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What explains preferential voting? A field experiment in Portugal

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What explains preferential voting? A field experiment in Portugal. This article analyzes the predictors of preferential voting in flexible list systems, focusing on political sophistication, voting rules and district size. It relies on a field experiment carried out in Portugal on the 2015 legislative election day. We found that the effect of district size depends on the nature of the voting rules introduced (optional or compulsory preferential voting). Also, political interest tends to lose its significance when preferential voting is compulsory. Thus, preferential voting does not constitute an obstacle for those with less political sophistication to express a vote, especially when the voting rules make preferential voting compulsory.
KEYWORDS: preferential voting; field experiment; electoral behavior; electoral system.

O que explica o voto preferencial? Estudo experimental nas eleições de 2015 em Portugal. O presente artigo analisa os fatores explicativos do voto preferencial em sistemas de lista flexível, com enfoque na sofisticação política, regras de votação e magnitude do círculo eleitoral. Baseia-se num estudo experimental de campo realizado em Portugal no dia das eleições legislativas de 2015. Verificou-se que o impacto da magnitude do círculo eleitoral depende das regras de votação utilizadas, que tornam o voto preferencial obrigatório ou opcional. Para além disso, o interesse pela política tende a perder a sua significância estatística quando o voto preferencial é obrigatório. Portanto, o voto preferencial não constitui um obstáculo ao voto por parte dos cidadãos com menores níveis de sofisticação política, especialmente quando as regras fazem com que a expressão de preferências seja obrigatória.
PALAVRAS-CHAVE: voto preferencial; estudo experimental; comportamento eleitoral; sistema eleitoral.

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INTRODUCTION

There are substantial differences in the ballot structure of electoral systems among European countries and elsewhere (Ortega, 2004; Renwich and Pilet, 2016), and research has shown that this may affect turnout, voting behavior, election results, quality of representation, and even satisfaction with democracy (Shugart, 2001; Farrell and McAllister, 2006; Pereira and Andrade Silva, 2009; Bosch and Orriols, 2014; Sanz, 2017; Söderlund, 2017; Riera and Bol, 2017). However, even when ballot structure is considered, and its effects are tested, it is sometimes difficult to isolate that factor from other features of the electoral system or the broader context in which elections take place.

In this article we analyze how the *likelihood of expressing preference votes* is influenced by political sophistication, ballot structure, and district magnitude and how these last two variables interact with the levels of political sophistication of voters. We test these hypotheses using data collected during a field experiment carried out in the 2015 Portuguese legislative election day.[1]

The understanding on the contextual and individual factors of preferential voting is thin, and this article seeks to flesh it out. We also contribute to an ever-growing field of experimental and quasi-experimental analysis of the impact of electoral systems and, in particular, voting rules (Laslier and van der

1 This study was conducted as part of the IASPP project "*Infraestrutura das Atitudes Sociais e Políticas dos Portugueses*" (Infrastructure of the Social and Political Attitudes of the Portuguese), funded by the *Fundação Ciência e Tecnologia* (FCT, Foundation for Science and Technology). The authors would like to thank the FCT for their support. The research was sponsored by the *Instituto de Ciências Sociais da Universidade de Lisboa* (Institute of Social Sciences, University of Lisbon), in particular from the *Observatório da Qualidade da Democracia* (Center for the Quality of Democracy), and from the *Thomas Jefferson – Correia da Serra* Institute of Public Policy (IPP).

Straeten, 2008; Blais et al., 2011, 2012; van der Straeten et al., 2013; Laslier et al., 2015; Baujard et al., 2014; Blumenau et al., 2017; Golder et al., 2017), which can provide empirically robust and internally valid insights about the nature and magnitude of that impact. We do this by reporting an experiment which consisted in a exit poll with different ballot papers. For our experiment, electors from three districts of different size were divided into three groups, and each group was presented with a different ballot: a closed-list ballot identical to the one used in the election; an ordered ballot on which the elector could either vote the party label or choose a single candidate; and an ordered ballot on which the candidate had to vote for one candidate.

This article is divided in the following five sections. First, the main studies that have investigated ballot structure and its consequences are briefly presented. Then we formulate our hypotheses concerning how the likelihood of expressing preferences vary according to different rules of flexible preferential voting, the size of electoral districts, the political sophistication of electors, and the interactions between these factors. In the third section, the methodology is described, i.e. the protocol implemented and the characteristics of the participants (citizens who had just exited the polling station and agreed to participate in an exit poll). Thereafter, the results of the statistical analysis testing our hypotheses are presented and discussed. The paper ends with some considerations on the main implications of the empirical patterns observed via this experiment.

WHY DO VOTERS CAST PREFERENTIAL BALLOTS IN FLEXIBLE LIST SYSTEMS?

Most literature on preferential voting usually focuses on its incidence and effects (Marsh, 1985; Karvonen, 2004; Renwick and Pilet, 2016) while neglecting its causes. However, aside from studying whether the effects of preferential voting are positive or negative in terms of how democracy works, we also need a systematic understanding of why people are more or less likely to express preferences for individual candidates (André and Depauw, 2017).

André et al. (2012) proposed three explanatory models of preferential voting in flexible-list systems. The first, the *resource model*, sees preferential voting as a sophisticated voting behavior (see also Marsh, 1985). This is so because party labels provide shortcuts from which to infer issue positions and policy commitments as a whole, whereas differentiation between candidates requires more time and effort. Therefore, in empirical terms, we should observe a positive relationship between expressions of preferences and direct or proxy measures of political sophistication, such as age, education, political

knowledge, and political interest, as well as lower levels of preferential voting among women, the working class, and the unemployed (who are believed to display lower levels of political sophistication).

The second, entitled *proximity model*, posits that "a preference vote would be the sign of an intense and regular relation between voters and candidates they vote for" (André et al., 2012, p. 297). This means that empirical studies should find a positive relationship between expressing a preference vote and instances of direct (party or interest group membership, contact over casework, less densely populated contexts), or mediated contact (i. e. when party leaders or other elite members who benefit from wide media coverage are on the list).

Third, André et al. (2012) propose an *instrumental model*, which postulates that it is not rational for voters to express preferences when those preferences are highly unlikely to influence who is going to be elected. Thus, district magnitude matters, since preferential votes become more decisive as the number of seats a party wins in an electoral district grows. We could therefore expect that preferential voting will be greater in districts of higher magnitude, where they are more likely to make a difference.

A test of the isolated and combined effects of these models in Belgium (under an optional preferential voting system) gives support to the three models, even if only political interest and age are relevant resources (André et al., 2012). The resource model also receives support from other studies. For instance, focusing on four countries with very different systems in place (Denmark, Germany, the Netherlands, and Norway), van der Kolk (2003) finds that education and political interest foster the expression of preferences, but reports mixed results regarding the role of party attachments, gender, and age. In turn, Andeweg and van Holsteyn (2011) find that women in the Netherlands tend to cast preferential votes more than men and that there is a negative association between age and preferential voting (with younger voters expressing preferences more often). These patterns are actually the opposite of what we would expect according to the resource model. However, the authors also find a positive impact of education, political interest, internal political efficacy, and political knowledge (which backs up an understanding of preferential voting as knowledgeable and sophisticated voting). A replication of their analysis using data from the 2012 Dutch Election Study confirms the relevance of education (Hoedemakers, 2014). Lastly, a study focusing on six countries with open or flexible lists and optional preferential voting also shows that political knowledge and education foster the expression of preferences, although the role of political sophistication is stronger in some contexts than in others (André and Depauw, 2017). In turn, the instrumental model receives support from a study that uses the existence and magnitude of thresholds required for

a candidate to be directly elected as a contextual condition, and shows that the effectiveness of the preference system (lower/no thresholds) leads to more preferential votes being cast (André and Depauw, 2017).

The three models discussed focus above all on individual characteristics of voters, but also recognize the importance of the context (the specificities of electoral designs) for preferential voting in flexible-list systems.

We argue that ballot structure is a relevant factor here. Whether voting for a candidate is optional or compulsory (in the sense that there is no formal way to simply express support for a party) is believed to be the most important difference between flexible list systems (Renwick and Pilet, 2016; Nagtzaam and van Erkel, 2017). Shugart (2005) even considers that flexible list systems in which the expression of preferences is made mandatory constitute a distinct sub-type, which he names *latent list* system.

In spite of their importance, few studies have analysed the direct impact of these rules on voting behavior. Renwick and Pilet (2016) compare countries where personalized voting is optional (Belgium, Czech Republic, and Sweden) and compulsory (the Netherlands), and conclude that there is no clear optional-versus-compulsory pattern. In fact, their direct and longitudinal comparison of the aggregate percentage of preferential votes between countries is inconclusive: whereas Belgians tend to vote more preferentially than the Dutch, the Czechs and Swedes do so to a lesser extent (André et al., 2012; Renwick and Pilet, 2016). Nevertheless, an experiment carried out in the Netherlands and Belgium by Nagtzaam and van Erkel (2017), which analyzed the impact of different arrangements (not only compulsory vs. optional voting rules in flexible lists, but also the number of preferences voters are allowed to express) concluded that if expressing preferences is optional, fewer preferential votes will be cast.

Beyond ballot structure, there are reasons to believe that district magnitude is a factor in preferential voting, namely by its impact in terms of both closeness between the candidates and the citizenry and party magnitude (André et al., 2012). However, these two arguments would lead to competing hypotheses about the relationship between district magnitude and preferential voting. In the first case, a positive relationship would be expected: more preferential votes in low magnitude – and low population density – districts, because this will increase the proximity between candidates and voters and raise awareness of the individual MP candidates. In the second case, a negative relationship would be expected: small district magnitude would equate to low party magnitude (i. e. low number of winnable seats per party), which may discourage electors from voting preferentially (as well as demotivate candidates from adopting constituency-oriented stances and cultivating a personal reputation). André et al. (2012) report mixed evidence that supports both the relevance of proximity

and party magnitude in Belgium. There is also another reason why we could expect a negative association between district size and prevalence of preferential voting: the number of candidates may depress preferential voting, as electors feel overwhelmed by the amount of choices (André and Depauw, 2017).

Both ballot structure and district magnitude may not only affect the propensity to vote for specific candidates, but also interact with individual characteristics associated with political sophistication. There are few studies on this topic, however. In a comparative study of six countries (Latvia and Switzerland, with open lists; Austria, Belgium, the Czech Republic, and Sweden, with flexible lists), André and Depauw (2017) conclude that the differences between the informed and the uninformed about politics are observable only in contexts in which there are fewer candidates (presumably in smaller districts); when this number is high, both groups display low odds of casting preferential votes. Research showing an interaction between voting rules and political sophistication is, to our knowledge, nonexistent, but the latter may matter more in optional systems, since the logic underlying the impact of voting rules supports the assumption that list voting - unavailable in compulsory systems - is the easiest way out first and foremost for uninformed voters.

Based on this literature, and aiming to shed light on the relevance of different dimensions and contribute to the debates in this stream of research, we derive a set of hypotheses to be tested experimentally, which are presented in the next section.

GOALS AND HYPOTHESES

Our goals are the following: to test the effect of different indicators of political sophistication on the expression of preferences, whether making preferential voting optional matters, the way in which district magnitude affects preferential voting, and how the last two variables interact with voters' levels of political sophistication.

Our first hypothesis concerns political sophistication. We expect higher levels of education (which grants voters resources to better analyze political events and actors) and greater interest in politics to be predictors of preferential voting.

> *Hypothesis 1*: Education and interest in politics have a positive impact on the likelihood of expressing preferences in the ballot.

Concerning the direct effect of voting rules, we argue that the lack of formal alternatives to the preferential vote will lead to more voters casting

preferential votes in compulsory systems than in optional ones. In order to compare non-preferential voting in compulsory and optional systems, we rely on the shared assumption that in compulsory systems voting for the list-puller (the first candidate on the list) as well as blank or invalid voting is non-preferential voting (Andeweg and van Holsteyn, 2011; Hoedemakers, 2014; Renwick and Pilet, 2016; but see also Nagtzaam and van Erkel, 2017 for an appraisal of this assumption). Therefore, we posit that:

Hypothesis 2: The expression of preferences for individual candidates is less common when voting rules make preferential voting optional instead of compulsory.

Regarding district magnitude, considering the previous studies, and due to contradictory evidence, we posit that:

Hypothesis 3: District magnitude is linked with different probabilities to express preferences on the ballot.

In addition to exploring the dynamics of political sophistication, voting rules and district magnitude, our aim is to see whether the context moderates the role of political sophistication in the likelihood of expressing preferences. We expect the role of political sophistication to be stronger in districts of high magnitude, in which the number of choices could be overwhelming for inattentive voters (for instance, in Lisbon the number of candidates was above 700, whereas in Beja it was close to 50). Regarding the moderating impact of voting rules, we believe that political sophistication will matter more if the rules make preferential voting merely optional. In this case, uninterested electors will give their vote to the party list, and the politically engaged will be more likely to express a preference for a specific candidate. Therefore:

Hypothesis 4: The expression of preferences for individual candidates is more likely affected by voters' levels of education and interest in politics in larger districts.

Hypothesis 5: Preferential voting is a function of political sophistication only when the system does not make it mandatory.

DATA AND METHODS

We now report the experiment carried out and the methods employed in the analysis. Before doing so, in order to provide the reader with information about the broad institutional setting in which the elections we focused

on took place, we describe the main characteristics of the Portuguese electoral and party system. Legislative elections in Portugal are held according to the D'Hondt formula in one-tier electoral systems with closed party lists. The 22 districts in Portugal range from 2 to 48 seats (47 in 2015), thus making it one of the four countries with the greatest variation in district magnitude (Lago and Lobo, 2014). Concerning the party system, in the first democratic legislative elections (1975), four parties that still constitute the core of the Portuguese party system emerged (Lobo, 2001). These are the Communist Party (*Partido Comunista*, PCP) and Socialist Party (*Partido Socialista*, PS) on the left, the center-right Social Democratic Party (*Partido Social Democrata*, PSD), and the conservative Social Democratic Center (*Centro Democrático Social*, CDS, today CDS-PP), on the right. To these four parties, a fifth must be added, the Left Bloc (*Bloco de Esquerda*, BE), which since 1999 has consolidated its presence in Parliament, and can be ideologically placed on the extreme-left (Lisi, 2015). Portugal can be seen as a relatively stable and unfragmented party system: in 2011 and 2015 the number of effective parliamentary parties was, respectively, 2.93 and 2.71 (Lobo, Pinto, and Magalhães, 2015).

THE EXPERIMENT

On 4 October 2015 (election day in Portugal), an exit poll field experiment with 936 voters took place. The experiment was conducted in three constituencies: one large (Lisbon, which elected 47 deputies), one medium-sized (Braga, which elects 19 deputies), and one small (Beja, which elects 3 deputies). In each electoral district, 312 voters were randomly selected at several polling stations within each district (in eight different parishes, urban and rural, belonging to four municipalities within the electoral district, which included the district capital and smaller towns).[2] Voters were approached as they exited the

2 In each electoral district, four councils were selected – in the circle of Beja: Beja, Castro Verde, Ferreira do Alentejo, and Moura; in Braga: Braga, Esposende, Fafe, and Guimarães; in Lisbon: Cadaval, Lisbon, Sintra, and Vila Franca de Xira. In each of these councils two parishes were selected, thus totalling eight parishes per electoral district (See Table A1 in the Appendix). Eight interviewers were involved and each interviewed *circa* 40 respondents over nine hours on election day. The response rate was 86%. Each interviewer carried 13/14 ballots of each of the three possible types. The interviewers were monitored on site at every stage of the process, namely in terms of selection of the respondent, the way the interviewer approached the respondent and presented the study, and the duration of interview. During the day, the characteristics of respondents (age and gender) were recorded to ensure that at the end of the day, the three effective samples were equivalent regarding the main socio-demographic variables (age and gender). In order to ensure that, when considered separately, these three samples would be representative of electors in each electoral district, a socio-demographic matrix for each district derived from the National Census was used as reference. This matrix is presented in Table A2 in Appendix 1.

polling station and randomly assigned to one of three experimental conditions (104 participants per condition in each district): they were either invited to "vote" using the official ballot used in the 2015 legislative election (the control group), a ballot offering the possibility to vote for *either a party or a candidate* (the optional preference voting condition), or a ballot *only allowing* voting for a candidate (the compulsory preference voting condition). For the purposes of this paper, we use only the data gathered in these last two experimental conditions; therefore, the number of cases in this study is 624.

Participants in the compulsory and optional preferential voting conditions received a ballot with the party lists of each of the 15 or 16 parties running in the district. The number of candidates in each party list matched the number of seats at stake in each constituency. This ballot is different from that commonly used in Portugal, which merely presents the names and symbols of the political parties. The lists were headed by the name and symbol of the political party, and the order of the candidates on the list was the one decided by the parties; that is, voters were asked to express preferences on actual MP candidates by looking at their names ordered in the way their parties decided to place them. The ballots were A3 sheets of paper, with a landscape layout, and the lists occupied one side of this sheet in the case of Beja and Braga and two sides in the case of Lisbon. The layout was not very different from that used in Dutch general elections. The only difference between the ballots used in the optional and compulsory conditions was that in the former there was also a check-box next to the name and symbol of each party, which participants could use if they preferred to support the party as a whole.

The ballots were accompanied by instructions. In the compulsory condition, the instructions were: "This ballot has a different than usual format. Please read the following instructions carefully before casting your vote! Please vote by placing an x next to the name of your preferred candidate. The lists included here are the lists of candidates standing for election for each party in this constituency. With this ballot paper you can vote for your preferred candidate by placing a cross (x) in the space next to the candidate's name. You can only express one vote, by placing one cross (x) next to your preferred candidate. If you make more than one cross (x) your vote will be spoiled." Participants in the optional condition were given very similar instructions, different only in key aspects (in italics): "This ballot has a different than usual format. Please read the following instructions carefully before casting your vote! Please vote by placing an x next to the name of your preferred *party or candidate*. With this ballot paper *you can vote either for your preferred party (by placing a cross (x) in the box next to the party symbol), or for your preferred candidate (by placing a cross (x) in the space next to the candidate's name)*. The lists

included here *are the lists of parties and candidates* standing for election in this constituency. You can only express one vote, by placing one cross (x) *next to either your preferred party or your preferred candidate*. If you make more than one cross (x) your vote will be spoiled."

After casting their ballots, the participants were asked to fill in a short questionnaire, aimed at getting information about their socio-demographic characteristics (gender, age, education, marital status, professional status, religiosity, union membership, and political party/group membership)[3], key political attitudes (political interest, ideology)[4] and preferred modes of exposure to political information[5]. The information about political characteristics was asked for separately from the ballot, in order to give respondents freedom to vote. No information on how votes would be translated into seats was given; voters therefore behaved under the assumption that the electoral formula would not be changed.

The compulsory preferential rule we adopt in this experiment is very similar to that of the Netherlands. Interestingly enough, the Dutch system does not exacerbate the incentives for candidates to cultivate personal votes, since the parties still present and order the ballots (which may, of course, be altered by voters), votes are pooled, and voters cast only one single vote below the party level. Therefore, it is similar to the Portuguese system regarding incentives to cultivate personal votes: the Netherlands ranks ninth within the 13 combinations of systemic incentives to pursue personal votes (Carey and Shugart, 1995; Andeweg and van Holsteyn, 2011). The optional system we test here is very similar to the Belgian, with the main difference being the fact that in our experiment voters were allowed either to simply endorse a party list or select a single candidate (in Belgium voters may vote for the party or express preferences for one or several candidates; André et al., 2012).

3 Gender is a dummy variable in which 1 stands for "male". Age is a continuous variable measuring the age of participants on election day. Education is an ordinal variable with 7 points, ranging from 1 (no schooling) to 7 (university degree completed). Marital status is a nominal variable differentiating between those who were married or cohabiting, widowed, divorced/separated, or single on election day. Professional status is also a nominal variable distinguishing those with a full-time job, a part-time job, home-makers, students, retired, or in "other situation". Religiosity is measured here via a 4-point scale in which 1 stands for "not religious at all" and 4 means "very religious". Lastly, both union and political party/group membership are dummy variables, in which 1 means that the participant is unionized or a political party or group member.

4 Political interest is measured via a 4-point scale in which 1 means "not interested at all" and 4 means "very interested". Ideology is measured through an 11-point scale in which 0 stands for "left" and 10 for "right". The mid-point of this scale is 5.

5 A nominal variable distinguishing those who favor television, newspapers, radio, social networks such as Facebook and Twitter, or none of these media.

PARTICIPANTS

As mentioned above, 936 voters in the 2015 Portuguese legislative elections participated in this experiment, and the data on 624 of them (those who were allocated to either the compulsory or the optional preference voting conditions) are used in the analysis.

This group is composed of 51.4% women, and the mean age of participants is 49 (with a standard deviation of 17; 23% between 18 and 34 years old and 20% older than 65). Participants were also diverse in terms of educational profile, with 21.3% holding a university degree and 18.3% having completed only elementary schooling. The majority of participants rely on television for information on politics or current affairs (70.4%), and 36.1% claim to be not religious at all or not very religious. The sample is almost evenly composed of full-time employees (52.3%) and people with other professional situations. Only 7.4% are union members, and 11.4% claim to be part of political parties or groups. Self-reported levels of political interest are, on average, above the mid-point of the scale (2.7, with a standard deviation of .9), which is not surprising considering that participants are actual voters (people who turned out to vote on a sunny Sunday), but, even so, 11% declared to be uninterested in politics and 27% just a bit interested. In terms of ideology, the average is of 4.79 (with a standard deviation of 2.5) on a scale from 0 (left) to 10 (right). Comparing the official election results in the three constituencies and the choices made by the respondents using the official ballot paper in the October 2015 election confirms, *grosso modo*, the representative nature of the sample in terms of party choice (Lobo, Santana-Pereira and Gaspar, 2015).

Taken as a whole, the groups of participants in the two main experimental conditions (optional vs. compulsory) are equivalent.[6] However, due to the different characteristics of the Lisbon, Braga, and Beja areas, the groups of participants in the three districts differ in terms of educational attainment (being, on average, more educated in Lisbon than in Beja; $F(2,623) = 4.564$; $p < .05$), religiosity (being more religious in Braga than in Beja, and more religious in Beja than in Lisbon; $F(2,623) = 16.120$; $p < .001$), political party or group membership (more common in Lisbon than elsewhere; $F(2,623) = 5.094$; $p < .01$), and

6 There are no statistically significant differences in terms of gender ($t(622) = -1.201$; $p > .05$), age ($t(622 = .026$; $p > .05$), educational attainment ($t(622) = -.499$; $p > .05$), interest in politics ($t(622) = -.819$; $p > .05$), religiosity ($t(622) = -.041$; $p > .05$), ideology ($t(617) = -.364$; $p > .05$), marital status ($\chi 2 = 3.118$; $p > .05$), preferred media for political information ($\chi 2 = 3.753$; $p > .05$), employment status ($\chi 2 = 9.738$; $p > .05$), union membership ($t(622) = -.612$; $p > .05$), or party/political group membership ($t(622) = -.1268$; $p > .05$).

ideology (with participants in Braga being, on average, more right-wing than those of Lisbon and Beja; $F(2,618) = 12.448$; $p < .001$). Therefore, in the data analysis reported in the following section, these variables will be controlled for via their insertion in regression models.

Table 1 presents the frequency of preferential voting across districts, comparing both optional and compulsory ballots. In the optional preferential voting condition, the percentage expresses the proportion of participants who voted for a given candidate instead of for the party as a whole, blank, or null. Instead, in the compulsory preferential voting condition, we present the proportion of voters expressing preferences for candidates other than the list-puller (as we have seen above, voting for the first candidate in the list is often assumed to be a sign of non-preferential voting; this is, therefore, a very conservative measure of preferential voting, since list-pulling votes may sometimes be sincere preferential votes).

A note on spoiled ballots is due. Unsurprisingly, the percentage of spoiled votes is higher in these two experimental conditions (about 13%) than when the participants used the official ballot (5% approximately; Lobo, Santana-Pereira and Gaspar, 2015).[7]

TABLE 1
Percentage of Preferential Votes Cast by District and Condition (vs. non-preferential voting, including blank/null votes).

		Beja	Braga	Lisbon
Optional	Preferences (vote for candidates)	12.5	9.6	26.9
	Vote for the List	82.7	78.4	55.8
	Blank/Null	4.8	12.5	17.3
Compulsory	Preferences (vote for candidates other than the list-puller)	23.1	51.9	17.3
	Vote for the list-puller	63.4	26.9	75.1
	Blank/Null	13.5	21.2	7.6

7 A regression analysis testing the same model displayed in Table 2, but having the probability of casting a blank or null vote as dependent variable, shows that interest in politics and education do not affect the probability of spoiling a vote, which was higher for the participants in the compulsory preferential voting condition and as the magnitude of the electoral district increased; both variables interacted, with the effect of district magnitude on the likelihood of spoiling votes being much stronger in the compulsory than in the optional condition.

RESULTS

In order to test our hypotheses, we computed logistic regression models on the likelihood of casting a preference vote, having as predictors district magnitude (a three-point variable)[8], the ballot structure (a dummy variable), gender, age, education, and political interest. We also inserted religiosity, union membership, and political party/group membership (as proxies or actual measures of involvement in associative work; see André et al., 2016) and ideology as controls.[9]

The results, shown in Table 2 (Model 1), reveal that most individual level variables are not key predictors of the likelihood of casting a preferential vote. Other than ideology[10], there is an effect of political interest, with those who are not interested in politics at all being less likely to vote for individual candidates that those who self-report higher levels of interest about what happens in the world of politics. Education seems to have no impact on the likelihood to vote for individual candidates. The results also show that the effect of political interest is modest: when the other variables are kept at their mean values, the uninterested are 28% likely to express preferences, in contrast with those who are very interested in politics: 38%. Gender and age do not seem to have an impact on the likelihood to express preferences in the ballot: men are just slightly more likely to do it than women (predicted probabilities of 31 and 26%, respectively), and there is no distinct pattern in terms of age. In short, we find partial and modest empirical support for hypothesis 1.

8 The three points are low magnitude (Beja), average magnitude (Braga) and very high magnitude (Lisbon). We understand this three-point variable as ordinal, since an increase in this variable is related to an increase (or decrease) in the factors that encourage or inhibit preferential voting discussed above (proximity, media visibility of candidates, etc.), although this increase/decrease may not be constant from point to point. Use of ordinal variables as continuous is standard, leading to greater interpretability of results (*vis-à-vis* the use of several dummies).

9 The evidence regarding the role of ideology is, however, both scarce and mixed. Hoedemakers (2014) reports a small but significant effect of ideology, with left-wing voters being more likely to select candidates other than the list-puller. While weak, this result is interesting because it neither corroborates the irrelevance of ideology in terms of the level on which one allocates one's vote (Andeweg and van Holsteyn, 2011) nor literature hypothesizing higher levels of preferential voting from right-wing voters, associated with a trend for candidates linked to right-wing parties to undertake more personalized campaigns than left-wing candidates (e. g. Giebler and Wessels, 2013, Karlsen and Skogerbø, 2015).

10 We computed predicted probabilities of preferential voting of 10.1% for the extreme left-wing voters, 21% for those placed at the center of the spectrum, and 30% for the extreme right-wing participants.

The regression reported in Table 2, Model 1, also allows us to test hypotheses 2 and 3 regarding the effects of voting rules and district magnitude. Concerning the former, its impact is significant and follows the expected direction: on average, participants in the optional condition were only 22% likely to express preferences, as compared to 35% in the compulsory condition (keeping all the other variables constant). That is, regardless of the broader context and voter characteristics, compulsory preference voting rules (i. e. the lack of a formal possibility of not voting for individual candidates) does produce more actual preferential votes being cast, when compared to optional preferential voting.[11] Therefore, hypothesis 2 is confirmed.

Nevertheless, the coefficient for district magnitude does not reach statistical significance, which would cause Hypothesis 3 to be rejected. The predicted probabilities actually point to the fact that preferential voting could be more likely in a district of relatively average magnitude such as Braga (32%) than in low and high magnitude districts (26/27%). We decided to further explore the role of district magnitude and see if its effect depends on the voting rules used in this field experiment, by adding an interaction term of these variables to the regression model. The effect turns out to be statistically significant (Table 2, Model 2).

The predicted probabilities (Figure 1) shed light on the interaction between these two variables: it seems that the relationship between district size and probability to cast preferential votes is U-shaped when the voting rules make the expression of preferences merely optional. In this case, the likelihood of expressing preferences is greater in low (20.0%) and high (29.6%) magnitude districts than in the intermediate one (9.7%). In fact, these results can be read in light of what André, Waulters, and Pilet (2016) report in their study of preferential voting in Belgium, where an optional system is in place. On the one hand, in contexts such as Beja, in which the population density is low, the proximity model would posit somewhat higher patterns of preferential voting than in more densely populated contexts such as Braga or Lisbon. But in Lisbon this sense of proximity is fostered by the media: while it is unlikely in such a densely populated setting to meet the candidates in person, several candidates running in Lisbon are party leaders or key party elite members,

11 A t-test, performed under the assumption that the groups of participants in the optional and mandatory conditions are equivalent, supports the conclusions of the analysis of predicted probabilities holding the other variables constant, but finds a slightly stronger impact of this factor: on average, 16.4% of the participants in the optional conditions voted for a specific candidate, while in the compulsory conditions taken as a whole this value is almost twice as great (30.7%; differences are statistically significant: $t(622)= -4.301$; $p < .001$).

TABLE 2

Parameter estimates for the predictors of the probability of expressing preferences in the ballots (logistic regressions)

	Model 1	Model 2	Model 3	Model 4
Intercept	-3.420 (.75)	-4,308 (.84)	-4.334 (.90)	-2,240 (1.09)
District	.089 (.50)	.532 * (.21)	.073 (.13)	-.503 (.43)
Compulsory (1 = yes)	.84 *** (.20)	2.347 *** (.60)	2.223 ** (.76)	.863 *** (.21)
Gender (1 = male)	.287 (.21)	.265 (.21)	.283 (.21)	.292 (.21)
Age	-.011 (.01)	-.011 (.01)	-.011 (.01)	-.011 (.01)
Education	.046 (.08)	.047 (.08)	.047 (.08)	.052 (.08)
Interest in Politics	284 * (.13)	.262 * (.13)	.596 ** (.21)	-.174 (.34)
Religiosity	.025 (.12)	.027 (.12)	.043 (.12)	.038 (.12)
Union Membership (1 = yes)	-.355 (.40)	-.358 (.40)	-.344 (.40)	-.355 (.40)
Political party/group membership (1 = yes)	.428 (.32)	.471 (.32)	.421 (.32)	.398 (.32)
Ideological self-placement	.174 *** (.04)	.177 *** (.04)	.170 *** (.04)	.177 *** (.04)
Compulsory* District		-.721*** (.26)		
Compulsory* Interest			-.486 (.25)	
District* Interest				.215 (.15)
Nagelkerke R2	.135	.152	.143	.140
N	619	619	619	619

Notes: The dependent variable is a dummy in which the value 1 identifies the participants who expressed preferences in the ballot. Values are unstandardized coefficients with standard errors in parentheses.
Significance: * = p < .05; ** = p < .01; *** = p < .001.

benefiting from media attention that is usually not granted to candidates running in other districts, such as Braga.

However, the probability of casting preferential votes reveals an inverted U shape when the voting rules are compulsory (Figure 1). In this context, the likelihood of expressing preferences is greater in Braga (51.4%) than in Lisbon (21.2%) or Beja (28.3%). In Beja, this figure may be explained by the instrumental model rationale: voting for candidates other than the list-puller (our measure of preferential voting) may not make much sense in a context in which most parties will, if lucky, have a party magnitude of 1, i. e., elect just one MP, and, therefore, the most feasible candidate is likely to be the list-puller. In turn, in Lisbon, most list-pullers are party leaders, which means that the likelihood of voting for candidates other than them may be hindered by a trend toward first-level personalized voting. That is, voters may think that "if I have no alternative but vote for a candidate, I might as well just vote for the leader of my party".

A second interesting finding from the data shown in Figure 1 is that it seems that voting rules only make a difference when the number of seats at stake is neither very low (Beja) nor very high (Lisbon), but just above average (Braga).

Given the fact that political interest is the only measure of sophistication with an impact on the likelihood to vote preferentially, our analysis is hereinafter focused on the interaction of political interest with both voting rules and district magnitude, in order to test hypotheses 4 and 5.[12] Models 3 and 4 in Table 2 present the results of two regression models in which these interaction terms were included. The interaction between political interest and district magnitude is highly insignificant, thus discouraging Hypothesis 4 (Model 3), while the interaction term with voting rules is not statistically significant with a confidence interval of 95%, but significant if an interval of 94.5% would be chosen, which leads us to analyze it in greater depth in order to test Hypothesis 5. This interaction is further explored in Figure 2, which plots predicted

12 For the sake of completeness, we also computed models with interaction terms between, on the one hand, voting rules or district magnitude, and, on the other, alternative indicators of political sophistication (gender, age, education), to rule out the possibility that the absence of main effects of those variables was due to their impact being diametrically opposite in different contexts and, therefore, evened out when the context is not accounted for by means of interaction terms. None of the interaction terms between voting rules and gender, age, or education were statistically significant. In the case of the interactions between district magnitude, and these variables, only the term regarding gender was significant: women are slightly more likely than men to cast preferential votes in the low magnitude district of Beja but less likely to do so in the two other districts.

FIGURE 1
Predicted probability of preferential voting according to voting rules and district magnitude (with confidence intervals in dotted lines)

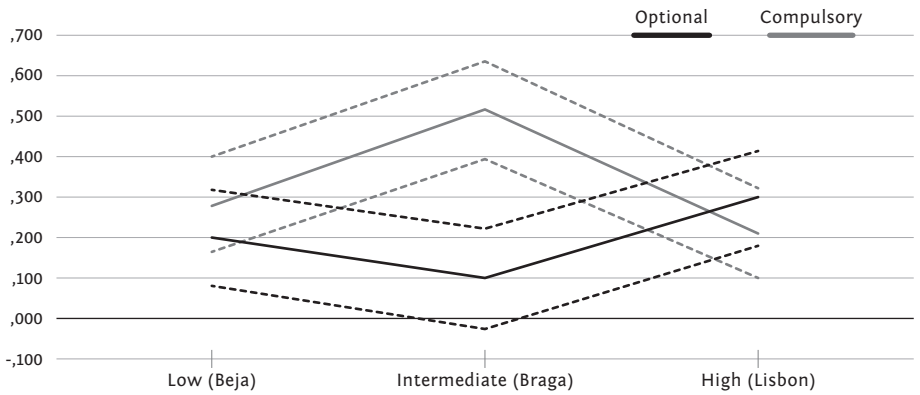
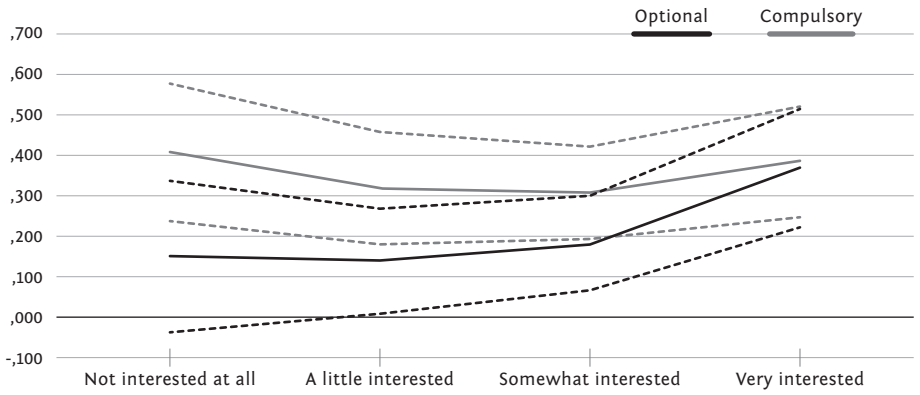


FIGURE 2
Predicted probability of preferential voting according to voting rules and levels of interest in politics (with confidence intervals in dotted lines)



probabilities of preferential voting according to levels of interest in politics and the voting rules underlying the ballot used to cast the vote, controlling for the other factors. What we see is that a positive (but modest) association between levels of political interest and preferential voting is observed only when the rules make the expression of preferences optional: in this context, voters are more likely to vote for individual candidates if they are more interested in what happens in the realm of politics. However, political interest does not seem to be a key feature of preferential voting when there is no formal alternative to

casting a vote for a candidate. Regardless of their political awareness, participants in this condition were equally likely to vote for candidates other than the list-puller. While vote rules seem not to matter in terms of probability to cast preferential votes for those who are very interested in politics, in the case of the uninterested the fact that there is a formal way of voting without having to choose among candidates tends to lower (although not in a statistically significant way) their odds of expressing preferences. In short, Hypothesis 5 seems to receive empirical support from this analysis.

CONCLUSIONS

In this article, the results of an experiment carried out in the 2015 legislative elections in Portugal are used to further our understanding of flexible list voting. The experimental study – focusing on actual voters on election day – is an ideal ground to test our hypotheses, and enables the study of the impact of the varying electoral system characteristics on voting behavior, holding everything else constant, which is very rare in published studies of preferential voting.

Studying these issues will help us to understand the conditions under which preferential voting can be a mechanism that furthers choice by the electorate. Given this overall goal, the focus was on testing the importance of political sophistication for preferential voting, as well as contextual dimensions such as district magnitude and voting rules (compulsory or optional preferential voting). We also explored whether political sophistication matters for the expression of preferences in interaction with voting rules and amount of choices available.

The analysis shows that age, gender, and education make no difference for casting a preferential vote, which is encouraging from the perspective of its introduction. Only political interest emerges as a significant predictor of preference voting in our multivariate model. Concerning the two different voting rules, optional and compulsory preferences, having the latter makes a significant difference. District magnitude does not seem to make a difference, but further exploration of the interaction of this variable in interaction with type of ballot employed shows that it is significant. The relationship between this variable and the expression of preference votes follows a U-shaped curve for voters using optional voting, but an n-shaped curve for voters using compulsory voting. Indeed, it is the mid-size district – Braga – where voting rules make a difference, with a substantial increase in the number of voters expressing a preference vote when the ballot makes preferential voting compulsory.

Finally, the analysis of the interaction between political interest and the two contextual variables does not show significance. If we loosen the criteria

of significance slightly we see that there is a positive (but modest) association between levels of political interest and preferential voting in the optional preferential voting context, while political interest seems to make no difference if preference voting is compulsory.

Taken together, these results suggest that preferential voting is not dependent on political sophistication, with the partial exception of political interest. District magnitude does not seem to matter much for the likelihood of expressing preferences, especially when one compares very small and very large constituencies, whose characteristics allow for the resources and incentives listed by André et al. (2012) to work. In average size districts, the likelihood of expressing preferences may be greater or less than in the other districts according to the voting rules, with compulsory vote increasing the number of preferential votes and optional vote depressing it. The compulsory ballot is significantly linked to preferential voting (especially so in average-size districts) and also dilutes the importance that political interest may have in determining preferential voting. The results therefore do not suggest that preferential voting discriminates against those who are less sophisticated, especially if the ballot presented is one of compulsory preferential voting. *Ceteris paribus*, it makes a significant case for the adoption of compulsory voting, such as in the Netherlands, rather than the optional system, such as in Belgium.

Before ending, we would like to acknowledge some of the paper's shortcomings that may signal avenues for future research. First, it would have been important to include more electoral districts of similar magnitude, so that we consolidate our findings for district effects. Second, it would have also been interesting to compare systematically with another country where preferential voting already occurs. We are aware that having this kind of study in a country without preferential voting means that electors had not previously prepared to vote on such terms and were conscious that this was simply a study. Third, despite the fact that the response rate was 86% in the exit poll, there is still the possibility it may have resulted in bias due to the risk of polling only those voters most willing to respond. Last, a larger questionnaire would enable us to elicit more information about our respondents and the reasons for the type of preferential vote they cast.

APPENDIX

TABLE A1
Details of the parishes included in the study

Electoral district	Council	Parish	Total number of Registered Voters
Beja	Beja	União das freguesias de Beja (Santiago Maior e São João Baptista)	11887
	Beja	União das freguesias de Beja (Salvador e Santa Maria da Feira)	8794
	Castro Verde	Santa Bárbara de Padrões	881
	Castro Verde	União das freguesias de Castro Verde e Casével	4590
	Ferreira do Alentejo	União das freguesias de Alfundão e Peroguarda	1041
	Ferreira do Alentejo	União das freguesias de Ferreira do Alentejo e Canhestros	4330
	Moura	União das freguesias de Moura (Santo Agostinho e São João Baptista) e Santo Amador	7607
	Moura	União das freguesias de Safara e Santo Aleixo da Restauração	1590
Braga	Braga	Braga (São Vítor)	24394
	Braga	União das freguesias de Celeirós, Aveleda e Vimieiro	5972
	Esposende	Antas	2179
	Esposende	União das freguesias de Esposende, Marinhas e Gandra	11005
	Fafe	Arões (São Romão)	3239
	Fafe	União de freguesias de Moreira do Rei e Várzea Cova	2318
	Guimarães	Creixomil	8638
	Guimarães	Selho (São Jorge)	5182
Lisbon	Cadaval	União das freguesias do Cadaval e Pêro Moniz	3140
	Cadaval	União das freguesias de Lamas e Cercal	3238
	Lisbon	Lumiar	37856
	Lisbon	Penha de França	25501
	Sintra	Rio de Mouro	37850
	Sintra	Colares	6387
	VF Xira	Vila Franca de Xira	15509
	VF Xira	União das freguesias de Alverca do Ribatejo e Sobralinho	28950

Source: CNE

TABLE A2
Socio-Demographic Matrix for each Electoral District

Electoral District	Variable	Voters	%
Beja	Men	63418	49%
	Women	66288	51%
	18-34	26554	20%
	35-54	43005	33%
	55+	60147	46%
Braga	Men	383041	49%
	Women	403994	51%
	18-34	207058	26%
	35-54	311445	40%
	55+	268532	34%
Lisbon	Men	896372	47%
	Women	1003335	53%
	18-34	427031	22%
	35-54	695143	37%
	55+	777533	41%

Source: INE.

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