`Participating in the 2010 UK E-campaign: Who Engaged, How, and with what Effect? [1]

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Abstract:
This paper applies structural equation modelling to original survey data from the 2010 UK election to examine three research questions: (1) how people engaged with the online campaign; (2) who the online participants were; and (3) whether any mobilization effects of e-campaigning activity can detected in terms of increasing individuals' likelihood of voting? Our measurement model identifies three distinct types of e-campaign participation that range from low intensity information gathering activities to more active formal party involvement and more informal 'expressive' types of engagement. Each is regressed on standard socio-demographic variables and political attitudes and in a final step used to predict turnout to vote. Our results show that lower intensity news and information gathering activities are significantly linked to voting, while more active formal and informal types of e-campaign participation are not, controlling for levels of political interest and efficacy. Our findings are important in suggesting that online participation is multi-dimensional phenomenon like its offline counterpart, and that following previous studies, information gathering activities appear to be particularly important to stimulating 'real world' participation.

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Introduction

Over the past three decades a growing body of work has charted declines in levels of formal participation, particularly turnout, and rising tendencies for citizens to engage in more elite challenging and direct forms of political activity (Barnes and Kaase, 1979; Norris, 2003a&b; Dalton, 2004; Pattie et al, 2003; Stoker, 2006). One means of redress of these trends has been seen to lie in the widening use of internet-based technologies, with scholars identifying a range of features particular to the new medium that can help to overcome some of the barriers to participation and even open up new incentives for active involvement (Bimber, 2003; Polat, 2005; Anduiza et al, 2008). To date, while the story is not uniformly positive an increasing number of empirical analyses point to a positive effect of internet use on participation (Krueger, 2002; Tolbert and McNeal, 2003; Johnson & Kaye, 2003; Gibson et al., 2005; Mossberger et al. 2007; Moy et al. 2005; Jensen et al., 2007; Quintelier and Vissers, 2008; De Zuniga et al, 2009; Pasek et al., 2009; Verba et al. 2008).

This paper aims to revisit and test this thesis in the context of the UK 2010 General election and to advance the literature on this topic in two key ways. First we seek to build on the increasing trend in studies of online participation to develop a more sophisticated understanding of the nature of e-participation. In the early days of study, there was a tendency to adopt blunt measures of 'internet use' writ large. However as surveys have expanded their range of items measuring internet use, a more multi-faceted picture has emerged, pointing to a picture of differentiation in mode that mirrors that within offline participation. As this more multi-dimensional approach has spread the detection of positive effects for political engagement has increased. Secondly using this more nuanced understanding of e-participation we examine how these different types are affecting likelihood of voting in national elections.

We test these arguments using original survey data gathered immediately after the UK General Election of 2010. The first section below outlines the state of current research into the effects of the internet on participation and recent developments toward use of more sophisticated measures and models of the key relationships. We then describe the key findings that have emerged in the context of UK general elections. After outlining our data and measures, we map them to a structural equation model that

simultaneously estimates three sub-models: (1) a three factor measurement model of e-campaign participation; (2) a structural model that compares the effect of a range of standard socio-demographic and attitudinal predictors on our three types of online campaign activity; (3) and a final model testing whether any mobilization effects can be detected by relating engagement in the e-campaign participatory activities to having voted in the 2010 election. In the concluding section we discuss our findings and stress the need for more nuanced and conceptually refined measures of e-participation to be used when understanding their causes and consequences.

The Internet and Participation

Interest in the effects of internet use on individuals' levels of political engagement has grown over the past decade and empirical analyses of the relationship have generally drawn increasingly positive conclusions, although as Boulianne (2009) points out, not necessarily in a monotonic fashion. Early studies maintained at best an ambivalent stance on the question with Bimber's (1999, 2001) influential analysis of U.S. internet users in the late 1990s reporting little to no effect of internet use on participation rates, as measured by turnout, although campaign donations were found to show some increase. While some authors argued for more positive findings on voting rates and political interest in subsequent elections (Tolbert and McNeal, 2003; Johnson and Kaye, 2003) the prevailing view at the turn of the millennium was largely skeptical and even pessimistic with internet use being seen as likely to be reinforcing existing participatory biases and thus reducing the pool of active citizens (Bonfadelli 2002; Davis 1999; Hill and Hughes 1998; Norris 2001; Scheufele and Nisbet, 2002 & 2004; Wilhelm, 2000).

As measures and models of internet use expanded a more mobilizing picture began to emerge, particularly among young people (Delli Carpini, 2000; Owen, 2003; Lupia and Philpot, 2005; Shah et al. 2001b from Coleman et al. 2008; Gibson et al, 2005; Di Gennaro and Dutton, 2006). More generally, authors argued it was necessary to move beyond simple binary measures of internet use/access to differentiate a range of online behaviors such as information seeking, recreational use, and online discussion in order to discern effects (Moy 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 (Anduiza et al., 2008; Gibson et al., 2005; Krueger, 2002). Finally, important methodological steps were taken to try to try to control for the self-selection problems that research in the area inevitably encounters, i.e. the argument that internet users are already more interested and involved in politics than the average citizen (Kroh and Neiss, 2009; Curtice and Norris, 2004). This included use of panel data (Shah et al., 2005; Jennings and Zeitner, 2003), two stage regression models (Anduiza et al., 2010) and also experiments in which participants are 'treated' to online political stimuli (campaign information or a discussion group) and changes in participatory intentions / behavior are recorded (Coleman et al., 2008; Horiuchi et al, 2005; Iyengar and Jackman, 2003; Lupia and Baird, 2003; Stanley and Weare, 2004). Most studies continued to offer support for the existence of mobilizing effects of internet use or at least are unable to entirely discount them.[2]

Increasing attention has also been paid to enriching our theoretical understanding of how internet use might be leading to increased political engagement. Simplistic 'direct effects' models based on 'soft' rational choice assumptions about lowered information and action costs were increasingly displaced by more complex models specifying indirect and two-step pathways to mobilisation. More recent work has started to focus on differentiating internal dimensions of e-participation in order to better understand how any mobilization effects are occurring. Saglie and Vabo (2009) employ exploratory factor analysis on a range of conventional e-participation activities to explore its underlying components and find it to be a multi-dimensional phenomenon, consisting of three factors - contacting, information seeking and use of e-petitions. Despite having confirmed a

[2] While Kroh and Neiss (2009) do show a significant reduction in the effect of internet use (measured as access rather than activity) on political attitudes/behavior using annual German panel data from 1995-2008, compared with standard cross-sectional regression analysis from 2005 they cannot rule out reciprocal causation, particularly in the area of political interest. Indeed a majority of tests in their analysis report positive and significant effects. Their central argument against the mobilization thesis is thus their finding that the benefits are greater for the politically active those who are poorly integrated into the process, which means ultimately reinforcement of existing participation biases. However it is arguable that an accelerated effect for those starting higher up the participatory scale would be expected, and increases in activity for those starting from zero or very low base of engagement would be smaller and slower to accrue but possibly then accelerate over time. Further in depth analysis of these sub-groups' response and consideration of a 'heterogeneity' thesis of internet effects would therefore seem to be required before ruling out any genuinely mobilizing effects.

differentiation of e-participation activities the authors then go on to collapse the items into a uni-dimensional scale that used conduct in the subsequent mobilization analyses.

Other authors have retained the differentiated e-participation variables in their analyses and used them to predict various types of offline or 'real world' participation. Rojas et al (2009) confirm a three step structural equation model that links 'e-news' consumption to newer types of 'e-expressive' activities that center on posting comments and opinion to various online fora. More formally these are defined as 'public expression of political orientations' distinctive from 'background conversations' and casual political talk (907). E-expressive participation is then linked to 'e-activism' which involves more focused and directive uses of online technologies such as mobile phones and social network sites to mobilize others. This chain of activity is then found to precipitate greater offline engagement. Their work supports the findings of Shah et al. (2005) which used a two step SEM to show that e-information seeking prompted civic emailing and offline talk which in turn prompted offline participation. Other studies lending support to the idea of differentiated but inter-linked modes of e-participation are those by Gil de Zuniga et al (2009) and Baumgartner and Morris (2010). Using hierarchical regression techniques studies connect online information seeking with more active forms of e-participation, ranging from online discussion, online persuasion (via email) and online donation Unlike Rojas et al (2009) and Shah et al (2005), however, these authors do not find support for the final step that such activities promote offline participation.

Overall, therefore, the literature on online political engagement has expanded significantly over the past decade, both theoretically and empirically. Key findings that have emerged are that firstly, different forms of e-participation can be identified, and second and perhaps even more importantly, that some of them, particularly forms of online political expression and social networking activism, are associated with stimulating offline participation. This paper seeks to investigate these claims in the context of the recent UK 2010 general election. To what extent did different forms of online participation occur and how far, if at all, were these activities mobilize offline engagement?

The internet and political mobilization in UK elections

Studies of e-participation and mobilization in the UK have been relatively limited compared with studies of the U.S. electorate. Initial analyses of the topic centered on the supply-side of the question using coding schemes to evaluate whether political parties/candidates were providing opportunities for e-participation via content analysis (Gibson and Ward, 1998; Bowers-Brown, 2003). Individual level study of citizen engagement and responses to the online campaign emerged by 2001 and expanded further in 2005 when for the first time a majority of the electorate had access to the net (56%). The evidence from these elections was rather uninspiring in terms of any mobilization effects. Audiences were generally small. In 2001, two out of five internet users reported using the Internet for election related matters (Coleman, 2001). By 2005, this figure had increased to just over one quarter (15% of UK population) but only around three percent of internet users reported using it as their major source of information (Ward and Lusoli, 2005) and just three percent of voters visited party sites (Ward, 2005). Most attention was directed to the online versions of the offline mainstream media (Crabtree, 2001; Coleman 2001; Ward and Lusoli, 2005; Schifferes et al 2009). Most significantly perhaps, those engaging with the e-election were largely well educated, male, middle class, politically interested. (Coleman, 2001; Mesch and Coleman, 2007; Ward and Lusoli, 2005; Schifferes et al, 2009).

While findings from the 2001 and 2005 elections suggested a reinforcement of existing participatory biases rather than any mobilization effects. it should be noted that voter engagement in both elections was low with turnout being reduced to its lowest post-war level in 2001. Within this mix the internet was only media source that actually saw an increase in interest from the electorate. In addition, Lusoli and Ward (2005) found that young people in particularly were significantly higher consumers of online news and information than other age groups and more likely to consider the internet had made a difference to their vote choice. Finally, the stronger discussion networks and levels of activism identified by Norris and Curtice (2008) among those accessing news and information in the UK 2005 election may have created a much wider sphere of influence for online and campaign sites than otherwise might be evident.

More generally, although having assumed a generally low profile in earlier elections,2010 was witness to a considerable amount of hype being generated toward the

arrival finally of "the internet election". Expectations were driven in part by the recent experiences of the U.S. and Barack Obama's high profile online campaign. A critical mass of the electorate were now online - over 70% of the UK electorate reported internet access in 2010[3] - and there had been a rapid growth in the use of social media tools since the 2005 campaign which also helped to increase levels of optimism. Five years earlier the UK political blogsphere was a nascent force and Facebook Twitter and YouTube were not in the public domain. By 2010, however, it was claimed there were some 26 million active Facebook profiles in the UK and Twitter accounts were increasingly exponentially[4]. Thus, there were some grounds for expecting the internet to finally make its mark on the electorate in the 2010 election.

Research Questions

Our paper builds on the general questions outlined earlier about the measurement and mobilization potential of e-participation, and applies them to the specific case of the 2010 UK general election. In particular we ask:

- To what extent can we identify distinct 'types' of e-campaign participation? Are the distinctions used in characterizing offline participation meaningful in the online context?
- Who participates in these types of e-campaign participation? Are there different profiles of individuals engaging in different types of activity?
- How far do different types of e-campaign participation carry the potential for mobilizing citizens, particularly within the context of formal or conventional politics?

[3] Source: BMRB National Face to Face Quota Survey of 1,960 UK adults May 20th-26th 2010.

[4] Twitter publishes limited statistics on users, but reports that in 2010 there were more than 105 million users in the world, 7.2% of those being British (≈ 10.8 million), although not all of them would be active users (Source: Digital Stats Blog, http://digital-stats.blogspot.com/2010/04/twitter-users-by-country-city-january.html, and The Guardian http://www.guardian.co.uk/technology/blog/2010/apr/14/twitter-users-chirp-details). According to Facebook statistics, in July 2010 there were more than 26 million users in the UK, more than doubling the 2008 figure (Source: statistics compiled by Nick Burcher, see http://www.nickburcher.com/2010/07/facebook-usage-statistics-by-country.html).

Data and Methods

The data is from the post-election face-to-face survey by BMRB, a UK polling company. The survey included a range of items that indicated whether respondents had participated in a series of online campaign-specific activities. The sample size of the online only part of the survey used in this analysis is 1379. The survey itself includes questions about engagement more general and conventional forms of political behaviour. 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.

Participation in the e-campaign: Basic Descriptive Statistics

Before presenting the methods concerning the measurement and mobilization questions we pose, we first report some basic descriptive statistics about levels of engagement in the online election in the 2010 UK General election that are at the core of the paper. These include 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 by internet users only (as appropriate) and for the sample as a whole (i.e. including non-internet users).

Table 1: Online Campaign Activities of UK Voters in the 2010 General Election (weighted data)

Type Of Activity	Total Sample (%)	Internet users (%)	N
Official Campaign			
Read/accessed official sites	15.5	20.6	301
Signed up as supporter/for e-news	4.6	6.1	89
Used online tools to campaign /promote parties	3.3	4.3	63
Total official campaign engagement	18.6	24.8	363
Non-Official Campaign			
Read/accessed mainstream news sites	27.6	36.7	539
Viewed/accessed non-official online video	5.7	7.6	112
Joined/started political group on a SNS	3.2	4.2	62
Posted political comments to own/other blog/SNS	4.5	6.0	88
Forwarded non-official content (jokes, news items)	2.6	3.4	50
Embedded/reposted non-official content	1.1	1.4	21
Total non-official campaign engagement	31.4	41.7	613
Overall Activity	33.4	44.4	651

Source: BMRB National Face to Face Quota Survey of 1,960 UK adults May 20th-26th 2010.
Official Campaign Qu: Please could you tell me, whether you have done any of the following activities in relation to official parties or candidates online?
Non-official Campaign Qu:: Which, if any, of the following activities did you do online during the election campaign over the last month?

The results show that the most popular type of activity engaged in overall was consultation of mainstream news media content, with over one third 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. 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 six 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 (four percent). Beyond the official campaign, individuals displayed similarly lower levels of engagement in the more active types of e-participation, with posting general political content to social networks walls and blogs attracting four and six

percent respectively. Watching non-official YouTube videos attracted just under one in ten of internet users. 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 forwarding and reposting political material were less popular than more passive acquisition of online election material. Taking all these activities together we can see that fully one third of the UK population and just under 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.

A measurement model of e-campaign participation

Based on the results of the e-participation studies reported above and research into offline participation we first hypothesise a differentiation our e-campaign activities into distinctive clusters or modes. A first distinction we make is between those items that capture more active and passive types of political engagement. The items relating to online news and information gathering (official campaign sites, blogs and mainstream media sites) are seen to fit together as a more passive cluster of activities revolving around 'attention to news', while the remaining items require more effort and are 'other' directed. Within these more active types of e-campaign participation we make a further division between the 'other' that is being targeted. Essentially some actions are directed toward influencing government and formal institutions – here the political parties – while others center on non-governmental or extra-representational actors, in this case public opinion and other online users. This distinction has is a widely accepted one that has featured heavily in classic participation studies, particularly since the 1970s when mass protest actions increased rapidly and existing categorization schemes based around conventional forms of participation dependent on official state channels such as voting

and party-based activities were unable to capture the new modes of political involvement (Barnes and Kaase, 1979; Parry et al, 1992; Norris, 1999 & 2003; Teorell et al, 2007; Dalton, 2004).

The resulting division of activities places the items measuring use of party provided online tools, registering for official updates and joining or starting a politically oriented online social network group together. These are seen as more formal and organizationally embedded and active types of participation. Use of the web to post, forward or embed political content are seen as constituting more informal and expressive types of activities that while designed to influence a political outcome, are not generally aimed at or do not take place with an official or organized context. They are instead directed toward persuading or prompting an action or reaction among one's peers and the wider blog reading or tweeting public. The above two-fold division results in the four-fold typology presented in Table 2 onto which we can map some of the more commonly featured e-campaign participatory activities.

One innovation that this schema brings to the literature is that earlier attempts to widen of modes of engagement to include more unconventional or informal modes of action was done largely to incorporate actions outside the electoral context, or 'beyond the ballot box', here we bring a distinction between formal and informal into the electoral context. Thus the 'campaign' mode of participation is not seen as unidimensional as in earlier accounts but composed of at least two elements. Such an extension we think represents an important shift in the concept of participation, and points to a key area of innovation or change that digital media may be bringing to repertoires of political action.

Table 2: A Typology of E-Campaign Participation

	FORMAL	INFORMAL
ACTIVE	PARTY DRIVEN ACTIVITIES Signing up as volunteer Post/share campaign information in social media Use party online tools	NON-PARTY DRIVEN Posting to Blog Posting to SNS Use SNS to mobilize Forward emails Persuade others about an issue online
PASSIVE	INFORMATION SEEKING Official sites (includes official blogs, YouTube)	INFORMATION SEEKING Unofficial sites, blogs, YouTube Mainstream news sites

To test our expectations about whether different modes of e-campaign participation exist we first mapped our survey items onto the axes used in table 1. This resulted in a three-fold classification of items reported in table 3.

Table 3: A Typology of E-campaign participation, items BMRB UK 2010 Survey

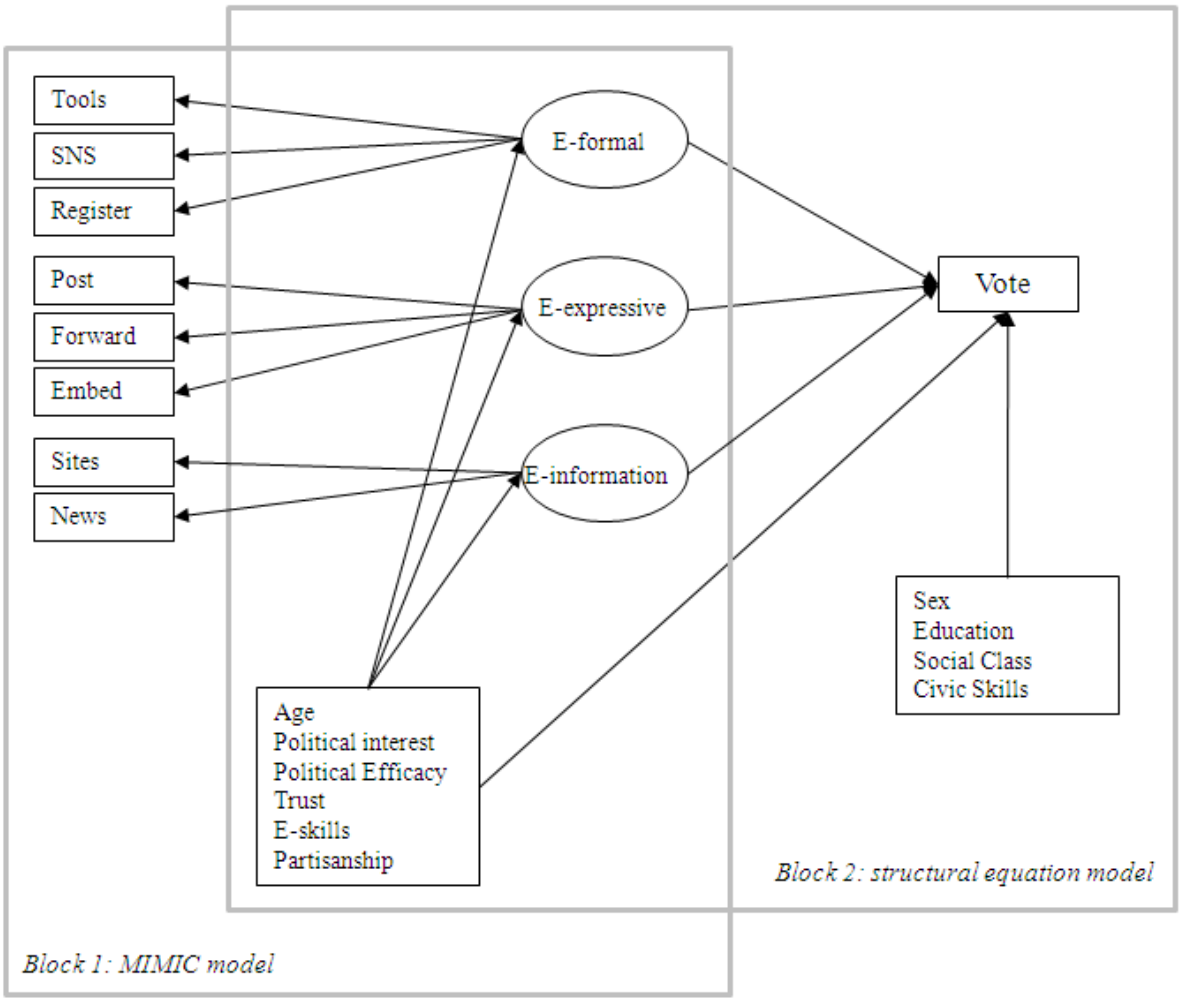
	FORMAL	INFORMAL
ACTIVE	E-FORMAL Online tools Register Join/create SNS	E-EXPRESSIVE Post Forward Embed
PASSIVE		E-INFORMATION Official sites Mainstream news sites Online videos

Methodology

To examine our main research questions – whether e-campaign participation is a multi-dimensional phenomenon, if there are different profiles of those engaging in it, and finally whether it leads to offline mobilization in terms of increasing individuals' likelihood of voting – we use a structural equation model. Figure 1 shows a path diagram of the full model. It is composed of three main sub-models. First, a measurement model was estimated using latent variable modelling. This sub-model allowed us to test our first research question concerning the multidimensionality of e-campaign participation. We assumed there are unobserved variables (in our case measuring the e-campaign) and that this can be estimated from observed variables. In order to address the second research question – whether we can identify different profiles of those engaging in these types of e-campaign activities – we use a multiple indicator, multiple cause or MIMIC model (Jöreskog and Goldberger, 1975) where the latent variables are considered to be the *cause* of the relationships from a set of indicator variables (e.g. online tools, visiting sites, sharing online information), that is itself *caused by* other, exogenous, variables (e.g. political interest, internal political efficacy, partisanship etc) (Zumbo, 2005; Fieldhouse and Cutts, 2009; Cutts et al, 2011). Finally, in the full structural model we included the direct effects of the latent variables and the covariates on vote in the 2010 UK general election. A structural equation model is an extension of the MIMIC model where the latent and observed variables are included simultaneously.

The analysis of the small amount of missing data (less than 4.2% of sample size) was handled through the estimation-mobilisation (EM) algorithm to compute missing data estimates using full information maximum likelihood (FIML) (Muthén and Muthén, 2005). This estimation approach is preferred because it provides unbiased parameter estimates and standard errors under missing at random (MAR) (Little and Rubin, 1987). We use the WLSMV estimator because it handles missing data on the covariates which is where our missing data was situated. All the models were fitted using Mplus 6 software (Muthén and Muthén, 2005).

Figure 1: Path diagram of the full structural equation model tested.



Block 1 in figure 1 above shows the MIMIC model structure. Put simply, the unobserved, latent variables are represented by a circle and the observed variables by boxes. The Ys (e-campaign participation items) are the indicators of the latent variable and the Xs (age, interest, etc.) are its exogenous causes. The arrows represent the strength and direction of the causal relationships between the observed and latent variables of interest with linear regressions for the Xs and continuous Ys and non-linear regressions for binary Ys. The indicator variables are subject to measurement error while the random effects on the latent variable are captured (Fieldhouse and Cutts, 2009; Cutts et al, 2011).

As shown in block 2, the model allows us to decompose the direct and indirect effects of various factors affecting voting in 2010. For instance, e-skills, political efficacy, trust in politicians, partisanship and political interest are allowed to condition both on the three latent variables measuring e-campaign participation and vote in 2010. Thus these variables have an effect via these measures of e-campaign participation as well as directly. So for example, part of the effect of political interest is transmitted via the e-campaign participation latent variables. However, the effect of e-campaign participation on voting in 2010 is net of the direct effect of political interest etc. and can be considered as an e-participation effect, albeit partly determined (itself) by these other variables. We also measure age effects. Age is defined as a categorical variable with separate dummies for young people aged 18-29, middle aged 30-44, middle older aged 45-59 and old age 60 plus. Socio-demographic factors (sex, social class and education[5]) and civic skills[6] variables have been identified in the wider participation literature as strongly linked to individuals' propensity to participate (Verba et al, 1995). We also include an internet skills variable[7] to measure the 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). Individuals who have an interest in politics, feelings of internal efficacy, trust British politicians and are partisans are more likely to become politically active.[8] However, lower levels of attitudes like trust may be associated with a propensity to become active in informal forms of participation (Norris, 1999 & 2003; Dalton, 2004). Nonetheless, these political variables have been established by scholars as important predictors of voting (Clarke et al, 2005; 2010).[9]

[5] Sex is a categorical variable. Both class and education are continuous variables.

[6] Civic skills is count variable 0-4. However, closer inspection of the data found that it was positively skewed with a z-score of 12.12 for skewness and a large amount of kurtosis. The Kolmogorov-Smirnov Z test of normality also revealed that the distribution was non-normal. Therefore we log transformed the civic skills to deal with the moderate to excessive amount of skewness.

[7] E-skills is also a count variable 0-4. The z-score for skewness and kurtosis was 5.65 and -7.56. Hence it was log transformed to deal with non-normality.

[8] Political interest is coded as a dummy – lots of political interest = 1; all others = 0. Feelings of efficacy is distributed normally with no evidence of skewness. However, missing data here (for 17 cases) was recalculated by using the mean score. Efficacy was included as a continuous variable. Trust in politicians was found to be moderately positively skewed (z-score = 2.6) and there was also evidence of negative kurtosis. We log transformed this variable to remove non-normality and included it as a continuous variable. Partisanship is coded as a dummy – no partisanship = 1; partisanship = 0.

[9] After running a number of well established tests (including tolerance statistics and variance inflation indicators), we found no evidence of multicollinearity in the model

Model Results

The fit of the full structural equation model was assessed against standard goodness of fit measures including Comparative Fit Index (=.95) and The Root Mean Square of Approximation (.002) and the statistics shown indicate a 'good' model fit (Hu and Bentler, 1999). We also report R-Square statistics for individual regressions to illustrate how well the model explains the outcomes (e-participation latent variables and vote in 2010). Even though all the findings presented in this paper are from the final full model, for clarity we break down and present the results in three steps, corresponding to each of our three research questions.

(1) Measuring the E-Campaign Participation Latent Variables

As described above, the three latent variables represent e-campaign participation. Two latent variables (E-Formal and E-Expressive) include three indicator variables while one latent variable (E-Information) includes two indicators (visiting official websites and mainstream news sites)[10]. In simple terms, the latent variable model can be written:

$$Y_{ij} = \lambda_{ij} \eta_j + \varepsilon_{ij} \quad (1)$$

where

$$\eta_j = \gamma_{ij} X_{ij} + \zeta_j . \quad (2)$$

Y_{ij} is the *i*-th indicator of the *j*-th latent variable η_j, with loading λ_{ij} and unique factors ε_{ij} (i.e. unshared variance and error). The latent variables η_j accounts for the effects of the regressions γ_{ij} on the exogenous causes X_{ij}, as well as the variance ζ_j not accounted for by X_{ij}. Here it is assumed that error terms (ε_{ij} and ζ_j) have a mean of zero (Cutts et al, 2011). In addition to the model shown in equations (1) and (2) and Figure 1, the latent variables η_j were allowed to correlate freely, representing the non-independence of e-participation. The model structure also allowed all exogenous predictors to covary freely.

Table 4 provides the standardised and unstandardised regression estimates of measurement indicators on the three e-participation latent variables (for the full model). The standardised estimates (StdYX) are equivalent to factor loadings from a common

[10] Originally, the e-information latent variable was tested including a third item (viewing online videos). The item was removed from the analysis based on the information obtained from the modification indices, regression loadings and standard errors.

factor analysis. The unstandardised estimates for online tools (e-formal) embedded/reposted campaign content (e-expressive) and official candidate sites (e-information) are constrained to equal 1 with estimates for the other indicator variables providing relative values. All indicators are significantly and positively correlated with each latent variable. The coefficients and the large standardised loadings for each indicator suggest that each latent variable is a good representation of the variables. This is confirmed by the r-squared statistics which indicate the proportion of variance in each indicator which is explained by the model. Given that the indicators are regressed only on the latent variables, the r-squared values are the square of the standardised coefficients. The e-formal latent variable reproduces more than two thirds of the variance in online tools and official register and just under for unofficial SNS. For e-expressive, it reproduces nine tenths of the variance in embedded/reposted campaign content and more than two-thirds of the variance in forwarded campaign content and posted comments. Finally, the e-information latent variable reproduces nine tenths of the variance in official websites but less than half in mainstream news websites. To test the significance of the independent contribution of each indicator we re-specified the model without each of the indicators in turn and found that the inclusion of each indicator made a significant contribution in the reduction of log likelihood.

Table 4. Estimates of E-Campaign participation indicators on latent variables (factor loadings, full model)

Variables	**Estimates (β)**	**SE**	**StdYX**	**R^2**
E-Formal				
Online Tools	1.00	-	0.84	0.71
Unofficial SNS	0.92	0.11	0.79	0.62
Official Register	0.99	0.08	0.84	0.71
E-Expressive				
Embedded/Reposted Campaign Content	1.00	-	0.95	0.90
Forwarded Campaign Content	0.86	0.09	0.84	0.71
Posted Comments (Blogs/Wall SN etc)	0.87	0.06	0.85	0.72
E-Information				
Official Candidate Sites	1.00	-	0.95	0.91
Mainstream News Websites/Blogs	0.67	0.07	0.69	0.48

Note: Data is weighted. Correlations between e-formal and e-expressive (0.55** standardised); e-formal and e-communication (0.38** standardised); e-expressive and e-communication (0.36** standardised).

(2) Profiling E-Campaign Participation

Now that we have established latent measures of e-campaign participation, which confirmed our expectation that different types of online participation could be identified within our dataset, we now seek to account for involvement in these different types of participation, based on both classic and newer explanations of online political activity. We expect to find different profiles of individuals engaging in each of the sub-types of e-participation. Thus before we examine the impact of those latent variables on voting in 2010, we first examine whether these expectations are met. In figure 1, this is shown by the causal arrows running into the latent variable and represents the regression of the latent variables on the covariates. For each model, the variance explained (r-square) is at least a quarter. The estimates for these models are presented in Table 5.

Table 5. Regression of latent variables on covariates by E-Campaign: E-Formal, E-Expressive and E-Information in the 2010 General Election (Full Model)

Variables	E-Formal		E-Expressive		E-Information	
	Estimates (β)	(StdYX)	Estimates (β)	(StdYX)	Estimates (β)	(StdYX)
Young Age 18-29	0.55**	.26	0.52**	.21	0.66**	.26
Middle Age 30-44	0.12	.06	0.45**	.19	0.56**	.23
Middle/Older Age 45-59	0.02	.01	0.08	.03	-0.01	-.00
Lots of Political Interest	0.54**	.21	0.33*	.11	0.45**	.15
Political Efficacy	0.01	.03	0.04	.11	0.04**	.11
Trust	0.69**	.23	0.22	.06	0.79**	.22
E-Skills	0.66**	.16	1.85**	.39	1.48**	.31
No Partisanship	-0.36**	-.13	-0.19	-.06	-0.05	-.02
R^2	**.25**		**.26**		**.29**	

Data is weighted. N = 1379. *Significance at the 0.10 level; ** Significance at the 0.05 level. Reference category for Age = Age 60 plus.

Unsurprisingly, those individuals who are aged between 18-29 and those with online skills are the most likely to engage in all forms of e-participation (e-formal, e-expressive and e-information). Yet, the results suggest a distinction in terms of who participates in these different modes of e-participation. Individuals who engage in e-formal activities are significantly more likely to be aged 18-29 than from older age groups. Indeed, this seems to be preserve of the youngest age group, the standardised coefficient shows that age 18-29 is the most important predictor, given the insignificant

finding for those aged 30-44 and above. This clearly contrasts with those engaged in e-expressive and e-informationn activities where both the youngest and middle age groups are significant drivers. Apart from being aged 18-29, those who engage in e-formal activities are also significantly more likely to be interested in politics, trust politicians, have online skills and are less likely to be non-partisans. By contrast, apart from being in the youngest or middle age groups, those who engage in e-expressive activities are significantly more likely to have online skills. While having an interest in politics does matter, albeit at the 10% level, the standardised coefficients reveal that having online skills is by far the strongest and most important driver of e-expressive participation. Engaging in e-expressive campaign–related activities is not associated with formal politics as measured by partisanship and trust in politicians. These activities seem to be attracting those previously unengaged profiles of citizens, namely those who are young, have strong online skills and have some interest in political matters but not in a formal sense through an attachment to a party or politicians or feeling efficacious. The results for the e-expressive mode are particularly interesting as these are unusual suspects of taking part in an activity related to the campaign – i.e. a conventional political event. One explanation may be explained by the fact that these activities are being conducted informally (targeting of friends, family and colleagues rather than on official political agents).

Those who engage in e-information activities do have a similar profile to those who participate in e-formal campaign related activities. For instance, they are significantly more likely to be from the youngest age group, have online skills, trust politicians, and have a strong interest in political matters. Unlike those engaged in e-formal activities, those aged 30-44 are also significantly more likely to be involved in e-information activities than those in the older age groups. As with e-expressive activities, the insignificant effect of partisanship strength in the model of e-information activities suggests that not all online campaign-related activities are conducted by the same profile of strong party supporters. Another important predictor of e-information is political efficacy. Here we examine the effect of internal political efficacy (politics are too complicated to understand) and find that those individuals who find politics and

government less complicated are significantly more likely to be engaged in e-communication activities.

(3) E-Campaign Participation on Vote in 2010

Now that we have established these measures of e-campaign participation and examined which factors stimulate e-engagement, we now turn to our hypotheses which relate to the impact of e-campaign activities on voting in the 2010 general election. In this section we are interested in whether or not e-campaign activities have a significant influence on whether an individual voted or not in the 2010 general election after controlling for socio-economic variables (sex, class and education) and other political drivers such as partisanship, political efficacy and trust in politicians. The direct effect estimates for these regression models by party are presented in Table 6.

Table 6. Regression of 2010 Vote on E-Campaign (E-Formal, E-Expressive and E-Information) and Control Variables (Full Model)

Variables	Vote 2010	
	Estimates (β)	(StdYX)
Sex	-0.10	-.04
Young Age 18-29	-1.53**	-.54
Middle Age 30-44	-1.02**	-.38
Middle/Older Age 45-59	-0.45**	-.16
Social Class	0.20**	.19
Education	0.13**	.15
Lots of Political Interest	0.19	.05
Political Efficacy	-0.02	-.05
Trust	0.42**	.10
Civic Skills	0.39*	.07
E-Skills	-0.31	-.06
No Partisanship	-0.39**	-.11
E-Formal	-0.06	-.04
E-Expressive	-0.02	-.02
E-Information	0.35**	.31
R^2	**.41**	

Data is weighted. N = 1379. *Significance at the 0.10 level; ** Significance at the 0.05 level.
Reference category for Age = Age 60 plus.

The model explains more than forty per cent of the variance in turnout in 2010. In general, the established patterns of voting are confirmed. Firstly, socio-economic variables were significant drivers of turnout, with the likelihood of voting significantly higher for those in the older age groups, among well educated individuals and those in the higher social class positions. However, there was no significant sex effect. Those individuals with civic skills were also significantly more likely to vote. Other political factors were also key drivers of turnout. Those individuals more trusting of politicians were significantly more likely to vote while those less attached to a particular party were predictably significantly less likely to participate. Political interest was a surprisingly insignificant, although given that it was a significant predictor of all three latent e-campaign related activities, it is likely to have an indirect effect on turnout via these latent measures. Internal political efficacy and online skills were also insignificant after controlling for other factors.[11]

As regards the types of e-campaign related participation, the e-formal and e-expressive activities did not have any significant effect on turnout. Based on our findings, the individual profile of those engaged in these formal and informal e-campaign related activities are quite different, hence the interpretation of these insignificant effects need further explanation. In the previous section, e-formal participants were individuals who are politically interested and trust politicians, but more crucially feel close to a political party. Given the latter, such individuals who participate in online formal activities (e.g. using official online tools to help parties in their campaign) are already more likely to vote, given that they strongly support a political party, before accessing these online applications. By contrast, e-expressive participants, despite their levels of interest in political matters, would have not been expected to be active in formal activities related to the campaign. We have argued the informality of this form of e-participation might explain their actual engagement in such activities in the online environment. Given that voting is one of the most formal forms of political participation, that would explain why

[11] Here we defined internal political efficacy as whether politics was too complicated or not. Conventional theories and models of turnout often define political efficacy as an individuals sense that he/she has the skills and resources to influence the political process. This measure is commonly used in rational choice models of turnout – whether an individual feels there is a chance of being influential or not (see Riker and Ordershook, 1973; Blais, 2000) – and civic voluntarism where a combination of social characteristics, contexts and psychology are used to explain political participation.

despite being attracted to the campaign arena, this was not sufficient to enhance a motivation towards turning out on election day. Moreover, the online feature of the participatory act may also be relevant here with these individuals possibly more likely to be mobilised in a hypothetical online election than one which requires registering and voting by conventional methods (filling out a form and sending by post or visiting the polling booth).

Unlike the other latent measures of e-campaign related activities, those individuals who engaged in e-information activities were significantly more likely to vote. Indeed the standardised effect is extremely large, and after age, it was the most important predictor of turnout in the 2010 general election when compared against other variables. Like e-formal participants, those engaged in e-information activities share an interest in political matters and tend to trust politicians but they are not attached to a political party and are politically efficacious. Hence, these individuals are more likely to be influenced to vote by looking at candidates' websites or news websites/blogs rather than out of loyalty for a political party.

Conclusions

The emergence and rise of online participatory activities has offered a new opportunity to consider the multi-dimensional nature of political participation. Does online participation differentiate or cluster into distinctive modes, as is the case with offline activities and if so to what extent does is 'look' like or replicate these previous types of engagement (Krueger, 2002; Gibson et al, 2005; Jensen et al, 2007; Anduiza et al, 2010)? This paper has sought to fill this gap by offering a more sophisticated measurement of e-campaign participation which has then been used to test its mobilization effects on offline involvement, here defined as voting.

Using structural equation modelling, we first tested a theoretical typology that classified e-campaign behaviours into different modes taking into account two characteristics – level of active engagement required and the target of the behaviour (i.e. formal or informal). Our results identified three main types of e-campaign participation: e-formal, that centered on interacting with official actors (political parties), e-expressive, that centered on interacting in public forums with peers and other citizens to voice one's

political views and finally e-information gathering activities that involved individual consumption of online news about the election. In a second step we observed the predictors of engaging in each of these new modes of e-campaign participation. Our findings support that we are dealing with distinct modes, particularly with regard to the e-expressive type of participation. The profile of citizens engaging in these sharing activities appeared to have a less positive orientation toward the political system than those undertaking e-formal and e-information gathering activities. These results suggest a potential mobilizing effect.

We tested this mobilizing effect of these different forms of e-campaign participation on voting in the 2010 UK General Election. In particular in line with a number of previous studies we find that engaging in e-information gathering activities is significantly linked to an increased likelihood of voting, suggesting a mobilizing potential of the internet in this regard. Engagement in the e-expressive and e-formal modes was found to have no effect on individuals' likelihood of voting. For e-formal participation we see this as somewhat predictable in that these individuals are more highly motivated and attached to a political party than average. They are already highly involved in politics and further involvement in the e-campaign is unlikely to increase their likelihood of voting. Such an explanation does not hold so well for our e-expressive participants, however, who appear to be relative newcomers to campaign-related participation. Indeed we would argue that these individuals were probably attracted by the informality of these activities, and that engaging in them provides no obvious or immediate trigger into more official types of engagement.

The results are significant both conceptually and methodologically. First, they confirm that e-participation is not a homogenous or uni-dimensional concept and should be broken down into distinctive activities before any mobilizing effects are assessed. Second, within these different types of e-participation, some are clearly the domain of 'usual suspects' and are attracting already active citizens. Others, however, are appealing to citizens who are not highly involved with politics and while they are not necessarily increasing their interest in voting, they may be raising their levels of political engagement and support for the system in other subtler ways. Finally, despite being undertaken largely by those who are highly interested and supportive of the political system,

accessing news and information about the election does appear to provide an additional stimulus to voting. The sudden disappearance of political interest in our final model, supports our claim for mobilization here in that it suggest that e-information related activities may be absorbing and increasing levels of political interest, creating a virtuous circle that leads to voting. Future work clearly needs to investigate this positive spiral of attention to online news and information. Notably recent work by Boulianne (2011) in the U.S. context is helpful in this regard by reporting that e-information activities increased levels of political interest among those already interested. Whether this booster effect is ultimately democratizing, however, is also an important question for further research to address. If online resources really do provide a significant additional boost to 'real world' participation for those already attentive to the political system, then conclusions of reinforcement in participatory biases would seem to loom larger than claims for mobilization.

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Appendix A: variables from BMRB survey

Variable	Coding
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).
Vote	Voted in the last General Election 2010 0 No 1 Yes
Sex	0 Male - 1 Female
Age	18-95 years old Recoded: Young age (18-29) – Middle Age (30-44) – Middle/Older Age (45-59)
Education	0 None/Primary incomplete 1 Primary 2 Secondary incomplete 3 Secondary

	4 High school 5 Further between high school and university 6 University degree 7 Doctorate
Social Class	1 A 2 B 3 C1 4 C2 5 D 6 E
Civic skills	Scale 0-4. Sum index of activities done in last 12 months: Written a letter; Gone to a meeting taking part in making decisions; Planned or chaired a meeting; Given a presentation or speech. Log transformed
E-skills	Scale 0-4. Sum index of activities done in last 12 months: 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 Log transformed
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	None Not very much Some Quite a lot A great deal Recoded into binary: A great deal - other categories
Partisanship strength	Non partisan Not very strong Fairly strong Very strong Recoded into binary: Non partisanship – other categories