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The Causal Impact of Ballot Order on Voting Behaviour: Evidence from a Natural Experiment in Italy

Tommaso Giulla

The study of ballot design has gained salience in political science. The very procedure voters need to carry out in order to vote affects electoral outcomes, on top of the more direct effects of electoral rules. I focus on a specific channel through which such effects might realise: the order in which parties appear in the voting paper. Exploiting a natural experiment in the 2018 Italian general election, I estimate the electoral gain obtained by parties by virtue of being assigned the first (top-left) position in the voting paper. I use the fact that in Italy the party order in ballots is determined independently for the two elected chambers, thus exposing voters to two different exogenously determined lists. I find that, within a same municipality, parties which are assigned the first position in one chamber obtain a vote share between 0.1 and 0.2 p.p. higher relative to the other chamber. On average, this means that roughly 1 voter every 500 is influenced by the order in which party appears on the voting paper.

Keywords: Electoral Institutions, Voting Behaviour, Ballot Design, Cognitive Biases
JEL codes: D02, D72, D91

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INTRODUCTION

The study of ballot design has gained salience in recent research in the field of political science. In fact, the very procedure voters need to carry out in order to express their preference (how and where votes are *cast*) might itself entail consequences onto electoral outcomes, on top of the more direct effects of electoral rules (how and where votes are *counted*). In this respect, the literature has highlighted a number of mechanisms through which this effect might realise, putting particular emphasis on the time and cognitive effort required by the voting procedure: more complicated ballots (e.g. when multiple bodies are elected simultaneously) tend to discourage voters, resulting in higher shares of blank and invalid votes, or in roll-off (i.e. an increasing share of blank and invalid votes in the later stages of the voting procedure). As such, candidates appearing earlier in the voting process might (undesirably) receive an electoral advantage.

This work focuses on this specific dimension of ballot design, that is, the order in which parties are shown to voters. In particular, I study the effect of appearing in the first (top-left) position in the voting paper on a party's obtained vote share. Indeed, according to the "cognitive fatigue" hypothesis briefly outlined above, distressed voters might disproportionately opt for the most easily executable choices, picking the first satisfactory option they encounter (a cognitive procedure called "satisficing"[1] in behavioural psychology). For unconvinced voters, the satisficing option might well be the first party they get to read on the ballot paper. In countries using the roman alphabet, this should coincide with the first party that appears on the top-left corner of the voting paper.

[1] The concept of "satisficing" was introduced by Nobel laureate Herbert A. Simon in 1956 in his article "Rational Choice and the Structure of the Environment".

In order to test this hypothesis, I exploit a natural experiment provided by the setting of the Italian general elections. In Italy, the order by which parties appear on the voting ballot is determined by lottery. Exploiting this source of exogenous variation, I investigate whether ballot ordering yields any effect on the electoral performance of running parties. Specifically, I compare the vote shares obtained – within a same municipality – in the (simultaneous) elections for the two parliamentary chambers (*Camera dei Deputati* and *Senato*). The party ordering in the voting papers for the two chambers is determined by separate lotteries. This can help making the *ceteris paribus* assumption more credible. Within a same municipality, I can highlight the effect of the relative variation in the ballot ordering in the two voting papers onto the vote shares in the *Camera* and in the *Senato*. Using a simple OLS specification, I find that, within the same municipality, parties which are assigned the first position in the ballot for the *Camera* obtain, on average, a vote share 0.1 percentage points higher than in the *Senato*. Conversely, parties assigned the top-left position in the ballot for the *Senato* obtain, within the same municipality, a share 0.2 p.p. higher than in the *Camera*. For the average Italian municipality (with an electorate of roughly 4,300 voters), this means that approximately 1 voter every 500 is influenced by the order in which party appears on the voting paper. Further, this effect appears to be stronger for larger parties (reaching 0.5 p.p. for the *Senato* election). It is important to remark how voting is not compulsory in Italy, meaning that what I estimate is the influence of ballot design on individuals who actively chose to go voting.

Although this effect is, luckily, rather modest, and unable to alter electoral results at the national level, my findings contribute to the literature on the influence of ballot design onto voting behaviour. Specifically, I show how a mechanism highlighted in laboratory experiments does operate in a real-world scenario. Thanks to the specificities of the Italian case, my test of this hypothesis is rather solid, as I can sustain a causality claim outside of an experimental design.

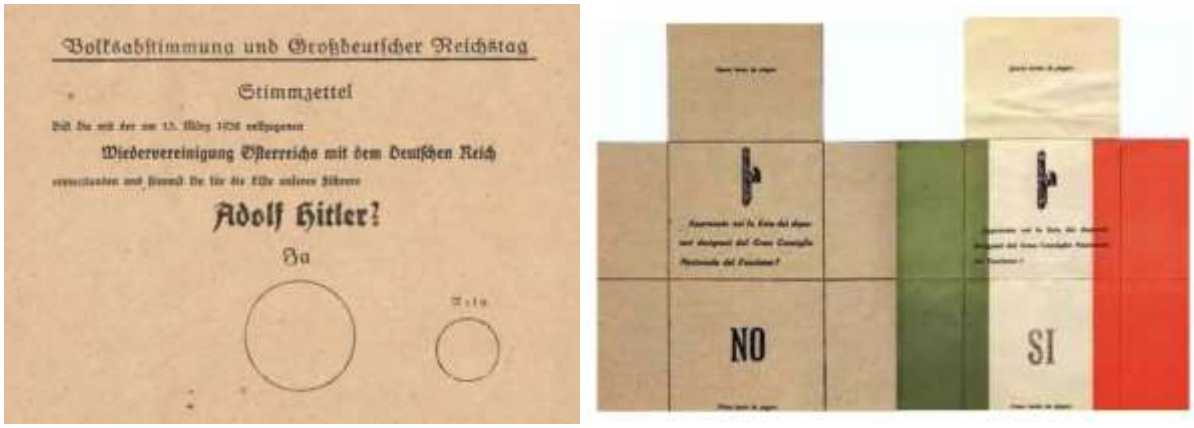
In addition, the fact that each municipality in Italy is exposed to two lotteries makes this study arguably more credible vis-à-vis the existing empirical literature on the subject, as my analysis relies on rather weak identification assumptions.

This work proceeds as follows: a first section addresses the relevant literature; a second section describes the institutional context of Italian general elections, and the possibility to study a natural experiment in such setting; a third section describes the data used, and presents the main variables of interest; a fourth section discusses the identification strategy and the main results; a fifth section provides a brief discussion of the results in the light of the relevant literature; a final section summarises the main takeaways of this work.

THE LITERATURE ON BALLOT DESIGN AND VOTING BEHAVIOUR

A rather extensive literature in political science has studied ballot designs, and concluded that these might entail important consequences for voting behaviour (for instance, Rusk 1970; Alles, Barnes and Tchintian, 2017; Engstrom and Roberts 2020; Muraoka 2021; Tchintian 2018; Alles, Barnes and Tchintian, forthcoming). Indeed, this should come as no surprise to those having some familiarity with the – infamously long – history of the use of propaganda in electoral races. Authoritarian regimes since Napoleon used ballot design to prompt favourable results in plebiscites, hinting that the present literature, including this contribution, is to some extent formalising mechanisms that were already grasped by past political agents in the form of intuition. In order to present a clear example of the use of visual cues in ballot design, Figure 1 reports two historical cases: the paper for the 1938 *Anschluss* ("reunification" [with the German *Reich*]) referendum proposed by the occupant Nazi authorities in Austria; and the one for the 1934 parliamentary "elections" in Fascist Italy. These embody rather well two ballot features that the literature has deemed important: proportions, and colours.

Figure 1: (on the left) a picture of the voting paper for the 1938 *Anschluss* referendum in Austria. The text asks the voter to support the reunification ("*Wiedervereinigung"*) of Austria with the German Reich, and to support the party "of our *führer* Adolf Hitler". (on the right) a picture of the voting paper for the 1934 general elections in Italy, asking voters to "approve the list of representatives proposed by the Grand National Council of Fascism ("*Approvate voi la lista dei deputati designati dal Gran Consiglio Nazionale del Fascismo?"*)



The ballot paper proposed by the Nazi authorities plays with proportions. The desired option "Yes" ("*Ja*") is portrayed at the centre of the paper, in a bigger font, and with a larger circle to be crossed in order to express the vote vis-à-vis the undesired option "No" ("*Nein*"), printed instead on the bottom-right corner with smaller font and circle size. The Italian paper exploits instead colour cuing: the ballots for the desired "Yes" ("*Si*") and undesired "No" ("*No*") options are identical insofar as their proportions, fonts and structural design. However, the "Yes" paper is printed in the colours of the Italian flag, to signal voters what would be the only patriotic choice. Indeed, many have devoted attention to study the inclusion of informational cues such as pictures, images, and party symbols in voting papers (Laskowski and Redish 2006; Kimball and Kropf 2005; Banducci et al. 2008; Lau and Redlawsk 2006; Conroy-Krutz et al. 2015; Moehler and Conroy-Krutz 2016; Tchintian 2018).

Importantly, ballot papers in modern democracies are usually more complex than the dichotomous examples presented above. Voters are in fact normally asked to choose among

many parties, and/or several candidates within each party lists. As such, on top of colours and proportions, other characteristics of the voting paper might yield an effect onto voting behaviour. Critical features range from the length of the ballot (Wattenberg et al. 2000; Walker 1966; Darcy and Schneider 1989; Aguilar et al. 2015) to, most relevantly to this work, the order and placement of parties and candidates (Ho and Imai 2008; Miller and Krosnick 1998; Villodres 2008; Söderlund et al. 2021; Casas et al. 2020).

With respect to this last strand of literature, I believe this analysis bring a novel contribution as the natural experiment I exploit arguably allows me to claim causality having to justify weaker identification assumptions. For instance, the only paper that relies on a comparably safe natural experiment is Ho and Imai (2008), who exploit the randomization-rotation of alphabetically-ordered ballots in Californian constituencies. However, in California, only the order for one district is extracted by lottery, while the remaining ones are obtained by "systematically rotating" the original lottery draw. Being the rotation "systematic", it could actually correlate with observable and unobservable districts' characteristics. Further, the result of the systematic randomization might influence the strategic behaviour of candidates, thus confounding the effect of the ballot ordering. As I will discuss in the next section, the Italian case should provide a shield against these concerns. A curious additional finding by Ho and Imai is that ballot ordering should only affect small parties. Indeed, more widely known political forces may be subject to a "brand effect" which could virtually annul any impact of ballot ordering. I will also test this hypothesis in my empirical analysis.

THE CASE OF ITALIAN GENERAL ELECTIONS

In order to investigate the effect of party ordering in the ballot onto voting behaviour, I exploit a natural experiment. In Italy, the order in which parties appear on the ballot is determined by

lottery. Indeed, many lotteries. Two distinct lotteries are held for the two elected parliamentary chambers (the *Camera dei Deputati*, and the *Senato*). Similarly, separate local extractions are carried out in each constituency (the *Circoscrizioni*, the local administrative units in charge of national electoral matters). For the election of the *Senato* there are 20 *Circoscrizioni* (which coincide with the *Regioni*, the standard subnational administrative units), while for the *Camera* there are 28 *Circoscrizioni* (either coinciding with or being a subset of a *Regione*). As a result, in a given election, the actual order(s) in which parties appear to voters in local ballots is determined by 48 separate lotteries. Ballots are for the rest identical across the Italian territory, and differ only in the number of parties or coalitions running in a given *Circoscrizione* (the number of running parties/coalitions range between 6 and 14), and in the actual candidates' names appearing in each district[2] (*Collegi*). Each voter is given two separate sheets, one for the *Camera* and one for the *Senato*. The vote takes place simultaneously for the two chambers. There is no mandate on which voting envelope should be opened and filled first, and voting choices do not need to be consistent between the *Senato* and the *Camera* voting papers. However, votes do need to be coherent within the same ballot: the chosen candidate in the uninominal district and the list in the multinominal district need to belong to the same party or coalition. Importantly, the eligible electorate differs between *Camera* and *Senato*. For the latter, only citizens above 25 years of age can vote.

It is interesting to remark that the explicit rationale underpinning the provision establishing the use of lotteries (*Presidential Decree of the 30th of March 1957, n. 361, art. 24, first and second commas*[3]) is the presumption that the order in which parties appear on the ballot might in fact

[2] Importantly, there are (in some cases) multiple districts within each *Circoscrizione*, in which different candidates may run, however always respecting the ordering and the number of parties common to the whole *Circoscrizione*.
[3] Direct link to the official text of the Decree (in Italian): https://www.gazzettaufficiale.it/atto/serie_generale/caricaArticolo?art.versione=1&art.idGruppo=0&art.flagTipoArticolo=0&art.codiceRedazionale=002G0004&art.idArticolo=8&art.idSottoArticolo=1&art.idSottoArticolo1=10&art.dataPubblicazioneGazzetta=2002-01-05&art.progressivo=0.

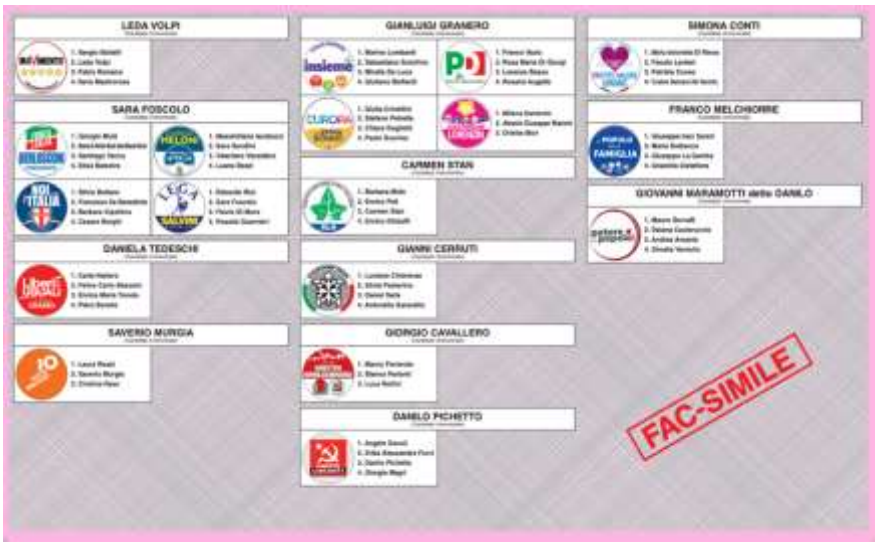
influence voters' decision. The legislator concluded that any such unintended advantage might have been most impartially allocated by fate, as opposed to any other criteria. As such, this analysis will contribute to shed some light on the sensibility (or lack thereof) of this precautionary measure, introduced well before the first scientific studies over the matter.

The fact that the party order voters face in the ballot is determined by fate potentially allows me to identify the causal impact that such order might entail onto voting behaviour. Lottery outcomes should in fact be expected to be on average orthogonal to any party or municipality characteristics. Moreover, the fact that each municipality in Italy is exposed to two distinct exogenously determined party orders (one for the *Camera* and one for the *Senato*) allows my identification strategy to more credibly respect the *ceteris paribus* assumption. By comparing the two electoral results obtained by a same party in the same municipality, I am in fact able to isolate the effect of party ordering from the one of any potential interaction between geographical and party characteristics (for instance, parties – or the candidates they present – might be plausibly stronger in some areas and weaker in others).

Indeed, it is no secret that parties' strategic decisions regarding their candidates is non-random with respect to their expected electoral strength at the local level. Specifically, more loyal and senior party members are usually let run in races deemed "safe", in order to secure their permanence in the parliament in the coming legislature. Younger and stronger candidates are instead usually presented in "difficult" constituencies where a tight result is expected. Finally, less important members – or the ones the party wants to get rid of – are presented in constituencies considered "lost", i.e. where a victory of the opponent(s) is deemed almost certain. It is important to notice how these factors would consist of interactions between parties' characteristics and geographical units. Such effects would not be captured by the inclusion of

the respective municipality and party fixed effects. Confronting the results obtained in the two chambers by the same party within the same municipality will therefore shield my strategy from these concerns, since the strategic decisions of parties can be reasonably expected to be similar for the two chambers within the same geographical unit. For illustrative purposes, Figure 2 reports the 2018 sample voting papers for the *Camera* (with pink background) and for the *Senato* (with yellow background) for the *Circoscrizione Liguria*.

Figure 2: (on top) sample voting paper for the *Camera dei Deputati*. (at the bottom) sample voting paper for the *Senato*. Names written in uppercase indicate the candidate to a given majority-rule district within the *Circoscrizione*. The symbol(s) indicate(s) to the part(ies) supporting the given majority-rule district. The numbered lowercase names to the right of each symbol indicate the list of candidates presented by the party. Party symbols grouped under the same majority-rule candidate's name are coalitions.



It is important to notice how the party ordering is different for the two chambers, thus exposing each Italian municipality to two distinct sources of exogenous variation. Extracted numbers are used to distribute – in ascending order – the party symbols along the ballot, filling by columns.

DATA

The data used in this analysis was produced by combining information from two sources. The first one is the official record of electoral results published by the Italian Ministry of Interior[4]. This database provides information at the municipal level on the votes obtained by every individual candidate (in majoritarian districts) and by the party lists (in proportional districts). Data is further disaggregated per elected chamber (*Camera* or *Senato*). The second set of information consists of data about the results of the 48 lotteries determining the order in which parties are actually displayed on the 28 distinct voting papers for the *Camera* and the 20 for the *Senato*. This information was obtained by searching the published sample ballot papers (similar to the ones shown above) that local police authorities (*Prefetture*) release before the election for informational purposes. When official samples from a *Prefettura* were not available, I used the information published by local newspapers, cross-checking multiple sources when possible (no inconsistency was encountered).

Due to data constraints, I focus on the 2018 Italian general elections (to this date, 2022 electoral figures have not yet been compounded and published by the competent authorities; the analysis could in theory be extended to previous elections, for which the electoral figures are available, but for which the information on local ballot designs is more difficult to retrieve). As a result, I dispose of roughly 75,000 observations (this number varies slightly depending on the model

[4] Direct link to the Italian Ministry of Interior's database: https://elezioni.interno.gov.it/opendata.

specification used), i.e. one data point for each party running for both *Camera* and *Senato* in each of the roughly 8,000 Italian municipalities.

The dependent variable (*diff. share*) is the difference in the vote shares for the *Camera* and the *Senato* obtained by a party within a municipality (that is, % votes Camera - % votes Senato). I use two different specifications for the dependent variable: the difference in the vote share obtained by party lists in plurinominal proportional-rule districts; and the same measure but for candidates in uninominal majority-rule districts. The treatment is captured by the two dummy variables, *lucky camera* and *lucky senato*, which respectively take the value of 1 if a given party appeared in the first place in the local ballot for the either the *Camera* or the *Senato*, and the value of 0 otherwise. I also coded the full ranking order extracted in each *Circoscrizione* in order to test whether any effects would extend beyond the simple first position measure. To potentially capture the bi-dimensionality of the voting paper, I also note the position of parties in terms of column and row rankings starting from the top-left corner (e.g. the first party will have a [column = 1, row = 1] vector; the second party of the third column a [column = 3, row = 2] vector; etc.). In order to implicitly control for other observables, I exploit municipality and party fixed effects (I add no explicit control variable).

THE EMPIRICAL STRATEGY

The empirical model consists of a simple OLS regression with party and municipality fixed effects. Heteroskedasticity-robust standard errors are clustered at the level of the *Circoscrizione* (i.e. the level at which the lotteries take place). The model is summarised by the following equation:

$$diff\ share_{ijk} = \beta_1 lucky\ Camera_{ik} + \beta_2 lucky\ Senato_{ik} + \gamma P_i + \delta M_j + \epsilon_{ijk}$$

Assuming:

$$E\left(lucky\ Camera_{ik}\ \times\ \epsilon_{ijk}\right) = 0$$

$$E\left(lucky\ Senato_{ik}\ \times\ \epsilon_{ijk}\right) = 0$$

Where the subindex i indicates the party, j represents the municipality, and k is the *Cirscoscrizione*. The variables P_i and M_j are respectively the party and the municipality fixed effect. These are included in order to control for the respective party and municipality specific characteristics which might entail an effect onto the difference in the vote shares obtained at the *Camera* and *Senato* (like, for instance, the strength of a specific party, or the unemployment rate in a given municipality). Importantly, within the same *Circoscrizione*, a party was assigned the top-left ballot position in both the *Camera* and the *Senato* ballots in only one case[5], for which the simultaneous inclusion of both chamber-specific dummy variables should pose no issue on aggregate.

By including both of the *Camera* and *Senato* dummy variables, I am able to check whether the effect would be symmetrical between the two chambers. I also use the difference between full extracted ranks (i.e. not just a dummy variable for the first extracted) ordering the parties for *Camera* and *Senato*. Finally, I use the "geographic" measures coded in terms of column and row positions. I test both the singles column-row ranks separately for the two chambers as well as the difference of their products. The product measure should capture simultaneously – in a three-dimensions space – the advantage of being located at the edges of the ballot paper, and the advantage of being located closer to the top-left corner. The following matrix illustrates how these measures would work. Higher values should negatively affect the visibility of a given party on the ballot.

[5] The party "*Liberi e Uguali*" in *Circoscrizione* "*Piemonte 1*".

Figure 3: illustration of the *Rank* and *Row-column product* measures

Rank

1	4	7	10
2	5	8	11
3	6	9	

Row-column product

1	2	3	4
2	4	6	8
3	6	9	

These alternative specifications allow me to test whether the lottery effect only operates via the allocation of the "best" position on the ballot, or whether the ordering could affect voting behaviour via more complex patterns.

Indeed, a recent literature on eye-tracking has highlighted several facts about how humans would read a text which are extremely relevant to this analysis (Pernice, Whitenton, and Nielsen, 2014). This body of research – which is actually motivated by the objective of optimizing the readability of web contents – formalized the occurrence of three relevant reading patterns: the spotted, F-shaped, and commitment reading patterns. The spotted pattern focuses on key attention points in a body of text or image. The F-shaped pattern prioritises content on the top and left borders of the text or image, then descending following horizontal lines. The commitment pattern basically formalizes the practice of "normal" reading. My simple specification using only the dummy variables for the top-left position should capture the occurrence of a spotted reading pattern, as distressed voters would focus on the first available focal point. Differently, the specification using the full ranking order should reflect a commitment pattern, that is, voters would approach the ballot skimming through column by column. Finally, the row-column product measure should be effective in case voters would go through the voting paper following an F-shaped pattern, as the privileged positions would be the ones laying on the top and left borders.

In order to check the *ex-post* exogeneity of the lotteries' outcomes, I perform three balance tests on the observable candidates' characteristics in uninominal majority-rule districts. The qualities of the single candidates running might in fact influence the relative party performance in the two chambers in a given municipality (although, as I argued above, there is no reason to expect radically different party strategic behaviours between the two chambers within the same geographical unit). Specifically, I check whether the lottery extraction (i.e. the fact that a party is allocated the top-left spot on the ballot) predicts any of the three candidate's characteristics I can observe: sex, age, and the fact of having been born in the *Circoscrizione* he or she is running. Table 1 summarises the results from these three simple OLS regressions.

TABLE 1: Balance Tests on Candidates' Observables

Varname	**Estimate**	**Std. Error**	**Pr(>|t|)**
sex	0.04	0.03	0.20
local	-0.01	0.03	0.79
age	-1.31*	0.65	0.04
Observations	3,964		

*** p<0.01, ** p<0.05, * p<0.1

The coefficients for the variables *sex* and *local* are close to 0, and are statistically insignificant at conventional levels. This indicates that women and men faced the same *ex-post* likelihood of appearing in the top-left spot in the ballots. The same holds true for candidates who were born inside or outside the *Circoscrizione* in which they are running. The coefficient of the variable *age* is instead negative (= -1.31) and significant at the 95% level. Specifically, candidates appearing in the top-left spot in the ballots are on average 48.8 years old, while other candidates are on average 50.1 years old. I do not believe this to be a relevant – nor large – difference.

RESULTS

Table 2 reports the results for the simple OLS equation specified above. Each model specification is tested using two outcome measures: candidates' differential shares in uninominal majority-rule districts (odd column numbers); and parties' differential shares in multinomial proportional districts (even column numbers).

The results from columns 1 and 2 (the baseline model with the two treatment dummy variables) are consistent with the hypothesis that parties and candidates that appear first (top-left corner) in the ballot receive a higher vote share. Specifically, the coefficient of *lucky camera* is positive (= 0.001), and statistically significant at the 99% level. Symmetrically, the coefficient of *lucky senato* is negative (= -0.002), and statistically significant at the 99% level. The coefficients should be interpreted as follows: on average, within a specific municipality, a party that appeared in the top-left position in the ballot paper for the *Camera* (*Senato*), obtained a vote share 0.1 (0.2) percentage points higher at the *Camera* (*Senato*) than at the *Senato* (*Camera*). These estimates should be interpret as causal. In the average Italian municipality, the number of votes casted equalled roughly 4,300. As such, the estimated coefficients imply that the result of the lottery (only considering the first extracted position) influenced, on average, 1 voter out of 500. This is my preferred specification since it is the one that implies the weakest assumption about how the extracted rank would affect voters: people will start reading from the top-left corner. The little asymmetry displayed by the two coefficients could be due to the different electorate participating in the two elections, with young citizens between 18 and 24 years of age only voting in the *Camera* election.

I find no evidence of an effect of the continuum of the extracted rank onto the differential vote shares obtained by parties and candidates between the two chambers. Specifically, columns 3

and 4 evaluate whether the difference in the ranking position between *Camera* and *Senato* would produce any differential advantage in one chamber vis-à-vis the other. The coefficients should be expected to be negative: a positive value in the ranking difference should capture a more disadvantageous position in the *Camera* ballot vis-à-vis the *Senato* one. However, I find null effects for this specification, both when analysing the impact on the candidates' and lists' obtained vote shares. A similar picture is presented in columns 5 and 6, which use as an explanatory variable the difference in the column-row product measure between the ballots for the two chambers. The same result is again reflected in the null coefficients in columns 7 and 8, which use as explanatory variables the differences in the single row and column position measures between *Camera* and *Senato*. Importantly, these latter specifications are in my opinion more fragile vis-à-vis the simpler one based on the first position in the ballot alone. Indeed, identifying any "intensive" effect of ballot ordering would imply making assumptions about how people would actually read the presented ballot. Voters might in fact read non-linearly the available options. Not only, such reading patterns might be different from person to person, further complicating the definition of an adequate catch-all identification strategy.

TABLE 2: Main Regression Results

VARIABLES	(1) *Candidate*	(2) *List*	(3) *Candidate*	(4) *List*	(5) *Candidate*	(6) *List*	(7) *Candidate*	(8) *List*
Lucky Camera	0.001***	0.001***						
	(0.000)	(0.000)						
Lucky Senato	-0.002***	-0.002***						
	(0.001)	(0.001)	0.000	0.000				
Diff. Rank			(0.000)	(0.000)				
Diff. Geom.					0.000	0.000*		
					(0.000)	(0.000)		
Row Camera							-0.000	-0.000*
							(0.000)	(0.000)
Column Camera							-0.000	-0.000
							(0.000)	(0.000)
Row Senato							0.000	0.000
							(0.000)	(0.000)
Column Senato							-0.000	-0.000
							(0.000)	(0.000)
Observations	77,754	77,088	72,907	72,241	72,907	72,241	72,907	72,241
N of municipalities	7,958	7,884	7,586	7,512	7,586	7,512	7,586	7,512
Municipality FE	YES	YES	YES	YES	YES	YES	YES	YES
Party FE	YES	YES	YES	YES	YES	YES	YES	YES

Robust standard errors clustered at the level of *Circoscrizione* in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3 reports instead the results from an additional analysis I run in order to test the "brand effect" hypothesis posited by Ho and Imai (2008). According to the authors, the effect of ballot ordering should only be observed for smaller parties, as larger ones would be subject to a "brand effect". As the symbols of larger parties would be more easily recognized by voters, the effect of the ballot ordering should be smaller if not null for them. I test this mechanism by restricting my sample so to first include only small parties (columns 1 and 2), and then only big ones (columns 3 and 4). I categorise as "big parties" the two major coalitions (left-wing[6]

[6] The left-wing coalition is composed of the following parties: *Partito Democratico, +Europa, Civica Popolare, Insieme.*

and right-wing[7]) and the *Movimento 5 Stelle* (which resulted being the most voted party at the national level in the 2018 elections). I label all other parties as "small parties". In these regressions, I only specify the treatment via the inclusion of the two the separate dummy variables (*lucky camera* and *lucky senato*), as these were the only significant coefficients in the results shown in Table 2.

TABLE 3: Testing the Brand Effect

	Small Parties		***Large Parties***	
	(1)	(2)	(3)	(4)
VARIABLES	*Candidate*	*List*	*Candidate*	*List*
Lucky Camera	0.001***	0.001***	0.002*	0.001
	(0.000)	(0.000)	(0.001)	(0.001)
Lucky Senato	-0.001***	-0.001***	-0.005**	-0.005***
	(0.000)	(0.000)	(0.002)	(0.002)
Observations	53,954	53,436	23,800	23,652
N of municipalities	7,958	7,884	7,958	7,884
Municipality FE	YES	YES	YES	YES
Party FE	YES	YES	YES	YES

Robust standard errors clustered at the level of *Circoscrizione* in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The results in Table 3 are surprising as they seem to contradict the results of Ho and Imai (2008). I do find evidence of a brand effect, however its influence appears to enhance the ballot ordering impact, rather than annulling it. In fact, looking at the results in columns 1 and 2, which use the small parties sample, the coefficients estimated for *lucky camera* and *lucky senato* display a lower magnitude (a 0.1 p.p. effect both when analysing the candidates' and lists' obtained vote shares). However, the same coefficients increase in magnitude when restricting the analysis to big parties (columns 3 and 4). Another interesting result is given by the fact that the ballot ordering effect appears to be symmetrical for small parties, while it is

[7] The right-wing coalition is composed of the following parties: *Noi con l'Italia, Fradelli d'Italia, Lega, Forza Italia.*

not for large parties. For small parties (columns 1 and 2), the effect of appearing in the top-left position in the ballot provokes the same 0.1 p.p. relative advantage in both chambers. For larger ones, appearing in the "lucky" position in the *Senato* ballot induces a 0.5 p.p. higher obtained electoral share vis-à-vis the *Camera*. The opposite effect only scores 0.2 p.p. when analysing the majority-rule candidates (column 3) and 0.1 p.p. for lists in proportionality-rule districts (column 4). Further, these latter results appear to have lost significance. This could however be due to the non-negligible loss of efficiency implied by restricting the sample to large parties only (that is, I am roughly using 1/3 of the initially available observations). An explanation for the asymmetry in the estimates for large parties could again rely on the different electorate participating in the *Senato* elections: older voters might be more (positively) susceptible to well-known party brands, especially when they are displayed in the most visible position on the ballot.

DISCUSSION

The results presented in the previous section confirm the "cognitive fatigue" hypothesis in two ways. First, more obviously, I find a positive effect of appearing in the top-left position in the ballot for one chamber on the electoral result obtained in that chamber by a candidate or party vis-à-vis the other chamber. This supports the idea that in fact unconvinced voters might opt for the most easily available option they can encounter: the party appearing in the top-left corner in the ballot. What is however curious – and specific to the analysed case – is that voting is not compulsory in Italy. This means that the effect I encounter was produced by individuals who actively chose to go voting despite not having formed any strong prior before or when accessing the ballot. The second piece of evidence supporting the proposed hypothesis is the lack of effect produced by ranking differences beyond the top-left ballot position. In fact, this finding is consistent with the idea that undecided voters might not be willing to pay the –

arguably high – cognitive cost of extracting relevant information from all the options available in the ballot, thus producing no effect for ranked positions beyond the first one.

My results are also consistent with the existing literature in political science studying the effects of ballot designs onto voting behaviour insofar as the estimated coefficients are small. However, differently from Ho and Imai (2008), I find this effect to be present for all parties in the political spectrum, and not only for the smaller ones, for which – the authors argue – the "brand effect" should be negligible. Not only. Conversely to the authors, I encounter an even stronger effect of ballot ordering for larger parties, suggesting that the manifestation of brand effects might not be trivial depending on the context analysed. Furthermore, for larger parties the effect appears to be asymmetric between the two chambers (0.5 p.p. for the *Seanto* and between 0.2 and 0.1 p.p. for the *Camera*). The main difference between the *Senato* and the *Camera* elections is the electorate, with citizens between 18 and 24 years of age not voting for the *Senato*. This hints that "brand effects" might resonate differently depending on demographic characteristics, with older voters probably more prone to vote well-known actors when they appear in the top-left position in the ballots. Finally, my results also support the sensibility of the rationale underpinning the provision establishing the use of lotteries to determine the party order in ballots. Indeed, order appears to grant a – although small and most likely irrelevant – electoral advantage. An advantage which would be best allocated by fate, as opposed to a rigid criterion.

CONCLUSION

This work has analysed the effect of ballot design onto voting behaviour, specifically focusing on the impact of party ordering on the voting paper. Looking at a natural experiment provided by the case of the 2018 Italian general election, I could estimate the causal impact of appearing

in the top-left position on the ballot onto the vote shares obtained by parties. I find that when a party occupies the "lucky" position in the ballot for the *Camera*, it gets – on average – a 0.1 percentage points higher electoral results vis-à-vis the *Senato*. The opposite effect is estimated to be slightly larger: appearing in the top-left position in the *Senato* ballot produces – on average – a 0.2 p.p. increase in the obtained vote share vis-à-vis the *Camera*. Curiously, in contrast with previous research, I find these impacts to be stronger for larger parties (reaching 0.5 p.p. for the *Senato* ballot), suggesting that the relationship between party ordering and the "brand effect" characterizing better known political forces could be less trivial than what previously thought. Overall, my analysis – strong of a simple and well-identified empirical strategy – brings a novel confirmation of the relevance of ballot design in voting behaviour, specifically supporting the "cognitive fatigue" hypothesis and highlighting an alternative (positive) interaction with "brand effects".

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