Who learns in information rich contexts? The informative effects of the 2015 Spanish electoral campaign

Monica Ferrín

Research Fellow, Collegio Carlo Alberto.

Piazza Arbarello 8, 10122 Torino, Italy

monica.ferrin@carloalberto.org

Marta Fraile (Corresponding author)***

Permanent Research Fellow at CSIC (Institute of Public Goods and Policies, IPP)

C/Albasanz, 26-28. Madrid 28037 (Spain).

marta.fraile@csic.es

Gema M. García-Albacete

Assistant Professor at the Department of Social Sciences, Carlos III University of Madrid

C/ Madrid 126, 28903 Getafe (Madrid), Spain

Phone: +34 91 6249599

gemamaria.garcia@uc3m.es

Word count: 8100

Abstract

This article analyzes the informative effects of an election campaign in a quasi-experimental scenario where new political information entered the competition, given the emergence of two new parties. Using an exhaustive measure of political learning, and thanks to the use of panel data, it shows that at least some of the otherwise 'inattentive citizens' were able to learn about politics during the Spanish general election campaign in December 2015. This group predominantly comprised women, the poorly educated, and especially those with low motivation. From all the media outlets analyzed here, we conclude that it was the information disseminated on TV infotainment that was most successful in promoting learning to a section of the typical 'have-nots'. Significantly, TV infotainment contributed the most to learning facts about the new political parties entering the electoral competition.

Keywords

Election Campaigns, Knowledge Gaps, Learning, Infotainment, Spain

Published at International Journal of Press Politics: doi: https://doi.org/10.1177/1940161219832455

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: We acknowledge the financial support of the Spanish Ministry of Science and Innovation (Grant Numbers CSO2012-32009 and CSO2016-75090-R]).

It is now beyond refute that the media environment has been transformed in Western democracies (Williams and Delli Carpini, 2011). While there has been a general decline in audiences for traditional media such as television or printed newspapers, there are growing alternative ways for citizens to engage with the news (Shehata and Strömbäck, 2018). These range from greater exposure to political news in digital and social media to the rise of alternative television program formats, where the distinction between news and entertainment blurs. These changes have notably increased media options, and increased concern among scholars about widening societal knowledge gaps (Prior, 2007; Shehata et al. 2015).

Citizens who are male, highly educated, and motivated, have higher levels of political knowledge than their female, lesser-educated and -motivated, counterparts (Delli Carpini and Keeter 1995). Electoral campaigns might in principle contribute to increasing opportunities to learn about politics by opening up new possibilities through the extensive diffusion of political information. However, not all citizens are equally attentive to media content. According to the knowledge gap hypothesis (Tichenor et al. 1970), those with high socioeconomic status or who are politically motivated acquire media-transmitted information at a faster rate than the less motivated. Consequently, electoral campaigns may only facilitate political learning among the most attentive and, therefore, exacerbate the existing gap in political knowledge between the ‘news seekers’ and ‘news avoiders’ (Aalberg et al. 2013; Blekesaune et al. 2012; Strömbäck et al. 2013).

Although previous studies have tested the hypothesis of the 'rich becoming richer' in the context of electoral campaigns, their findings have not been conclusive. This article contributes to existent scholarship by, first, analyzing the 2015 Spanish General Election, in

which two completely new parties competed for, and won, a large vote-share. This implies a quasi-experimental research design, as knowledge gains are tested during a campaign where (in principle) all respondents had something new to learn. Second, while prior contributors have predominantly focused on the analysis of knowledge growth, we change the focus to who learns and how learning occurs during the campaign. To answer these two questions, we first concentrate on the profiling of the learners, the resistant have-nots (who do not learn) and the haves (who already knew). We then explore the type of media outlet that is most effective in promoting learning among the 'have-nots'. Specifically, we investigate the informative role of traditional media such as newspapers and mainstream television news versus TV infotainment.

Findings show that there is an increase in the percentage of people providing correct responses. However, its size is small (at around 3 percent on average) and depends on the kind of knowledge upon which we focus. The novel focus on the profile of the learners, the resistant have-nots, and the haves provides evidence that the chances to learn about politics during the course of the campaign are greater for women, for citizens with low levels of education, and for the politically apathetic. Finally, infotainment seems to be particularly effective in promoting learning among a group of have-nots.

Learning about politics during electoral campaigns

Electoral campaigns involve a lot of information flow as rival parties and politicians compete for attention and coverage across all media sources. The massive amount of information becoming available to the public during electoral campaigns reduces the costs of acquiring information and therefore provides citizens with an opportunity to learn about politics (Delli Carpini et al. 1994; Holbrook 2002; Freedman et al. 2004).

However, even though learning opportunities increase during election periods, not all citizens are equally attentive to the news. Who does actually learn during the course of a given campaign? The extant literature offers inconclusive findings in this regard. Some studies report that knowledge during campaigns increases more among the 'information haves', resulting in an *increase* in knowledge inequalities (Moore 1987; Nadeau et al. 2008; Valentino et al. 2004); while others find that at least some of the knowledge gaps *decrease* during these periods (Arceneaux 2006; Hansen and Pedersen 2014; Kwak 1999; McCann and Lawson 2006; Ondercin et al. 2011). A further study shows that knowledge gaps vary during the course of the campaign and are at the smallest when the political information provided by the media is especially intense – such as after election debates (Holbrook 1999).

We propose that the special information-rich context of an electoral campaign will contribute to a decrease of the knowledge gaps reported in previous studies because information is so widespread that it reaches less knowledgeable citizens. Previous research has mainly focused on the haves in comparison to the have-nots, showing that the haves are more likely to be men, highly educated and interested in politics. We focus instead in the profile of the learners and compare them to the haves. If knowledge gaps are reduced, we should observe that in comparison to the haves, learners are more likely to be women, less educated and less interested in politics (H1).

Regarding the 'how-question', we argue that exposure to TV infotainment is key. While exposure to other sources of political information such as newspapers or internet based platforms is still biased towards the highly educated and/or motivated citizens, television is the most widely used by citizens, even those normally considered inattentive (Aalberg et. al

2013; Blekesaune et al. 2012; Eveland and Scheufle 2000; Shehata and Strömbäck 2011 and 2018; Seshata et al. 2015; Strömbäck et al. 2013).[i]

Political learning is often characterized by scholars as the product of a motivated action (Eveland et al. 2003; Graber 2001), whereby individuals decide first to inform themselves, and then choose the media source that best fits their personal interests. However, learning does not always imply a particular motivation; it can be the product of accidental or unintended exposure to media (Shehata et al. 2015; Wonneberger et al., 2012). Unintended exposure can occur because television viewers develop media use habits; increased availability; watching preceding or successive programs on the same channel; or even watching with co-viewers (LaRose, 2010; Sehata et al. 2015; Wonneberger et al., 2012). When television viewing is accidental, information can inadvertently be stored in individuals' memory, simply because it becomes available to them.

An electoral campaign increases citizens' likelihood to be inadvertently exposed to political information during prime time television broadcasts and especially in television shows of different formats. Previous research has extensively examined the role of TV news exposure on the likelihood to learn, showing, for instance, that public broadcast services increase citizens' likelihood to learn to a larger extent than commercial channels, and particularly during first-order general elections (Strömbäck, 2016). Less attention has been paid to infotainment. TV infotainment is widely exploited during electoral campaigns, and provides the possibility of citizens familiarizing themselves with candidates, even if the focus is on personal details such as their cultural tastes, their favorite sports, or their family life.

Defining *infotainment* is not easy, given the lack of agreement among current scholars about where to place the line separating news from entertainment (Williams and Delli

Carpini, 2011). TV infotainment is normally aired during prime time (but also during mornings) and frequently enjoys a high audience. Content-wise, its main distinctive feature is the fusion of information and entertainment (Brants and Neijens 1998). The typical infotainment television program in an electoral campaign is one hosting a given political candidate. The presenter normally has an informal, empathetic and easy going conversational style - often with a humorous punch-line - and promotes the participation of both audiences and the interviewed candidate (Otto et al. 2017).

It has been demonstrated that the appearances of politicians in TV infotainment shows promote political awareness among the typical inadvertent citizens, especially in the context of an electoral campaign where the 'information poor' are less likely to miss the constant flow of political news coverage (Baum and Jamison 2006; Harrington 2008; Hollander 2005). Hollander (2005) evidences the association between exposure to late-night shows and comedy programs and viewers' recognition of campaign information in the 2004 US elections. Other scholars, however, have argued that infotainment might be more effective for learning about candidates' personality traits (Moy et al. 2005), rather than for increasing specific knowledge about political issues. Adding to this literature, we propose that infotainment provides a particularly suited channel to learn during the campaign due to accidental/inadvertent exposure to political information. We expect that, in comparison to the have-nots, learners are more likely to watch infotainment programs on TV (H2).

The Spanish election campaign of December 2015: A quasi-experimental design

We use data from the 2015 Spanish General Election,[ii] which offers an exceptional opportunity for testing processes of political learning. Previous researchers have lamented the difficulty of addressing knowledge gaps during election campaigns, because most do

not introduce new information, but rather disseminate old information with greater intensity (Hansen and Pedersen, 2014). In this election, however, two *anti-establishment* parties, *Podemos* (Ps) and *Ciudadanos* (Cs), entered the national arena for the first time and together obtained 34.6 per cent of the vote; marking the end of the two-party system that had existed in Spain since 1978 (Orriols and Cordero 2016). Each new party competed for the vote on contrasting sides of the ideological spectrum and against the two main traditional parties, the *Partido Socialista Obrero Español* (PSOE) and *Partido Popular* (PP) (Ramiro and Gomez 2017). The abrupt appearance of the two new parties intensified election campaign debates against the mainstream political parties (Lancaster 2017). Most importantly, these political parties implied the diffusion of new information regarding new political candidates and their policy proposals. This quasi-experimental situation provides us with the unique opportunity to conduct a conservative test on the hypothesis that the campaign contributes to reducing knowledge gaps. Under these circumstances even those who 'already knew' had the opportunity to learn something new, and thus become richer in knowledge; thereby increasing the knowledge gaps.

The novelty, interest and uncertainty about the election, together with the new political actors, led to intense media coverage of the campaign and the introduction of new media formats. The general increase of infotainment on both public and commercial Spanish television channels is well documented (Baviera et al., 2017; Lopez-Rico and Peris 2017). For example, infotainment engaged a prominent position on the programming offer of the main Spanish mainstream television channels with a total weekly time devoted to this genre of around 154 hours by 2013 (Berrocal et al. 2014: 94). The 2015 electoral campaign strengthened the impact of infotainment. Even before the election, Podemos had initiated a communication strategy of participating in TV infotainment. Pablo Iglesias, Podemos'

main leader, started to appear in minor media channels and later on participated regularly in TV infotainment shows with large audiences (Casero-Ripollés et al. 2016). The same strategy was immediately adopted by all the other political parties when the election campaign started. The dynamic of television appearance became extremely intense during the 2015 election campaign, and the generalized presence of political candidates in pure infotainment programs produced a new media phenomenon (Baviera et. al. 2017; Lancaster 2017: 926; López-Rico and Peris-Blanes, 2017).

Learning and its operationalization

Most studies use the concepts of political knowledge and learning indistinctly, instead we concentrate on the concept of learning by paying attention to the profile of those citizens that learn during the campaign. Until now, three main empirical strategies have been used to estimate learning during electoral campaigns at the individual level. First, some have considered the change in political knowledge associated with variations in citizens' levels of exposure to different media outlets (Dilliplane et al. 2013; Shehata and Strömbäck, 2018; Shehata et al. 2015). A second group of scholars has used rolling cross-sectional survey data to track changes in respondents' political knowledge across diverse weeks (Edgerly et al. 2018; Ondercin et al 2011). Finally, others have used autoregressive estimation to model the changes in knowledge between t2 and t1, controlling previous knowledge in t1 as an independent variable (Hansen and Pedersen 2014; Van der Meer et al. 2016). While these three approaches have been effective in estimating knowledge gains during the election campaign, they tell us little about who learns (and the knowledge gaps), and which type of media outlet is most effective in promoting knowledge amongst the have-nots. Our

empirical strategy departs from previous studies in two aspects: the way learning is operationalized; and the measurement of the dependent variable.

Regarding the former – the way learning is operationalized –we build on Hansen and Pedersen's criticism on how knowledge gaps have been dealt with in past research. According to these authors, "analyses of knowledge gaps, or other gaps, should be bivariate; controlling for other variables is simply misleading because in real life, different groups have different initial levels" (2014: 318). Multivariate analyses of the type described above are informative about the impact of gender, political interest and/or education on learning, "all else being equal" (Hansen and Pedersen 2014: 315). However, these estimations disregard that men, the highest educated, and the politically interested tend to have higher levels of knowledge when the campaign starts than women, the lowest educated, and the uninterested. This might potentially bias the estimation of the extent to which the gaps decrease/increase during the campaign.

To deal with this limitation, we combine the information of the two panel waves and classify the respondents into three groups defined both by their initial level of knowledge before the campaign started (t1), and by their knowledge during the election campaign (t2) (for a similar strategy see Jerit 2009). We are therefore able to contrast the profile of three types of respondents: 1) respondents who already knew in t1 about an item (the *haves*); 2) respondents who did not know about an item either in t1 or in t2 (the resistant *have-nots*); and 3) respondents who did not know about an item in t1, but learned in t2 (the learners).[iii] This strategy has several advantages as compared to previous studies. Firstly, it allows us to consider respondents' initial levels of knowledge (yet without incurring in regression to the mean), as well as providing a detailed profile of the learners during the campaign. Consequently, we also discard potential ceiling effects derived from the fact that the haves

depart from high levels of knowledge before the campaign starts. Finally, this strategy admits multivariate analysis: it is therefore possible to test the role of media exposure in learning.

Regarding the measurement of the dependent variable, we depart from previous studies in that we do not operationalize learning by means of a single scale. The use of political knowledge (henceforth PK) scales has been criticized as a valid measure of what citizens know about politics (Lupia 2016), as PK questions are neither randomly selected nor representative of all the possible pieces of existing information (even in an electoral campaign context). Considering that the average citizen has different interests and preferences, the choice of PK questions might randomly influence estimated levels of knowledge for different groups of the population, which imply a potential bias of the PK scales. Lupia's criticism is reflected empirically, as knowledge items tend to produce different PK scales for different groups of respondents because of differential item functioning (see Lizotte and Sidman 2009). Put differently, the same PK item varies in difficulty and capacity to discriminate for each group of respondents. For example, knowing about a local policy might be easier for women and discriminate very little between knowledgeable and non-knowledgeable women, as compared to men, because women tend to be interested in local affairs (Coffè 2013). This is especially problematic in the study of knowledge gaps, since the different groups are a priori defined by different abilities, resources and motivations to interpret PK questions. Creating a scale not equivalent for all respondents is therefore likely to bias the results of any estimation.[iv]

In order to address this issue we measured learning by means of a large set of items (29) that were repeated (with exactly the same wording and format) in the two waves (details below). The item selection builds on previous studies in political learning during electoral

campaigns, and is aimed at including all different types of survey items used to date. First, we included four items that measure knowledge about the functioning of the political system (as in Nadeau et al. 2008), such as the number of years between elections; or the number of MPs. Second, respondents were asked to position the five main parties competing in the election (Partido Popular - PP, Partido Socialista Obrero Español - PSOE, Podemos - Ps, Ciudadanos - Cs, and Izquierda Unida - IU) on the left-right scale (as in Hansen and Pedersen 2014). Third, four questions about party positions on several policy issues were included (as in Craig et al. 2005). Fourth, we included a selection of nine political candidates whose pictures the respondents were asked to link to the party they belong to. Finally, given the relevance of the topic during the campaign, knowledge about two economic indicators – unemployment and inflation – was also introduced (as in Arceneaux 2006). In sum, our measure of knowledge is exhaustive, including facts about the functioning of the election, candidates, and party positions, both on specific policy proposals and on the ideological scale. Table 1 summarizes all five knowledge domains covered in this study together with the 29 knowledge items employed to measure them.[v]

Table 1 about here

Data and Empirical Strategy

To test the two hypotheses, we use an online panel survey on a representative sample of the Spanish population during November-December 2015. The first wave of the panel was fielded 11 days before the election campaign officially started,[vi] November 23 to December 3. The second wave of the panel was fielded during the last week of the election campaign: 11 December to 24 December (only 31 respondents – 2 percent – replied after December 20). 1,501 people were interviewed in the first wave; of these, 1,237 replied to the second

wave (82 percent). Respondents were recruited by invitation according to a number of quotas (sex, education, age and region). Information about the sampling procedure and the representativeness of the sample is available in Box 1 in the Online Appendix.

Each of these 29 items is coded 1 if the response is correct, and 0 if the response is 'Don't know' (DK) or incorrect. As for the items asking for the position of the political parties on the left-right scale (0-10) – each party-pair comparison was coded (a total of 10 party comparisons). Each correct party-pair comparison was coded 1 (for example, positioning Podemos to the left of PSOE), while it was coded 0 if DK or incorrect (for instance, positioning Podemos to the right of PSOE). The correct ordering of the parties was established by the average placement of each party made by all respondents.

As mentioned above, we consider the response to each of these items separately. This is possible by stacking the data. The resulting dataset counts 35,873 observations (29 knowledge items x 1,237 respondents). These observations are not independent, but are nested within each individual respondent, which gives us two levels of analysis: the answer to each of the knowledge items (level 1) and the respondents (level 2). With this empirical strategy, we are able to avoid the use of a knowledge scale that is not comparable across the three different groups of the population (the haves, the have-nots and the learners), and yet at the same time it allows us to analyze all the information revealed by the 29 items simultaneously (for a similar strategy see Lizotte and Sidman 2009 and Van der Meer et al. 2016).[vii]

Given the two-level structure of the stacked data, we estimate through two-level multinomial logistic regression with shared random effects. The dependent variable takes value 0 for the learners (incorrect/DK responses in t1 and correct responses in t2); value 1 for the resistant *have-nots* (incorrect/DK responses both in t1 and t2); and value 2 for the

haves (correct responses both in t1 and t2). The reference category is the learners. Knowledge gaps are defined by considering the three main sources of inequality referred to in previous literature: gender (women=1), levels of education (reference category: low), and motivation (politically interested=1).

In a later step we consider respondent's declared level of exposure to different media outlets, to test for the impact of traditional media vs. infotainment on learning. We distinguish three types of media sources. Exposure to mainstream TV news measures the average frequency a respondent watches TV news on any of these channels, from 0-no exposure to 7-everyday. Newspaper readership is operationalized as the average frequency a respondent reads any of the main Spanish newspapers, from 0-no exposure to 7-everyday. Finally, two alternative variables are used to measure exposure to infotainment. First, the average frequency (in quartiles) of watching a list of talk shows. A second specification distinguishes between two types of infotainment: 1) 'standard infotainment', those programs that primarily focus on social and political news, and 2) 'occasional infotainment', programs that do not normally discuss politics but invited politicians during the campaign and talked mainly about personal issues (López-Rico and Peris-Blanes, 2015; Baviera et al 2017).[viii] The two variables provide the average frequency (in quartiles) that the respondents watch infotainment from each of the two types. All questions about political motivation and exposure to different media sources were located at the beginning of the questionnaire in t1, so as not to contaminate expressed levels of motivation with knowledge items (for a similar strategy see Shehata and Stömbäck 2018).

Additionally, we controlled for both age of the respondents and the number of days elapsed between the answers provided in wave 1 and wave 2.[ix] This is to be sure that learning does not occur artificially, as a consequence of participating in the survey. We would expect that

if a respondent had learned as a consequence of having taken part in wave 1 of the survey, the probability that s/he is classified as a learner will be greater the lesser the number of days in between the two waves. In other words, if there are any survey effects, we would expect a positive and significant coefficient in tables 1 and 2 in the Appendix, indicating that the probability of belonging to the group of learners is higher the less the number of days in between the two waves as compared to the probability of belonging to any of the other two groups.

Findings

Figure 1 shows the percentage of correct answers for each item and suggests that there is a great deal of variation in how much people know at the beginning of the campaign on each topic and across items. Respondents are particularly knowledgeable about the position of the political parties on the ideological scale before the campaign begins. For example, 88 percent of respondents knew about the position of the PP relative to that of IU in t1 (two of the traditional parties that are the most distant on the ideological spectrum). In contrast, respondents' initial knowledge about policy issues and candidates is much lower. Less than 10 percent of respondents were able to identify Ciudadanos' two candidates from one of the new political parties (Rivera de la Cruz and de la Torre); and less than 15 percent of respondents knew about the policy proposals of the two old parties (PP and PSOE) before the election campaign started.

Figure 1 about here*

In addition, the high degree of variance in knowledge at t1 confirms the advantages of using an extensive set of items to measure knowledge gains. The 'margin to learn' during the election campaign differs considerably from one issue to the other. If we only concentrated on the party position on the ideological scale, we might conclude that there

has been a notable decrease in knowledge gaps during the election campaign. However this decrease could well be the result of ceiling effects: since the highest educated and motivated are likely to know about some of the issues before the election campaign starts, a decrease in knowledge gaps could simply reflect the fact that the *haves* do not have any more room for learning. In short, having an exhaustive measure of campaign learning is crucial to identifying the informative effects of electoral campaigns.

As for learning, that is, the difference in the percentage of correct answers between the two waves, black bars in Figure 1 show that on average respondents learned about all items but one (one of the candidates from the PSOE, Irene Lozano). However learning varies substantially across topics. For instance, 8.2 percent of respondents learned about the leader Garzón (IU) from t1 to t2, while knowledge about the candidate Isabel García Tejerina (PP) increased as little as 0.2 percent. Learning over the campaign seems to be somehow related to the level of controversy about an issue: one of the hottest topics of the campaign was the economy and the two questions included are among those respondents learned most about during the campaign (7.8 percent about unemployment and 5.9 percent about the Consumer Price Index). These findings are confirmed when looking at the distribution of our dependent variable across items and at the individual level. Table 4 in the Online Appendix shows that on average the percentage of learners is higher for the two economic items. If we consider the average percentage of respondents correctly answering each of the items in t1 as an indicator of the initial level of difficulty of the items, the latter does not appear to be related to the propensity to learn. For example, the percentage of learning about one of the easiest items –the position of Podemos vs. PP – is 5.4 percent, similar to that of one of the most difficult items – Ciudadanos' candidate Rivera de la Cruz, 5.2 per cent. Overall

learning, although unimpressive (3.4 per cent on average), adds to extant previous evidence supporting the informative effect of election campaigns.

As for who learns, we now turn our attention to identifying the profile of the citizens who learned during the electoral campaign. Table 1 in the Appendix summarizes the findings from the two-level multinomial logit estimation of the chances to be part of one of the three groups of respondents, the haves, the learners and resistant have-nots. The three sources of inequality are included in the estimation as independent variables: gender, education, and political interest; plus the two aforementioned controls (age and time between the two waves). The category of reference is the learners.[x]

We rely on the graphic visualization of the results to summarize the main findings. Figure 2A shows the predicted probability of being part of the group of those who learned versus the group of the haves by the three main sources of inequalities: gender, education, and, motivation. Figure 2B shows instead the predicted probability of being part of the group of those who learned versus the group of the resistant have-nots (who did not learn), by these three same variables. These estimates are calculated on the basis of the equations reported in Table 1 in the Appendix.

Figure 2A about here*

Supporting H1, Figure 2A shows that in comparison to those who already knew, the probabilities to learn are higher for those presenting lower levels of education, those who declare themselves not interested in politics, and for women. These differences in the chances to learn are substantive. Those with primary education are 10 percentage points more likely to be among the group of learners than those who have gone to university (0.23 versus 0.13). The non-politically interested are also more likely to belong to the group of learners than those who are interested (0.22 versus 0.16). Finally, women are four

percentage points (0.17 for men versus 0.21 for women) more likely to learn during the campaign than men.

Figure 2B about here*

The comparison between resistant have-nots and learners suggests that both share a very similar profile in terms of education, gender, and motivation: differences in the probabilities of learning versus not learning are of a very small size across all categories of education, motivation and gender.

Figure 2A then suggests that the campaign effectively provided an opportunity to ameliorate standard gaps in political knowledge: respondents who learned during the campaign had lower levels of education, were primarily women, and were less politically interested than those who 'already knew' before the campaign. Our second question refers to the 'how'. To explore how otherwise uninterested citizens learned during the campaign we add respondents' declared exposure to different media outlets to previous estimations. Table 2 in the Appendix presents the results. The predicted probabilities of being part of the group of the learners versus the group of the haves are illustrated in Figure 3A, the comparison between learners and the have-nots in Figure 3B. In general, following the mainstream TV news does not help us distinguish between the three groups of respondents, which is consistent with previous studies showing that watching television is not associated with any specific socio-demographic profile in Spain (AIMC 2015). Figure 3A also provides evidence of the well-established association between the type of media consumption and political knowledge: the haves are significantly more likely to be exposed to newspapers and infotainment than the learners (see also Table 2 in the Appendix).

Figures 3A and 3B about here

As for the comparison of the learners vs. the resistant have-nots, only the exposure to infotainment seems to matter (see Figure 3B). Confirming H2, the chances of being part of the group of respondents who learned during the campaign in comparison to those who did not learn are substantively larger for respondents who watched infotainment often. On average, those who declare a low level of exposure to infotainment (in the first quartile) are five percentage points less likely to learn during the campaign than those declaring a high degree of exposure to infotainment (for example, in the third quartile): 0.13 versus 0.18 respectively. Given the relevance of infotainment during the December 2015 election, the campaign seems to have provided some of the have-nots with an instrument to learn about politics. Figure 3A and 3B also show that the type of infotainment (either standard or occasional) does not contribute to the distinction between the three profiles of electors but rather it is the frequency with which they are exposed.

To make the most of the quasi-experimental design provided by this election, we have replicated the estimations for two types of knowledge questions: those that refer to new parties and those that refer to old parties (see Table 3 in the Appendix). Figure 4 shows the probabilities of falling into the category of the learners, in comparison to the resistant have-nots, according to infotainment exposure and by type of information (old vs. new parties). The results suggest that infotainment is especially useful for learning 'new' information. The graphs on the left hand side of Figure 4 show a significantly larger increase in the probabilities of learning about new parties the more frequent the exposure to infotainment. On the contrary, changes in probabilities of learning about old parties are not related to respondents' exposure to infotainment. We discuss the implications of these findings in the last section.

***Figure 4 about here**

Conclusion and Discussion

This article takes advantage of the exceptional circumstances of the 2015 Spanish General Election and provides evidence that, even when new information is available to the haves, the campaign contributes to reducing knowledge gaps. The overall size of the informative effects appears modest, and seems to depend on the kind of knowledge upon which we focus. Still, on average, around 10 percent of the total respondents learned about the items included in our study. If we consider the length of the campaign in Spain (15 days), the size of its informative effects is far from small.

The present study engages with the ongoing debate about the study of the informative effects of electoral campaigns and makes two major contributions in terms of research design. First, we used an exhaustive measure of political knowledge that integrates state of the art claims on how to measure this theoretically complex concept – covering knowledge about how the election works and the state of the economy; knowledge about the candidates; and knowledge of party position, both on specific policy proposals and on the ideological scale. One implication of our results is that the type of items used to measure campaign learning is at the source of the inconclusive findings of prior studies on knowledge gains in electoral campaigns. Consequently, and from a methodological point of view, we conclude that a valid estimation of campaign learning requires the use of measures covering a variety of content discussed during the campaign, contrary to what many previous studies do. Second, this article provides a strategy to improve the fit between the concept of learning and its operationalization. We systematically identify the group of learners, and compare them to the haves and the resistant have-nots. The comparison provides insights on how the information disseminated during the course of the

electoral campaign reaches some of the citizens who are typically inattentive to politics. As theorized above, the findings provide support for our expectation that the chances to learn are higher among those exposed to infotainment during the election campaign. As is the case in the US (Baum and Jamison 2006; Hollander 2005), this evidence constitutes an indication of the learning effects of infotainment in a polarized pluralist media system such as that in Spain, with many parties competing for power (Hallin and Mancini 2016). Furthermore, this quasi-experiment allowed to test for the first time whether and how new information is acquired by the citizens, setting the ground for future theoretical development. Or findings suggest that infotainment was particularly useful to acquiring 'new' information, which might be the result of both the relatively intense use of media by new candidates and parties but also to the attraction it created among entertainment programs. These results are particularly relevant in light of increasing levels of electoral volatility and the recent irruption and success of new political parties and candidates in many Western democracies in the last years.

Of course, these findings are limited to the study of a single electoral campaign; and a very exceptional one. Future research should include other Spanish campaigns to check the robustness of these findings, or to make comparison with other media systems of the same type. Another natural extension of the present study is the inclusion of a systematic analysis of infotainment program contents during the electoral campaign. This would allow for a systematic test about the extent to which learning is more likely for topics broadly covered by the media. Our findings suggest that this was the case during the Spanish 2015 campaign since we find a higher percentage of respondents who learned about economic issues. Furthermore, the results point to a stronger relationship between infotainment and learning information about new parties, which at the same time were more likely to appear

on this type of TV shows. Finally, once illustrated the advantages of using comprehensive measures of political knowledge and thus learning, further work could investigate whether specific groups of the population are more likely to learn about particular topics during the campaign.

Overall our findings suggest that campaigns play their part in informing people about candidates, parties, and policy proposals. However this good news requires qualification. First, only a few citizens among the have-nots are able to learn during the campaign. Second, given the distinct content and format, infotainment facilitates relatively superficial political information, as compared to the conventional news media. While typical news tends to be useful for acquiring information concerning civic knowledge, issues, and parties' issue positions, infotainment is more likely to promote learning about personality traits and forming impressions (Moy et al. 2005). As such, the information disseminated through infotainment might not always be sufficiently rich or accurate.

Finally, infotainment contents' quality raises other debates about electoral campaigns; such as the extent to which the information disseminated during the campaign is accurate and reliable. Here we have assumed that electoral campaigns spread honest claims about the political world but recent campaigns in other political systems show that electors can be tricked by fake claims. Similarly, research is needed regarding the long-term implications, in any, of information rich contexts.

LIST OF TABLES AND FIGURES

Table 1 Description of items

Knowledge Domains	Specific Items
Knowledge about the political system	Years between elections Who has the right to vote in elections Existence of gender quotas Number of MPs in Parliament
Knowledge of economic issues	Unemployment CPI (Consumer Price Index)
Knowledge of Leaders	Bescansa – Podemos Errejón – Podemos Garzón – IU Madina –PSOE Rivera de la Cruz – Ciudadanos Casado –PP Francisco de la Torre - Ciudadanos Isabel García Tejerina – PP Irene Lozano- PSOE
Knowledge of party proposals	PSOE- Gender violence Ciudadanos- Abolish provincial councils PP- Reduction in inheritance tax Podemos-Electoral accountability
Knowledge about the ideological position of the parties	Ciudadanos-IU Ciudadanos-Podemos Ciudadanos-PP Ciudadanos-PSOE IU-Podemos IU-PP IU-PSOE Podemos-PP Podemos-PSOE PP-PSOE

Figure 1. Percentage of correct answers in t1 and t2 (ordered by t2) and percentage of learning between t1 and t2 (Diff)

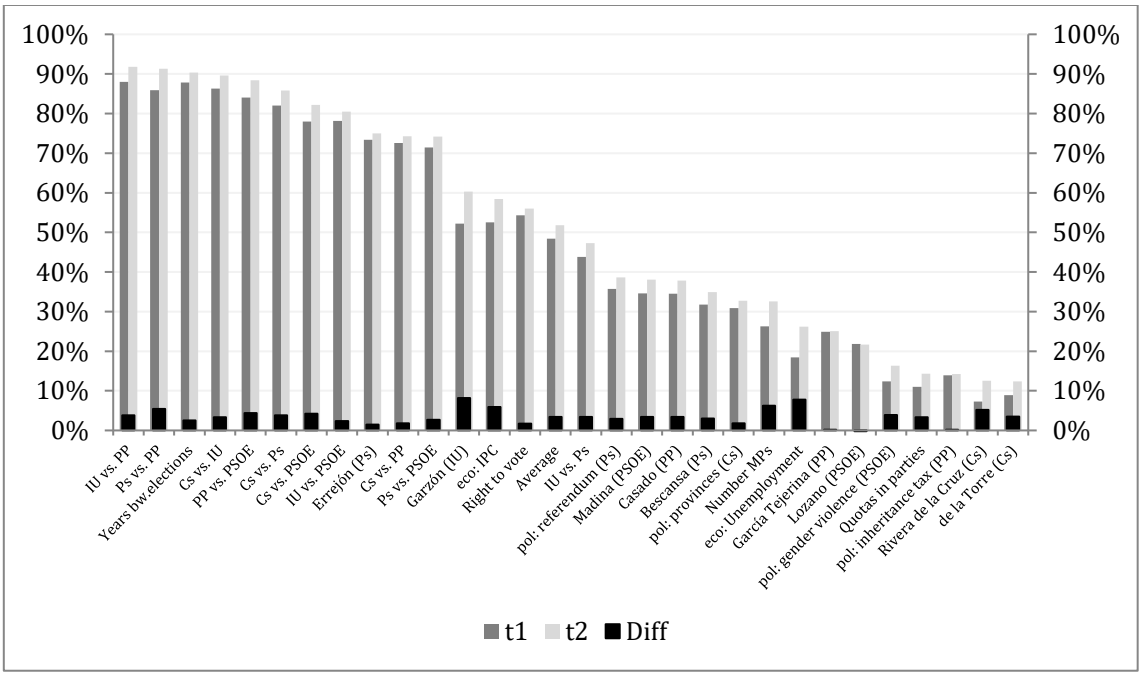
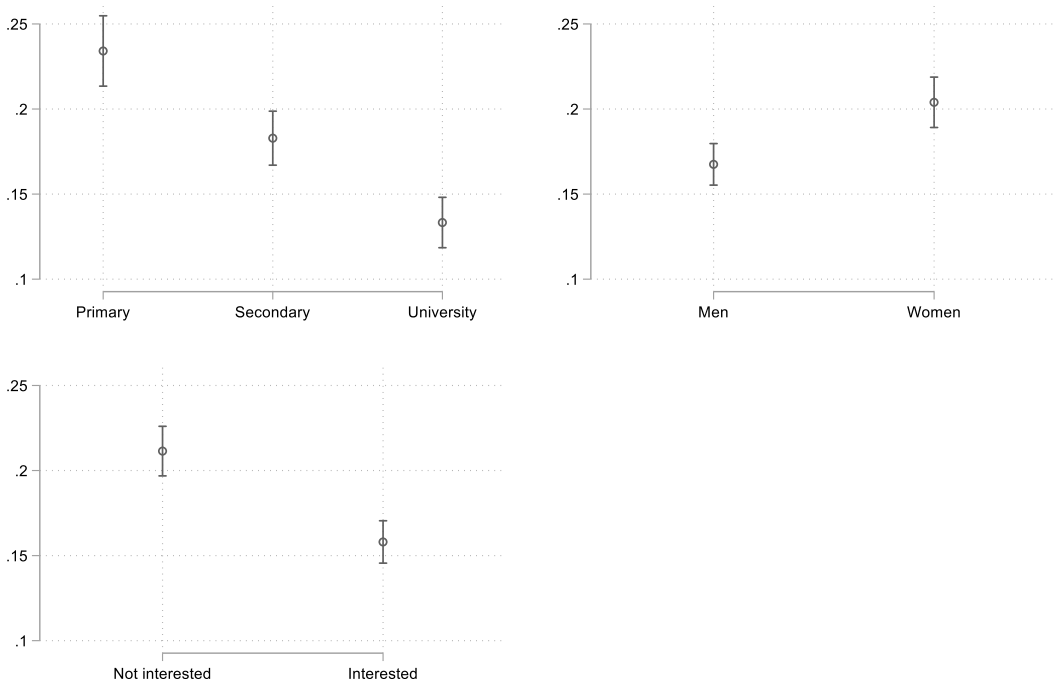
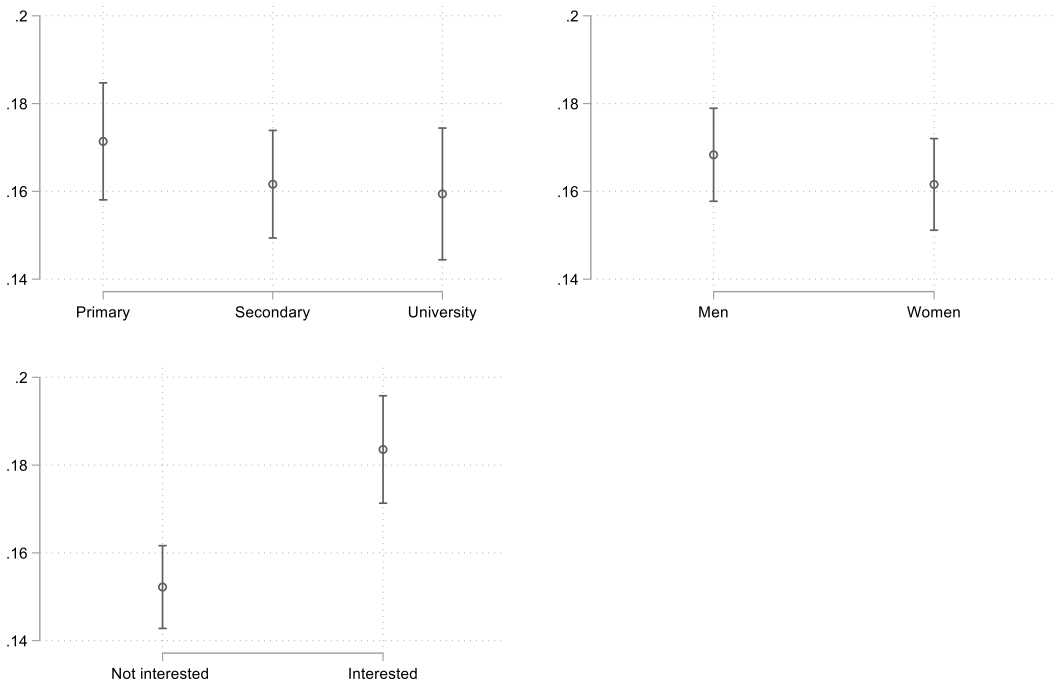


Figure 2A.Predicted probabilities of being part of the group of learners versus the group of haves



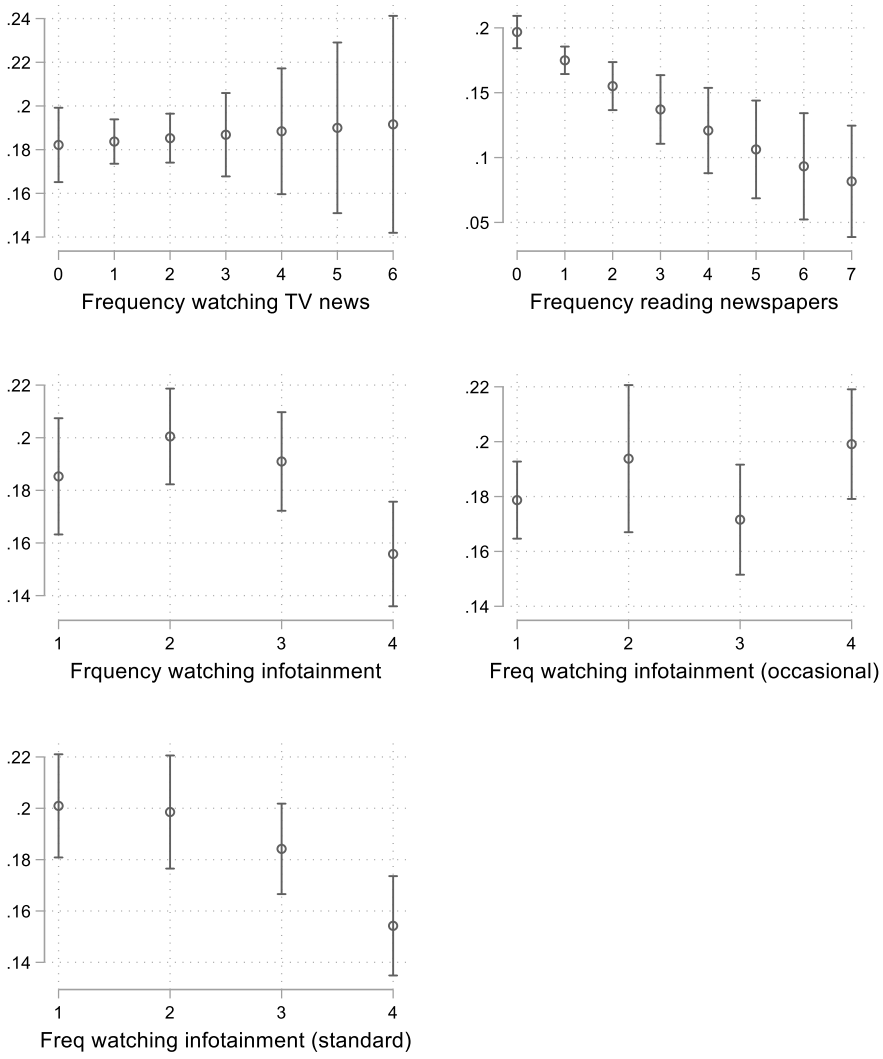
Note: Based on results from Table 1 in the Appendix

Figure 2.B Predicted probabilities of being part of the group of learners versus the group of resistant have-nots



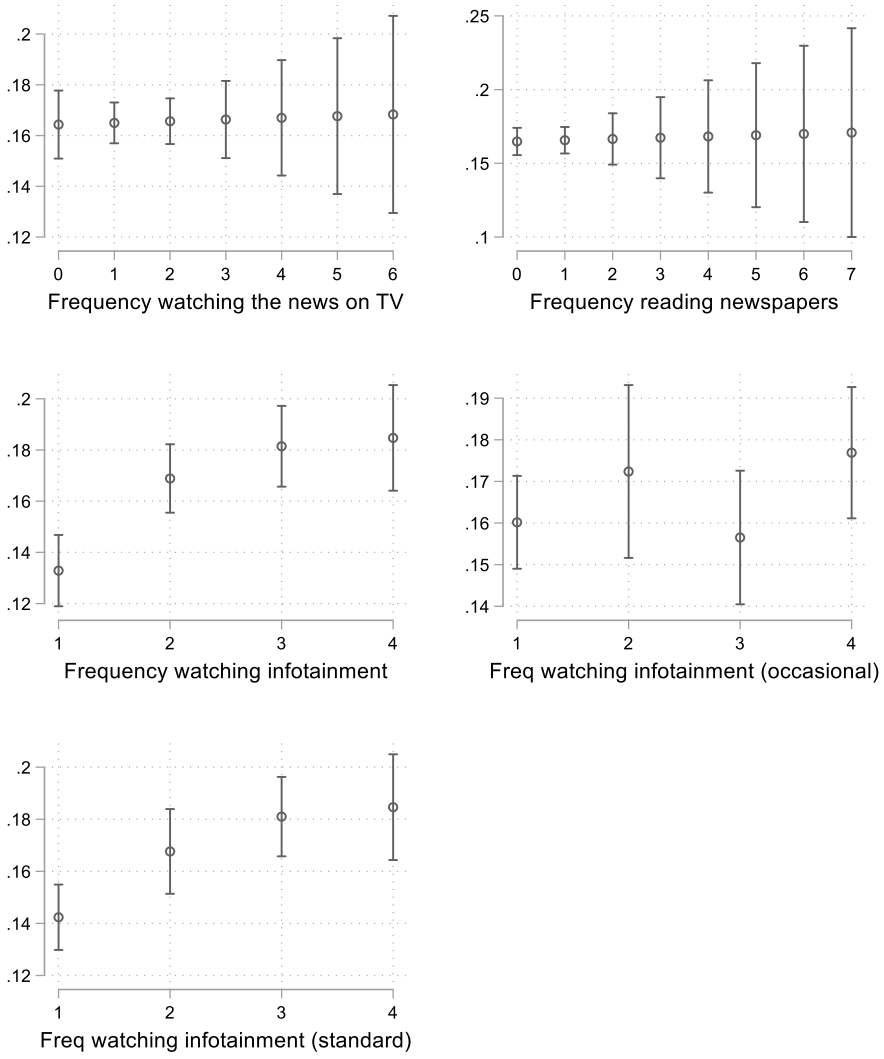
Note: Based on results from Table 1 in the Appendix

Figure 3A. Predicted probabilities of being part of the group of learners versus the group of haves by type of media exposure



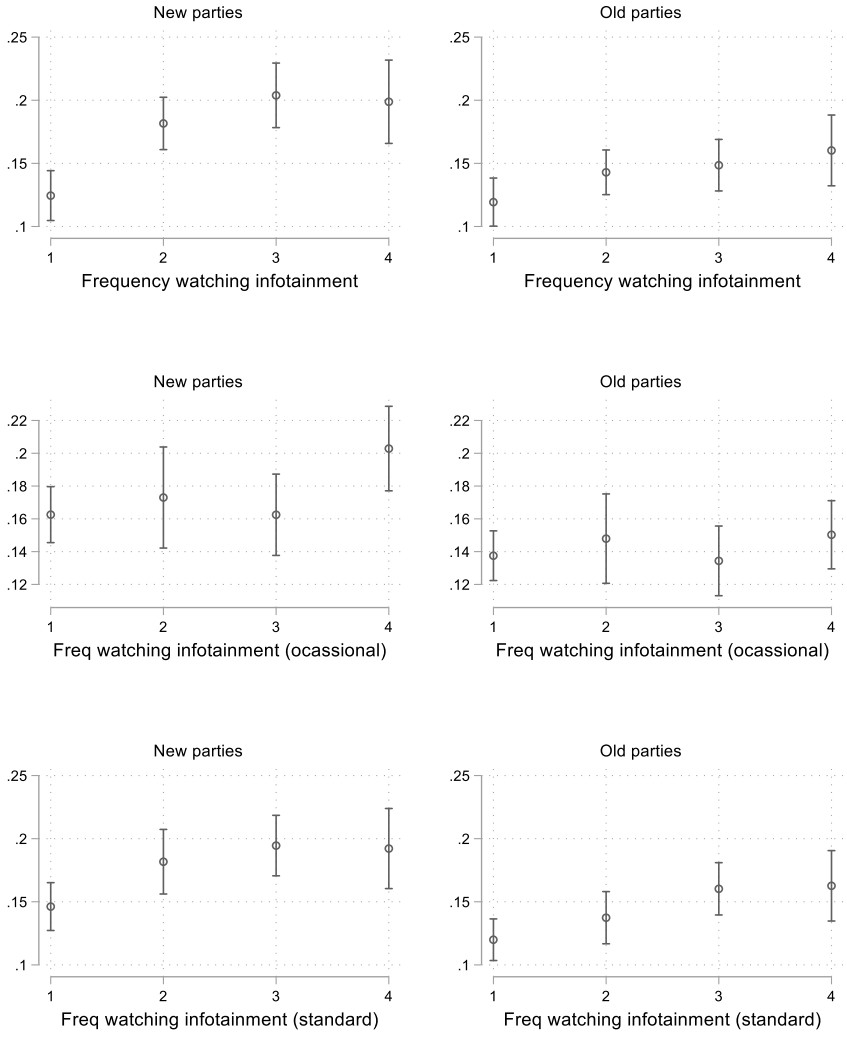
Note: Based on results from Table 2 in the Appendix

Figure 3B. Predicted probabilities of being part of the group of learners versus the group of resistant have-nots by type of media exposure



Note: Based on results from Table 2 in the Appendix

Figure 4. Predicted probabilities of being part of the group of learners versus the group of resistant have-nots by type of infotainment exposure and for knowledge related to new (*Podemos* and *Ciudadanos*) and old political parties (*PP*, *PSOE*, *IU*)



Note: Based on results from Table 3 in the Appendix

APPENDIX

Table 1 Two-level multinomial logistic regression: the three sources of inequality

Reference category: Learned	Basic model (inequalities)	
	Have-nots	Haves
Age	-0.007***	0.006***
	(0.002)	(0.002)
Education: Secondary (ref: primary or less)	0.068	0.256***
	(0.068)	(0.069)
Education: University studies	0.083	0.590***
	(0.081)	(0.081)
Women	0.048	-0.226***
	(0.055)	(0.055)
Political interest	-0.219***	0.316***
	(0.056)	(0.056)
Number of days in between waves	-0.031***	-0.018*
	(0.009)	(0.009)
Constant	2.578***	1.268***
	(0.213)	(0.215)
Variance (individuals)	0.350***	
	(0.032)	
Observations	31,958	31,958

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

Table 2 Two-level multinomial logistic regression: exposure to media

Reference category: Learned	Have-nots	Haves	Have-nots	Haves
Age	-0.005**	0.005**	-0.005**	0.004
	(0.002)	(0.002)	(0.002)	(0.002)
Education: Secondary (ref: primary or less)	0.086	0.250***	0.085	0.236***
	(0.068)	(0.068)	(0.068)	(0.068)
Education: University studies	0.099	0.566***	0.098	0.540***
	(0.081)	(0.081)	(0.081)	(0.082)
Women	0.057	-0.198***	0.053	-0.185***
	(0.055)	(0.056)	(0.056)	(0.056)
Political interest	-0.102	0.203***	-0.099	0.167***
	(0.063)	(0.063)	(0.064)	(0.064)
Number of days in between waves	-0.029***	-0.019**	-0.030***	-0.018*
	(0.009)	(0.009)	(0.009)	(0.009)
Frequency watch news on TV	-0.006	-0.014	-0.004	-0.005
	(0.031)	(0.031)	(0.031)	(0.031)
Frequency read newspapers	-0.006	0.136***	-0.008	0.130***
	(0.040)	(0.039)	(0.040)	(0.039)
Frequency infotainment (ref: 1st quartile)	-0.291***	-0.117		
	(0.076)	(0.077)		
3rd quartile	-0.374***	-0.060		
	(0.086)	(0.087)		
4th quartile	-0.386***	0.189*		
	(0.103)	(0.103)		
Frequency occasional infotainment (ref: 1st quartile)			-0.087	-0.104
			(0.086)	(0.087)
3rd quartile			0.021	0.018
			(0.076)	(0.077)
4th quartile			-0.128*	-0.142*
			(0.072)	(0.073)
Frequency standard infotainment (ref: 1st quartile)			-0.194**	-0.013
			(0.078)	(0.080)
3rd quartile			-0.290***	0.083
			(0.077)	(0.078)
4th quartile			-0.299***	0.295***
			(0.095)	(0.095)
Constant	2.649***	1.336***	2.637***	1.337***
	(0.214)	(0.216)	(0.215)	(0.217)
Variance (individuals)	0.338***		0.339***	
	(0.031)		(0.032)	
Observations	31,958	31,958	31,958	31,958

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

Table 3 Two-level multinomial logistic regression: exposure to media

	Old parties		New parties		Old parties		New parties	
Reference category: Learned	Have-nots	Haves	Have-nots	Haves	Have-nots	Haves	Have-nots	Haves
Age	-0.009***	0.003	0.001	0.007**	-0.009***	0.002	-0.001	0.005
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Education: Secondary (ref: primary or less)	0.144	0.279***	0.136	0.282***	0.154	0.276***	0.121	0.255**
	(0.098)	(0.101)	(0.100)	(0.100)	(0.097)	(0.101)	(0.101)	(0.100)
Education: University studies	0.171	0.689***	0.249**	0.671***	0.179	0.670***	0.227*	0.623***
	(0.119)	(0.121)	(0.121)	(0.120)	(0.119)	(0.122)	(0.121)	(0.121)
Women	0.005	-0.228***	0.075	-0.163**	0.005	-0.208**	0.073	-0.150*
	(0.080)	(0.082)	(0.082)	(0.082)	(0.081)	(0.083)	(0.083)	(0.083)
Political interest	-0.099	0.241***	-0.110	0.199**	-0.070	0.225**	-0.139	0.132
	(0.091)	(0.093)	(0.094)	(0.093)	(0.092)	(0.094)	(0.095)	(0.094)
Number of days in between waves	-0.024*	-0.009	-0.042***	-0.038***	-0.025*	-0.007	-0.043***	-0.038***
	(0.013)	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)
Frequency watch news on TV	-0.010	-0.009	0.042	0.050	0.005	0.016	0.046	0.056
	(0.045)	(0.046)	(0.046)	(0.046)	(0.046)	(0.047)	(0.048)	(0.047)
Frequency read newspapers	-0.024	0.145**	-0.021	0.105*	-0.026	0.137**	-0.027	0.097*
	(0.059)	(0.058)	(0.060)	(0.058)	(0.059)	(0.058)	(0.060)	(0.058)
Frequency infotainment (ref: 1st quartile)	-0.217**	-0.037	-0.458***	-0.288**				
	(0.110)	(0.115)	(0.113)	(0.114)				
3rd quartile	-0.251**	0.122	-0.594***	-0.279**				
	(0.126)	(0.130)	(0.129)	(0.129)				
4th quartile	-0.330**	0.377**	-0.537***	0.050				
	(0.151)	(0.153)	(0.155)	(0.153)				
Frequency occasional infotainment (ref: 1st quartile)					-0.082	-0.134	-0.073	-0.126
					(0.125)	(0.129)	(0.129)	(0.129)
3rd quartile					0.022	-0.018	-0.004	0.023

					(0.111)	(0.114)	(0.114)	(0.114)
4th quartile					-0.113	-0.127	-0.291***	-0.267**
					(0.105)	(0.107)	(0.107)	(0.107)
Frequency standard infotainment (ref: 1st quart)					-0.157	0.006	-0.258**	-0.035
					(0.114)	(0.119)	(0.116)	(0.116)
3rd quartile					-0.334***	0.095	-0.338***	0.050
					(0.112)	(0.115)	(0.115)	(0.114)
4th quartile					-0.328**	0.394***	-0.296**	0.315**
					(0.140)	(0.142)	(0.143)	(0.141)
Constant	2.871***	1.036***	2.638***	1.876***	2.857***	1.045***	2.624***	1.861***
	(0.310)	(0.320)	(0.320)	(0.320)	(0.311)	(0.321)	(0.321)	(0.321)
Variance (individuals)	0.340***		0.663***		0.336***		0.665***	
	(0.068)		(0.071)		(0.068)		(0.071)	
Observations	11,020	11,020	14,326	14,326	11,020	11,020	14,326	14,326

Note:Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

References

Aalberg, Toril, Arild Blekesaune, and Eiri Elvestad. 2013. "Media Choice and Informed Democracy: Toward Increasing News Consumption Gaps in Europe?" *The International Journal of Press/Politics* 18(3): 281–303

Arceneaux, Kevin. 2006. "Do Campaigns Help Voters Learn? A Cross-National Analysis." *British Journal of Political Science* 36 (01): 159–173.

Baviera, Tomás, Àlvar Peris and Lorena Cano-Orón. 2017. "Political Candidates in Infotainment Programmes and Their Emotional Effects on Twitter: an Analysis of the 2015 Spanish General Elections Pre-Campaign Season." *Contemporary Social Science*. doi: 10.1080/21582041.2017.1367833

Baum, Matthew A., and Angela S. Jamison. 2006. "The Oprah Effect: How Soft News Helps Inattentive Citizens Vote Consistently." *Journal of Politics* 68(4): 946-959.

Berrocal, Salome, Marta Redondo, Virginia Martín, and Eva Campos. 2014. "Presence of Infotainment in Spain's Mainstream DTT Channels." *Revista Latina de Comunicación Social* 69: 85–103

Blekesaune, Arild, Eili Elvestad, and Toril Aalberg. 2012. "Tuning Out the World of News and Current Affairs—an Empirical Study of Europe's Disconnected Citizens." *European Sociological Review* 28(1): 110–126

Brants, Kees and Peter Neijens 1998. "The Infotainment of Politics." *Political Communication* 15(2): 149–164

Casero-Ripollés, Andreu, Ramon A. Feenstra and Simon Tormey. 2016. "Old and New Media Logics in an Electoral Campaign: The Case of Podemos and the Two-Way Street Mediatization of Politics." *The International Journal of Press/Politics 21*(3): 378-397.

Coffé, Hilde. 2013. "Women Stay Local, Men Go National and Global? Gender Differences in Political Interest." *Sex Roles* 69: 323–338

Craig, Stephen C., James G. Kane, and Jason Gainous. 2005. "Issue-Related Learning in a Gubernatorial Campaign: A Panel Study." *Political Communication* 22 (4): 483–503.

Delli Carpini, Michael, and Scott Keeter. 1996. *What Americans Know about Politics and Why It Matters*. Yale University Press.

Delli Carpini, Michael, Scott Keeter, and J. David Kennamer. 1994. "Effects of the News Media Environment on Citizen Knowledge of State Politics and Government." *Journalism Quarterly* 71 (2): 443–56.

Dilliplane, Sussana, Seth K. Goldman and Diana C. Mutz 2013. "Televised Exposure to Politics: New Measures for a Fragmented Media Environment." *American Journal of Political Science* 57(1): 236–248.

Edgerly, Stephanie, Kjerstin Thorson and Chris Wells. 2018. "Young Citiznes, Social Media, and the Dynamics of Political Learning in the US Presidential Primary Elections." *American Behavioral Scientist* 62(8): 1042-1060Eveland, William P. Jr and Dietram A. Scheufele. 2000. "Connecting News Media Use with Gaps in Knowledge and Participation." *Political Communication* 17(3): 215-37.

Eveland, William P, Dhavan Shah and Nojin Kwak 2003. "Assessing Causality in the Cognitive Mediation Model. A Panel Study of Motivations, Information Processing, and Learning During Campaign 2000." *Communication Research* 30(4): 359–86.

Freedman, Paul, Michael Franz, and Kenneth Goldstein. 2004. “Campaign Advertising and Democratic Citizenship.” *American Journal of Political Science* 48(4): 723–41

Graber, Doris A. 2001. *Processing Politics: Learning from Television in the Internet Age*. University of Chicago Press.

Hallin, Daniel C. and Paolo Mancini, P. 2016. “Ten Years After Comparing Media Systems: What Have We Learned?” *Political Communication* 34(2):1-17.

Hansen, Kasper M., and Rasmus Tue Pedersen. 2014. “Campaigns Matter: How Voters Become Knowledgeable and Efficacious During Election Campaigns.” *Political Communication* 31(2): 303–24

Harrington, Stephen. 2008. “Popular News in the 21st Century. Time for a new Critical Approach?” *Journalism: Theory, Practice & Criticism* 9(3): 266–284

Holbrook, Thomas M. 1999. “Political Learning from Presidential Debates.” *Political Behavior* 21(1): 67–89.

———. 2002. “Presidential Campaigns and the Knowledge Gap.” *Political Communication* 19(4): 437–54

Hollander, Barry A. 2005. Late-night Learning: Do Entertainment Program Increase Political Campaign Knowledge for Young Viewers? *Journal of Broadcasting & Electronic Media* 49(4): 402–415.

Jerit, Jennifer. 2009. "Understanding the Knowledge Gap: The Role of Experts and Journalists." *The Journal of Politics 71*(2): 442-456.

Kwak, Nojin. 1999. “Revisiting the Knowledge Gap Hypothesis Education, Motivation, and Media Use.” *Communication Research* 26(4): 385–413.

Lancaster, Thomas D. 2017. “The Spanish General Elections of 2015 and 2016: A New Stage in Democratic Politics?” *West European Politics* 40(4): 919–37.

LaRose, Robert. 2010. “The Problem of Media Habits.” *Communication Theory* 20(2): 194–222.

Lizotte, Mary Katte and Andrew H. Sidman. 2009. “Explaining the Gender Gap in Political Knowledge.” *Politics & Gender 5*(2): 127-151

López-Rico, Carmen María and Àlvar Peris-Blanes. 2017. “Agenda e Imagen de los Candidatos de las Elecciones Generales de 2015 en España en Programas Televisivos de Infoentretenimiento”. *El Profesional de la Información* 24: 611-20

Lupia, Arthur. 2016. *Uninformed: Why People Seem to Know So Little about Politics and What We Can Do about It*. Oxford, New York: Oxford University Press.

McCann, James A., and Chappell Lawson. 2006. “Presidential Campaigns and the Knowledge Gap in Three Transitional Democracies.” *Political Research Quarterly* 59(1): 13–22

Moore, David W. 1987. “Political Campaigns and the Knowledge-Gap Hypothesis.” *Public Opinion Quarterly* 51(2): 186–200

Moy, Patricia, Michael Xenos, and Verena K. Hess 2005. “Communication and Citizenship: Mapping the Political Effects of Infotainment.” *Mass Communication & Society* 8:111–131

Nadeau, Richard, Neil Nevitte, Elisabeth Gidengil, and André Blais. 2008. “Election Campaigns as Information Campaigns: Who Learns What and Does It Matter?” *Political Communication* 25(3): 229–48

Negredo, Samuel, Alfonso Vara-Miguel, A., and Avelino Amoedo, 2016. *Digital News Report ES*. Available at http://www.digitalnewsreport.es/, consulted in October 2018.

Ondercin, Heather L., James C. Garand, and Lauren E. Crapanzano. 2011. "Political Learning during the 2000 U.S. Presidential Election: The Impact of the Campaign on the Gender Gap in Political Knowledge." *Electoral Studies* 30(4): 727–37

Orriols, Lluis, and Guillermo Cordero. 2016. "The Breakdown of the Spanish Two-Party System: The Upsurge of Podemos and Ciudadanos in the 2015 General Election." *South European Society and Politics* 21(4): 469–92.

Otto, Lukas, Isabella Glogger and Mark Boukes. 2017. "The Softening of Journalistic Political Communication: a Comprehensive Framework Model of Sensationalism, Soft news, Infotainment, and Tabloidization." *Communication Theory* 27(2): 136-155.

Prior, Markus 2007. *Post-broadcast Democracy: How Media Choice Increases Inequality in Political Involvement and Polarizes Elections*. New York, NY: Cambridge University Press.

Ramiro, Luis, and Raul Gómez. 2017. "Radical-Left Populism during the Great Recession: Podemos and Its Competition with the Established Radical Left." *Political Studies* 65 (1_suppl): 108–26

Shehata, Adam and Jesper Strombarck. 2018. "Learning Political News from Social Media: Network Media Logic and Current Affairs news Learning in a High- Choice Media Environment." *Communication Research*. doi:10.1177/0093650217749354.

Shehata, Adam and Jesper Strombarck. 2011. "A Matter of Context: A Comparative Study of Media Environments and News Consumption Gaps in Europe." *Political Communication* 28(1): 110–34.

Shehata, Adam, David Nicolas Hopmann, Lars Nord and Jonas Höijer. 2015. "Television Channel Content Profiles and Differential Knowledge Growth: A Test of the Inadvertent Learning Hypothesis Using Panel Data." *Political Communication* 32(3): 377-395

Strömbäck, Jesper. 2017. "Does Public Service TV and the Intensity of the Political Information Environment Matter?" *Journalism Studies*, 18(11): 1415-32

Strömbäck, Jesper, Monica Djerf-Pierre, and Adam Shehata. 2013. "The Dynamics of Political Interest and News Media Consumption: A Longitudinal Perspective." *International Journal of Public Opinion Research* 25(4): 414–435.

Tichenor, Philip J., George A. Donohue and Clarice N. Olien. 1970. "Mass Media Flow and Differential Growth in Knowledge." *Public Opinion Quarterly* 34(2) 159–170

Valentino, Nicholas A., Vincent L. Hutchings, and Dmitri Williams. 2004. "The Impact of Political Advertising on Knowledge, Internet Information Seeking, and Candidate Preference." *Journal of Communication* 54(2): 337–54.

van der Meer, Tom, Annemarie Walter and Peter van Aelst. 2016. "The Contingency of Voter Learning: How Election Debates Influenced Voters' Ability and Accuracy to Position Parties in the 2010 Dutch Election Campaign." *Political Communication 33*(1): 136-157.

Williams, Bruce A. and Michael X. Delli Carpini. 2011. *After Broadcast News. Media Regimes, Democracy, and the New Information Environment*. Cambridge University Press.

Wonneberger, Anke, Klaus Schoenbach and Lex van Meurs. 2012. "Staying Tuned: TV News Audiences in the Netherlands 1988–2010." *Journal of Broadcasting and Electronic Media* 56(1): 55–74.

SUPPLEMENTARY INFORMATION

Box 1 – Description of the Online Panel Survey

The online panel was administered by Netquest, a survey organization specializing in research in Spain, Portugal and Latin America. The Netquest Survey uses opt-in panels, based on existing databases of nationally representative samples of Spanish residents. The panel is restricted to individuals of at least 18 years of age. The sample is stratified with representative quotas of the Spanish population by geographical areas (seven geographical areas), age group, and gender. Netquest economically compensates all participants with vouchers that can be used later to purchase goods at Netquest's online store.

Internet surveys are increasingly common in the social sciences and have both advantages and disadvantages, although comparisons of estimates regarding political behaviour have found few differences (Bytzek and Bieber 2016). A comparison between the socioeconomic profiles of our sample with a face to face representative sample of the population collected in the same period shows only expected differences (see Table 1). The resulting sample has a similar demographic composition to large nationally representative face to face and telephone surveys in Spain. The comparison shows limited differences in the distributions of these variables between the two kinds of survey. Deviations encountered emanate on the one hand from the online survey's upper age participation limit of 70. A younger sample also implies higher education levels and fewer respondents who have retired from the labour force. Those deviations do not threaten the validity of the results since we focus on the panel component and have variation in all relevant independent variables.

Table 1. The socio-demographic profile of the online sample in comparison to the CIS3117 sample collected in the same period (Pre-Electoral survey December 2015), percentages

Variable	Categories	Netquest survey	National representative survey (face to face) CIS 3117	National representative survey CIS 3117 (percentages for up to 70 years of age)
Gender	Women	48.9	51.6	
Age	18-24	9.9	8.1	
	25-34	17.8	14.6	
	35-44	23.3	19.8	
	45-54	21.1	16.9	
	55-64	17.2	16.5	
	65 +	10.73	23.7	
		Targeted only up to 70 years old		
Education	Primary or less	18.5	21.6	14.3
	Secondary education	46.9	37.2	40.3
	Vocational training	8.5	19.2	21.4
	Higher education	26.1	21.7	23.7
Occupation	Working	53.44	42.5	50
	Unemployed	18.25	18.8	21.1
	Student	6.26	4.8	5.6
	Unpaid work (domestic)	5.6	7.2	6.4
	Retired	16.5	26.3	15.4
Interest in politics	Mean(1-4)	2.43 (SD: 0.86)	2.21 (SD:0.95)	2.26 (SD:0.95)

Box 2 – Comparison of the socio-demographic profile of the two waves of the panel

There are no relevant differences either in the socio-demographic characteristics of the respondents between the two waves, nor do levels of political interest vary significantly between the two waves (Mean level of political interest in t_1=2.43 and in t_2=2.44) – see Table 2.

Table 2. The socio-demographic profile of wave 1 in comparison to wave 2 of the online sample, percentages

Variable	Categories	Pre	Post
Gender	Women	48.6	48.9
Age	18-24	9.9	9.1
	25-34	17.8	17.2
	35-44	23.3	23.5
	45-54	21.1	21.6
	55-64	17.2	17.5
	65 +	10.7	11.2
Education	Primary or less	18.5	18.3
	Secondary education	46.9	47.1
	Vocational training	8.5	8.4
	Higher education	26.1	26.2
Occupation	Working	53.4	53.3
	Unemployed	18.2	18.3
	Student	6.3	5.7
	Unpaid work (domestic)	5.6	5.6
	Retired	16.5	17.1
Interest in politics	Mean(1-4)	2.43	2.44

Table 3. Summary of the format of the knowledge items used in the survey

Knowledge Domains (contents)	Number of items	Format*
Knowledge about the political system	4	Single choice format. 5 response categories (only 1 correct answer)
Knowledge of economic issues	2	Single choice format. 5 response categories (only 1 correct answer)
Knowledge of Leaders	9	
Knowledge of party proposals	4	Single choice format. 5 response categories – the parties (only 1 correct answer)
Knowledge of the ideological position of the parties	5	

* Except for the knowledge of the ideological position of the parties, time was limited to 30 seconds to answer each question.

Box 3. Operationalization of exposure to media

TV: From the following list of TV news, please tell us which you watch (no matter whether on TV or Online)

Telediario of TVE1 (La 1)
Informativos of Tele 5
Informativos of Antena 3
Noticias Cuatro
Informativos of La Sexta
Regional news
Another not included on the list ¿Which one? _____
I don't watch the TV news

Approximately, how many days a week do you watch them

1 day/week 2 3 4 5 6 7 everyday

NEWSPAPERS: From the following list of newspapers, please tell us which ones you read (no matter whether Offline or Online)

El País
El Mundo
La Vanguardia
ABC
La Razón
Publico.es
ElConfidencial.es
ElDiario.es
LibertadDigital.com
Another one Which one? (excluding sports)_____
I don't read newspapers

Approximately, how many days a week do you read them

1 day/week 2 3 4 5 6 7everyday

INFOTAINMENT: From the following list of talk shows, please indicate those you follow

	Cronbach's alpha*
Infotainment (including all programs)	0.65
Standard infotainment	0.69
El Intermedio	
Al Rojo Vivo	
El Objetivo	
Los desayunos de TVE	
El Debate de La 1	
La Sexta noche	
La noche en 24h	
Salvados	
Un tiempo nuevo	
El Cascabel	
Occasional infotainment	0.09
El programa de Ana Rosa	
Las mañanas de Cuatro	
El Hormiguero	

Note: * reliability measures should be interpreted with caution given that media exposure tends to be dependent on ideology in Spain.

Frequency

Sometimes Often Always

Table 4. Percentage of respondents classified in each of the categories of our dependent variable across knowledge items

	Resistant have-nots	Haves	Learners
Years between elections	25.43	67.83	6.74
Who has the right to vote	53.76	33.62	12.62
Number of MPs in Parliament	73.12	17.37	9.51
Existence of gender quotas	88.18	3.9	7.93
Unemployment	78.34	9.18	12.48
IPC	51.78	36.39	11.82
Bescansa-Podemos	71.2	20.01	8.78
Errejón-Podemos	38.11	53.76	8.12
Garzón-IU	50.2	37.05	12.75
Lozano-PSOE	82.1	12.22	5.68
Madina-PSOE	68.56	22.92	8.52
Rivera de la Cruz-Ciudadanos	89.7	1.98	8.32
Casado-PP	68.76	22.32	8.92
Francisco de la Torre-Ciudadanos	89.76	3.04	7.2
García Tejerina-PP	79.26	11.36	9.38
PSOE-Gender violence	86.53	3.5	9.97
Ciudadanos-Abolish provincial councils	72.99	17.37	9.64
PP-Reduction of inheritance tax	88.31	5.15	6.54
Podemos -Electoral accountability	68.16	18.16	13.67
Ciudadanos-IU	10.4	81.92	7.68
Ciudadanos-Podemos	14.16	76.8	9.04
Ciudadanos-PP	25.68	61.12	13.2
Ciudadanos-PSOE	17.84	72.24	9.92
IU-Podemos	52.72	30.24	17.04
IU-PP	8.24	84.16	7.6
IU-PSOE	19.52	70.72	9.76
Podemos-PP	8.72	82.08	9.2
Podemos-PSOE	25.84	62.56	11.6
PP-PSOE	11.6	79.84	8.56
Average	52.4	37.9	9.7

Source: our elaboration

Table 5. Mean value of answers per category and their descriptive statistics

	Mean	Std. Dev.	Min	Max
Average number of items respondents provide as incorrect/DK in waves 1 & 2	14.85	4.81	3	29
Average number of items respondents provide as correct in waves 1 & 2	9.76	6.55	0	25
Average number of items respondents provide as incorrect/DK in wave 1 and correct in wave 2 (learn)	2.64	2.70	0	20

Source: our elaboration

Table 6. Replication of the estimations of the three sources of knowledge inequalities at the individual level and for each of the knowledge items. Multinomial logit estimations

Type of knowledge		Learned vs…	Age	Second	University	Female	Interest in politics
General	Years between elections	Have-nots					
		Haves			0.822**		
	Who has the right to vote	Have-nots				0.487***	
		Haves		0.413*	0.824***		0.433**
	Number of MPs in Parliament	Have-nots	-0.022***	-0.432*	-0.656**		-0.706***
		Haves				-0.780***	
	Existence of gender quotas	Have-nots	-0.0192**				
		Haves					
Economic figures	Unemployment	Have-nots					-0.400**
		Haves	0.0291***			-0.626**	
	IPC	Have-nots	-0.0358***				
		Haves			0.732**	-0.831***	0.446**
Political leaders	Bescansa-Podemos	Have-nots	0.0138*			0.411**	-0.714***
		Haves	0.031***				0.685***
	Errejón-Podemos	Have-nots	-0.017*				
		Haves				-0.433**	0.615***
	Garzón-IU	Have-nots				0.376**	
		Haves	0.019***		0.493*		1.158***
	Lozano-PSOE	Have-nots	-0.021**		0.757*		-0.834***
		Haves			1.197***		0.742**
	Madina-PSOE	Have-nots	-0.039***		-0.855***		-0.446**
		Haves				-0.818***	0.480**
	Rivera de la Cruz-Ciudadanos	Have-nots					-0.655***
		Haves					
	Casado-PP	Have-nots					-0.428**
		Haves	0.024***		0.956***	-0.385*	0.878***
	Francisco de la Torre-Ciudadanos	Have-nots	0.0214**		0.591*		-0.815***
		Haves					
	García Tejerina-PP	Have-nots					
		Haves			0.809**		0.462*
Party proposals	PSOE-Gender violence	Have-nots	-0.0152**	-0.498**	-0.683**	-0.323*	
		Haves					
	Ciudadanos-Abolish provincial councils	Have-nots					-0.489**
		Haves			0.698**	-0.651***	0.447*
	PP-Reduction of inheritance tax	Have-nots	-0.020**				
		Haves	0.019	0.777*	1.719***		0.609*
	Podemos - Electoral accountability	Have-nots				0.414**	-0.449**
		Haves					0.763***
Party positions (left - right)	Ciudadanos-IU	Have-nots	-0.032***		-1.044**		-0.835**
		Haves			1.071***	-0.546**	0.649**
	Ciudadanos-Podemos	Have-nots	-0.029***		-0.959**		-0.572*
		Haves		0.678**	1.199***		1.025***

Ciudadanos-PP	Have-nots		0.693***	0.881***		
	Haves	0.018**	0.650***	1.328***		
Ciudadanos-PSOE	Have-nots	-0.018*				-0.475*
	Haves		0.570**	0.878***		0.548**
IU-Podemos	Have-nots	-0.020***				
	Haves	-0.019***	-0.423*			
IU-PP	Have-nots					-1.085***
	Haves		0.803***	2.077***		0.469*
IU-PSOE	Have-nots					
	Haves		0.597**	1.257***	-0.471**	0.869***
Podemos-PP	Have-nots					-1.104***
	Haves	0.025***	0.669**	2.336***	-0.460**	0.630**
Podemos-PSOE	Have-nots	-0.0149*				
	Haves			0.914***		1.167***
PP-PSOE	Have-nots	-0.0232**				-0.759**
	Haves		0.682**	1.727***	-0.450*	0.564**

Note: Cells shadowed in grey indicate negative effects. Empty cells indicate no statistically significant effects at p<0,1.
White cells with numbers indicate statistically significant positive effects.
*** p<0.01, ** p<0.05, * p<0.1

FINAL NOTES

[i] In Spain too, according to the Digital News Report, 76 percent of interviewees used TV programs or broadcasts to inform themselves in 2015 (Amoedo, Vara-Miguel and Negredo, 2018).

[ii] The 2015 Spanish general election was held on the 20th of December 2015, with a participation rate of 73 percent.

[iii] Another possibility is the combination of a correct answer in t1 but incorrect in t2. These cases are considered as mistakes, and included in the resistant have-nots category. We replicated our analyses: 1) without these cases, and 2) as a fourth category of our dependent variable. For both tests main findings below resulted robust.

[iv] The possibility to construct one or more scales from the 29 items was explored using Mokken Scale Analysis at the individual level. This dimensional exploration confirms the lack of equivalence of a potential scale across waves and groups defining main sources of inequalities (sex, education or political interest).

[v] In designing the questionnaire, we have considered all the relevant debates about the appropriate measurement of political knowledge. Different formats (images, words, and numbers) were used to maximize the ways in which knowledge questions were posed to the respondents, and as a strategy to dissuade the latter from the idea that they were being examined (see Table 3 in the Online Appendix).

[vi] The election campaign lasts only 15 days in Spain. The campaign started on 4 December and ended on 18 December, 2015.

[vii] As a robustness check we have replicated the same multinomial estimation at the individual level for each of the 29 knowledge items separately. Findings are summarized in Table 6 in the Online Appendix and confirm those shown in the main text.

[viii] All details regarding the list of television channels and programs included in the survey are available in Box 3 in the Online Appendix.

[ix] The question-time is the only variable from level 1 (question level) in the model (see Van der Meer et al. 2016 for a similar strategy). Other potential controls are the format and the topic of the questions, but since there is an overlap between the two items' features, it is not possible to test them separately. We have however replicated the analysis including the type of topic as an independent variable with five different categories (as in Table 1) and our results are robust.

[x] Our variable of control (number of days between the two waves) suggests that there is no contamination effect from wave 1 to wave 2. The coefficient is negative and significant both for the resistant have-nots and the haves, implying that the longer the time in between the two waves the greater the probability to learn during the campaign. We are aware that this control alone does not ensure that there has been no contamination at all from one wave to the other, but it provides a reasonable check. Additionally, we have controlled that the time used by the learners to answer the knowledge items has not varied significantly from one wave to the other (also to check for potential cheating).

View publication stats