



Ballot position effects in open-list PR systems: the moderating impact of postal voting

Michael Jankowski¹ · Torren Frank¹

Accepted: 10 December 2020 / Published online: 4 January 2021
© The Author(s) 2020

Abstract

Various studies demonstrate that candidates at the top of the party list have a strong advantage in preferential voting systems, particularly under open-list PR. Such ballot position effects can be explained by voters' tendency to rely on easily available information shortcuts when selecting a candidate. In this paper, we argue that the strength of ballot position effects depends on the context of how voters cast their vote. Specifically, we argue that postal voters are less likely to rely on the ballot position cue compared to voters who vote on election day for two reasons. First, postal voters might be more politically interested. Second, postal voters have more time to assess additional information about the candidates. The hypothesis is tested by analyzing newly collected data from two open-list PR elections in the German federal state of Hamburg. The results confirm the theoretical expectations: Ballot position effects are substantively weaker among postal voters. Additional analyses suggest that differences in the political interest between postal voters and election day voters are unlikely to fully explain these results. These findings advance our understanding of ballot position effects and voters' use of information shortcuts more generally.

Keywords Open-list PR · Preferential voting · Ballot paper cues · Ballot position effects · Postal voting

✉ Michael Jankowski
michael.jankowski@uol.de
<http://michael-jankowski.de>

Torren Frank
torren.frank@uol.de

¹ Univeristy of Oldenburg, Ammerländer Herrstraße 114-118, 26129 Oldenburg, Germany



Introduction

In open-list proportional representation electoral systems (open-list PR), voters can have a strong impact on which candidates get elected. By casting votes for candidates instead of closed-party lists, voters have the potential to change the ranking of candidates on the list. Theoretically, open-list PR systems allow voters to cast a vote for the candidate they like the most and that best reflects their policy preferences (Blumenau et al. 2017; Schoultz and Papageorgiou 2019). It is also assumed that open-list PR systems increase voters' ability to hold their representatives accountable (Carey and Shugart 1995; Tavits 2010; Crisp et al. 2013). While these aspects of open-list PR systems seem desirable, several studies also demonstrate that voters tend to cast rather uninformed votes under open-list PR. In various open-list PR elections strong ballot position effects have been observed (e.g., Faas and Schoen 2006; Lutz 2010; Marcinkiewicz 2014; Marcinkiewicz and Stegmaier 2015; Blom-Hansen et al. 2016; Däubler and Rudolph 2018). Ballot position effects describe the observation that candidates ranked higher on the ballot paper tend to receive more votes than candidates ranked lower on the ballot paper. Particularly, the candidate ranked first on a party list benefits the most from this ballot position effect. The effect of the first ballot position is so strong that some studies even conclude that under open-list PR "an easy rule applies: the first will be the first" (Faas and Schoen 2006, p. 100).

One prevalent explanation for ballot position effects is voters' tendency to rely on easily available information shortcuts (Brockington 2003). Especially under relatively complex electoral systems, such as open-list PR, voters have to acquire a large amount of information in order to cast a fully informed vote. However, as argued in Shugart et al. (2005), it is very unlikely that voters are that well informed about the candidates running for election. Instead, it is rational for voters to use easily available information shortcuts when selecting a candidate (Lupia and McCubbins 1998; Shugart et al. 2005; Lau and Redlawsk 2006). While some argue that ballot position effects assist voters in selecting a candidate (Marcinkiewicz 2014), it can also be argued that voters' tendency to rely on information shortcuts contrasts with the assumption that voters will select candidates which best reflect their policy preferences (Lau and Redlawsk 2001, 2006). To put it bluntly, voters who rely on the ballot position cue do not necessarily cast a vote with the intention of holding a certain candidate accountable or because this candidate best reflects their policy preferences; voters often do so because they lack information about the candidates running for election and relying instead on the party-defined list order is the best they can do (Däubler and Rudolph 2018). Therefore, it is relevant to understand in which contexts voters tend to rely on information shortcuts such as the ballot position cue. This paper addresses this issue. Specifically, we focus on the potentially moderating effect of postal voting on the strength of ballot position effects. The main argument is that ballot position effects should be weaker among postal voters for two reasons. First, voters with higher levels of political interest might self-select into voting by mail. As political interest is potentially weakening the ballot position cue, postal voters are



less likely to use the ballot position heuristic. Second, casting an absentee ballot gives voters more time to assess additional information about the candidates running for election. Instead of casting a vote within a voting booth in which voters have little time and no access to additional candidate information, postal voters can actively look for additional candidate information when they are insecure about which candidate best reflects their interests. Therefore, it is expected that ballot position effects should be substantively weaker among postal voters.

The argument is empirically tested using novel data from the open-list PR elections in the German federal state of Hamburg in 2015 and 2020. For both elections, highly disaggregated election results of all candidates for each ballot box have been collected, which includes ballot boxes used for postal voting. This data allows to compare how candidates perform on election day with candidates' performance among postal voters. The results confirm the theoretical expectations: Candidates ranked at the top of the ballot paper perform significantly worse among postal voters than among voters who cast their vote on election day. This effect is restricted to the first ranked candidate; all other candidates perform significantly better among postal voters. We then proceed to analyze the mechanism behind this finding by using survey data. It is demonstrated that postal voters are on average older than election day voters, but they do not show significantly higher levels of political interest than election day voters. These results indicate that it is unlikely that self-selection into postal voting explains our findings. In sum, the paper provides new insights on the occurrence of ballot position effects in open-list PR elections and also contributes to the study of postal voting. More generally, the findings have implications for our understanding of voters' use of information shortcuts as they highlight that voters seem to prefer other candidates once they have more time and access to other information than presented on the ballot paper.

Ballot position effects under open-list PR

As described above, it is frequently assumed that voters lack important information about candidates running for election and thus have to rely on information shortcuts when casting a vote (Shugart et al. 2005). The most efficient way to obtain information about the different candidates is to use the information presented on the ballot paper (Brockington 2003). Information shortcuts can be derived from the name of a candidate (Jurajda and Munich 2015; Portmann and Stojanović 2019), from additional information about the candidates that is presented on the ballot paper such as the age (Webster and Pierce 2019), gender (Górecki and Kukońowicz 2014; Ragauskas 2019), or occupation (Mechtel 2014) of a candidate. However, it is questionable how useful such ballot paper cues are. For example, the gender of a candidate is usually not very helpful for assessing the quality of a candidate. Therefore, voters are more likely to look for ballot paper cues which are better suited for deriving a candidate's quality as a politician (Kam 2007).

In contrast to a candidate's gender, the ballot position of a candidate is often perceived as a rather meaningful information shortcut (e.g., Marcinkiewicz 2014). In many open-list PR elections, parties are responsible for determining



the list order of candidates. Therefore, voters can rely on this ranking by assuming that the party elites have selected the best candidates to the top of the list. Put differently, voting for the top-placed candidates helps voters to feel that they did not cast a completely random vote, because at least the more informed party selectorate is convinced that the top-placed candidate is qualified for the job.

Previous research has demonstrated that ballot positions do indeed occur in open-list PR elections and that they tend to be strong. Lutz (2010), for example, analyzes the case of Switzerland and demonstrates a significant influence of the positioning of candidates on the ballot paper on the receipt of preferential votes. Faas and Schoen (2006) as well as Däubler and Rudolph (2018) analyze Bavarian regional elections in Germany and demonstrate that strong ballot position effects exist in these cases. Moreover, Marcinkiewicz (2014) and Marcinkiewicz and Stegmaier (2015) focus on Polish and Czech elections. They also find a strong relationship between ballot placement and electoral success. Blom-Hansen et al. (2016) provide an extensive review of previous studies on ballot position effects and they find evidence of ballot position effects in Danish local and regional elections. What is more, all of these studies agree that it is particularly *the first ballot position* which benefits from the list order. At lower ballot positions, the effect becomes much weaker or vanishes completely (e.g., Däubler and Rudolph 2018).

An important caveat has to be mentioned when comparing these studies. As also pointed out by Blom-Hansen et al. (2016), the studies discussed above differ in their ability to identify the causal effect of candidates' list ranking. Because ballot order is usually not random, but reflects the evaluation of candidates by party selectors (e.g., Put et al. 2019; Crisp et al. 2013; Folke et al. 2016), it is not surprising that candidates at the top of the ballot receive more votes. It is also well known that the top-ranked candidates receive more campaign support by the party leadership and receive more media attention, which also increases their chances of being selected by voters (van Erkel and Thijssen 2016; Devroe and Wauters 2020). Put differently, even if voters do not simply vote for top-placed candidates due to the ballot position, then we would probably still observe a correlation between list placement and electoral success as the top-placed candidates are more likely to attract a large number of preference votes. Therefore, studies which rely on natural experiments are particularly important as they demonstrate that ballot position effects still occur and are also very strong even when candidate quality and list placement are not correlated (Faas and Schoen 2006; Blom-Hansen et al. 2016; Däubler and Rudolph 2018).

While there is strong evidence for the existence of ballot position effects, less is known about the question of when these effects tend to be particularly strong. Gendzwill and Marcinkiewicz (2019) show that ballot position effects appear to be less pronounced in contexts in which there is a stronger tie between voters and constituents. The aforementioned study by Marcinkiewicz and Stegmaier (2015) further demonstrates that having the option to cast a vote for the party list, instead of having to cast a vote at the candidate level, drastically reduces the ballot position advantage.



The impact of postal voting

This paper contributes to previous research on ballot position effects under open-list PR by accounting for the context under which voters select a candidate. Specifically, the focus is on the potentially moderating effect of postal voting on the strength of ballot position effects. Why should postal voting have an effect on ballot position effects? To provide an answer to this question, it makes sense to reflect more specifically about the reasons why ballot position effects can occur under open-list PR.

First, as already mentioned above, ballot position effects can be simply caused by the fact that candidates ranked higher on the list are of higher quality than candidates ranked lower on the list, and that candidates of higher quality are better in attracting preferential votes. “Higher quality” in this context can also mean that candidates are more strongly supported by their party and they receive more financial resources than their co-competitors, which also contributes to the observed ballot position effects (van Erkel and Thijssen 2016; Devroe and Wauters 2020). However, research relying on natural experiments indicates that strong ballot position effects even occur when candidate quality and ballot positions are not correlated. Second, ballot position effects might reflect a psychological bias of voters for candidates ranked at the top of lists. This is the dominant theory for explaining ballot position effects in other contexts than open-list PR elections (Darcy and McAllister 1990). It is comparable to the bias observed in survey research in which some respondents simply select the first response option, which is known as primacy effect (Krosnick and Alwin 1987). It has also been argued that voters tend to associate higher list positions with higher quality even in situations where list ranking has no meaning (Kim, Krosnick and Casasanto 2015). However, the observed effects due to implicit cognitive biases are usually much smaller than the strong ballot position effects observed under open-list PR. Therefore, this mechanism can also not fully explain why ballot position effects occur under open-list PR. Finally, ballot position effects can occur due to a lack of information among voters about the candidates running for election. This explanation is in line with the observation that voters are usually not fully informed about the candidates running for election (Brockington 2003). In such situations, it is rational for voters to rely on easily available information shortcuts to compensate their lack of knowledge and in order to be able to cast an at least somewhat justified vote (Popkin 1994). Because the ballot position is determined by the party, the ballot position can be used as an information shortcut.

The three explanations described above provide guidance for why ballot position effects could be weaker among postal voters. If the quality-based explanation holds true, postal voting should have no effect on the strength of ballot position effects. This is because the mechanism suggests that it is not the ballot position which causes the observed effect, but rather the correlation between candidate quality and list ranking. There is no obvious reason why voters who cast an absentee vote should be more or less likely to vote for a candidate of higher quality. Likewise, the psychological bias explanation is also less relevant for postal voting. If voters are casting a vote for the top-ranked candidate due to a hidden psychological bias, then this bias should also apply when casting an absentee ballot. In contrast, the cue-based



mechanism provides an explanation of why postal voting and ballot position effects might be connected.

According to the cue-based explanation, voters rely on the position cue in order to compensate for their lack of knowledge. To understand why postal voting matters, consider a voter who is not well informed about the candidates and casts a vote on election day. This voter will be confronted with the lists of candidates at the polling station in the voting booth. A situation in which the voter usually has little time and no access to more information than that given on the ballot paper itself. Therefore, voting at the ballot box increases the probability that voters rely on information shortcuts. Now consider the same voter casting an absentee vote, i.e., the voter receives the ballot paper by mail a few weeks ahead of the election date. When the voter now casts a vote, she or he has no time pressure and, more importantly, can also assess additional information about the candidates. This information might be advertisement from a certain candidate that was in the voter's mailbox on the same day as the absentee ballot paper arrived and which the voter would have forgotten about if she had cast a vote on election day. But it might also be the case that the voter actively searches for information about all candidates, for example, by assessing a Voting Advice Application (Schoultz and Papageorgiou 2019). To put it bluntly, for uninformed voters on election day, relying on the ballot position cue is the last resort—without it selecting a candidate would become random or based on an even less useful candidate cue, such as the gender of a candidate. For postal voters, the situation is different as they have more options to overcome their lack of knowledge and access to other sources of information. Moreover, the vote choice and level of information of voters about the candidates might be different between postal and election day voters due to varying levels of media attention during the election campaign. It is reasonable to assume that candidates receive more media coverage at the end of the election campaign, particularly the top-placed candidates might benefit from this increased level of media attention (van Erkel and Thijssen 2016; Devroe and Wauters 2020). But postal voters might have cast their votes already weeks prior to the end of the election campaign, which means that they are less likely to be affected by the media coverage. As a consequence, weaker ballot position effects should be observed in the election results of candidates among postal voters compared to the ballot position effects observed in the results for voters on election day.

Hypothesis Candidates ranked at the top of the list will perform worse among postal voters than among election day voters.

Selection effects

There is, however, a second potential explanation for weaker ballot position effects among postal voters. Postal voters are not a random sample of the electorate but a special subset. For example, previous research has demonstrated that postal voters are, on average, significantly older than those who vote at their polling station on election day (Ellermann 2004; Rallings et al. 2010; Southwell 2009). With regard to



the political interest of postal voters, it has been argued that postal voters are more likely to be politically interested, as requesting to cast an absentee ballot is seen as more costly than turning out on election day. Postal voters thus might show a high degree of willingness to participate in politics. Analyses by Rallings et al. (2010) support this claim, as they find that postal voters in the British general elections 2001 and 2005 had higher levels of political interest than those who voted on election day.

Therefore, if postal voters are more likely to be informed about the candidates running for election, then they might also be less likely to rely on ballot paper cues when casting a vote. In short, the comparison of postal and election day voters might be affected by a selection bias. Without experimental data, this selection bias cannot be directly addressed. However, we suggest running additional analyses for testing the plausibility of the selection bias explanation.

Institutional context: open-list PR elections in Hamburg

The empirical analysis relies on the results of two elections (2015 and 2020) in the German federal state of Hamburg. Hamburg uses a rather complex open-list PR system for its elections. The first unusual characteristic is that it is a mixed-member open-list PR system, which means voters have to select candidates on a statewide list but they also have to select candidates in their electoral districts. Both lists are open, but the statewide list allows for casting a vote at the party level, while this option does not exist in the electoral districts, i.e., voting for candidates is compulsory. Due to these differences between the two lists, our analysis only focuses on the lists in the seventeen electoral districts. The second characteristic of the electoral system in Hamburg is that voters have five votes for each list. Voters are completely unrestricted in how they distribute these votes. They can cast all votes for a single candidate or distribute them among several candidates. In total, 71 candidates are elected in the electoral districts and therefore the district magnitude in the electoral districts is rather low (it ranges between three and five).

The relatively high degree of complexity of the electoral system in Hamburg provides a good case for our analysis. As argued in the literature on information shortcuts, the probability that voters use cues increases with the complexity of the decision (Shugart et al. 2005; Lau and Redlawsk 2006). Therefore, voting in the electoral districts of Hamburg should be characterized by a high degree of voters who make use of information shortcuts such as ballot position cues and thus the case is well suited for analyzing the impact of postal voting. One can also expect particularly strong ballot position effects due to the rather low salience of the elections in the electoral districts in Hamburg. The prominent party front-runners usually run on the statewide list while less prominent candidates compete in the electoral districts. Given that fewer voters should know these candidates, this could further increase the strength of the ballot position effects. However, it should also be mentioned that the ballot paper in Hamburg provides quite a lot information about the candidates. For each candidate, the year of birth, the current occupation, and the place of residence (the urban district in which a candidate lives in) are displayed (see also Jankowski



2016). Therefore, it is reasonable to assume that differences between postal and election day voting would be even stronger if such information were not provided on the ballot paper, because voters had even fewer information on which they could rely when selecting a candidate. Importantly, the provided information about the candidates is identical for postal voters and election day voters, because the ballot paper is identical in both cases. Therefore, differences in ballot paper design cannot explain differences in voting behavior.

The case of Hamburg is also very suitable because many voters make use of postal voting. In the elections of 2011 and 2015 more than 30% of all votes were cast by using an absentee ballot (Statistical Office for Hamburg and Schleswig–Holstein 2020, p. 8). This comparatively high share of postal voters can be explained by two factors. First, casting an absentee ballot is not very complicated in Hamburg. Postal voting can be easily requested months before the election date without the necessity to provide a specific reason. Therefore, everyone who is willing to cast an absentee ballot is allowed to do so. Second, the electoral system of Hamburg was reformed between the elections of 2004, 2008, and 2011 from a very simple closed-list PR system to the above described complex open-list PR system (see Müller and Jankowski 2018 for a more detailed description of these reforms). Thus, many voters are not used to this complex electoral system causing many voters to prefer postal voting as it gives them more time to cast a vote without making a mistake. As a consequence, the share of postal voters almost doubled between elections of 2004 (the last election before the reforms of the electoral system started) and 2020 from 18% to more than 34%.

Data and methods

For the empirical analysis it is essential to differentiate between candidates' electoral success among election day and postal voters. Therefore, we have collected novel data for two elections in the German federal state of Hamburg in 2015 and 2020. Specifically, we have collected the election results for each candidate at the level of individual ballot boxes. There are more than 1000 ballot boxes in Hamburg each with a unique identifier. The important factor is that ballot boxes used for collecting the results of postal voting are assigned a special identifier so that these boxes can be easily identified.¹ This allows to observe each candidate's performance among election day voters and among postal voters. As there are no additional covariates which vary at the level of each ballot box, all results are aggregated. Thus, the analysis relies on two data sets. The first data set contains the candidate results among election day voters and the second contains the candidate results among postal voters. In total, the data covers 1127 candidates.

The statistical analysis will be based on the following variables. For measuring the electoral performance of a candidate, a candidate's list vote share is computed as

¹ The identifier for these ballot boxes is two digits longer compared to ballot boxes which are used on election day because the value '99' is inserted in the middle of the identifier.



suggested in various studies on open-list PR elections (Faas and Schoen 2006; Marcinkiewicz 2014). The list vote share is estimated by dividing the number of votes received by the total number of votes cast for all candidates on the list. For example, a value of 0.15 means that a candidate received 15% of all votes from the list she or he was running on. To measure the effect of postal voting we take difference between a candidate's list vote share in the postal voting data and the vote share in the election day data. When a candidate performed equally well in both contexts, the list vote share should be identical and thus the difference would be zero. However, when a candidate performed better among postal voters than among election day voters, our dependent variable has positive values. Thus, negative values indicate that a candidate performed worse among postal voters and better among election day voters.

The main independent variable of interest is the ballot position of a candidate. The maximum number of ballot positions in Hamburg is ten. As ballot position effects are strongly non-linear and our focus is specifically on the effect of the first ballot position, which is usually the by far strongest ballot position effect, the ballot position is included as a categorical variable in the regression analysis. Thus, the model includes nine dummy variables with the first ballot position denoting the reference category.

Because the ballot position is not randomly assigned to the candidates, it is important to include other variables in the model which might confound our findings as they correlate with both the list placement of candidates and the electoral performance of candidates among postal voters.² For example, one can assume that postal voters might be older and older voters might have a preference for older candidates (Webster and Pierce 2019). At the same time, age might also correlate with ballot placement. Therefore, controlling for candidate characteristics is important. We therefore control for the following candidate characteristics in our analysis: gender (binary), migration background (binary), PhD title (binary), incumbency (binary), localness (binary), work sector (eight categories), and age (continuous).³ The appendix to this paper contains a more detailed description on the definition, coding, and descriptive statistics of these variables (see Tables 2 and 3).

To assess the question of whether the results are driven by a selection bias, we additionally rely on survey data collected by the *Forschungsgruppe Wahlen* during the election of 2015 in Hamburg (Forschungsgruppe Wahlen 2016).⁴ The survey contains responses from more than 1600 citizens in Hamburg. We keep only those respondents who answered that they are sure that they are going to vote in the election. A binary variable is used for identifying postal voters. The variable equals one if a respondent stated that she either already had cast her vote by mail or is going to

² Note, however, that it is not a major problem for our analysis that the effect of the ballot position on the list vote share is not causal. Even if the relationship between ballot positions and list vote share is caused by other factors which correlate with the ballot position of a candidate, the impact of these factors should be similar between election day and postal voters.

³ We also include age squared to account for a potential non-linear relationship.

⁴ No survey data have been released so far for the election of 2020.



do so. The variable is zero for respondents who say that they are going to cast their vote on election day. We then compare postal voters and election day voters with regard to various attitudes. Most importantly, it is analyzed whether postal voters show higher levels of political interest and whether they are older than election day voters. In addition, we analyze whether postal voters care more about local issues during the election campaign or whether they are more likely to support a certain party.

Results

Table 1 presents the results of the regression analyses. The first two models in Table 1 use a candidate's list vote share as the dependent variable. The first model is based on the election day results and the second model is based on the postal voting results. The third model uses the difference between the two vote shares as the dependent variable.

Ballot positions and electoral success

We first take a look at the two models in which the dependent variable is a candidate's list vote share in order to understand the relationship between the ballot position of a candidate and the electoral success in the open-list PR elections of Hamburg. The results of these models are also visualized in Fig. 1. Both models demonstrate that the ballot position and the electoral success of a candidate are clearly correlated (compare also the results in Marcinkiewicz and Jankowski 2014). Particularly the first ballot position is associated with a strong increase in the vote share as can be seen from the large effect sizes of all the list placement dummy variables. Already the candidate placed on the second ballot position receives an over 20 percentage point lower vote share than the first placed candidate. But also beyond the second ballot position, the list placement is correlated with a candidate's electoral success, although the effect becomes much weaker. For example, while there is still a clear difference between the vote share of a second and third placed candidate, it hardly matters whether a candidate is placed on the seventh or eighth position. This non-linear relationship between a candidate's ballot position and their electoral success is clearly visible in Fig. 1. It is important to remember that these strong effects do not solely reflect the effect of the ballot position (Blom-Hansen et al. 2016). They are also caused by the fact that list placement is correlated with other factors, which also influence a candidate's electoral success. However, the results clearly demonstrate that the ballot position and the electoral success of candidates are strongly correlated and it seems unlikely that these strong effects can be explained exclusively by other factors than ballot position effects.



Table 1 Regression results: ballot position effects on election day and postal voting

	Dependent variable =		
	Election day	Postal voting	Postal election day
2nd ballot position	- 0.274*** (0.010)	- 0.242*** (0.011)	0.0323*** (0.004)
3rd ballot position	- 0.323*** (0.009)	- 0.289*** (0.010)	0.0339*** (0.004)
4th ballot position	- 0.337*** (0.009)	- 0.302*** (0.010)	0.0345*** (0.004)
5th ballot position	- 0.340*** (0.009)	- 0.306*** (0.010)	0.0339*** (0.004)
6th ballot position	- 0.353*** (0.009)	- 0.317*** (0.010)	0.0359*** (0.004)
7th ballot position	- 0.364*** (0.008)	- 0.327*** (0.009)	0.0366*** (0.004)
8th ballot position	- 0.361*** (0.009)	- 0.325*** (0.010)	0.0359*** (0.003)
9th ballot position	- 0.362*** (0.009)	- 0.324*** (0.010)	0.0377*** (0.004)
10th ballot position	- 0.355*** (0.009)	- 0.322*** (0.010)	0.0334*** (0.004)
Female	0.00417 (0.004)	0.00400 (0.004)	- 0.000237 (0.002)
Migration background	- 0.0109* (0.005)	- 0.0195*** (0.005)	- 0.00899*** (0.002)
PhD Title	0.0206** (0.007)	0.0259** (0.008)	0.00518* (0.002)
Incumbency	0.0316*** (0.008)	0.0328*** (0.009)	0.00104 (0.003)
Localness	0.0237*** (0.005)	0.0219*** (0.006)	- 0.00191 (0.002)
Work sector=Health care	0.0297*** (0.007)	0.0293*** (0.007)	- 0.000354 (0.003)
Work sector=Law	0.0375*** (0.007)	0.0411*** (0.007)	0.00367 (0.002)
Work sector=Education	0.0270** (0.010)	0.0197 (0.010)	- 0.00728** (0.003)
Work sector=Social work	0.0103 (0.007)	0.0103 (0.007)	0.0000968 (0.004)
Work sector=Academic	0.0216*** (0.006)	0.0170* (0.007)	- 0.00452 (0.003)
Work sector=Business	0.00495 (0.004)	0.00369 (0.004)	- 0.00107 (0.001)



Table 1 (continued)

	Dependent variable =		
	Election day	Postal voting	Postal election day
Work sector=In education	0.000815 (0.008)	- 0.00758 (0.009)	- 0.00844** (0.003)
Age	- 0.000277 (0.001)	0.000868 (0.001)	0.00116*** (0.000)
Age ²	- 0.00000502 (0.000)	- 0.0000151* (0.000)	- 0.0000102*** (0.000)
Intercept	1.005*** (0.022)	0.982*** (0.023)	- 0.0250*** (0.007)
N	1127	1127	1127
Adj. R ²	0.908	0.886	0.292

Clustered standard errors in parentheses. Dummy variables for number of candidates on list and election year included but not displayed. Reference category for work sector is “other” (all occupations which could not be classified)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

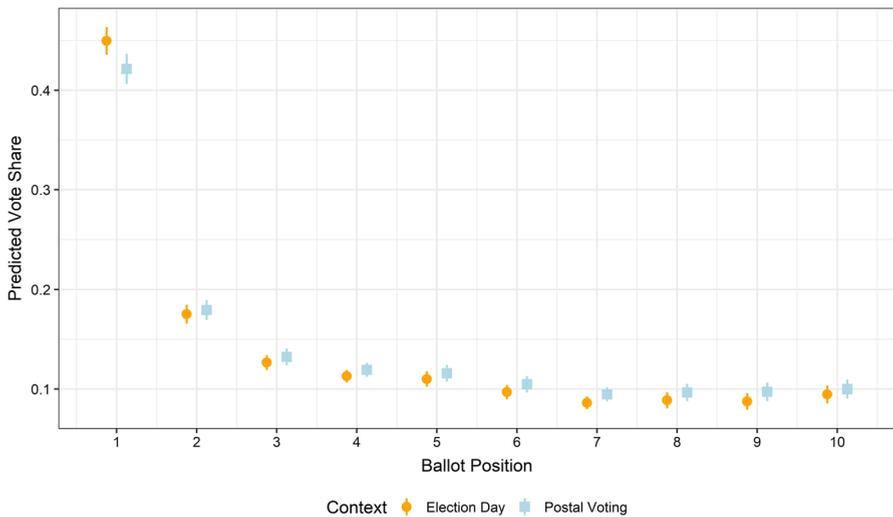


Fig. 1 Predicted vote share for each ballot position conditional on election day voting and postal voting. Vertical lines denote 95% confidence intervals. Predictions are based on Model 1 and Model 2 from Table 1

The impact of postal voting

When comparing the election day model and the postal voting model, it already becomes clear that the advantage of the first ranked candidate is weaker for the case of postal voting. In Table 1, this can be seen from the weaker effects of the



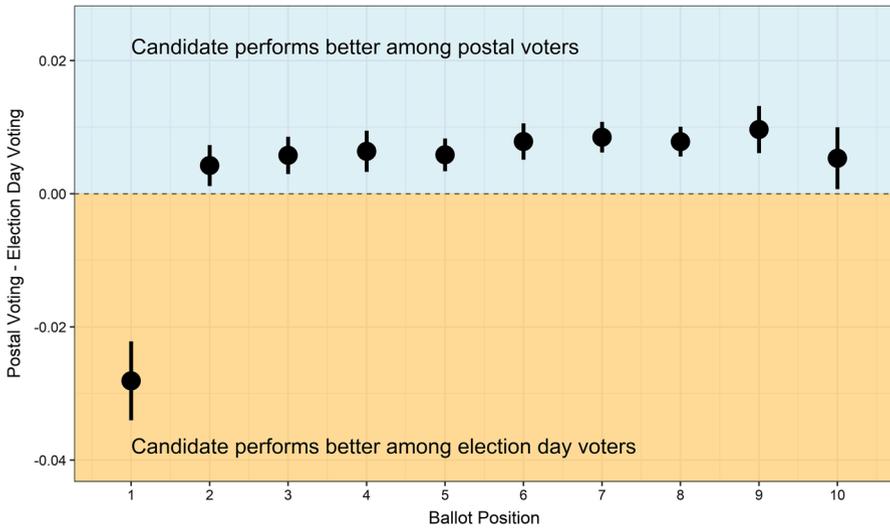


Fig. 2 Predicted difference between postal voting and election day voting results for each ballot position. Vertical lines denote 95% confidence intervals. Predictions are based on Model 3 from Table 1

ballot position dummy variables. For example, for the second ballot position, the effect relative to the first ballot position is -0.274 in the election day model but only -0.242 in the postal voting model and thus three percentage points lower. This observation also becomes clear from Fig. 1. As can be seen from the visualization, the predicted vote share is substantially lower for the top-ranked candidates in the postal voting model. For all other candidates (ranked on positions 2 to 10) the pattern is reversed, i.e., these candidates appear to perform better among postal voters than among election day voters. Therefore, the pattern of ballot position effects strongly suggests that the effects are weaker among postal voters.

This conclusion is confirmed by the third model of Table 1, in which the difference in each candidate's electoral success between postal and election day voting results is used as dependent variable. Remember that positive values of the dependent variable indicate that a candidate performed better among postal voters than among election day voters. As can be seen from Table 1, the marginal effects for the ballot position are all positive and around 0.03, meaning that all candidates below the first ballot position perform significantly better among postal voters compared to the top-ranked candidate. Strikingly, there seems to be no non-linearity in the effects as the effect size is almost identical for all candidates. In Fig. 2, this effect is visualized based on predicted values of the dependent variable. The visualization clearly demonstrates the negative effect of postal voting on the electoral performance of top-ranked candidates. According to this model specification, top-ranked candidates receive an approximately three percentage points lower vote share among postal voters. All other candidates



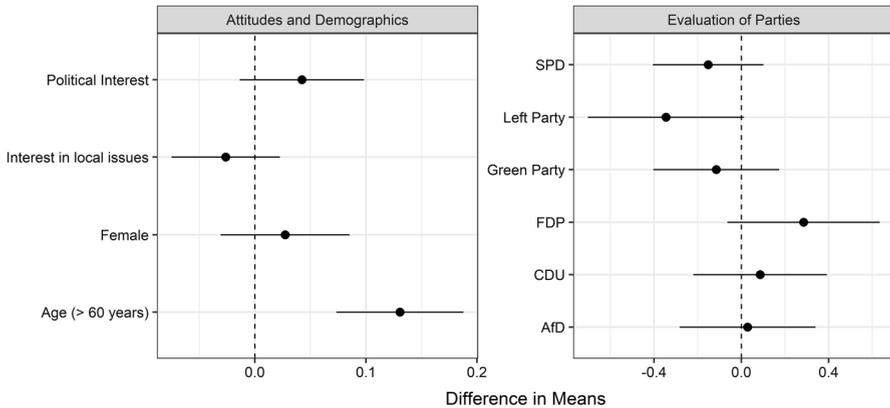


Fig. 3 Difference in means for different covariates between postal voters and election day voters in the election of 2015 in Hamburg. Horizontal lines denote 95% confidence intervals

perform, on average, better among postal voters. These patterns are in line with the theoretical expectation that postal voters will make less use of the ballot position shortcut when selecting a candidate.

Selection effects

The previous section demonstrated that the ballot position is strongly correlated with electoral success in the elections of Hamburg, but the correlation appears to be substantially weaker for the postal voting data: Top-ranked candidates still receive the most votes among postal voters, but their advantage over lower ranked candidates is smaller compared to the election day voting results. These results confirm the theoretical expectation that ballot position effects tend to be smaller among postal voters. However, as discussed in the theory section, two mechanisms might explain this finding. First, postal voters might have more time and resources to select a candidate and thus they do not have to rely on the ballot position information shortcut when selecting a candidate. Second, postal voters might be different from election day voters and thus selection effects might explain our results. In order to test this selection bias mechanism, Fig. 3 displays the difference in means between postal voters and election day voters for various covariates based on a survey of voters in the election of 2015 in Hamburg (see Data and methods section for details).

As can be seen from Fig. 3, postal voters and election day voters appear to be surprisingly similar. In the left panel of Fig. 3, the difference in political interest, age, interest in local issues, and gender between postal voters and election days voters is displayed. All variables are binary measures. *Political interest* measures a self-reported high level of political interest. *Age* measures whether a voter is older than 60 years.⁵ *Interest in local issues* measures whether a respondent answered yes to the question of whether “issues regarding Hamburg were more important for my vote choice than

⁵ We are using a binary indicator for age because the survey has not asked the specific age of respondents but instead used ten age categories.



issues regarding Germany.” As can be seen, only the difference in age is statistically significant. Postal voters are substantively more likely to be older than 60 years than election day voters. However, the difference in the political interest is not significant, but the point estimate suggests a slightly higher probability of postal voters to have a high level of political interest than their election day counterparts. Likewise, there is no evidence that postal voters differ from election day voters with regard to their interest in local issues or gender. In addition, the right panel of Figure 4 displays the difference in party evaluation between postal voters and election day voters. Voters were supposed to evaluate each of the six main parties of the German party system on a scale from 1 to 11. Again, the results do not suggest that postal voters are substantively different from election day voters. Only for the evaluation of the Left Party a small negative effect can be found ($p=0.058$). In sum, the results indicate that differences in the level of political interest between postal voters and election day voters are unlikely to explain the differences in the performance of top-ranked candidates. Both groups of voters appear to be rather similar, but differ in regard to their age.

Effect heterogeneity

So far we have demonstrated that candidates on the first ballot position perform significantly worse among postal voters and that differences in the level of political interest are unlikely to be the reason for this finding. However, we have also found that postal voters are significantly older than election day voters. Based on this finding, it seems reasonable to analyze whether the negative effect of postal voting on the first ballot position depends on the age of the candidate. Following the argument made in the literature on candidate choice that voters like candidates with similar socio-demographic characteristics (Dolan 2008; Webster and Pierce 2019), it is reasonable to assume that older voters prefer older candidates. If this is the case, then we should observe that particularly young candidates ranked at the top of the ballot paper should perform worse among postal voters than older candidates.

To test this assumption, we extend the third regression model from Table 1 by including an interaction term between the age of a candidate and the ballot position. We also include age squared to account for a potential non-linear relationship. The results of this interaction are displayed in Fig. 4. As can be clearly seen from the left panel, which displays the moderating effect of a candidate’s age on the first ballot position, there is a clear moderating effect of age on the strength of the negative effect of postal voting. As expected, the negative effect of postal voting is particularly pronounced for young top-ranked candidates. Here, the model suggests a more than five percentage point lower vote share for these candidates among postal voters. The negative effect of postal voting is weakest for candidates in their fifties and then increases again. This curve-linear relationship demonstrates that postal voters seem to avoid voting for the first ranked candidate when the candidate is either too young or too old. Importantly, this pattern cannot be found at lower ballot positions as demonstrated in Fig. 4 for the fifth and tenth ballot position. Again, this pattern of strong effects for the first ballot position and no effect at lower ballot positions suggests that the observed effects can be attributed to the ballot position shortcut.



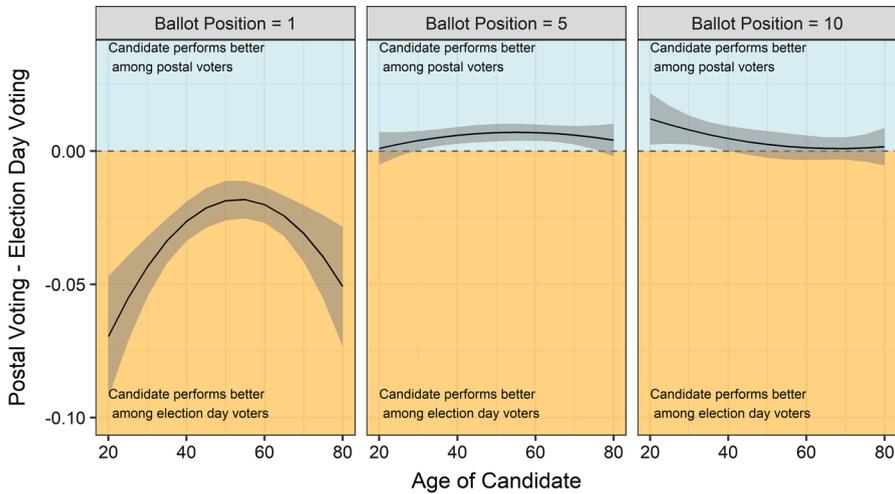


Fig. 4 Predicted difference between postal voting and election day voting results conditional on candidates' age. Shaded area denotes 95% confidence intervals

Conclusion

Ballot position effects can be observed in various open-list PR elections and they are usually so strong that being ranked first guarantees a candidate that she or he will be elected. Understanding when and why ballot position effects occur is therefore important as it informs us about the process of how voters select a certain candidate. Based on the assumption that ballot position effects are (at least partly) caused by voters' lack of specific knowledge about the candidates running for election, we have argued that postal voting likely weakens the ballot position effect. We argue that this pattern can be observed because postal voters are more likely to access other information about the candidates when casting their vote. Our analysis of two elections in Hamburg clearly confirms this expectation. The top-ranked candidate of a party list performs significantly and substantively worse among postal voters than among voters on election day. The observed pattern is striking because it is restricted to the first ballot position, which is exactly the ballot position for which the effect should be expected to occur. Further analyses demonstrate that this negative effect of postal voting on the top-ranked candidate's electoral success is particularly strong when this candidate is very young or old. Moreover, additional analyses of survey data show that postal voters are older than election day voters, but that they have no higher levels of political interest. This finding suggests that the observed effects cannot be fully explained by the self-selection of certain voters into postal voting.

The findings have implications for our understanding of voters' decision making in open-list PR systems, but also for our understanding of postal voting. While the comparison between postal voters and election day voters was not the main research question of this article, the findings are still interesting. For example, the observation that postal voters do not seem to be significantly more



politically interested than election day voters could suggest that relatively complex electoral system might mitigate the effects of self-selection into postal voting. In this regard our paper might provide motivation for future research on how the complexity of electoral systems affect how many (and what types of) voters make use of postal voting.

With regard to our understanding of open-list PR elections and candidate voting more generally, this study suggests that the context can matter for the vote decision of voters. In this regard, this study complements existing research which has also addressed the impact of contextual factors on vote decisions (e.g., Germann 2020; Berger et al. 2008). This study suggests that in a context in which voters have more time and are more likely to incorporate other sources of candidate information in their decision-making process, they are less likely to make use of easily available information shortcuts such as that given on the ballot. This pattern suggests that at least some voters who vote on election day for the first ranked candidate would probably vote for a different candidate if they had made use of postal voting. In this regard, the results oppose arguments which claim that relying on shortcuts results in decisions that are identical to decision that voters would have taken under full information. Instead, our findings suggest that voters tend to select different candidates when they have more time to make a decision. This might be due to the low-salience character of the analyzed elections. In such contexts, having access to more information might change voting decisions, because the shortcuts on which voters could rely on are of rather low quality.

However, it should be reminded that the analysis is based on aggregate election data which only allow for identifying general patterns in the election results of candidates. By using individual level data on how voters select candidates in different contexts, future research could shed light on the question of which information postal voters use to select a candidate in comparison to election day voters. In other words, it remains an important question for future research to identify the mechanisms behind the observed effects at the individual level. Such mechanisms might even include that the location of where a voter casts a vote could already have an effect on vote choice as suggested by Berger et al. (2008). Addressing such questions can be challenging for future research, because observational data, such as voter surveys, can hardly identify the impact of the voting context on vote decisions. Using experimental approaches might be a more promising approach, but it seems also challenging to manipulate the context of postal voting in an experimental design. Therefore, analyzing the impact of postal voting at the individual level might be particularly challenging for future research, but it is also of great importance as postal voting is becoming increasingly common in many democracies.

Acknowledgements We are grateful to Kamil Marcinkiewicz and Christina-Marie Juen as well as the anonymous reviewers for helpful comments on earlier versions of this manuscript. Replication files for this article can be accessed from the Harvard Dataverse via: <https://doi.org/10.7910/DVN/ZIDRMH>.

Funding Open Access funding enabled and organized by Projekt DEAL.



Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

Appendix: Definition and descriptive statistics of variables

See Tables 2 and 3.

Table 2 Definition and sources of variables used in the analysis

Variable	Definition	Categories	Source
Gender	Manual coding of name	Male, Female	Ballot Paper (Name)
Migration Background	Manual coding of name	No, Yes	Ballot Paper (Name)
Age	Election Year-Year of Birth	Range: 19 to 90	Ballot Paper (Year of Birth)
PhD	Candidate holds a PhD	No, Yes	Ballot Paper (Name)
Localness	Candidate lives in the electoral district	No, Yes	Ballot Paper (Urban District)
Work Sector	Manual coding of occupation	Academic, Economic, Education, Health Care, Law, Social Work, In Education, Other	Ballot Paper (Occupation)
Ballot Position	Rank of candidate on ballot	Range: 1 to 10	Ballot Paper (List Position)
Listlength	Number of candidates on list	Range: 1 to 10	Ballot Paper
Incumbency	Candidate was member of parliament	No, Yes	Own research



Table 3 Descriptive statistics for variables used in the analysis

Variable	2015	2020
Female	0.353	0.391
Migration background	0.109	0.207
Age	49.29	46.80
PhD	0.060	0.070
Incumbency	0.115	0.137
Localness	0.853	0.861
Ballot position = 1	0.165	0.200
Ballot position = 2	0.162	0.190
Ballot position = 3	0.144	0.153
Ballot position = 4	0.130	0.129
Ballot position = 5	0.118	0.110
Ballot position = 6	0.094	0.088
Ballot position = 7	0.065	0.053
Ballot position = 8	0.063	0.045
Ballot position = 9	0.031	0.018
Ballot position = 10	0.028	0.016
Occupation = Academic sector	0.115	0.108
Occupation = Economic sector	0.314	0.221
Occupation = Education sector	0.052	0.055
Occupation = Health care sector	0.047	0.065
Occupation = In education	0.063	0.112
Occupation = Law sector	0.110	0.114
Occupation = Other	0.235	0.268
Occupation = Social sector	0.063	0.059
<i>N</i>	617	511

References

- Berger, Jonah, Marc Meredith, and S. Christian Wheeler. 2008. Contextual priming: Where people vote affects how they vote. *Proceedings of the National Academy of Sciences* 105 (26): 8846–8849.
- Blom-Hansen, Jens, Jørgen Elklit, Søren Serritzlew, and Louise Riis Villadsen. 2016. Ballot position and election results: Evidence from a natural experiment. *Electoral Studies* 44: 172–183.
- Blumenau, Jack, Andrew C. Eggers, Dominik Hangartner, and Simon Hix. 2017. Open/closed list and party choice: experimental evidence from the UK. *British Journal of Political Science* 47 (4): 809–827.
- Brockington, David. 2003. A low information theory of ballot position effect. *Political Behavior* 25 (1): 1–27.
- Carey, John M., and Matthew Soberg Shugart. 1995. Incentives to cultivate a personal vote: A rank ordering of electoral formulas. *Electoral Studies* 14 (4): 417–439.
- Crisp, Brian F., Santiago Olivella, Michael Malecki, and Mindy Sher. 2013. Vote-earning strategies in flexible list systems: Seats at the price of unity. *Electoral Studies* 32 (4): 658–669.
- Darcy, R., and Ian McAllister. 1990. Ballot position effects. *Electoral Studies* 9 (1): 5–17.
- Däubler, Thomas and Lukas Rudolph. 2018. Cue-taking, satisficing, or both? Quasi-experimental evidence for ballot position effects. *Political Behavior*.
- Devroe, Robin, and Bram Wauters. 2020. Does high on the ballot means highly competent? Explaining the ballot position effect in list-PR systems. *Acta Politica* 55 (3): 454–471.



- Dolan, Kathleen. 2008. Is there a “gender affinity effect” in american politics? Information, affect, and candidate sex in U.S house elections. *Political Research Quarterly* 61 (1): 79–89.
- Ellermann, Silvia. 2004. Die Bedeutung der Briefwähler bei der Bundestagswahl 2002. In *Die Bundestagswahl 2002*, ed. Frank Brettschneider, Jan van Deth, and Edeltraud Roller, 249–275. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Faas, Thorsten, and Harald Schoen. 2006. The importance of being first: Effects of candidates’ list positions in the 2003 Bavarian state election. *Electoral Studies* 25 (1): 91–102.
- Folke, Olle, Torsten Persson, and Johanna Rickne. 2016. The primary effect: Preference votes and political promotions. *American Political Science Review* 110 (3): 559–578.
- Forschungsgruppe Wahlen. 2016. State Election in Hamburg 2015: Survey Data. type: dataset. <https://doi.org/10.4232/1.12650>.
- Gendzwil, Adam, and Kamil Marcinkiewicz. 2019. Interventionism of voters: district size, level of government, and the use of preference votes. *Acta Politica* 54 (1): 1–21.
- Germann, Micha. 2020. Making votes count with internet voting. *Political Behavior*. <https://doi.org/10.1007/s11109-020-09598-2>.
- Górecki, Maciej A., and Paula Kukołowicz. 2014. Gender quotas, candidate background and the election of women: A paradox of gender quotas in open-list proportional representation systems. *Electoral Studies* 36: 65–80.
- Jankowski, Michael. 2016. Voting for locals: Voters’ information processing strategies in open-list PR systems. *Electoral Studies* 43: 72–84.
- Jurajda, Stepan, and Daniel Münich. 2015. Candidate ballot information and election outcomes: The Czech case. *Post-Soviet Affairs* 31 (5): 448–469.
- Kam, Cindy D. 2007. Implicit attitudes, explicit choices: When subliminal priming predicts candidate preference. *Political Behavior* 29 (3): 343–367.
- Kim, Nuri, Jon Krosnick, and Daniel Casasanto. 2015. Moderators of candidate name-order effects in elections: An experiment. *Political Psychology* 36 (5): 525–542.
- Krosnick, Jon A., and Duane F. Alwin. 1987. An evaluation of a cognitive theory of response-order effects in survey measurement. *Public Opinion Quarterly* 51 (2): 201.
- Lau, Richard R., and David P. Redlawsk. 2001. Advantages and disadvantages of cognitive heuristics in political decision making. *American Journal of Political Science* 45 (4): 951.
- Lau, Richard R., and David P. Redlawsk. 2006. *How voters decide: Information processing during election campaigns*. Cambridge: Cambridge University Press.
- Lupia, Arthur, and Mathew D. McCubbins. 1998. *The democratic dilemma: Can citizens learn what they need to know?*. Political economy of institutions and decisions Cambridge: Cambridge University Press.
- Lutz, Georg. 2010. First come, first served: The effect of ballot position on electoral success in open ballot PR elections. *Representation* 46 (2): 167–181.
- Marcinkiewicz, Kamil. 2014. Electoral contexts that assist voter coordination: Ballot position effects in Poland. *Electoral Studies* 33: 322–334.
- Marcinkiewicz, Kamil, and Michael Jankowski. 2014. When there’s no easy way out: Electoral law reform and ballot position effects in the 2011 Hamburg state elections. *German Politics* 23 (1–2): 103–117.
- Marcinkiewicz, Kamil, and Mary Stegmaier. 2015. Ballot position effects under compulsory and optional preferential-list PR electoral systems. *Political Behavior* 37 (2): 465–486.
- Mechtel, Mario. 2014. It’s the occupation, stupid! Explaining candidates’ success in low-information elections. *European Journal of Political Economy* 33: 53–70.
- Müller, Stefan, and Michael Jankowski. 2018. Do voters really prefer more choice? Determinants of support for personalised electoral systems. *Journal of Elections, Public Opinion and Parties* 29 (2): 262–281.
- Popkin, Samuel L. 1994. *The reasoning voter: Communication and persuasion in presidential campaigns*, 2nd ed. Chicago: University of Chicago Press.
- Portmann, Lea, and Nenad Stojanović. 2019. Electoral discrimination against immigrant-origin candidates. *Political Behavior* 41 (1): 105–134.
- Put, Gert-Jan, Jef Smulders, and Bart Maddens. 2019. Party nomination strategies in flexible-list systems: Do preference votes matter for realistic list positions? *Party Politics*. <https://doi.org/10.1177/1354068819858590?journalCode=ppqa>.



- Ragauskas, Rimvydas. 2019. Party-determined viability and gender bias in open-list proportional representation systems. *Politics & Gender*.
- Rallings, Colin, Michael Thrasher, and Galina Borisyuk. 2010. Much Ado about not very much: The electoral consequences of postal voting at the 2005 British General Election. *The British Journal of Politics and International Relations* 12 (2): 223–238.
- Shugart, Matthew Soberg, Melody Ellis Valdini, and Kati Suominen. 2005. Looking for locals: Voter information demands and personal vote-earning attributes of legislators under proportional representation. *American Journal of Political Science* 49 (2): 437–449.
- Southwell, Priscilla L. 2009. Analysis of the turnout effects of vote by mail elections, 1980–2007. *The Social Science Journal* 46 (1): 211–216.
- Statistical Office for Hamburg and Schleswig-Holstein. 2020. Analyse der Bürgerschaftswahl am 23. Februar 2020 in Hamburg. Endgültige Ergebnisse. https://www.statistik-nord.de/fileadmin/Dokumente/Wahlen/Hamburg/B%C3%BCrgerschaftswahlen/2020/Analyse/Wahlanalyse_B%C3%BCWaHH2020_endg%C3%BCltig_korrektur.pdf.
- Tavits, Margit. 2010. Effect of local ties on electoral success and parliamentary behaviour: The case of Estonia. *Party Politics* 16 (2): 215–235.
- van Erkel, Patrick F.A., and Peter Thijssen. 2016. The first one wins: Distilling the primacy effect. *Electoral Studies* 44: 245–254.
- von Schoultz, Asa, and Achillefs Papageorgiou. 2019. Policy or person? The electoral value of policy positions and personal attributes in the Finnish open-list system. *Party Politics*. <https://doi.org/10.1177/1354068819891048>.
- Webster, Steven W., and Andrew W. Pierce. 2019. Older, younger, or more similar? The use of age as a voting heuristic*. *Social Science Quarterly* 100 (3): 635–652.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Michael Jankowski is a post-doctoral researcher and lecturer at the University of Oldenburg, Germany. His research focuses on elections, parties, and political elites. His previous work has been published in journals such as *Electoral Studies*, *Party Politics*, *Journal of European Public Policy*, and the *Journal of Public Administration Research and Theory*.

Torren Frank is a research assistant at the University of Oldenburg, Germany. He is interested in the study of populism and electoral systems.

