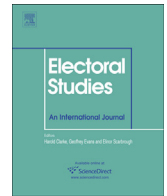




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Heterogeneity and the calculus of turnout: Undecided respondents and the campaign dynamics of civic duty

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ABSTRACT

Accounts of turnout often maintain that citizens participate in elections because the expressive, instrumental and normative benefits associated with the act of voting outweigh the respective costs. Although the impact of those benefits has been empirically assessed in many studies, we know little about when and for whom this impact is stronger. To this end, this paper examines 1) how the effect of those benefits and particularly that of civic duty increases over the election campaign and 2) whether this increase can be attributed to voter heterogeneity. Survey respondents who have not yet decided how they are going to vote will be increasingly swayed to cast a vote on the basis of their civic duty and not other predictors of turnout. The empirical hypotheses are being tested by utilising recent rolling cross-section election studies from Britain. The results suggest that the influence of civic duty on turnout is stable for decided but increases for undecided voters the closer the election day looms.

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1. Introduction

Citizens are often assumed to calculate the costs and the benefits of their future actions and decide whether they will eventually turnout. Their instrumental benefits denote the utility they receive from seeing their preferences (policies, parties or candidates) represented in government. Such considerations along with “expressive” partisan attachments and normative benefits related to civic duty tend to inform their calculus (Brennan and Hamlin, 1998; Schuessler, 2000; Riker and Ordeshook, 1968; Blais, 2000). For many turnout models, these considerations are assumed to be uniform across the electorate and temporally “fixed”.

This study, in contrast, theorises that electoral proximity (i.e. *the daily countdown before election day*) enhances the importance of certain predictors on turnout.¹ On this

account, the impact of considerations like the sense of civic duty are expected to be amplified the closer the election day looms. It is being argued that the election day is the ‘deadline’ for voters to make a decision and this time pressure is reflected on the weight they place on different considerations at different time points in the campaign. In line with the ‘deadline’ proposition, the paper further tests whether the temporally dependent effect of civic duty on turnout is uniform across the electorate or heterogeneous voter segments accord more weight on civic duty in the final days of the campaigns. The main source of heterogeneity is whether a citizen is decided or undecided for whom she will vote (Kosmidis and Xezonakis, 2010; Chaffee and Choe, 1980; Chaffee and Rimal, 1996; Fournier et al., 2004; Nir and Druckman, 2008; Henderson et al., 2010).

The analyses are based on survey data that can capture the varying impact of turnout predictors via the rolling cross-section (RCS) component (see Johnston and Brady, 2002; Brady and Johnston, 2006). The empirical analyses of the article use the RCS component for predictors and the respective post election wave to measure turnout. The empirical results show that for decided respondents

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¹ Throughout the paper I discuss the causal importance of various considerations within the voting calculus and not how the levels of, e.g. political interest, increase or decrease during the campaign.

(*reported vote intention*) the importance of civic duty is stable across the campaign while for undecided respondents (*reported indecision*) the same effect increases over the course of the campaign.² This finding is theoretically plausible and in line with other studies that have reported heterogeneity in the influence of civic duty (Gerber and Green, 2000a; Großer and Schram, 2010). The theoretical argument posits that for undecided respondents, the calculus of voting will be heavily influenced by this sense of civic duty because expressive benefits, like party identification, are not strong and their instrumental benefits have already failed to predict a prompt vote intention. As a consequence, the importance of their sense of duty will be heightened the closer the election day looms.

This article aspires to 1) inform the literature on the classical downsonian model, 2) expand on the literature about campaigns and turnout and 3) add to the limited work on the undecided voters. With respect to the former, this paper seeks to add useful dimensions in the Calculus of Voting that could enhance its predictive accuracy and thus illuminate how the same parameters can make better predictions for different voters at different points in time. This way we can learn more about how campaigns could affect aggregate turnout and gain insights into the behaviour of a ubiquitous voting group like the undecided voters.

In the following Section review the infamous paradox of voting; I then discuss voter and temporal heterogeneity. This discussion leads to the theoretical arguments informing the hypotheses to be tested. After that, I describe the data, specify the statistical models and present the results from the empirical analyses. In the final Section summarise the theoretical and empirical implications of this research.

2. Background & hypotheses

2.1. Calculus of voting

According to the oft-cited calculus of voting, voters have goals and seek to achieve them in the most efficient way possible (Downs, 1957). Behaviour is, accordingly, conditioned by the individual's perceptions of the costs and benefits that accrue to themselves. In other words, the decision to participate will be made in response to whether the costs of voting (C) (e.g. registration, going to polling station, gathering information) are larger than the associated benefits (B) (Riker and Ordeshook, 1968; Blais, 2000; Blais et al., 2000; Panagopoulos, 2008; Clarke et al., 2004). The benefits, in turn, will be conditional upon the extent to which the individual vote is decisive in determining the election. In its original formulation the calculus of voting is derived as follows:

$$\pi B > C$$

In the above inequality, the principal consideration is 'B' as it represents the citizens' instrumental benefit from

seeing their preferred candidate, policy or party winning the election. The *Benefits* term, however, is conditional on the extent to which voters consider themselves to be pivotal in deciding election outcomes. And this is where strictly instrumental considerations fail to predict large number of electors. In large scale elections, according to the downsonian model, it is irrational to vote because even if the benefits (B) from seeing ones preferred party in power are very large, the probability that ones vote is decisive (π) is infinitesimal (Grofman, 1993; Larcinese, 2007).

Most citizens, however, do vote and some of them do so repeatedly. Downs (1957) attempted to explain the empirical deficit of his model by assuming psychic or consumption benefits from voting. His proposition suggested that voters participate to maintain and support the democratic system. Similar explanations for this "paradox" posit that voters tend to distort the perceptions of their benefits by relying on these normative and psychic considerations. In effect, the original calculus of voting is often modified by the proposition that voters obtain a benefit from merely exercising or performing their citizen duty to vote (the 'D' term) (Riker and Ordeshook, 1968). Riker and Ordeshook (1968) modified the equation as follows³:

$$\pi B + D > C$$

Even though these consumption parameters (generally represented by the 'D' term) were often related to different psychic and normative benefits, civic duty has been at the centre of scholarly attention. Blais (2000) suggests the following useful definition:

"I define [civic] duty as the "belief that not voting in a democracy is wrong". Sense of duty thus corresponds to an ethical judgment that voting is right and not voting is wrong. If someone votes out of a sense of duty, she votes because her conscience tell her she ought to vote; she would feel ashamed and guilty if she were not to vote. (2000:93)"

In Blais' terms, the variation in the sense of civic duty corresponds to the varying presence of a guilt stemming from non voting. Although, this solution comes with some theoretical (and empirical) shortcomings, this sense of duty is the solution to the turnout paradox.⁴

While in most cases the discussions either focus on the above paradox or the unconditional impact of the parameters, this paper departs from the traditional calculus of turnout and seeks to understand how the three types of considerations (instrumental, expressive and normative benefits) of the model work for different voters at different time-points in the campaign. In other words, the paper's theoretical argumentation and contribution lies in the relaxation of two key assumptions embedded in these

² I use the term 'respondents' to describe their status as units of a survey sample. The terms 'undecided citizens' or 'undecided voters' are also used and they describe the same group of people.

³ Riker and Ordeshook suggested a variety of psychic benefits including Down's proposition about system support. The characterisations of these benefits as psychic, normative or consumption benefits describe the same concept and are being used interchangeably.

⁴ The theoretical and empirical shortcomings are discussed at later sections of the paper.

models of voter and temporal homogeneity. The former merely suggests that the influence of one of the parameters only represents the average effect across all voters while the latter assumes that the influence of the predictors within the calculus is stable across time (e.g. the campaign period) and it does not exhibit any variation. In the following section, I discuss how these assumptions have been evaluated by other electoral researchers. This discussion leads to the derivation of the set of hypotheses that will be empirically tested.

2.2. Heterogeneity and the decision to turnout

Both theory and intuition would allow for some groups of voters to have distinguishably different priorities when they calculate their benefits from voting. In political behaviour, and particularly in studies of vote choice, the homogeneity assumption has been relaxed in various instances (for an overview see [Bartle, 2005](#)). These analyses include research on low and highly informed voters, cognitive heterogeneity in economic perceptions, levels of political knowledge, issue voting and leadership driven voting ([Andersen et al., 2005](#); [Duch et al., 2000](#); [Gomez and Wilson, 2006](#); [Rivers, 1988](#); [Bartels, 1996](#); [Bartle, 2005](#)). When it comes to turnout, studies assuming and (less often) testing for heterogeneity have examined age, psychological attachments, information, strategic uncertainty and ideological alienation ([Palfrey and Rosenthal, 1985](#); [Adams et al., 2006](#); [Thurner and Eymann, 2000](#)). For this paper, however, the source of heterogeneity is whether a voter is decided how she is going to vote or not.⁵ For a variety of plausible reasons, voters who are undecided are going to be more susceptible to campaign persuasion (see [Chaffee and Choe, 1980](#); [Chaffee and Rimal, 1996](#); [Fournier et al., 2004](#); [Nir and Druckman, 2008](#); [Kosmidis and Xezonakis, 2010](#); [Henderson et al., 2010](#)). These reasons relate to the concept of an indecisive voter.

Undecided voters choose from a set of defined alternatives. They may vote for one of the rival parties, or abstain from the election. Though the alternatives are clear, the difference in their utility by choosing, say, Party X rather than Party Z, is not. Their indecision status, in other words, relates to a set of difficulties in maximising their utilities. The first of those difficulties corresponds to political apathy where an undecided voter has no substantive interest in politics. The second difficulty relates to ambivalence on which a voter bears conflicting considerations about a set of attitude objects ([Steenbergen and Brewer, 2004](#); [Rudolph and Popp, 2007](#); [Rudolph, 2011](#)). In both cases, the campaign will inform the voters' utility functions. On the one hand, political parties will seek to maximise their

public support by disseminating persuasive messages, while voters will be processing the information from those messages to make up their minds.⁶ The received persuasive messages will inform their running tallies and undecided respondents will eventually formulate vote intentions. Because of the alleged campaign susceptibility, the undecideds will place more weight on information amplified during the campaign while decided respondents will tend to rely on their prior dispositions (see [Kosmidis and Xezonakis, 2010](#)). With regard to turnout, experiments have shown that a similar type of heterogeneity can be anticipated.

In general, the literature leveraging experiments discusses the causal impact of mobilisation, social pressure and normative/psychic benefits on turnout ([Gerber et al., 2008](#); [Panagopoulos and Francia, 2009](#); [Arceneaux and Nickerson, 2009](#); [Gerber and Green, 2000a, b](#); [Großer and Schram, 2010](#)). Some of these studies report that many of the parameters widely used in turnout models do not influence the decision-making of the electorate uniformly. A typical example is the heterogeneous impact of civic duty. Even though it is not superior to other experimental treatments like social pressure, studies have shown that when the voter homogeneity assumption is relaxed, some voters rely disproportionately to civic duty considerations. Gerber and Green, for example, found that unaffiliated voters seem to be more responsive to civic duty invocations compared to registered partisans ([Gerber and Green, 2000a](#)). A similar finding was reported in a laboratory turnout experiment ([Großer and Schram, 2010](#)). Großer and Schram found that "floating" voters placed larger weight on civic duty compared to their "allied" counterparts. The argument underlying the above findings relates to the inability of instrumental benefits to sway these voters. In effect, their calculus will be disproportionately informed by normative benefits, such as the sense of civic duty. This can be better understood if we consider 1) how electoral campaigns work and 2) how information flows relate to the decision to turnout.

The standard rational choice model assumes that all voters are fully informed about 1) the consequences of their actions, 2) the importance of their vote in deciding the final outcome, and hence, 3) the future behaviour of their fellow citizens and the electoral prospects of the competing parties. However, voters are not forecasters and they do not have the capacity to calculate complex probabilities about future actions (for the critique see [Bendor et al., 2003](#); [Bendor et al., 2011](#)). The only aspect of their informational capacity that bears some realistic merit, is that their utilities can be maximised through seeing their party winning the election. It becomes clear that the instrumental aspect of their decision process is largely conditional on whether they have a preference in the first place. In effect, a voter who is unable to declare a vote intention (i.e. *an undecided respondent*) will also be unable to

⁵ The 2005 and the 2010 BES (British Election Study) surveys asked their respondents: "If you do vote in the general election, have you decided which party you will vote for, or haven't you decided yet?" The available responses were 1. Yes, I have decided, 2. No, I haven't decided yet, 3. I will not vote, 4. Don't Know. Plausibly, the second and fourth categories correspond to the undecided voter. The empirical results reported below remain robust when the "don't know's" are excluded from the analysis. The distribution of these variables over the campaign can be found in the [Appendix](#).

⁶ The use of the term campaign messages does not constrain a message to be sent or received during a campaign. The mechanisms are the same for the rest of the electoral cycle. What [Norris et al. \(1999\)](#) would label as permanent campaign.

evaluate her calculus in an instrumental manner, at least, not to the extent that a decided respondent might be. As a result, the normative benefits will disproportionately inform the undecided respondents' calculus and this portion of voters will only vote if they think the must.

This ethical judgment (that citizens should vote) is the only uncontested campaign message amongst several. Research in strategic communications suggests that persuasive messages from competing parties tend to cancel each other out (Chong and Druckman, 2010). In their seminal study on negative campaign messages, for example, Ansolabehere and Iyengar found evidence pointing to the same direction with only partisans responding to negative campaign advertisements and non-partisans remaining unaffected.⁷ Arguably, while parties and candidates will keep on disseminating persuasive messages to convince the electorate, the 'civic duty' message will not cancel out and it will not be contested.

From the above literature, it is reasonable to expect that the impact of time can alter the weight placed on different considerations by decided and undecided voters. For decided voters, the campaign will only influence the parameters of their calculus that relate to the original party vote intention. Considerations like leadership traits, ideological dispositions and the influence of expressive partisanship are likely to be enhanced by the campaign (Gelman and King, 1993). For undecided respondents, on the other hand, the decision to turnout is a necessary step before a party choice. As a result, this decision will be strongly related to the dynamics of the electoral campaign. So long as instrumental and expressive benefits are inadequate to sway these voters, the only parameter of the calculus that can distinguish voting from abstention is the ethical judgment that people should vote. If a respondent is decided how to vote, her sense of civic duty will be also strong and significant in predicting turnout yet the campaign period will not alter the magnitude of the effect. For undecided citizens, on the other hand, their calculus of voting will be heavily influenced by this sense of civic duty as neither a) expressive benefits are strong nor b) their relative instrumental benefits.

The above argument evaluates the two dimensions on which heterogeneous weights might apply. The temporal dimension, on which the electorate accords different importance on considerations conditional upon the proximity of the election day, relates to the first hypothesis to be tested:

H1. The influence of civic duty on turnout will be uniformly larger the closer the election day looms.

This hypothesis represents the starting point before testing the main hypothesis of the paper. The main idea is that the campaign, in general, has the ability to direct the weights to civic duty and the 'election day deadline' proposition enhances its importance conditional upon chronological proximity. For H1, the temporal

component of civic duty is homogeneous across the electorate.

The second dimension relates to individual voters and the different weight they place on different considerations. To summarise this argument, the conceptual definition of an undecided respondent suggests that instrumental and expressive benefits are weak to motivate their turnout. So long as these benefits fail to inform their decision calculus, the consideration that will send them to the polls is the guilt from non voting. The less time they have until they make their final decision (i.e. the closer the election day), the stronger the causal weight they will place on their sense of civic duty. Linking this argument to H1, the expectation is straight-forward and is summarised in the following hypothesis:

H2. The temporal component of the influence of civic duty will be limited to undecided respondents.

To rephrase H2, the influence of civic duty will be increasing for undecided, while remaining stable for decided respondents. It is clear, however, that if both H1 and H2 are confirmed by the empirical models, then the uniform increasing influence of civic duty will be 'driven' by the undecided portion of the BES samples.

Although the main focus of this article is the varying impact of civic duty for decided and undecided respondents, a solid test of the theory should include a number of independent variables that can account for sociodemographic characteristics as well as the remaining parameters of the calculus of voting. These are being discussed in turn accompanied with some expectations about their impact on turnout.

2.3. Independent variables

In its simplest form, research on political participation has examined the influence of the usual suspects like gender, age and education (Fieldhouse et al., 2007; Miller et al., 1991; Wolfinger and Rosenstone, 1980; Franklin, 2004; Blais, 2000). Their relationship with turnout is considered an empirical regularity. For example, analyses of age cohorts and aggregate turnout have depicted that older citizens are more likely to cast a vote (Franklin, 2004). A similar consensus exists for the effect of education. More educated citizens are more likely to vote (Wolfinger and Rosenstone, 1980).

Political predispositions also explain an important portion in the decision to turnout. The principal predisposition is party identification, which is usually defined as an enduring self-image of being a supporter of a particular party (Campbell et al., 1960; Butler and Stokes, 1969). Identifiers are largely assumed to vote for their party in order to simply express their identities as 'Conservative', 'Labour', 'Liberal', 'Republican' or 'Democrat' (Brennan and Hamlin, 1998; Lomasky and Brennan, 2000; Schuessler, 2000). Unsurprisingly, the impact of partisanship on turnout should be strong and positive as it represents the expressive portion of the calculus.

Evaluations of leaders can be thought of as useful approximations of the benefits accrued from seeing the

⁷ This is not to say that undecided voters are the exact opposite of partisans. Undecided Partisans and Decided Non-Partisans might also exist (Kosmidis and Xezonakis, 2010).

preferred party winning the election. A reasonable strategy to estimate the impact of leaders would be to estimate pairwise differentials. The models, instead, employ a measure that simultaneously takes into account all the differential benefits. This can also be thought of as a measure of attitudinal ambivalence that it is generally believed to have a strong effect on turnout (Feldman and Zaller, 1992; Alvarez and Brehm, 1997; Steenbergen and Brewer, 2004; Lavine, 2001; Mutz, 2002). Contrary to measures that examine ambivalence within one attitude object, however, I examine ambivalence across leadership feeling thermometers.⁸

The empirical models also account for campaign mobilisation through an additive index of party efforts to contact voters. This contact takes the form of canvassing, knocking on citizens' doors, or telephone mobilisation efforts. The effects of those efforts have been documented in a series of articles and books (see for instance Jackson, 1996, 1993; Clarke et al., 2004; Hillygus, 2005; Bergan et al., 2005; Karp et al., 2008; Panagopoulos and Francia, 2009). For this paper, the expectation is that although party contact is a significant predictor of turnout, its impact does not have any temporal variation.

The final parameter to be considered is the driving force of the turnout paradox. In a formal model of turnout, the probability of casting a decisive vote (π) is defined by nature and hence it is not behavioural. The only way to mimic the π parameter is to employ the individual's self perception of being influential in politics. The main problem with this variable, often labelled as internal political efficacy, is related to measurement. Respondents are asked to report the influence they think they have on politics in general and not on the election outcome as rational choice models maintain. Though this is an extremely useful way to tap into a voter's sense of self importance, it does not capture the exact concept of pivotality. It is clear, however, that voters constantly receive both subtle and overstated messages invoking the idea that one's vote may change the result. In addition, undecided voters have their own treatment from the mass media when it comes to political efficacy. They are considered to be the target of campaign strategists as "they are going to decide the election outcome" (but see Panagopoulos and Francia, 2009).

3. Data & operationalisation

Theories and empirical models of political participation make static and cross-sectional predictions. In effect, these models generally fail to take into account the dynamics of decision-making. The hypotheses outlined above, therefore, can only be tested using data that measure attitudes at various points across the election campaign. The 2005, and the 2010 British Election Study surveys, feature the so-called rolling cross-section component (see Johnston and Brady, 2002; Brady and Johnston, 2006; Sanders et al., 2007). In RCS datasets, daily independent samples are

being gathered to account for temporal heterogeneity, while the campaign samples are being re-interviewed after the election. In effect, pre-election attitudes can predict post-election behaviour, i.e. turnout in the general election. Similar studies exist in Canada, New Zealand, the US, Germany and the Netherlands. These studies, however, cannot be used here as they either do not have a post-election wave or/and do not measure key predictors (i.e. civic duty) during the campaign rolling wave.⁹ In what follows, I present the operationalisation of the parameters that specify the empirical model along with the wording of the key survey items used for the test of H1 and H2.

Moving to the actual operationalisation of the sense of civic duty, the BES respondents were asked to report their agreement or disagreement with the following phrase: "Not voting in elections is a serious neglect of one's civic duty". The response category would offer a Likert type 5-point scale that ranges from "Strongly Agree to Strongly Disagree".¹⁰ It is important to mention that the readings of civic duty were gathered during the campaign and the variable has been recoded so that higher values denote a higher sense of civic duty. Though a similar 'civic duty' measure exists, this one if preferred as it describes the ethical judgment and the guilt from not voting. More importantly, the alternative measure only appears in the pre-campaign wave limiting the value of the dynamic analyses.¹¹

The key moderating variable was also gathered during the campaign. The models presented in Section 4 include interaction terms with a variable scoring 1 if the respondent is undecided and 0 if the respondent is decided. This is based on the BES question, "If you do vote in the general election, have you decided which party you will vote for, or haven't you decided yet?" which comes with four response categories, 1. Yes, I have decided, 2. No, have not decided yet, 3. I will not vote and 4. Don't Know. Categories 2 and 4 correspond to the undecided voters and 1 to the decideds. The third category was excluded from the analyses.¹² It should be noted that this question comes after a question that seeks to establish how likely the respondent is to turnout and vote and before the party choice (vote intention) question. Given the order of the questions it is reasonable to infer that responses 2 and 4 reflect indecision about party choice rather than turnout. The dependent variable (*Turnout*) is a binary measure that scores 1 if the respondent reported having voted in the election and 0 if she reported having abstained. The dependent variable was measured in the post election wave.

⁹ The only exception to that rule is the Canadian Election study in 2004. Unfortunately, the small number of undecideds does not allow for reliable analyses.

¹⁰ Plots depicting campaign variation in the duty measure across decided and undecided voters can be found in the Appendix.

¹¹ The other duty item measures the agreement to the following statement: "It is every citizen's duty to vote in an election".

¹² As mentioned previously, the results remain the same when the 'don't know's' are also excluded. The same applies when non-voters are included in the decided group.

⁸ The variable accounting for across objects attitudinal certainty is worked out as follows: .

Table 1
Description of variables from Equation (1).

Variable	Description	Panel wave
Turnout	Respondent voted in this election	Post-election wave
Age	Age of the respondent	Post-election wave
Education	Age completed education	Campaign wave
Gender	Male respondent (1)	Campaign wave
Civic duty	Sense of civic duty	Campaign wave
Political influence	Influence on politics	Campaign wave
(Attitude) certainty	Leader certainty	Campaign wave
Political interest	Respondent's political interest	Campaign wave
Party contact	Additive index of mobilisation efforts (Canvassing + Telephone + Knocking)	Campaign wave
PID	Party identification dummy (Pid = 1)	Campaign wave
Day of campaign	Day of the campaign (higher values correspond to days closer to election day)	Campaign wave
$Day \times X_i$	Interaction term between Day of Campaign and Predictors of Interest	Campaign wave

The entries in Table 1 describe the various types of turnout considerations. As it was discussed in previous sections, this article accounts for normative, expressive and instrumental considerations. While the two former are well represented by the sense of civic duty and party identification respectively, the consideration to account for instrumental benefits is more trivial. The obvious way to mimic the calculus of voting would have been to include ideological proximities in the right hand side of the turnout equation. Unfortunately, in both the 2005 and the 2010 BES studies the sample size drops dramatically if one includes the proximities between the three main parties and the respondents. To avoid the instability in the parameters I use feeling thermometers towards the party leaders. This variable effectively captures the differential benefits from voting one party rather than the other. The following section motivates the model choice and describes the empirical strategy to test the main hypotheses.

4. Statistical model & empirical results

Certain limitations make the empirical study of turnout generally difficult. One of the key problems is that of endogeneity. As many have argued, turnout models imply relationships that do not have clear causal direction. In cross-sectional designs this is a severe problem as vote recall is being reported in the same interview as the sense of civic duty, political influence or even party identification making the model predictions unreliable. This study, in contrast, relies on a pre-post panel design on which the pre-election wave has a campaign rolling component. Endogeneity, in other words, is less of a problem in such designs. To be sure, the essay is not interested in evaluating which variable explains most of the variance in the propensity to turnout, but rather the conditional impact of the variables.

To account for the temporal dependence of the effects I will create interaction terms of the pre-election measure of civic duty with the day of the interview. This method has been recently used to examine the campaign dynamics of economic voting (Matthews and Johnston, 2010). Since this study is not only interested in temporal dependence, the

specification is slightly more complex to simultaneously account for voter heterogeneity. The empirical model that tests the main hypothesis (H2) is presented below:

$$\begin{aligned}
 Pr(\text{Turnout}_t) = & \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Gender} \\
 & + \beta_4 \text{CivicDuty}_{t-1} + \beta_5 \text{PartyID}_{t-1} \\
 & + \beta_6 \text{LeaderCertainty}_{t-1} \\
 & + \beta_7 \text{PoliticalInterest}_{t-1} \\
 & + \beta_8 \text{PoliticalInfluence}_{t-1} \\
 & + \beta_9 \text{PartyContact}_{t-1} + \beta_{10} \text{Day} \\
 & \times \text{Undecided} \times \text{CivicDuty} \\
 & + \sum \beta_{11-k} \text{ConstitutiveTerms} + \varepsilon
 \end{aligned} \tag{1}$$

The key independent variable in Equation (1) is the sense of civic duty and its respective interaction with the day of the campaign and whether the respondent was decided or undecided. If there is a positive interaction coefficient (β_{10} on Equation (1)), the conclusion is that the influence of civic duty increases over the course of the campaign for undecided voters. To account for this three way interaction term, the model specification includes the three respective interactions ($Day \times Undecided$, $Day \times Duty$ and $Undecided \times Duty$) as well as the constitutive terms that make up the full three-way term.¹³

The empirical analyses are conducted separately for each election and the results from the analyses are reported in two steps. First I present the results from the turnout probit models and then visually inspect the marginal effects of the interaction terms. This strategy is employed because probit coefficients do not make intuitive sense and, second, because the interaction term coefficients and standard errors do not offer any substantive information regarding the temporal dependence of that effect over the course of the campaign (Brambor et al., 2006; Kam and Franzese, 2007; Berry et al., 2010). Before analysing the fully interacted models, I estimate a

¹³ More formally, $y = x \times z \times \omega + x \times z + x \times \omega + z \times \omega + z + x + \omega + \text{controls} + \varepsilon$.

Table 2

Probit models of turnout (sample estimates).

	(1) BES2005	(2) BES2010
Party identification	0.309* (0.166)	0.0337 (0.156)
Leader certainty	-0.015 (0.025)	0.036 (0.023)
Political influence	0.050* (0.030)	-0.060 (0.027)
Political interest	0.182* (0.096)	0.200** (0.093)
Age	0.018*** (0.002)	0.009*** (0.002)
Gender	0.045 (0.065)	-0.048 (0.052)
Education	0.081*** (0.023)	0.065*** (0.019)
Civic duty	0.238*** (0.061)	0.308*** (0.054)
Day of campaign	-0.012 (0.019)	-0.007 (0.016)
Day×CivicDuty	0.002 (0.003)	0.001 (0.002)
Day×PoliticalInfluence	-0.001 (0.001)	0.001 (0.001)
Day×PoliticalInterest	0.001 (0.005)	-0.001 (0.004)
Day×PID	-0.019** (0.009)	-0.007 (0.007)
Day×Leaders	0.003** (0.001)	0.0007 (0.001)
Constant	-1.58*** (0.367)	-1.10*** (0.349)
N	4359	10,925
χ^2	279.8	401.7
Pseudo-R ²	0.145	0.136

Robust standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

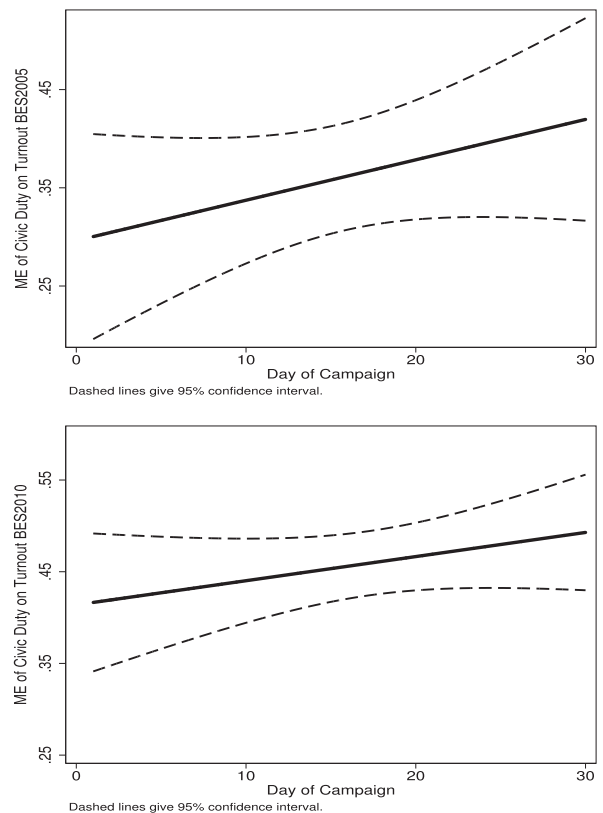
model that does not assume voter heterogeneity and only accounts for temporal dependence for key turnout predictors. This model tests H1 which evaluates whether the influence of civic duty is uniformly larger the closer the election day.

Table 2 presents probit coefficients from turnout models from Britain. None of the interactions exert a significant influence with the exception of the 'Day × PID' interaction for 2005. Since, however, the significance of interaction terms cannot be directly assessed from the output, I plot the marginal effects of civic duty on turnout over the course of the campaign. The plots provide a more formal assessment of H1.

Fig. 1 should be interpreted in the following way. So far as both the upper and the lower bounds of the confidence intervals are above the zero value on the Y-axis, there is a statistically significant effect. Since the hypothesis tested examines temporal dependence, it is also important to explore whether the effect is different across different values on the X-axis. For the 2005 and 2010 elections, we can infer that the influence of civic duty for the whole sample of respondents follows an upward trend. In both cases, however, the visual inspection of the relationship would only suggest a very modest difference across time points in the campaign. In other words, H1 is only weakly confirmed.¹⁴

Is that temporal independence uniform across different groups in the electorate? Should one expect that voters susceptible to persuasion (or, at least, reluctant to be persuaded until they were interviewed) to be placing the same weight on civic duty over the campaign? Tables 3

¹⁴ The values on the Y axes from the marginal effects figures should not be interpreted as probabilities or substantive effects. Although they are reliable in terms of significance testing, they do not offer any predictions about the actual effects. They are just the first derivative of the linear prediction and they do not vary between 0 and 1 as the coding of the dependent variable in probit and logit models. This is the case for Figs. 1, 4 and 5.

**Fig. 1.** Civic duty on turnout over the campaign (Sample estimates).

and 4 test that hypothesis for the 2005 and 2010 elections. The models control for party identification, political interest, political influence, party mobilisation, the leadership differentials and demographics. The latter set of variables are not fully interacted as the estimation procedure becomes more difficult due to collinearity.¹⁵

In Tables 3 and 4 the predictor of interest is the Day × Duty × Undecided interaction term. In 2005 this interaction fails to achieve conventional levels of statistical significance. The 2010 version of this variable, however, does and it is positively signed. The interpretation of that is that the effect of civic duty is increasing and it is statistically higher for undecided voters for most days across the campaign. Figs. 2 and 3 visualise the relationships for Tables 3 and 4 respectively.

The figures plot the marginal effect of civic duty on turnout as this varies from the first day of the campaign (approximately 30 days before the election) to one day before.¹⁶ The marginal effect is then stratified by decided and undecided respondents. Fig. 2 confirms the coefficient estimate from Table 3. Although the effect for undecided

¹⁵ Split sample models that include temporal interaction terms for all covariates corroborate the main results.

¹⁶ More practically, the plots depict the change in the probability of turnout after a standard deviation change in civic duty across days of the campaign.

Table 3
Probit models of turnout in Britain 2005.

BES2005	Coef.
Age	0.018*** (0.003)
Gender	0.045 (0.065)
Education	0.080*** (0.023)
Party contact	0.035 (0.051)
Party identification	-0.014 (0.088)
Leaders certainty	0.033** (0.013)
Political influence	0.038** (0.017)
Political interest	0.180*** (0.051)
Civic duty	0.254*** (0.079)
Day of campaign	-0.002 (0.016)
Undecided	0.064 (0.461)
Day×Duty	0.000 (0.004)
Duty×Undecided	-0.085 (0.120)
Day×Undecided	-0.027 (0.027)
Day×Duty×Undecided	0.010 (0.007)
Constant	-1.541*** (0.361)
N	4359
Deviance	-1183
Pseudo-R ²	0.145

Robust standard errors in parentheses.
***p < 0.01, **p < 0.05, *p < 0.1.

Table 4
Probit models of turnout in Britain 2010.

BES2010	Coef.
Age	0.010*** (0.002)
Gender	-0.062 (0.052)
Education	0.054*** (0.020)
Party contact	0.279*** (0.042)
Party identification	-0.133* (0.074)
Leaders certainty	0.042*** (0.011)
Political influence	0.024* (0.013)
Political interest	0.150*** (0.053)
Civic duty	0.312*** (0.073)
Day of campaign	0.007 (0.014)
Undecided	0.186 (0.445)
Day×Duty	-0.002 (0.003)
Duty×Undecided	-0.037 (0.107)
Day×Undecided	-0.057** (0.022)
Day×Duty×Undecided	0.011** (0.005)
Constant	-0.924** (0.365)
N	10,925
Deviance	-1888
Pseudo-R ²	0.155

Robust standard errors in parentheses.
***p < 0.01, **p < 0.05, *p < 0.1.

respondents (solid line) increases over the campaign it is not statistically distinguishable from decided respondents. The effect for the decided group is *temporally independent*.¹⁷ Fig. 3 that corresponds to the 2010 election, reveals that there is a temporal component in the impact of civic duty for undecided respondents. It further shows that the

¹⁷ It is worth discussing the negative coefficients on the effect of party identification on turnout. This obscure result is -most probably- resulted in by collinearity between party identification, decision to vote and party contact. Split sample estimations suggest that the coefficient is positive for decided voters and negative for undecided voters.

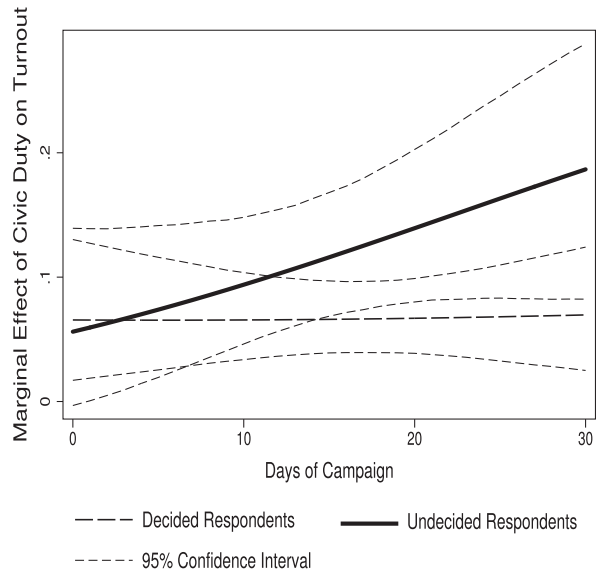


Fig. 2. Civic duty on turnout over the campaign (BES, 2005).

influence increases and is statistically different from the decideds' stable effect.

While both theory and intuition would place civic duty explanations high in the voting calculus, several criticisms about the endogeneity of civic duty warrant some additional analyses. Although the paper is not interested in disentangling the endogeneity issue, it does offer some tests that confirm the robustness of the reported effects. The main concern relates to the possibility that the increasing impact of civic duty for undecided voters is an artefact of the rolling feature of the data. In other words, readings of the civic duty measure closer to the election

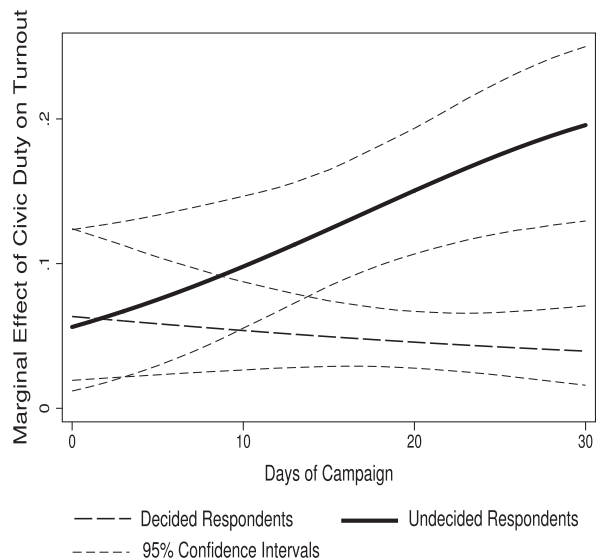


Fig. 3. Civic duty on turnout over the campaign (BES, 2010).

have a stronger impact on turnout because endogeneity increases with time.

To further examine that possibility the following simple test is performed. If readings of civic duty measured closer to the election are inducing the endogeneity in the estimates, then by substituting the duty readings with past measures (from the same respondents before the campaign started) the impact of duty should become stable for undecideds like it is for their decided counterparts. The BES campaign studies allow for such comparisons as they comprise of two wave panels before the election; a campaign wave ($t-1$ in time-series jargon) used in the reported analyses and a pre-campaign wave ($t-2$) that also maintains a rolling component. To illuminate whether the increasing impact of duty for the undecideds is robust, I will substitute the $t-1$ with the $t-2$ readings and then reestimate the models. The Undecided measure, the Days of Campaign counter and the remaining turnout considerations will still capture $t-1$ variation. The results from these estimations are visualised in Fig. 4 that presents the marginal effects of civic duty on turnout using the $t-2$ readings.

Fig. 4 suggests that the main findings of the study remain robust.¹⁸ Even with the inclusion of the pre-campaign (i.e. lagged) $t-2$ term, the effect of civic duty is strong and stable for decided voters but equally strong yet increasing for undecided. This is the case for both 2005 and 2010 and especially for the latter BES study, the influence for undecided voters remains statistically different compared to their counterparts.¹⁹ Moreover, if one had to theorise about which group is more likely to be affected by simultaneity, then the decided group should be expected to rationalise. To be sure, the stable (and plausibly modest) effect of civic duty for decided voters lends additional confidence to the results.

This is an important finding that helps us understand some of the dynamics present in election campaigns. Even though the dynamic influence of civic duty is at the core of the study, other important predictors are simultaneously examined. In Fig. 5, I report the temporally conditional marginal effects of a set of covariates for undecided samples in the data. The rows in Fig. 4 depict the two elections under investigation, while the columns display the marginal effect of Party Identification, Political Interest, Attitudinal Certainty and Political Influence on turnout over the campaign. In all cases the effect of party identification fails to meet the conventional levels of statistical significance while it follows an either stable or decreasing trend. The marginal effect of Political Interest is statistically

significant only for the British election in 2010. Its impact (significant or not) is stable and does not vary across days of the campaign.

The same takes hold for the impact of attitudinal certainty. In both the 2005 and the 2010 samples, the effect of leadership attitudes is indistinguishable from zero. Finally, the effect of Political influence (i.e. internal efficacy) on turnout is time invariant and insignificant. In other words, the campaign rhetoric about the importance of everyone's vote fails to exert considerable effects on the calculi of undecided voters.²⁰ The mere fact that civic duty is the only consideration looming larger for undecideds when the election is closer provides further support for the theoretical argument.

In sum, the empirical results confirm the main hypothesis of the article (H2). Notwithstanding, the results regarding the 2005 campaign warrant further discussion. In line with the theory, the impact of civic duty is increasing for undecided and remains stable for decided respondents. At the same time, however, there is no discernible difference between decided and undecided voters. Some speculation about the differences in the results between 2005 and 2010 could be derived. The electoral context and some details about the data can inform these speculations.

With regard to the latter, the number of observations in 2010 is much higher compared to 2005. As a result, the confidence in the statistical estimates increases and the differences are sharper. But context might play its role. The 2005 election took place with the Iraq war and the economy being prominent in the campaign agenda. The Labour party, that eventually won the election, placed a lot of resources to highlight its competence on managing the economy. The 2010 election, in contrast, was fought on different grounds. The two issues that dominated the agenda were the first set of leadership debates and particularly the overwhelming polling scores for the Liberal Democrats and Nick Clegg that gave rise to the discussion about the possibility of a Hung Parliament. This discussion was, indeed, heightened during the final two weeks of the campaign. It could be argued, therefore, that voters -of all parties- were keen to follow the campaign and be attentive. In other words, these high levels of attention might make the differences between decideds and undecideds sharper. All in all, however, the increasing impact of normative benefits is identical for the indecisive portions in both cases analysed.

5. Discussion

One of the key questions in political behaviour relates to the low levels of electoral participation in national and European elections. Many look for answers in the links between turnout and party identification (Heath, 2007), others on ideology and alienation (Adams et al., 2006), while others have focused on how mobilising efforts

¹⁸ The impact of duty remains significant for undecided respondents even when an endogenous lagged version of turnout is included in the equation. This is especially the case in 2010 where the effect is also -modestly- increasing over the campaign. I thank the two anonymous reviewers for making these suggestions.

¹⁹ Three points on Fig. 4. The Y axis does not report predicted probabilities. It reports the first derivative of the linear prediction and hence the Y axis does not vary between 0 and 1. Secondly, graphs similar to Figs. 2 and 3 have been produced and the main results are the same. In terms of style, finally, the plot for 2005 would be impossible to produce and interpret as the marginal effect for decided and undecided voters completely overlap. In any event, the increasing effect of civic duty on turnout for undecided voters is still evident.

²⁰ The analyses for Fig. 5 are based on split sample estimations that are available upon request. Note that for the decided group only few turnout predictors vary across days of the campaign corroborating the main conclusions of the study.

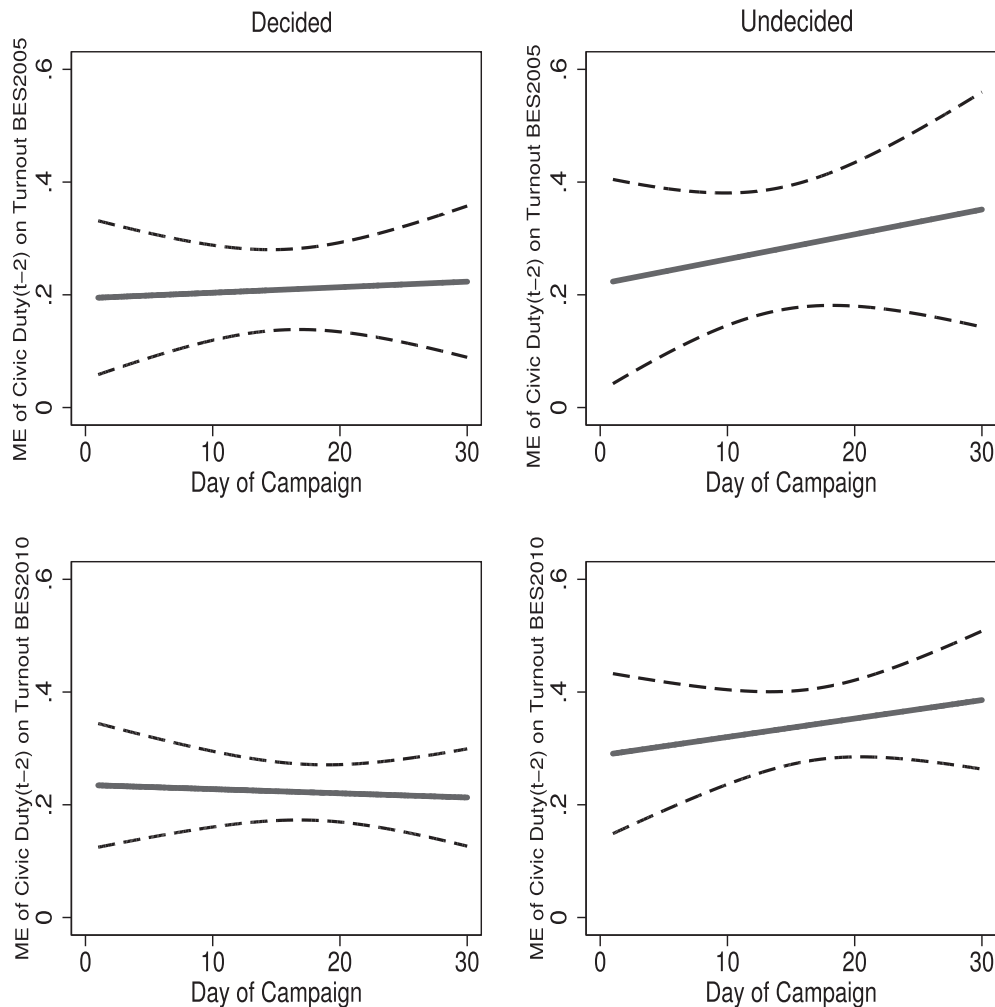


Fig. 4. The effect of lagged civic duty on turnout in Britain 2005/2010.

influence individual propensities to participate (e.g. Jackson, 1996; Hillygus, 2005; Bergan et al., 2005). The breadth of research on the topic reflects its importance for democracy and elections.

The Downsian foundations of participation have motivated an array of turnout models. From the starting point of infinitesimal pivotality, to the addition of the “*D*” term and the other expressive benefits parameters, rational choice theories of turnout have shed light to the phenomenon. At the same time, the inclusion of these variables in empirical models of turnout has become a common practice. This study seeks to identify two important dimensions of these models. First, it seeks to discern *when* do these variables matter more and for *which* voting groups.

With respect to voter heterogeneity, the key source of heterogeneity is whether a respondent is decided or undecided on how she is going to vote. Interestingly, the amount of research dedicated to this voting group is disproportional to the attention they attract from the media. This article puts forward a first test about their behaviour with respect to their propensities to turnout.

Besides examining how different they are from their decided counterparts, the results also show how campaign dynamics alter the weight they accord to important normative considerations.

The snapshot of two elections in the UK is a very good starting point to test these hypotheses. The RCS survey design provides an excellent opportunity to incorporate dynamics in these campaigns and assess how the impact of key predictors varies over time. Without question, rolling panel waves instead of rolling cross-sections would provide the optimal way to test similar hypotheses. Unfortunately, such data do not exist. Even if these datasets did exist, certain questions about the campaign cannot be answered directly. We can only assume that some psychological mechanisms are being activated over the course of the campaign. Despite the fact that election campaigns have similar “rules” and are being ran engaging similar methods, we might expect that the black box is not the same for different elections in different countries.

As with every paper that employs survey data, the study at hand comes with concerns and implications. The

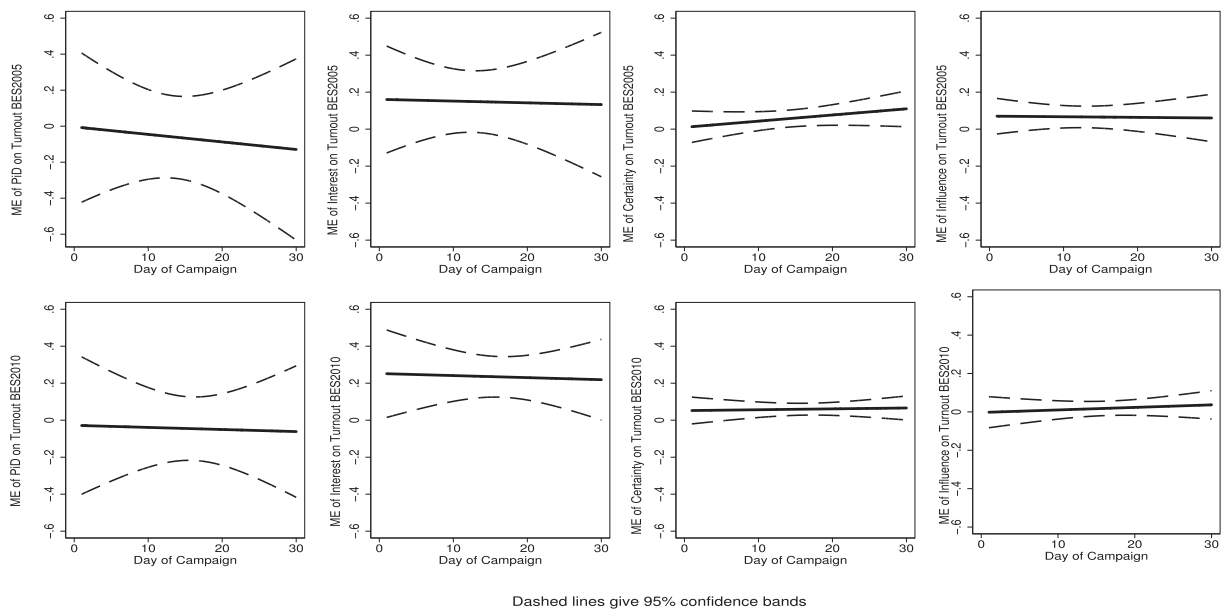


Fig. 5. Campaign dynamics for key turnout predictors for undecided voters.

measurement of the dependent variable is a pivotal concern. Many survey designers and some analysts have doubted the reliability of post-election vote recall (for an excellent discussion see [Karp and Brockington, 2005](#)). Indeed, surveys evidently overestimate reports of turnout. Even though this is a significant caveat, it does not affect the tests of the hypotheses. There is no plausible theoretical reason to believe that the differences between decided and undecided can be distorted due to this problem. To be sure, the expectation would be that undecided voters are less likely to overestimate their turnout. Fortunately, recent work on the topic has showed that the self-completing nature of Internet surveys minimises social desirability bias and produces comparably better measures of turnout ([Holbrook and Krosnick, 2010](#)).

Another point related to the data analysed here relates to the functional form of the reported effects. The models presented here make a strict assumption about how effects vary over the campaign. There are reasons to believe that actually time and decision-making are not linearly related. There are good theoretical reasons to suggest that the final week of the campaign, all actors will put disproportionate amounts of effort to persuade and be persuaded. Relaxing the linearity assumption would reveal important dynamic processes. I leave that for future research.

Similarly, the main independent variable (i.e. sense of civic duty) and its relation to turnout does not come without concerns. Intuitively, civic duty is a plausible parameter that resolves the “paradox” of voting. However, both in strict rational choice terms as well as under a -more relaxed- behavioural perspective, the proposition that voters participate in elections because they have a “taste for voting” does not seem satisfactory (see [Goldfarb and Sigelman, 2010](#)). If the benefits from voting are being

driven down by the minuscule pivotality, then much of the explanatory power of the calculus stems from the “D” term. The empirical results from the panel data and the various robustness checks demonstrate that concerns about simultaneity are not warranted.

The pre-post setup of the dataset can reassure that this is not a simple rationalisation but rather an intuitive process that can be attributed to the deadline imposed by the election day. The key idea behind this proposition is that while months (or weeks) before the election, voters still have time to evaluate the political alternatives and decide, the actual pressure to reach a decision tends to amplify the importance of normative benefits. The question remains however; How do those voters vote in the voting booth?

The research on undecideds’ actual political choices is premature and we only know little about which considerations play a stronger role in deciding about which party they will vote. In a recent paper, [Kosmidis and Xezonakis \(2010\)](#) found that in the 2005 UK election the undecideds relied on the economy to cast their votes. Work on the 2008 US Presidential election corroborates this finding by suggesting that campaigns tend to reinforce issue attitudes ([Henderson, 2010](#)). The economy is also the main consideration for ambivalent voters in the US ([Zaller, 2004; Lavine et al., 2012](#)). It is certain that more research is needed to understand how political choices are being made by voters who declare their inability to choose between parties.

Appendix

Descriptive plots

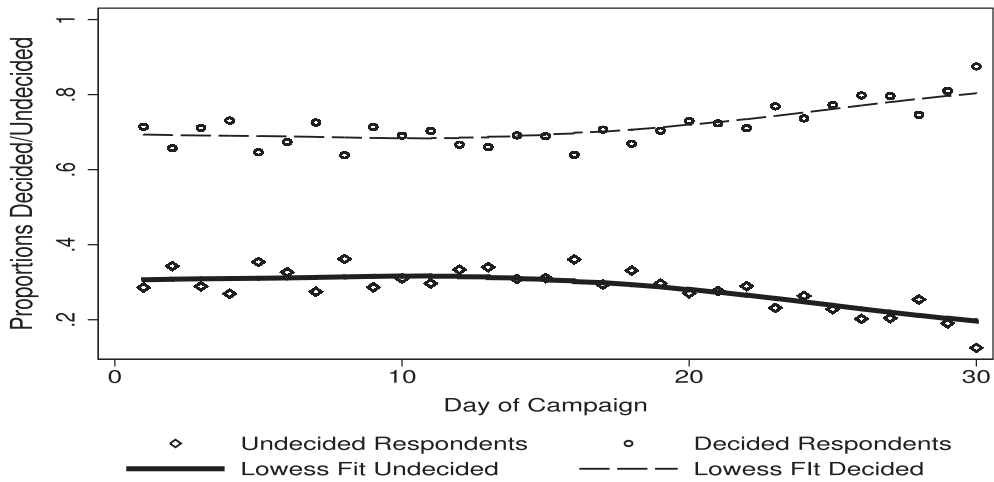


Fig. 6. Decided and undecided voters over the 2005 campaign.

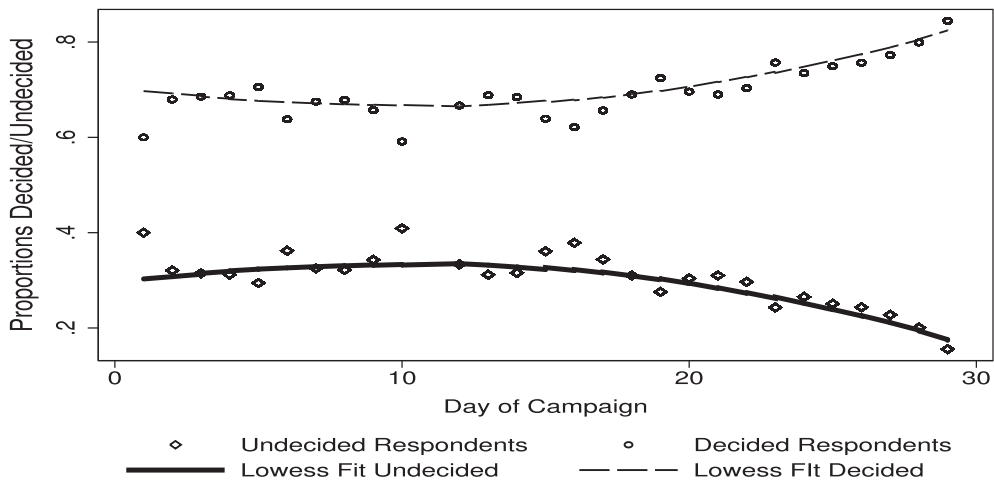


Fig. 7. Decided and undecided voters over the 2010 campaign.

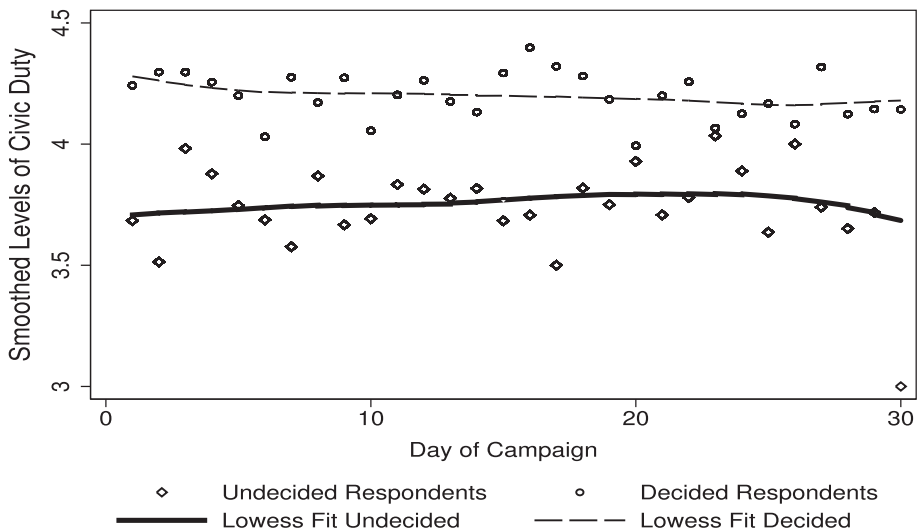


Fig. 8. Civic duty over the 2005 campaign for decided and undecided voters.

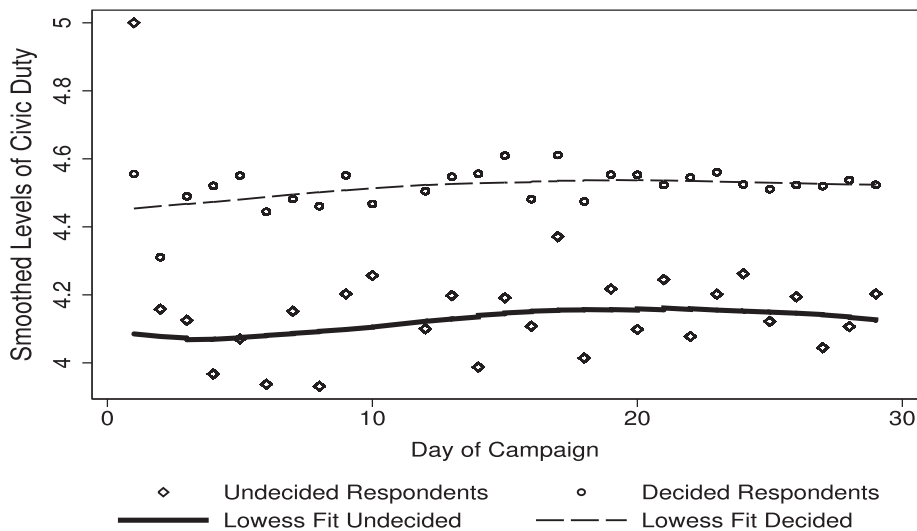


Fig. 9. Civic duty over the 2010 campaign for decided and undecided voters.

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