offline engagement (Wilhelm, 1998; Hill and Hughes 1998; Davis 1999; Bimber 1999, 2001; Norris 2001, 2003; Bonfadelli 2002; Scheufele and Nisbet, 2002). Other authors, however, argued for more positive effects on voting rates and political interest in subsequent elections (Johnson and Kaye, 2003; Tolbert and McNeal, 2003) and subsequent empirical analyses of the relationship have generally drawn increasingly positive conclusions, although as Boulianne (2009) points out, those effects are small and findings have not proceeded in a monotonic and cumulative fashion.

Part of the reason for the more optimistic picture emerging has been due to the widening range of measures and models of internet use which have permitted more sophisticated and subtle analyses in the detection of effects. Authors argued it was necessary to move beyond simple measures of use/access to differentiate a range of online behaviours such as information seeking, recreational use, and online discussion to better discern effects (Moy et al. 2005; Shah et al, 2005; Mossberger et al., 2008). Attention was also given to better specifying the dependent variable of interest on the grounds that online participation constituted a new form of participation that was conceptually and empirically distinct from offline modes such as voting and contacting (Jensen et al, 2007) and should be examined in its own right (Krueger, 2002; Gibson et al., 2005; Anduiza et al., 2010).

The analyses that have followed have moved to identify various sub-dimensions of online political activity and pointed to some interesting conclusions. Firstly they have demonstrated how distinctions drawn in offline modes of participation are replicated in the online environment. A number of studies using latent variable analysis for example showed that various types of formal and informal types of political engagement such as contacting, party and protest activity or petition-signing could be identified online and that internet participation is a multi-dimensional phenomenon (Saglie and Vabo, 2009; Hirzalla and van Zoonen, 2010). In addition this work has also distinguished a potentially new type of expressive political participation online which involves the sharing and promoting of informal opinion and comment via blogs and social networks (Rojas and Puig-i-Abril, 2009; Gil de Zuniga, 2010). These scholars have also sought to map the causal links between these various types of online activity, specifying and testing 'pathways to participation' that link more passive information gathering to more active purposive on and offline modes.

While extensive tests of these structural paths have not been conducted, the idea of information seeking acting as an initial ‘gateway’ or stimulus to more active types of online and offline engagement has gained a considerable consensus in the literature. In particular the work of Boulianne (2011) using a simultaneous equation modelling of 3-wave panel data from the American National Election Study (2008–2009) provided convincing support for the idea that online news consumption stimulated levels of political interest and discussion among those with low prior interest. While not fully discounting the self-selection bias that accounts for the significant impact of internet use on political engagement, her work provided convincing support for indirect effects arguments, whereby the lower information and action costs of the online environment are seen to lead to increases in individuals’ political interest and perceptions of competence, thereby leading to higher levels of engagement (Iyengar and Jackman, 2003). Overall, although not conclusive, current research is strongly suggestive that online political activities are maturing and differentiating in the manner that we see with offline political engagement. Furthermore these activities may then be linking in a sequential manner to move people from more passive types of engagement into more active modes.

E-campaigning and online participation in the UK

Much of the work and conclusions cited thus far have been drawn from the US population. Studies of the internet and participation in other contexts such as the UK are more limited. What does exist indicates a similarly mixed to increasingly positive picture. There is for example clear evidence of a growing use of the internet for news and information among voters, however, we see few signs of any significant shifts occurring in the political landscape among voter behaviour. The Labour landslide election of 1997 was really the first occasion that any notable efforts were made by parties to engage in online campaigning (Gibson and Ward, 1998; Bowers-Brown, 2003). However, with less than one in ten voters reporting they had access to the internet at this time, there was little realistic expectation that any impact would occur.

The 2001 election saw a jump in the number of individuals online to around one third of the population, and according to a Hansard Society post-election survey, under one in five (18%) of those online reported using the internet for election related matters (Coleman, 2001), equating to around six percent of the population. The profile of those going online appeared to support the reinforcement hypothesis in that they were largely well educated, male, middle class, politically interested, internet literate. Despite this relatively low reach of online political content and biased consumption, however, subsequent multivariate analysis of survey data from 2002 covering a range of online non-electoral political activities among the British public revealed some signs of mobilization with online participators being defined primarily by their youth and also more socially diverse profile than those engaging in offline types of activity (Gibson et al., 2005). Notably the typical predictors of more active modes of offline participation such as education, class and gender were less or not significant in predicting an index of online activities leading the authors to state that “...the Internet is expanding the numbers of the politically active, specifically in terms of reaching groups that are typically inactive or less active in conventional or offline forms of politics.” (Gibson et al., 2005: 561).

By 2005 for the first time a majority of the electorate had access to the net (56%) and a significant minority were reported as using it for election news and information, (28% of internet users or 15% of the UK population), although only around three percent of internet users used it

as their major source of information (Ward and Lusoli, 2005). At this stage, despite some experimental efforts at blogging by candidates and politicians, standard websites or web 1.0 platforms remained the primary mode of web campaign communication and although the extent of this activity at the local level had increased substantially from 2001 (Gibson and Ward 2003; Gibson and Ward, 2008), the increase in provision did not appear to stimulate any rise in voter attention. As in 2001, only around three percent of voters reported having visited party sites and just one percent viewed candidates' sites (Ward, 2005). Although a range of political content outside official sites emerged that allowed voters to engage in more informal forms of participation such as sending jokes about the campaign, visiting satire sites, creating their own posters or videos related to the election (Coleman et al, 2007). Overall the mainstream news websites and particularly the BBC continued to dominate popular attention as they do offline (Crabtree, 2001; Coleman 2001; Ward and Lusoli, 2005; Schifferes et al, 2009).

Countering this picture of relative stasis, however, was the fact that despite its low penetration among the public at large, the internet was the only media source that actually saw an increase in interest from the electorate between elections. Furthermore participatory uses, while low, had increased two to three-fold since 2001, more than one might expect given the growth of the Internet in the same period. Finally among those accessing online sources, a significant number of younger people said it had proved to be an important source in helping them make their vote choice (Ward and Lusoli, 2005).

The 2010 campaign saw heated speculation this election would mark the real coming of age of the technology with much discussion of this being "the internet election" where voters would take to the web to discuss and debate the campaign through social network tools and virtual spaces and parties/candidates would exploit new technologies to mobilise voters, particularly younger citizens². The raised expectations were predicated on a number of grounds. Technologically, the internet was now a mass media with audience of over 70% of the UK electorate and the popularity of social media and networking tools since the 2005 campaign had grown exponentially. In 2005 the UK political blogosphere was in its infancy and Facebook was still a nascent social networking site, while YouTube and Twitter had not entered the public domain. By 2010, however, it was claimed there were some 26 million active Facebook profiles in the UK and Twitter use was increasingly dramatically.³ The 2008 US presidential campaign and, in particular, Obama's high profile deployment of the Internet to mobilise voters had also sown the seeds of optimism for a similar 'breakthrough' in e-campaigning effectiveness. Obama's campaign team claimed that in the course of the 2008 campaign they had: signed up 13.5 million email supporters; two million active profiles on the MyBO site; two million SMS subscribers; 1.75 million Facebook supporters and raised \$500,000,000 from 3.2 million online donors. The *Pew Internet and American Life* campaign and post-election surveys underlined the importance of the internet as a source of news for voters in 2008, with 60% of Internet users (44% US population) reporting going online to looking for political electoral news. Interestingly voters were going beyond traditional new sources and seeking out more partisan information - visiting candidate websites, and signing up to receive texts and emails, as well as forwarding messages on to friends, (Smith, 2009).

In practical terms, some initiatives clearly drew on the US campaign experience, not least the MyConservatives.com mirroring the MyBO portal idea. Yet, within a couple weeks of the 2010 campaign starting, the internet was already being written off by many of the same newspapers that had previously championed it just weeks before. Commentators queued up to declare that far from being the Internet election, it was in fact the television election (a reference

to the leaders debates and then latterly to the so called “bigotgate” incident). The narrative quickly became one where the Internet had played little role in the campaign, apart from acting as an echo chamber to the mainstream media. Furthermore, online tools were being described as relatively ineffective for party mobilisation with Iain Dale (leading Conservative blogger) suggesting that social media tools were useless for campaigning since they lacked enough of an audience and didn’t reach much beyond the usual suspects⁴. Overall, the Internet had gone from potential game-changer to a failure in less than three weeks. This was in the face of little hard evidence being produced to support any of the claims.

Research Questions

In our two previous studies of the UK 2010 General Election we have sought to put these questions of the impact of the internet on voter engagement. Using a particularly rich set of indicators of online and offline participation we were able to probe more deeply this question of differentiation of e-participation activities. In our first study (Gibson et al. 2010; Gibson and Cantijoch, 2011) we were able to show support for the notion that online political engagement was a multi-dimensional phenomenon with more conventional types of activity such as information-seeking, targeted and party-related modes being confirmed via simultaneous confirmatory factor analysis (SCFA). We also found support for the existence of the social-media oriented expressive mode which involved the use of blogs, social networks and email to forward, post and embed informal or unofficial content.

In a second paper we used these factors to explore questions of mobilization during the election campaign (Cantijoch et al, 2011). In particular we sought to identify the profiles of those people engaging in these different modes and particularly whether they varied in their levels of social and political resources i.e. were they already engaged or new to the process? Our findings showed that while the more conventional types of online participation drew in the more ‘usual suspects’, the e-expressive mode was more common among those with less interest and involvement in the process. We then examined the impact of these types of engagement on the act of voting itself. We found that only information seeking was significantly and positively related to voting. This was important in confirming the growing consensus within the extant literature of the mobilizing nature of accessing political news and information online (Boulianne, 2009). We also found that party-related and e-expressive activities had no discernable impact on voting. While for the former we explained this through the fact that those engaging in partisan activities online were already highly likely to vote and so more of such practices was unlikely to change this intention, for the latter we saw the picture slightly differently and argued that those engaging in these informal practices were not necessarily being drawn into formal politics and making a connection between such activities and voting.

In this paper we seek to further confirm and extend our previous analyses. Specifically, we use a new data set that combines pre and post- election responses from an online panel that allows us to re-test our measurement model using a new data source. Thus, we pose a first key research question:

(RQ1) Measurement - To what extent are the types of e-campaign participation observed in the UK post-election face to face cross-section survey replicated in the pre-election component of the online panel survey?

In addition, in this paper we draw our attention away from voting to examine a set of more general types of online political engagement. Some of the implications derived from our previous findings were confined to the act of voting, which has been treated in the literature as a unique type of participation that can be characterized as the easiest yet most formal form of engagement in politics (Verba et al, 1995: 360-361). In this paper we question whether any effects of engaging in e-campaign activities can be detected beyond voting by considering a set of non-electoral online activities: e-petition, e-contact, e-donation and e-discussion.

An electoral campaign is a period that produces an exceptional political environment in which citizens are more likely to be exposed to political information flows, not only through media exposure but also through casual conversations about politics and the election within their social networks (Huckfeldt et al, 1995). However, previous research has shown that information gains during electoral campaigns are not equally distributed and the knowledge gap between information-rich and information-poor citizens widens during this period (Nadeau et al, 1998). The internet literature has debated whether involvement in online activities may be altering these processes, either widening further the existing knowledge gaps (Bonfadelli, 2002; Prior, 2007) or offsetting the effects of these gaps by increasing levels of political efficacy, political interest and knowledge (Kenski and Stroud, 2006; Xenos and Moy, 2007; Boulianne, 2011). Engaging in e-campaign acts can be expected to produce a mobilization effect, particularly when it occurs within informal modes of interaction (e-expressive) or via soft information seeking activities (e-information). Such activities we expect to be more likely to draw in the non-usual suspects to the political arena, compared with more formal and resource-intensive types of online engagement such as party-related activities and donating. Thus, we pose a second research question:

(RQ2) Mobilization – If types of e-campaign participation are observed then does an increased engagement in them lead to subsequent increases in the likelihood of individuals engaging online in more general non-campaign types of activity?

By analysing different forms of e-participation separately as our outcome variables we seek to adopt a more nuanced approach to the study of mobilization effects both in the left and right-hand sides of the equation. Not only do we expect e-campaign participation to be a multi-dimensional phenomenon with different types having more or less of a mobilizing effect, but we relate these dimensions to a range of political activities in the post-election period that effectively replicate classifications developed in the offline participation literature (Verba and Nie, 1972; Barnes et al, 1979; Parry et al, 1992; Verba et al, 1995; Teorell et al, 2007). More specifically we focus on four theoretically distinct forms of engagement: (1) e-donation and (2) e-contact, two acts of involvement taking place in an organizational context and via representational institutions; (3) e-petition, a type of activity typically clustered in a protest or extra-representational mode; and (4) e-discuss, a ‘softer’ form of engagement which is generally not considered an authentic form of participation according to instrumental definitions of the concept, but which is increasingly seen to play an important role as a stimulus to more active types of engagement (Shah et al., 2005). If any mobilization effects are detected, we expect these to vary for different e-campaign activities as predictors of distinct modes of online participation. More specifically we would expect our e-expressive and information seeking types of activity undertaken during the campaign to have a stronger impact on the less formal types of non-electoral participation subsequently – i.e. the e-petition and e-discussion items compared with the

more formally structured or channelled modes of e-donate and e-contact. Relatedly, if e-campaign activities that were more formal and party-oriented in nature have a mobilizing effect post-election, we would expect this to be found in the more official channels of online contacting of a politician and donating to a political party or organization.

Data & Methods

To conduct our analysis we use a two wave election panel study conducted by the UK based internet polling company YouGov⁵. The panel structure of the data means that we can examine longer term impact of the e-campaign participation activities for online political engagement – the pre-election wave being conducted in the final week of the campaign (end of April) and the post wave, three months after the election (beginning of August). The study replicated precisely the items from our post-election BMRB face-to-face survey used in our previous analyses, asking whether respondents had participated in a series of online campaign-specific activities. The pre-election component included questions about likelihood of engagement in more general forms of political behaviour in the next few years. These questions were administered again in the post-election wave. Additional questions measuring political attitudes and standard demographic data were also included. A full listing of the items used in both surveys can be found in Appendix A. In terms of the steps of our analysis:

(1) Step 1 focused on *measuring* e-participation during the campaign. Here we used the online pre-election survey component of the YouGov panel to examine the question of whether underlying sub-dimensions of e-campaign participation exist. For purposes of this analysis, rather than a full confirmatory structural model, we conducted a simple exploratory factor analysis using a principal components analysis with Promax rotation.

(2) Step 2 addressed the *mobilization* effects whereby we used the factor scores produced in step 1 in a set of regression analyses of post-election online political behaviours. The models included not only a range of control items, but also lagged variables from time t to measure the same outcome variables as in $t+1$. We examined four particular types of online participatory activities – e-donate, e-contact, e-petition and e-discuss.

Results

Below we report the findings of our analyses. Before presenting the evidence concerning the measurement and mobilization questions we pose, we first report some basic descriptives about levels of engagement in the online campaign in the 2010 UK General election.

Overall levels of engagement with the online campaign

Our survey included three items measuring engagement with the official e-campaign of the parties and six items that measure involvement in more informal and non-party based aspects of the e-campaign, and use of non-official sources of information. Table 1 reports the basic frequencies for each type of activity separately and for an overall measure of e-campaign engagement.

Table 1. E-campaign activities of UK citizens in the 2010 General Election

	%	N
Mainstream News Websites	44.84	500
Official Candidate Sites	19.20	214
Videos with Unofficial Campaign Content	12.52	140
Posted Comments (Blogs/Wall SN etc)	9.12	102
Forwarded Campaign Content	5.97	67
Official Register	4.95	55
Official Tools	3.46	39
Unofficial SNS	2.28	25
Embedded/Reposted Campaign Content	2.18	24
Overall activity	51.3	569

Note: Data are weighted.

The results show that the most popular type of activity engaged in online was consultation of mainstream news media content, with 45% of internet users turning to such sources during the election. This is followed by accessing party produced sites, which one fifth of internet users reported doing at some point in the campaign. Watching non-official YouTube videos attracted over one in ten of internet users. Individuals displayed lower levels of engagement in the more active types of e-campaign participation, with posting political content to social networks walls and blogs and forwarding campaign content attracting nine and six percent respectively. Other more active types of involvement with the official campaigns such as signing up as a Twitter follower or Facebook fan of a party or candidate were less common, with only five percent of internet users engaging in such practices. Actually helping to promote the parties' message or online profile via various tools such as email or texts or posting supportive links and messages on Facebook or Twitter also attracted a more limited pool of individuals online (over three percent). Notably, the more active forms of unofficial involvement (as with official campaign led initiatives) such as starting or joining a political social networking group or reposting political material were less popular than more passive acquisition of online election material. Taking all these activities together we can see that just over half of internet users engaged in some form of online political activity during the election.

While these levels of participation do not quite match the levels engagement seen in the US during the Presidential election of 2008, which were estimated to be over half of population (Smith, 2009), levels have clearly increased significantly in the UK since 2005. And while mainstream news sites remain among the most commonly accessed sources, one of the most striking increases from Ward and Lusoli's (2005) findings is the rise of those utilising official campaign sites, with up to seven times as many individuals reportedly having sought out party or candidate produced material this time around.

(1) Measuring e-participation: Exploratory Factor Analysis

As noted earlier, the literature reveals a move toward viewing e-participation in a more differentiated manner. While there are a number of different ways in which one could 'slice' its

underlying dimensions, following the extant literature and our previous findings our items were expected to cluster into at least three underlying latent constructs. One is expected to capture the more passive activities of viewing political material online, the other two being more active types of engagement that divide into more formal and party activities and the more informal e-expressive mode, centering on social media and unofficial content. To see how well our expectations fitted the data we conducted an exploratory principal components analysis (EFA/PCA) on our 9 e-campaign participation variables as measured in the YouGov dataset using a Promax rotation. As the survey was conducted online all respondents were internet users from the analysis. The results shown in Table 2 broadly support our expectations.

Table 2. Exploratory Factor Analysis of E-Campaign Indicators.

	E-expressive	E-info	E-party
Mainstream News Websites	-0.05	0.88	-0.14
Official Candidate Sites	-0.07	0.71	0.17
Videos with Unofficial Campaign Content	0.19	0.54	0.10
Official Register	0.01	0.06	0.77
Official Tools	-0.04	-0.01	0.83
Unofficial SNS	0.67	-0.20	0.23
Posted Comments (Blogs/Wall SN etc)	0.66	0.19	-0.03
Forwarded Campaign Content	0.73	0.10	-0.02
Embedded/Reposted Campaign Content	0.86	-0.07	-0.14
Eigenvalue	3.09	1.22	1.01
Variance (%)	34.31	13.57	11.25

Note: Data are weighted. Extraction method: Principal Components Analysis. Rotation method: Promax.

The findings show first of all that our expectations for differentiation are supported, with three factors being identified with Eigenvalues of over 1.0. Our more specific expectations about the content of these factors according to their active and passive, informal and formal focus also appear to gain some support.

Factor 1 measures ‘E-expressive’ participation in the campaign and contains items that constitute active forms of involvement with the election but that relate more to its informal and unofficial aspects such as forwarding links and new stories to others, reposting or embedding such content into one’s own site and joining or starting a political group within a social network site. Factor 2 ‘E-information’ appears to capture more passive and less ‘labour-intensive’ types of online engagement such as accessing news and campaign information and watching online video. Finally Factor 3 ‘E-party’ captures more active involvement in formal politics including signing up for party news feeds and actively using online tools to help campaign for the party.

Assessing these constructs then in light of our expectations it would seem that we have managed to identify a range of latent variables that capture more passive and active forms of e-participation with the active forms being differentiated by their campaign or non-campaign focus. More specifically, there appear to be a set of e-campaign activities that center on accessing and discussing news and information. Beyond this, various forms of more active political involvement emerge. One type centers on largely new forms of campaign engagement that individuals can undertake online on behalf of, or in relation to parties and candidates. Finally

there appears to be a set of non-elite targeted activities that citizens can undertake to promote and express their views to others.

(2) Mobilization effects

Based on the findings from the first stage of our analysis which confirmed our expectation that different types of online campaign participation could be identified within our dataset we then moved on to seeking to account for the effects of involvement in these different types of participation. To do this we computed three new variables – e-info, e-party and e-expressive – that captured our three modes of e-campaign engagement. We then regressed our four dependent variables at time t+1 (post-election) on these scores along with a series of control variables and other attitudinal factors associated with participation measured at time t (pre-election). The set of independent variables we included in our models have traditionally been used to predict different modes of participation⁶:

- Socio-demographic factors (gender, age, education and social class) and civic skills: these variables have been identified in the wider participation literature as strongly linked to individuals' propensity to participate (Verba et al, 1995).
- Internet skills: this is a measure of overall competence of internet use, as developed by new media scholars to test for any independent effects on rates of participation, offline and online (Best and Krueger, 2005).
- Media exposure. We included a measurement of newspaper readership.
- Political attitudes (interest in politics, feelings of internal efficacy and trust in British politicians): involved individuals are more likely to become politically active. However, lower levels of attitudes like trust may be associated with a propensity to become active in informal forms of participation (Norris, 1999; Dalton, 2002; Norris et al, 2006).

We also included a measure of each activity at time t as a control for pre-existing likelihood of engagement in e-donation, e-contact, e-petition and e-discuss. Both the lagged versions of each dependent variable and the dependent variables themselves were measured with a scale of 0-10 of the likelihood of undertaking the activity within the next few years. In order to avoid skewness, we recoded these variables into binary measures. Thus, all our models are binary logistic regressions, which were conducted using Stata version 12. Tables 3 to 6 report the results of the four regression models predicting these modes of e-participation among internet users.

E-donation

The first model in Table 3 predicts e-donation without including prior likelihood of e-donating (pre-election or lagged variable). This model explains thirteen per cent of the variance in the likelihood of e-donating (R^2). The results show that among the socio-economic variables included, only social class is a significant predictor of e-donating, the likelihood of engaging in this form of participation being higher for those in higher social class positions. However, there are no significant age or sex effects, and those individuals with online skills or who read a newspaper are also not significantly more likely to donate online. One of the attitudinal factors emerges as a key driver of e-donation: those individuals more trusting of politicians are significantly more likely to donate online. Political interest and internal efficacy, however, are non-significant. Regarding the e-campaign indicators, while engaging in e-expressive and e-

information activities during the campaign has a significant effect on the likelihood of e-donating, the e-party type of activity results in an insignificant coefficient.

Turning to the model that includes a lagged variable for e-donation (i.e. likelihood of e-donating measured before the election), the results show the disappearance of the effects of e-expressive and e-information. In this second model, which explains twenty-one percent of the variance of e-donating, engaging in the e-campaign activities is not a driver of e-donation. The loss of the significance of these coefficients between the non-lagged and the lagged model suggests that individuals who engage in campaign activities online are already more likely to become active in other forms of participation like donating online. Their engagement in e-expressive and e-information activities does not make a difference in their likelihood of e-donating. The use of panel data has helped us disentangle these relationships and prevents us from wrongly identifying effects as we would have by examining cross-sectional data.

Table 3. Regression of E-Donation on E-Campaign (E-Party, E-Expressive and E-Information) and Control Variables

Variables	Without prior e-donation		With prior e-donation	
	(β)	(Odds)	(β)	(Odds)
Age	-0.02	0.98	-0.02	0.98
Age Squared	0.00	1.00	0.00	1.00
Female	-0.02	0.98	0.11	1.12
Education	0.02	1.02	0.03	1.03
Class	0.49**	1.63	0.44**	1.55
Newspapers	0.31	1.37	0.35	1.42
E-Skills	-0.00	1.00	0.08	1.09
Political Interest	0.23	1.26	0.12	1.12
Political Efficacy	0.04	1.04	0.06	1.06
Political Trust	0.24**	1.27	0.22**	1.25
E-Expressive	0.19**	1.21	0.13	1.14
E-Information	0.26**	1.29	0.18	1.19
E-Party	0.07	1.08	-0.18	0.84
Prior E-Donation			0.49**	1.64
Constant		-2.45*		-2.75**
Pseudo R ²		.13		.21
Log Likelihood		-593.51		-527.39
N		1,058		1,045

Note: data are weighted. ** significant at the <0.05 level; * significant at the <0.10 level

E-contact

Table 4 shows the findings for e-contact, presenting again the results of two models: the first one excluding and the second one including prior e-contact. The results are very similar to the previous ones for e-donation. Here the first model indicates there is a positive effect of age and social class: older individuals and from higher social class positions are more likely to contact a politician online. Two of the attitudinal factors appear to be also associated with e-contact – political interest and trust – while political efficacy is non-significant. As in the analysis of e-

donation, in the non-lagged model the e-information type of e-campaign activity is positively related to e-contact. However, again, this effect disappears in the second model when prior likelihood of e-contacting is included as a control. This second model explains twenty-nine percent of the variance and suggests that age, social class and political interest (but not political efficacy) remain as drivers of participation in e-contact even when prior engagement is controlled for.

Table 4. Regression of E-Contact on E-Campaign (E-Party, E-Expressive and E-Information) and Control Variables

Variables	Without prior e-contact		With prior e-contact	
	(β)	(Odds)	(β)	(Odds)
Age	0.09**	1.09	0.08*	1.08
Age Squared	-0.00	1.00	-0.00	1.00
Female	0.20	1.22	0.17	1.18
Education	0.13	1.14	0.11	1.12
Class	0.54**	1.72	0.43*	1.54
Newspapers	-0.19	0.82	-0.03	0.96
E-Skills	0.07	1.07	-0.02	1.00
Political Interest	0.50**	1.65	0.36**	1.43
Political Efficacy	0.05	1.05	0.09	1.10
Political Trust	0.10**	1.10	0.04	1.04
E-Expressive	0.11	1.12	-0.02	0.98
E-Information	0.38**	1.47	0.23	1.26
E-Party	0.13	1.14	0.01	1.01
Prior E-Contact			0.41**	1.51
Constant	-4.65**		-4.52**	
Pseudo R ²	.16		.29	
Log Likelihood	-572.30		-466.16	
N	1,046		1,000	

Note: data is weighted. ** significant at the <0.05 level; * significant at the <0.10 level.

e-petition

Table 5 shows the results for e-petition, a form of participation typically clustered in unconventional or extra-representational modes. The first of the models does not include prior likelihood of signing an e-petition and accounts for 20% of the variance of the dependent variable. It shows that the likelihood of signing e-petitions increases with age, but the negative and significant effect of the quadratic age variable indicates that this effect decreases in older groups. Here again the likelihood of signing an e-petition is higher for individuals in higher social class positions. And on this occasion the three measures of political attitudes are significantly and positively associated with e-petition: the more interested in politics, those who feel more efficacious politically and those more trusting of politicians are more likely to sign an e-petition.

The coefficients for our e-campaign indicators reveal that only engaging in e-information activities results in a significant effect on e-donating. However, like in the analyses of e-donation

and e-contact, this effect disappears when we include in the model a measure of prior likelihood of signing an e-petition. The inclusion of the lagged variable in this second model reduces the coefficients of the three attitudinal indicators – interest, efficacy and trust – and that of e-information to non-significance. Again, these findings suggest the existence of spurious effects of this type of e-campaigning when prior engagement is not taken into account.

However, an interesting finding in this second model is the negative and significant coefficient for e-party: after controlling for prior likelihood of signing an e-petition and other attitudinal indicators, engaging in e-party activities reduces the likelihood of e-petitioning after the election. Thus, active involvement in formal politics during the campaign (signing up for party news feeds and actively using online tools to help promote the party) is negatively associated with a later proclivity to engage in an informal form of online participation. These results go further than our theoretical expectations by suggesting that rather than a lack of any effect of formal or party-oriented activities on subsequent involvement in extra-representational channels a distinct disincentive appears to be operating. Those undertaking more online party activities during the campaign are actually then less inclined to seek out more direct channels of influence afterward in the shape of e-petitions. Such findings are important in that they support the claim for adopting a more nuanced approach to the analysis of the mobilization effects.

Table 5. Regression of E-Petition on E-Campaign (E-Party, E-Expressive and E-Information) and Control Variables

Variables	Without prior e-petition		With prior e-petition	
	(β)	(Odds)	(β)	(Odds)
Age	0.18**	1.19	0.15**	1.17
Age Squared	-0.01**	1.00	-0.01**	1.00
Female	0.24	1.27	-0.08	0.92
Education	0.15	1.16	0.07	1.08
Class	0.62**	1.86	0.70**	2.01
Newspapers	-0.02	0.98	0.02	1.02
E-Skills	0.15	1.17	0.09	1.09
Political Interest	0.53**	1.70	0.28	1.32
Political Efficacy	0.12*	1.12	0.11	1.13
Political Trust	0.11*	1.11	0.06	1.06
E-Expressive	0.28	1.33	0.06	1.07
E-Information	0.54*	1.71	-0.06	0.94
E-Party	-0.13	0.88	-0.43**	0.65
Prior E-Petition			0.49**	1.63
Constant		-5.57**		-5.36**
Pseudo R ²		.20		.36
Log Likelihood		-376.15		-293.35
N		1,048		1,014

Note: data is weighted. ** significant at the <0.05 level; * significant at the <0.10 level.

E-discuss

Our final independent variable is e-discuss. Table 6 reports the results for two models, with and without prior likelihood of discussing politics. Here none of the socio-economic control variables result in significant effects. However, those who are more interested in politics and more trusting of politicians are more likely to engage in discussions about politics with family and friends online (e.g. through email or in a discussion group). As in the previous analyses, e-information is in this first model a driver of e-discussion. But on this occasion, the coefficient for this variable remains positive and significant in the model that controls for prior likelihood of e-discussing politics (which explains 21% of the variance of e-discuss). While the effects of interest in politics and trust in politicians disappear, engaging in e-information activities during the campaign predicts a proclivity to take part in discussions about politics online after the election. The odds ratio (1.46) indicates that this variable is the most important in the model. This is a very interesting finding in that it suggests that the findings of previous research that attributes a mobilizing effect to online information-seeking may be picking up a mediated effect via political discussion. So the more information consumed online during the campaign prompts increased discussion which then may be driving the behavioural consequences in terms of increasing an individual's likelihood to vote.

Table 6. Regression of E-Discuss on E-Campaign (E-Formal, E-Expressive and E-Information) and Control Variables

Variables	Without prior e-discuss		With prior e-discuss	
	(β)	(Odds)	(β)	(Odds)
Age	0.05	1.04	0.05	1.05
Age Squared	-0.00	1.00	-0.00	1.00
Female	0.06	1.06	-0.02	0.98
Education	0.08	1.08	0.07	1.07
Class	0.30	1.35	0.21	1.23
Newspapers	-0.01	0.98	0.05	1.05
E-Skills	0.15	1.16	0.15	1.17
Political Interest	0.23*	1.25	0.09	1.09
Political Efficacy	0.02	1.03	0.00	1.00
Political Trust	0.08*	1.08	0.05	1.06
E-Expressive	0.20	1.22	-0.05	0.95
E-Information	0.61**	1.84	0.38**	1.46
E-Formal	0.06	1.06	-0.07	0.94
Prior E-Discuss			0.33**	1.39
Constant		-1.97		-2.13*
Pseudo R ²		.12		.21
Log Likelihood		-593.41		-526.65
N		1,059		1,040

Note: data is weighted. ** significant at the <0.05 level; * significant at the <0.10 level.

Conclusions

One of the main objectives of the first studies of political participation consisted in determining the criteria by which different modes of participation could be identified (Verba and Nie, 1972.). During the following decades, this debate was reassessed as the repertoire of activities in which scholars were interested was expanded, including for example unconventional or non-institutionalised forms of participation (Barnes and Kaase, 1979; van Deth et al, 2007) or political consumerism (Stolle and Micheletti, 2005). Similarly, the emergence and rise of online participatory activities has offered a new opportunity to reconsider the study of the dimensionality of participation. Recent scholarship has provided increasing support for the idea that online participation can be differentiated into categories similar to those found offline, i.e. contacting, donating, communal, party and protest activities as well as more passive forms of engagement such as paying attention to political news and discussing or expressive forms of involvement (Rojas et al. 2009; Saglie and Vabo, 2009; Gil de Zuniga et al, 2010; Hirzalla and Van Zoonen, 2010). The jury remains out on the extent to which on and offline forms of the same activity are merging or occurring in separate spheres (Jensen et al. 2007; Hirzalla and Van Zoonen 2010). This paper has sought to build on this growing understanding of the multi-dimensional nature of e-participation by identifying a series of different types of online participation during the 2010 UK General election campaign and relating these types to different behavioural outcomes post-election.

In doing so we have re-tested and confirmed a measurement model of e-campaign activities developed in our previous work with a fresh data source giving us further confidence in these findings. This measurement model was based around a typology that took into account two characteristics – formality and passivity – to classify e-campaign participation activities into different modes. Through exploratory factor analyses, we have identified our three dimensions of e-participation: e-information, e-party and e-expressive. In addition to re-confirming results of our original analysis we have then shown how they differentially predict subsequent political activities. We have done this using a panel study design that allows us to impose robust controls on pre-existing levels of political engagement, particularly for those activities that we test as dependent variables. Our results show that for the most part levels of pre-election commitment to donate and contact online and engage in e-petitioning explain much of the post-election commitment to do so, and that online campaign involvement does not add significantly to this intention. However we have found that use of the internet during the campaign to obtain information does appear to have a lasting effect on likelihood of discussing politics for up to three months afterward, even when one factors in a prior propensity toward discussion. This is in line with our theoretical expectations and supportive of findings from the wider literature.

These results suggest that e-campaign activity is not stimulating the more costly but also more direct forms of political participation such as e-donation, e-contact and signing an e-petition, but effects do appear from a passive and less “labour-intensive” type of activity like e-information on another soft form of engagement such as e-discuss. As such our work supports a growing conclusion that the internet’s role in stimulating participation is likely to be more complex than a simple direct effect. Finally, we have further observed a significant negative association between engagement in formal e-campaign activities (e-party) and a later proclivity to take part in a direct democracy initiatives online (e-petition). This suggests that those

undertaking online actions for the parties during the campaign became more committed to the representative process after the election and somewhat more averse to taking direct action.

APPENDIX A:

Variables and coding from YouGov panel survey

E-campaign participation: Did during the campaign. (0) No; (1) Yes.

- Read or accessed any party or candidate produced campaign sites (home pages, official Facebook profile, official Youtube channel, etc.).
- Signed up to receive information from a party or candidate (a twitter feed, a news alert or e-newsletter) or registered online as a supporter or friend of a party or candidate on their website or social networking site (e.g. Facebook, MySpace etc.).
- Used any of the online tools to help parties or candidates in their campaign (e.g. sent or posted official party material to other people by email or text, set up or got involved in a campaign meeting or event, downloaded a party logo or material to put on your own site or profile etc.).
- Read or accessed any mainstream news websites or news blogs to get information about the campaign (e.g. BBC news online, The Guardian online, etc.).
- Viewed or accessed videos with unofficial political or election related content.
- Joined or started a political or election related group on a social networking site (e.g. Facebook, MySpace etc.).
- Posted comments of a political nature, on your blog, or a wall of a social networking site (either yours or someone else's).
- Forwarded unofficial campaign content (links to video, news stories, jokes etc.) to friends, family or colleagues via email, sms, twitter or through your facebook network.
- Embedded or reposted unofficial campaign content (links to video, news stories, jokes etc.) on your own online pages (i.e. a social networking profile, blog or homepage).

Online Non-electoral Participation: How likely will do in the next few years (0- very unlikely, 10-Very likely). Measured at time t (lagged variables) and replicated at time t+1 (outcome variables).

- Contact a politician or national/local government official by email
- Discuss politics with family or friends online (e.g. through email or in a discussion group)
- Sign an online or e-petition
- Donate money online to a political party/organisation/cause.

Sex: (0) Male; (1) Female

Age: 18-81 years old.

Education: (0) No formal qualifications; (1) Secondary; (2) A-levels; (3) Below degree; (4) Degree or above.

Social Class: (0) C2-D-E; (1) A-B-C1

E-skills: Scale 0-4. Sum index of activities ever done on the internet: sent an attachment with an email; posted an audio, video, or image file to the internet; personally designed a webpage or blog; downloaded a software programme from the internet.

Read Newspaper: (0) Does not read a newspaper; (1) Reads a newspaper.

Internal Efficacy: (0) Politics extremely complicated - (10) Politics not at all complicated.

Trust in British Politicians: (0) No trust – (10) A great deal of trust. Log transformed.

Interest in politics: (0) Not interested, (1) Not very interested; (2) Somewhat interested; (3) Very interested.

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Endnotes

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² Daily Telegraph, 4 April, 2010.

³ Twitter publishes limited statistics on users, but reports that in 2010 there were more than 105 million users in the world, 7.2% of which were British (\approx 10.8 million), although not all of them would be active users (See: Digital Stats Blog, <http://digital-stats.blogspot.co.uk/2010/04/twitter-users-by-country-city-january.html>, accessed June 2012, and The Guardian <http://www.guardian.co.uk/technology/blog/2010/apr/14/twitter-users-chirp-details>, accessed June 2012). According to Facebook statistics, in July 2010 there were more than 26 million users in the UK (source: statistics compiled by Nick Burcher, see <http://www.nickburcher.com/2010/07/facebook-usage-statistics-by-country.html>, accessed June 2012).

⁴ ‘General Election 2010: This was meant to be the internet election. So what happened?’ by Iain Dale, *The Telegraph* 27/04/10, available at <http://www.telegraph.co.uk/news/election-2010/7640143/General-Election-2010-This-was-meant-to-be-the-internet-election.-So-whathappened.html> (accessed June 2012).

⁵ YouGov uses targeted quota sampling as opposed to random probability sampling. For this study, 2,130 UK adults were recruited from the YouGov’s online panel via email in the first wave (68% response rate). This figure dropped to N=1425 in the second survey. Thus, the attrition rate was 33.1%. For all our analyses, subjects with missing data on any employed item were deleted. Weights were supplied based on a combination of demographic and political variables. Since the study sought to obtain a national representative sample of the electorate, data were weighted to the profile of all adults aged 18+ taking into account age, gender, social class, region, political party identification and newspaper readership. Target percentages were derived from census data, the National Readership Survey and YouGov internal analysis. Weights were applied in all the analyses presented in this paper.

⁶ See variables coding in appendix A