

Electoral Systems and Support for Female Candidates

June 14, 2016

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Abstract:

It is a well-established finding that proportional representation (PR) electoral systems are associated with greater legislative representation for women than single member, first-past-the-post systems. However, the degree to which different types of PR rules affect voting for female candidates has not been fully explored. The existing literature is also hampered by a reliance on cross-national data in which individual vote preferences and electoral system features are endogenous. In this paper, we draw upon an experiment conducted during the 2014 European Parliament (EP) elections to isolate the effects of different PR electoral systems. Participants in the experiment were given the opportunity to vote for real EP candidates in three different electoral systems – closed list, open list, and open list with panachage and cumulation. Because voter preferences can be held constant across the three different votes, we can evaluate the extent to which female candidates were more or less advantaged by the electoral system itself. We find that voters, regardless of their gender, support female candidates, and that this support is stronger under open electoral rules.

How do electoral rules affect women's legislative representation? Nearly every national legislature in the world underrepresents women compared to their proportion in the voting population, but the extent to which they are underrepresented (or that men are overrepresented) varies remarkably (Schwindt-Bayer and Squire 2014, Krook 2009). Explanations for the variation in women's representation draw on the cultural and socioeconomic environment in a country as well as on its electoral rules and the characteristics of its party system. Recent studies suggest that the effect of electoral rules on women's representation *depends* on the cultural or historical context in which elections occur (Valdini 2013, Holli and Wass 2012). Such complexity makes it challenging to effectively discern the role of these different factors. In this paper we focus specifically on the role played by the openness of electoral rules, and examine whether women candidates win more votes under some electoral rules than others.

Existing research suggests that electoral rules matter for the electoral success of women candidates, but evidence for *how* it matters is mixed. A general finding is that proportional representation electoral systems are associated with greater legislative representation than majoritarian systems.¹ Studies have begun to examine distinctions among different types of proportional representation to determine whether closed party lists, where the parties decide how many female candidates are put forward as well as their positions on the party list, tend to result in greater female representation than open lists, which allow for preferential voting (Thames and Williams 2010, Luhiste 2015).

As we show below prior research has produced mixed findings. The mixed results may be due in part to a reliance on cross-national data in which individual vote preferences, candidate behavior, and electoral system features depend on the national context. Although cross-national studies are an obvious way to try to capture the effect of different electoral rules on women's electoral success, it is difficult to be confident that all of the other factors that might determine voters' propensities to vote for female candidates are taken into account.² The approach we take here complements the cross-national studies, and allows us to isolate the

¹By 'majoritarian', we mean electoral rules that require a candidate to win a plurality or majority of the votes in a district (typically with a district magnitude of one).

²Salmund (2006) and Roberts, Seawright and Cyr (2013) suggest that once some methodological problems in these cross-national studies are taken into account, the effects of electoral rules on women's representation in national parliaments is smaller than previously thought.

effect of the openness of the electoral rules from other factors that might influence the proportion of votes cast for women.

In this paper, we draw on an experiment conducted during the 2014 European Parliament (EP) elections to evaluate the effects of different proportional representation electoral systems. Participants in the experiment were given the opportunity to vote for real EP candidates in three different electoral systems – closed list, open list, and open list with panachage and cumulation. The candidates on the party lists were randomly chosen from the actual MEPs sitting in the EP, and each participant faced a different ballot, though it was the same for each participant under the three voting rules. Thus, our protocol has two distinct features which will play a key role in our empirical strategy:

(i) the experimental protocol randomizes the ballots faced by each subject, and in particular the gender composition of the different party lists. This allows us to directly assess the electoral performance of the different lists, randomly varying the gender composition of their lists;

(ii) the experimental protocol allows each voter to vote under three different systems, which allows us to vary the influence that the voter has over choosing candidates while holding the voter and context constant.

This experiment enables us to examine several different research questions: Do voters show a general reluctance to vote for female candidates and, in particular, are parties hurt when they have more women on their lists? Do female candidates attract more votes under more open electoral rules? Do all voters react the same way to the openness of electoral rules, or do women and men react differently? Finally, how does ideology affect support for female candidates in each system? We use the experimental results to address each of these questions, enabling us to ascertain more precisely how electoral systems affect support for women candidates. We find that parties with a higher proportion of women on their lists are not penalized, and, indeed, that voters are more likely to vote for women under more open electoral rules. This pattern holds for both male and female voters, though the propensity to vote for women is more pronounced for the latter. Interestingly, the effect of ideology seems to operate mainly through the gender composition of the different parties, rather than any effect of the electoral rules themselves.

Electoral Institutions and Voting for Women

Scholars point to a wide array of contextual and institutional factors that could explain the discrepancy between the proportion of women in the electorate and the proportion of women elected to office, addressing the many stages in the process that results in women's representation (Kittilson and Schwindt-Bayer 2012). What determines how women participate in politics by voting, learning about politics, becoming a candidate, becoming a member of a party's elite, or serving in office if successful at the polls? Assuming that women put themselves forward as candidates (Fox and Lawless 2005) and that parties support them by placing them on the ballot (Cheng and Tavits 2011), a crucial question for understanding women's representation in legislatures becomes, "under what conditions will voters vote for them?" Our focus in this paper relates to this critical question, that is, the effect of electoral rules on voters' propensity to vote for women.

Singling out the effect of electoral rules on voting behavior poses a challenge, because electoral rules can affect women's representation not only by having an impact on the behavior of voters, but also by having an impact on candidates and party elites. The most common argument about electoral rules and women's representation is that more proportional electoral rules lead to higher rates of women elected to office than is the case with majoritarian electoral rules (Kittilson and Schwindt-Bayer 2010). Some of the explanations for the difference in outcomes focus on the incentives of party leaders to include more women on the ballots in PR systems compared to majoritarian ones. There are at least a couple of explanations for this. One is that majoritarian, single-member districts are particularly likely to favor incumbents, and incumbents are mostly men (Fréchette, Maniquet and Morelli 2008, Murray 2012). Thus a party in a majoritarian system that wishes to protect its incumbents will be less likely to promote female candidates, at least in districts controlled by the party.

The second reason why majoritarian electoral rules might be associated with less female representation than proportional ones is due to actions taken by party elites due to their beliefs that voters tend to prefer to vote for men (Lakeman 1994). As Roberts, Seawright and Cyr (2013, 1558) suggest, "Voters may be hesitant to choose women in head-to-head contests with men. This may lead parties to select fewer female candidates in plurality systems and fewer of the ones chosen to be elected". Note that this explanation about

the reluctance of party elites to select women as candidates does not require that voters actually be hesitant to vote for women, only that party elites believe this to be the case (Brooks 2013).

This anticipated reluctance to vote for women is at the heart of arguments that women can be more easily elected under closed list than under open list proportional representation (Matland 2005). Assuming (perhaps naively) that party elites choose to place women in electable positions on the party list, then the advantage of a closed list system (where voters cannot affect which candidates on the list get elected) compared to an open list one (where voters can affect which candidates on the list get elected) is that voters cannot use their vote to elect the men on the list over the women (Thames and Williams 2010). However, it is important to consider the question of whether (or under what circumstances) parties will place women in favorable positions on the lists. Schmidt (2008) suggests that placement mandates are the institutional features that matter most. The natural tendency of a party whose leadership doubts voters' enthusiasm for women candidates would be to de-prioritize female candidates, at least in the absence of a quota requirement. Thus, closed list electoral systems would be better for female candidates only if an anti-female candidate bias exists among voters and parties are ready to place women in favorable positions on the lists in spite of the bias. If on the contrary voters are more favorable to women candidates than the party leadership is, open list system systems would be better for female candidates.

This raises an empirical question. Is there evidence that voters are hesitant to vote for women? Many studies examining gender-based voting in majoritarian systems have argued that female candidates do as well as male candidates, suggesting that voters are as willing to vote for women as for men (Welch and Studlar 1988, Lawless and Pearson 2008, Fulton 2014).³ However, Schwindt-Bayer, Malecki and Crisp (2010) examine the electoral success of women in three countries that use the single-transferable vote type of proportional representation, and find that the results vary by national context due to political culture. Holding the effect of electoral rules constant, and controlling for factors such as candidate strength, party characteristics, and district competitiveness, they find that being a female candidate is an advantage in Australian (Senate) elections, a disadvantage in Ireland, and that it is inconsequential in Malta. More generally,

³Recent work suggests that valence characteristics also affect voters' decisions. Fulton (2014) finds that women candidates fare less well than men after controlling for valence characteristics, at least among male voters. This effect is important for independent voters, but not for partisan ones. Among voters affiliated with a political party, the effect of partisan attachment on vote choice matters more than candidate gender or valence.

Thames and Williams (2010) examine the impact of electoral rules that allow voters to vote for candidates rather than parties across a wide set of countries and find that countries that use “party-centered” systems, such as closed list PR, encourage greater women’s representation than countries that use “candidate-centered” systems, such as open list PR.⁴ This suggests that a bias against female candidates may exist, but a recent study of the effects of electoral rules on the representation of women in the European Parliament finds that the level of openness of the electoral rules has no effect (Fortin-Rittberger and Rittberger 2014), and argues that contextual factors are the key determinants of women’s electoral success.

To better understand electoral outcomes, it is important to focus on the voters themselves – is there evidence of a propensity to vote for women? In other words, is there a demand for women representatives, and if so, from whom? Sanbonmatsu (2002) argues that voters have “baseline gender preferences” that affect their vote choice. She finds that citizens in the United States have an “affinity” towards candidates of their own gender. And, although she cautions that voter gender is only part of the explanation for this affinity, she also discusses a wide range of studies (again, in the American context) that show gender effects in voting (see, e.g., Plutzer and Zipp 1996). Outside of the United States, patterns of same-gender voting have been found in Finland (Holli and Wass 2013, Giger et al. 2014). Thus, from this literature, one might suspect that same-gender affinity voting would be most obvious in open list electoral systems. If both men and women prefer candidates of their own gender, then, assuming equal turnout, the effect of open list electoral systems for electing women should depend on the relative proportions of men and women in the electorate, and on the relative strength of same-gender bias among male and female voters.

A common theme in the studies examining electoral outcomes and/or voter preferences is that the effects of electoral rules on the electoral success of women depend on characteristics of parties, political culture, candidate characteristics, voter partisanship, and other factors. However, the cross-national analyses typically used to examine this issue all confront the challenge of adequately isolating the effects of electoral rules on voting behavior from these other factors. With observational data, one has to worry about what other differences between voters in countries A and B, aside from the electoral rules, are systematically affecting the

⁴ Luhiste (2015) finds that female candidates are placed in worse positions on lists in open list compared to closed list systems. However, see Kunovich (2012) and Górecki and Kukołowicz (2015) for a discussion of why open list proportional representation systems might encourage women’s representation.

propensity to vote for female candidates. Are parties more likely to act as ‘gatekeepers’, keeping women away from viable positions on party lists in some countries than in others (Cheng and Tavits 2011, Luhiste 2015)? Is the legislature more powerful in one country than another (Schwindt-Bayer and Squire 2014)? While not denying the importance of contextual factors, we think that it is worth re-examining the question of the effects of electoral rules on voters’ propensity to vote for women candidates using a different approach. If we could have the same voters vote according to different electoral rules, we would be able to compare the effect of the electoral rules themselves, holding constant other contextual factors that might be relevant to a particular voter’s situation. Using an experimental approach, described below, allows us to do just that. Because we can hold voter preferences constant across three different sets of voting rules, we are able to more easily evaluate the extent to which female candidates are more or less disadvantaged by the electoral system itself.

Our empirical strategy is to use our experimental data to evaluate some of the claims and expectations put forward in existing research. In particular, we explore four research questions:

1. Does having more women on a party list pose a disadvantage to a party’s electoral performance?

This question draws upon the general expectation, discussed above, that women candidates are an impediment for parties at the voting booth. Existing evidence suggests that this is a false expectation, but such research has been conducted within single countries or cross-nationally. We wish to replicate these important findings with our original experimental design as a starting point for our examination of electoral system effects. The experimental protocol randomized the ballots faced by each subject, and in particular the gender composition of the different party lists. The data therefore allow us to measure the impact of the gender composition of a party list on its electoral performance, thus providing a clear test of the existence of a general bias against lists with many female candidates.

Note that if such a general bias were to exist, one could expect a moderating effect of the electoral system on the relationship between the gender composition of the list and its electoral performance. In a recent study, Blumenau et al. (forthcoming) show that mainstream parties are more successful under open list PR than under closed list PR because voters who have an extreme preference over a certain ‘niche’ issue do not have to vote for a niche party to express it. Under open list PR, they can express this position by giving a

positive preference vote for a similarly extreme individual candidate on a mainstream party list. If one were to apply the same line of reasoning to preferences for women candidates, one would expect the effect of the gender composition to be larger under closed list PR.

2. Does the openness of electoral rules affect the propensity to vote for female candidates? In other words, how do voters respond to an open list?

This question addresses the heart of the debate over female representation and electoral systems. The findings of observational research on open vs. closed list proportional representation electoral systems are mixed. On the one hand, Shugart (1994) and Taagepera (1994) argue that open lists with large district magnitude are best for female candidates; in such circumstances groups can coordinate to increase female candidates' chances of being elected through personal votes. On the other hand, Jones (1998) and Jones and Navia (1999) contend that closed lists with quotas can increase female representation most significantly. Further complicating matters, Schmidt (2008) argues that only placement mandates are relevant for the election of women. We wish to examine the issue with our experimental data, as none of the other studies have isolated the behaviour of voters in reaction to different ballots. We capitalize on the fact that each voter in the experiment voted under three different voting rules: closed list, open list, and open list with panachage and cumulation, facing the same ballot under the three rules. This means that we can test whether individuals adjusted their behavior in response to the different rules, while holding their preferences, the gender composition of the lists, and the context of the election constant.

3. Do voters show same-gender voting patterns?

Research on gender affinity in voting (women voting for women and men voting for men) suggests that it is more likely to occur when elections are candidate-centered (as opposed to party-centered) and when voters lack strong partisan identification (Holli and Wass 2010, Plutzer and Zipp 1996). Potential explanations for gender affinity voting, which tend to focus on reasons why women would vote for women, include gender consciousness, a desire for descriptive representation, or an expectation of shared policy interests (Goodyear-Grant and Croskill 2011). To date, most analyses of same-gender voting examine countries with majoritarian electoral systems; in one of the few studies in a proportional representation context, Giger et al. (2014) find evidence of a 'gender gap' in gender affinity voting, whereby women are less likely to engage in same-gender

voting than men are, though they show that this gap varies according to contextual features such as district magnitude or the proportion of men and women on the party lists. While scholars have demonstrated substantial variation in the existence and strength of gender affinity voting, the literature suggests that we should not expect women to be *less* likely to vote for women, or men to be *less* likely to vote for men. At most, they might be equally likely to vote for a candidate of either gender. We wish to assess whether our voters exhibit gender affinity voting, as this is central to understanding whether women candidates are disadvantaged, or pose a disadvantage for their party in the voting booth. We are also interested in studying whether the same-gender voting patterns vary across electoral systems. We again use the fact that each voter in the experiment voted under three different voting rules, facing the same ballot, to address this question.

4. Does ideology affect the propensity to vote for female candidates?

Our last research question draws upon existing literature that points to the relationship between left-wing parties and women's representation (Salmond 2006, Caul 1999, Kittilson 2006), the role of egalitarian attitudes about political leadership (Norris and Inglehart 2001) and the importance of gender ideology (Paxton and Kunovich 2003). Extending this further, with the logic that those on the left of the ideological spectrum may be more ideologically predisposed to support gender equity, we examine whether left-leaning voters are more inclined to vote for women than right-leaning voters. If such a bias were to exist, it would provide some insight into the distribution of female representation around the world and across parties.

Data and Methodology

The data used in this paper are drawn from the *EuroVotePlus* project.⁶ This project was run between May 4 and May 26, 2014 through an online platform, as part of the Making Electoral Democracy Work research project (Blais 2010). The study was open to individuals from any country. The team in charge of the experiment advertised the website in national and local media during the three weeks preceding the EU elections. The website was available in 14 different European languages.

The purpose of the *EuroVotePlus* experiment was twofold. On the one hand, it sought to educate the public about different electoral systems used by some Member States to elect their MEPs and to discuss some

⁶ See Laslier et al. (2015) for a description of the *EurovotePlus* project.

potential reforms of the EP electoral rules. The second objective of the project was to gather information about voting behavior under different electoral rules by presenting an experiment that would allow researchers to observe behavioral changes across candidate list configurations. Unlike using observational data in which voters from Country A may vote using a closed list system and voters from Country B may vote using an open list one, the researchers asked the same ‘voter’ to use three different electoral systems.

Regarding the potential reforms, the website provided a discussion about having elections with Europe-wide party lists. Currently, each EU Member State has a certain number of seats in EP elections, and elects its own MEPs. Some have proposed to reform the EP electoral system by adding additional members, elected through Europe-wide party lists in a single pan-European constituency. However, which electoral system should be used for such a reform has not been established. Indeed, the diversity of electoral rules in use throughout Europe for the election of members of the European Parliament is remarkable.

A goal of the online experiment was to see how respondents would react to the opportunity to take part in hypothetical elections with Europe-wide party lists. This project provides us with ideal data for our study of voting for women, as detailed above. Participants voted under three different voting rules that are currently used to elect (national) members of the European Parliament: closed list (example: France), open list (example: Latvia), and panachage (example: Luxembourg). Visitors to the website were invited to cast ballots for these hypothetical pan-European elections.

One challenge that faced the researchers when designing these pan-European elections was to set up an election that would mimic, from the point of view of the voter, what would be a realistic election of European delegates through pan-European party lists. The solution was to allow each participant to see seven lists, corresponding to the seven political groups that were actually registered at the European Parliament at the time of the election. Each of these experimental lists was composed of 10 candidates. The candidates on each list were randomly selected from among the real MEPs registered in the corresponding group. Randomization was done independently among participants, meaning that any two participants saw different candidates. Each candidate was presented on the ballot under his or her group affiliation, with his or her first name, surname, nationality, and official picture. Further information about the candidates was made available by having the name of each candidate linked to the candidate’s official web page on the European

Parliament's website. Note that because of the way these pan-European party lists were constructed, many candidates were unfamiliar to each respondent (because they were MEPs from other countries). Although gender was not explicitly indicated on the ballot, it could be easily inferred from the pictures of the candidates, and often inferred from first names (and in some cases last names).

Each participant voted under the three different voting procedures, in the following order: closed list, open list, and finally panachage. In the closed list system, participants were asked to indicate which party list they wanted to vote for. Voters had no direct control over which candidates within the lists were elected. In the open list system, participants had to choose one party list. Then, they were able to assign 0, 1 or 2 points to each candidate within this selected list.⁷ There was no constraining maximum number of votes to be assigned (the maximum for each participant was two multiplied by the number of candidates on the list). In the panachage electoral system, each participant had a total of ten points to be distributed. Instead of being constrained to a single party's list of candidates, participants were able to distribute the points among any number of party lists. However, a maximum of two votes could be assigned to any single candidate. The ballots remained the same, for a given participant, under the three voting rules.

After completing the three pan-European votes, respondents were asked to complete a short questionnaire with standard demographic questions (including gender) and questions about politics in general and ideology. For our analysis, we use only observations where we have results from the vote in the three pan-European elections as well as answers to the question about gender. Our sample contains 1,810 participants (see summary statistics in Table A1 in the Appendix). Note from this table that the participants are not representative of the general European population. Females are under-represented (27% of the respondents), and there seems to be a general left-wing bias in our sample.⁸ Young respondents are over-represented: mean age in the sample is 36 years, and the proportion of respondents aged between 18 and 30 is 47% (against around 20% in the general European population). Respondents are also over-educated: 42% of the respondents in the sample are still studying, and among those who report having stopped studying, the mean age for finishing studying is 25 years old. As the sample is voluntary and non-random, it is also likely that the

⁷ The default category was 1, so choosing a 0 meant taking one vote away from a candidate.

⁸ Under the closed list system, 24% of our experiment participants voted for the Social Democrat pan-European list, while only 10% for the Christian Democrats (People's party). However, in reality the Christian Democrat lists gathered more votes than Social Democrats throughout Europe.

respondents are more politically interested and sophisticated than the general population. We asked the respondents how interested they were in politics in general, and on a 0 to 10 scale, the mean answer is 8.1 (1791 observations). By comparison, a post-electoral survey conducted by the European Parliament (European Parliament, 2014) reveals that over 54% of Europeans declare not being interested in politics in general. Because our focus is on whether the rules alter choices, representativeness is not required to test our research questions effectively; each respondent voted three times, holding their own preferences, attitudes, and context constant. Further, even if we assume that our sample is more politically aware than the general population, the only likely implication is that our results represent effects among those most likely to be aware of the incentives provided by electoral systems. Therefore, while we do not expect the magnitude of our effects to be replicated in the general population, we do take them to be true effects among the most sophisticated subset of the population.

[Insert Figure 1 here]

Because of the randomization of the ballots, there was substantial variation in the percentage of female candidates seen by the respondents. Figure 1 reports the distribution of the proportion of female candidates seen by participants on the ballots (among the 70 candidates on the ballot), the mean of which is 32% (with a standard deviation of 5%).

Table 1 reports the statistics among the ballots seen by our respondents, by party list. Note that extreme parties (on the right and left) had on average fewer female candidates than the other parties. In particular, the list of the Europe of Freedom and Direct Democracy party contained, on average, less than 6% of female candidates.⁹ The parties with the most female candidates were the Greens/European Free Alliance (over 47% of female candidates on average) the Social Democrats, and the Alliance of Liberals and Democrats. The ideological aspect of female candidate variation occurred naturally because the lists were compiled from the roster of existing MEPs; parties with fewer women MEPs would naturally provide fewer potential female candidates for our lists.

[Insert Table 1 here]

⁹ This party is quite extreme in terms of women representation: 49% of the lists featured no women, and the maximum number of women on the ballot was 2 (out of 10 candidates).

To give an idea of the ideological positions of these different parties, Table 2 gives, for each party, the average left-right ideology of respondents who voted for that party in the closed list system. To construct Table 2, we used the 1,757 respondents who answered the question about ideology that was asked in the short questionnaire. Ideology is measured on a 0-10 scale, with higher scores indicating a position that is more to the right (see the descriptive statistics for this variable in Table A1).

[Insert Table 2 here]

Results

We begin by considering the broad question posed in question 1: are voters biased against lists with many female candidates? As explained above, in the experiment the candidates on each party list were randomly drawn from the party's MEPs. Because of the way the ballots were built, the number of women on a party list is statistically independent of the number of women on the other lists, and of the voter's characteristics. We can use this fact to assess how each party's electoral performance was affected by the number of women present on its list. As noted above, this possible bias has been entertained as one reason parties may avoid putting female candidates on their lists. To perform this examination, we use the proportion of women on the ballot as the independent variable and overall votes for the party as the dependent variable.

More precisely, we measure the electoral performance of a list as follows. Under the closed list or the open list systems, it is the proportion of voters voting for a list. Under the panachage system, we compute for each respondent the total number of votes given to candidates of a specific list, divided by the total number of votes given across all lists. Table A2 in the Appendix reports, for each party under each system, the party's average performance depending on the number of women on its list (the note below Table A2 further describes how the electoral performance of the party is computed). Figure 2 offers a visual representation of electoral attractiveness for each list, under each electoral system. The horizontal axis displays the proportion of female candidates on the list; the vertical axis shows the performance of the party list (proportion of votes). To construct this figure, we only kept the cases for which we have at least 100 observations (see Table A2 for detailed information about the distribution of gender composition by party).

[Insert Figure 3 here]

From these graphs, it seems safe to conclude that, for each party, having a higher proportion of female candidates on a list does not present any clear disadvantage (at least in our sample of respondents). Across all of the graphs, there is no evidence of a clear decline in support for the party as the proportion of women on the list increases. In no case is the final bar the lowest point in the series. If anything, having a higher proportion of women on the ballot may be a benefit, in particular in the case of the Greens/European Free Alliance (Fig. 2c), to a lesser extent for the Progressive Alliance of Socialists and Democrats (Fig. 2b), and, maybe more surprisingly, for the European Conservatives and Reformists (Fig. 2f), as they seem to attract more votes when more female candidates are present on their lists. We observe only small differences across voting rules.

In order to further assess the impact of the proportion of female candidates on the electoral performance of a list, we estimate the following model for each list K and each electoral system S :

$$Vote_ListK_SystemS_i = \beta_0 + \beta_1 Fraction_Females_ListK_i + \varepsilon_i$$

where:

- $Vote_ListK_SystemS_i$ is a dummy variable equal to 1 if respondent i votes for list K when the electoral system S is either the closed list rule or the open list rule. When the electoral system S is the panachage system, $Vote_ListK_SystemS_i$ is the fraction of votes that individual i gives to list K , that is, the total number of votes given by the individual to candidates on this list, divided by the total number of votes given by the individual.
- $Fraction_Females_ListK_i$ is the fraction of female candidates in list K on the ballot seen by individual i .

We estimated 21 models in total (seven lists under three electoral systems), using a binary logit model for the closed list and open list electoral systems, and an OLS model for the panachage system. Table 3 reports the coefficient for the fraction variable in each case, along with the associated p -value.

[Insert Table 3 here]

With the exception of the Alliance of Liberals and Democrats, the sign of the coefficient on $Fraction_Females_ListK$ is uniformly positive across all parties and electoral systems. This confirms that having more females on a list does not hurt the electoral prospects of a party, and this does not seem to depend

on the voting system. Furthermore, the positive effect of having more females on the ballot is significant for the Progressive Alliance of Socialists and Democrats (except in the open rule system) and for the Greens/European Free Alliance, as well as for the European Conservatives and Reformists in the open list system. Therefore, having women on a ballot may even be a benefit in some cases.

Our first research question related to the performance of parties/lists as a whole. Next, we turn to consider our remaining hypotheses, which address the relative performance of male and female candidates: does the individual propensity to vote for female candidates depend on the electoral system, and gender and ideology of the voter? In these analyses we focus directly on voting for women candidates, designating it as the dependent variable. Accordingly, for each system and each participant, we create a variable *VotesForWomen* describing the respondent's support for female candidates. This variable was constructed differently for each electoral system, in such a way that the comparison across electoral systems is meaningful. In the closed list system, voters have no control over which candidates are elected, and our measure of support for female candidates is simply the proportion of females on the list that was chosen by the individual. In the open list system, participants were able to assign 0, 1 or 2 points to each candidate within the list they voted for. To create a measure of votes for women, we divide the total number of points given to female candidates by the total number of points distributed (within the chosen list). In the panachage electoral system, each participant had a total of 10 points to be distributed, possibly across lists. Our measure of support for women in this system is the total number of points given to female candidates divided by the total number of points distributed (across all lists), in the same way as for the open list electoral system. In Table 4 we report the mean value of votes for female candidates in the whole sample (in the column labelled "All"), in each type of electoral system. The last two columns in the table report the mean votes for women by male and female participants, respectively.

[Insert Table 4 here]

Let us first consider the results for the whole sample. The mean percentage of women candidates on the lists is 32%. Average support for women in the closed list system is 39%, under the open list system 41%, and under panachage 44%. These data provide evidence that more open electoral systems are associated with more votes for women, as clearly the panachage system has the most votes for women (44%). Furthermore,

since the average support for women is always higher than the proportion of women candidates on the ballots, this provides further evidence that there is no systematic bias against female candidates. All the differences are significant at the 1% level (see Table A3 in the Appendix for the reports of the associated statistical tests).

Next we address our research question about same-gender voting. The last two columns of Table 4 demonstrate that, for both male and female voters, open electoral systems are associated with significantly more votes for women (see Table A3 in the Appendix for the reports of the associated statistical tests). The data also demonstrate that women vote for women more than men do in the open and panachage systems, but there is no statistical difference in the closed list system.¹⁰ This confirms the existing research that finds female affinity effects, while also providing evidence that women candidates are not disadvantaged among male voters. When given the opportunity to vote for more men under the more open electoral systems, male voters do not seem to engage in additional same-gender voting patterns.

Finally, we consider whether ideology moderates support for women candidates. Figure 3 shows how the propensity to vote for women depends on ideology, for each gender and each electoral system. The five ideology categories have been constructed based on the ideology variable: *ExtremeLeft* corresponds to ideology between 0 and 2 (n_males=337 (26% of male respondents), n_females=158 (33% of female respondents)); *CenterLeft* to ideology equal to 3 or 4 (n_males=472 (37%), n_females=161 (34%)); *Center* to ideology equal to 5 (n_males=168 (13%), n_females=158 (15%)); *CenterRight* to ideology equal to 6 or 7 (n_males=209 (16%), n_females=55 (12%)), and *ExtremeRight* to ideology between 8 and 10 (n_males=140 (11%), n_females=39 (8%)).¹¹ The top graphs present the results for female respondents, and the bottom graphs for male respondents. The results for electoral systems are presented for the closed list system (left), the open list system (middle), and panachage (right).

[Insert Figure 3 here]

¹⁰We perform independent-sample t-tests to compare the behavior of male respondents and female respondents in each of the three voting system. For the closed list system, the t-statistic is $t=0.13$, and the two-tailed p-value 0.90; for the open list system: $t=3.38$ and $p=0.001$; for the panachage system: $t=6.40$ and $p=0.000$.

¹¹Female respondents tend to be more left-wing than male respondents. The mean value of ideology among female respondents is 3.37, compared to 4.04 for male respondents (an independent t-test shows that the mean for females is strictly lower than for males; $t=3.17$, two-tailed p -value $p=0.002$).

What is immediately obvious in Figure 3 is that, regardless of gender and the electoral system, ideology is very important – the propensity to vote for women declines as one moves from the left- to the right-hand side of the ideological spectrum. The effect is especially strong for voters on the extreme right-hand side of the ideological spectrum. The graph also confirms that both male and female respondents tend to vote more for female candidates in more open systems, with a much larger effect for female voters. Interestingly, this last effect holds true regardless of the ideology of the respondent.

The above results are quite interesting, but an additional, and more direct, way to test our expectations is to conduct multivariate regression analyses. To do so, we create a stacked dataset, where each respondent is entered into the dataset three times, once for each electoral system. This allows us to directly compare the effects of gender and ideology on support for female candidates across all systems.

We first consider the impact of gender and the electoral system. We include dummy variables for the open list electoral system and the panachage system (closed list is the reference), as well as interactions between gender and those electoral systems. The interactions allow us to see whether women are more likely to vote for women as the electoral system becomes more open, and the electoral system dummy variables indicate whether the same occurs for men. As individual characteristics, we include gender and dummy variables for ideological categories (Extreme-Left, Center-Left, Center-Right, Extreme-Right; Center is the reference category). We also add as a control the proportion of female candidates on the ballot faced by the respondent. More specifically, we estimate the following model, where index i denotes the individual and index S the electoral system:

$$\begin{aligned} \text{VotesForWomen}_{iS} = & \beta_0 + \beta_1 \text{Female}_i + \beta_2 \text{Extreme_Left}_i + \beta_3 \text{Center_Left}_i + \beta_4 \text{Center_Right}_i \\ & + \beta_5 \text{Extreme_Right}_i + \beta_6 \text{Open-List} + \beta_7 \text{Panachage} + \beta_8 \text{Female*Open-List} \\ & + \beta_9 \text{Female*Panachage} + \beta_{10} \text{ProportionFemalesOnBallot}_i + u_{iS} + \varepsilon_{iS} \end{aligned}$$

where $\text{VotesForWomen}_{iS}$ is the proportion of individual i 's votes that are cast for women candidates (see the note in Table A2 for a precise definition); Female_i is a dummy variable that equals 1 if individual i is a female; u_{iS} is the between-individual error term; and ε_{iS} is the within-individual error term. Table 5 shows the results using a Random Effects model.

[Insert Table 5 here]

Several pieces of information emerge from Table 5. The coefficient on *Female* indicates the effect on votes for women of having a woman respondent rather than a man, for closed list ballots. The numbers in the table confirm our observation that female respondents are not more likely than male respondents to cast votes for lists with a larger proportion of female candidates in the closed list system. The coefficients on *Open List* and *Panachage* indicate the effect on votes for women of using open list or panachage rules, respectively, compared to closed list rules, among male voters. Male respondents are more likely to vote for women in more open systems (although the effect is only significant at 10% for the open list system, and is quite small). The coefficient on *Female * Open List* allows us to determine whether the impact of an open list system is greater among female respondents. The coefficient on *Female * Panachage* tells a similar story, substituting panachage for open list electoral rules. In open list and panachage systems, women increase their support for women candidates more than men do, compared to the closed list system benchmark. We therefore confirm that the effect of openness is not restricted to women voters, as the electoral system variables are also significant and positive, but that the effect is greater for women. This suggests a same-gender voting effect for women as well as a propensity to support women overall.¹² The effect is particularly strong for the panachage system: compared to the closed list system, it is associated with 3 percentage points more votes for women among men, and 13 percentage points more votes for women among women voters.

Regarding the impact of ideology, we confirm that left-wing voters are more supportive of women candidates than center and center-right voters, and that extreme-right voters are less supportive. To further study the impact of ideology, we estimate a model allowing for interactions between ideology and the electoral system, again using a Random Effects model. The results are shown in Table A.4 in the Appendix.

This further analysis reveals that the impact of ideology documented in Table 5 is mostly driven by differences in the closed list system election. Indeed, we confirm that in the closed list system, center-left voters are more supportive of lists with many women candidates than center and center-right voters; and that extreme-right voters are less supportive. However, none of the interaction terms between ideology and the open electoral systems are significant. These findings suggest that ideology has a strong effect on votes for

¹² Note that men, when given the chance under open list or panachage rules, are not choosing to engage in same-gender voting to increase the proportion of men for whom they vote.

women, but the effect is mostly driven by the different gender compositions of the party lists, rather than by voters' ideology itself. Indeed, while we observe a large effect of ideology in the closed list system, there are no significant additional effects of ideology in the other systems (once one takes into account the closed list vote). This is consistent with the observations made about Figure 3: whatever their ideology, voters tend to increase their support for women when one moves from a closed list system to a more open system, and they do so in proportions which do not vary significantly with ideology.

Conclusion

The analyses above present us with a number of observations that allow us to answer our research questions.

1. Do voters show a reluctance to vote for female candidates?

Whatever the party, having a higher proportion of female candidates on its list does not hurt its electoral prospects (at least in our sample of respondents). If anything, it helps, such as in the case of the Progressive Alliance of Socialists and Democrats and Greens/European Free Alliance parties. We also observe that in more open systems, when voters are given more freedom to express their preferences about the candidates, the propensity to vote for women increases (see point 2 below).

2. Does the openness of electoral rules affect the propensity to vote for female candidates?

Our results suggest a strong “yes”: the openness of electoral rules does influence support for female candidates overall. The data provide clear evidence that open electoral systems are associated with more votes for women, and that the panachage system brings about the most votes for women.

3. Do voters show same-gender voting patterns?

The answer is “yes and no”, depending on the electoral system. In closed list systems there is no evidence of same-gender voting, in that male and female respondents vote for lists with similar gender characteristics. In more open electoral systems, and more specifically in the open list system with panachage and cumulation, there is evidence of a strong same-gender effect for women but not for men. We observe that both men and women alike are more supportive of female candidates in more open electoral systems, but this effect is much stronger for female voters.

4. Does ideology affect the propensity to vote for female candidates?

Again, the answer is “yes and no”. We do find that, whatever the voting rule, voters at both extremes of the political spectrum – and more particularly so those at the extreme-right end – are less likely to vote for women candidates than voters with a moderate ideology. A priori, two different mechanisms might explain this finding. The first one relates to the very large differences in the proportions of female candidates across party lists, extreme parties having fewer female candidates. Given this heterogeneity in the composition of party lists, even if voters were gender-blind and voting solely based on their ideological proximity to parties, one would observe this strong negative correlation between ideological extremism and support for female candidates. A second mechanism, which could reinforce the first one, is that voters with extreme ideology, and in particular with right-wing ideology, do not like to vote for women candidates: when given a chance, they are less likely than moderate voters to vote for female candidates. It appears that, in our sample, only the first mechanism is at play. Indeed, we observe that when we compare voting under open rules to the closed rule system, voters with extreme ideology increase their support for female candidates in proportions similar to these of other voters; they do not seem to exhibit any dislike of female candidates. If on average they vote for fewer female candidates, it is only because extreme parties give them less opportunity to do so.

To conclude, our results suggest that, at least in our sample, voters do not exhibit a systematic bias against female candidates. Parties are not hurt when they have more women on their lists, whatever the electoral system. Furthermore, the propensity to vote for women increases when voters are given more freedom to express their preferences about the candidates.. This is true for both male and female voters, even if the effect is particularly strong for female voters. Last, interestingly, and contrary to some expectations, this is true independently of ideology. Our experimental results therefore suggest that concerns about voters being turned off because of the presence of women on the ballot appear to be unfounded.

In trying to explain the small number of women MPs (and the low level of women in the political elite in general), two competing hypotheses are that *(i)* parties do not put females on their lists because of their lower chances of being elected, the latter being driven by voters’ bias against females, and *(ii)* parties, historically composed of men, discriminate against female politicians. Our results do not support the first

hypothesis. Our study suggests that it may be worthwhile to examine the second interpretation, according to which the culprit is party discrimination.

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Figures

Figure 1: Distribution of the proportion of women on the ballots

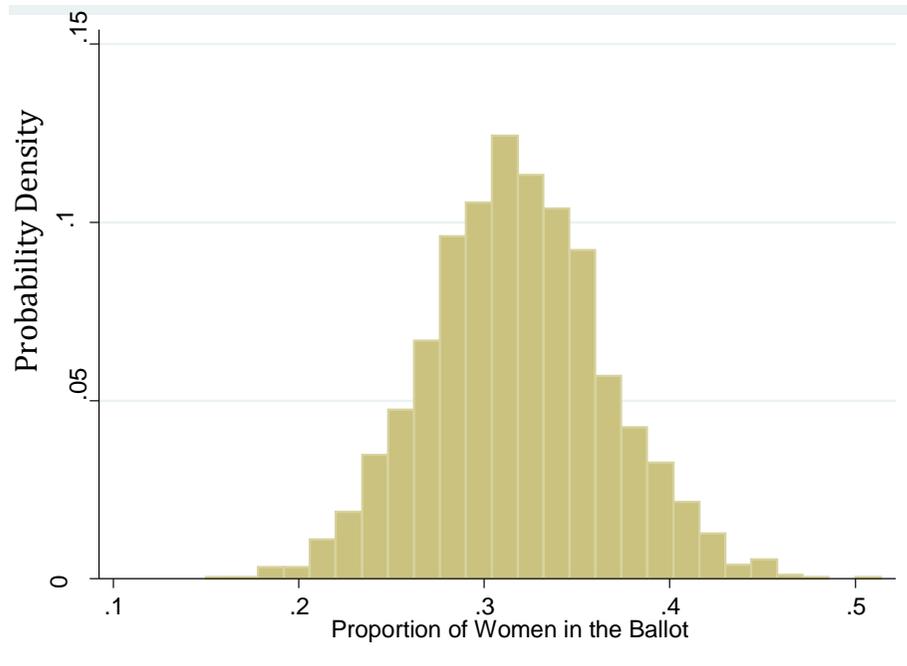


Figure 2: Average attractiveness of the party lists (Proportion of votes), by gender composition of the list (Fraction female candidates)

Fig. 2a: The European United Left-Nordic Green Left

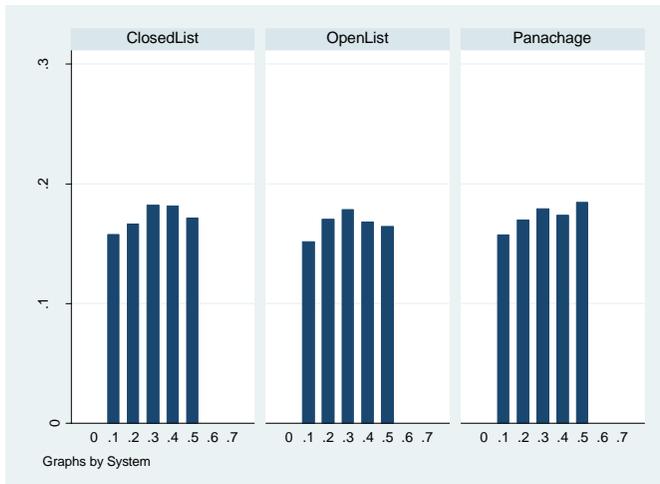


Fig. 2b: The Progressive Alliance of Socialists and Democrats

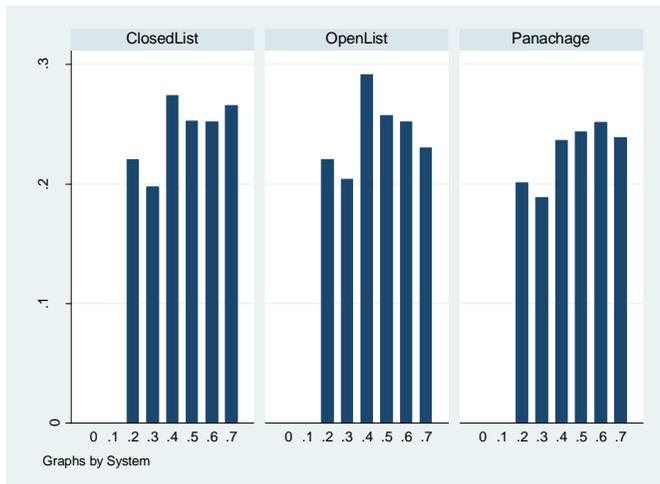


Fig. 2c: The Greens/European Free Alliance

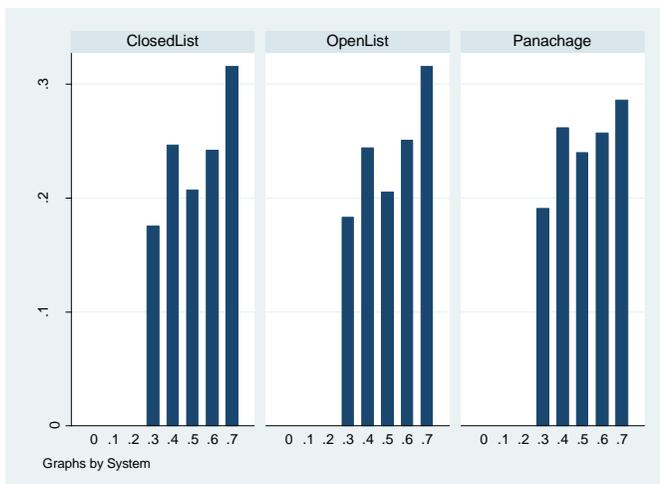


Fig. 2d: The Alliance of Liberals and Democrats for Europe

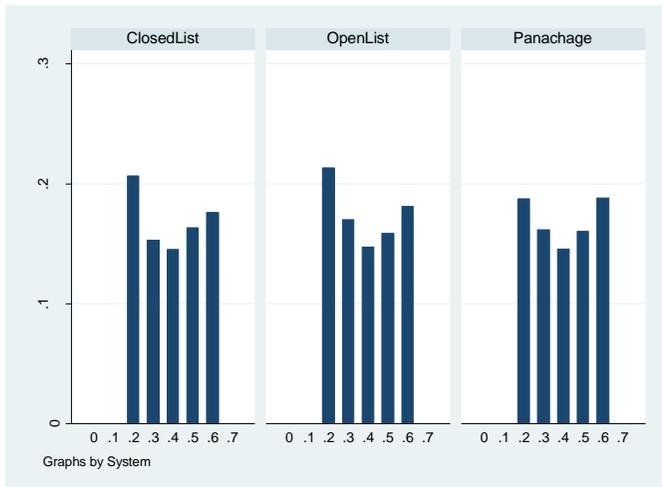


Fig. 2e: The European People’s Party

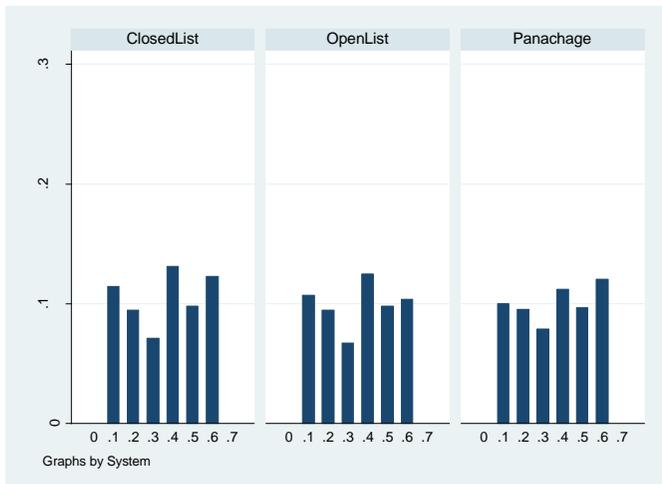


Fig. 2f: The European Conservatives and Reformists

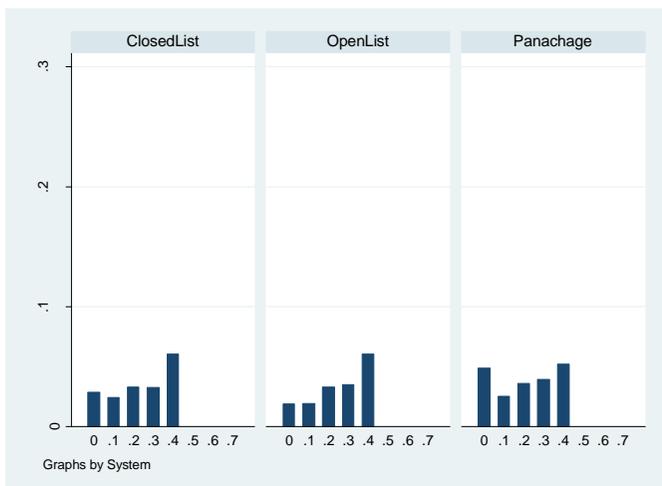


Fig. 2g: The Europe of Freedom and Direct Democracy

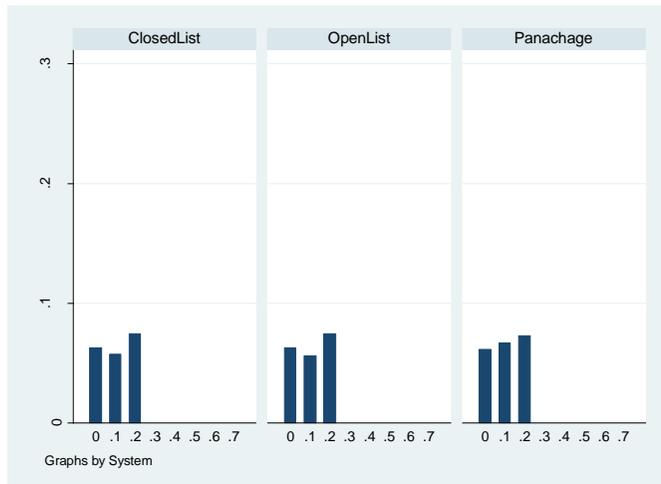
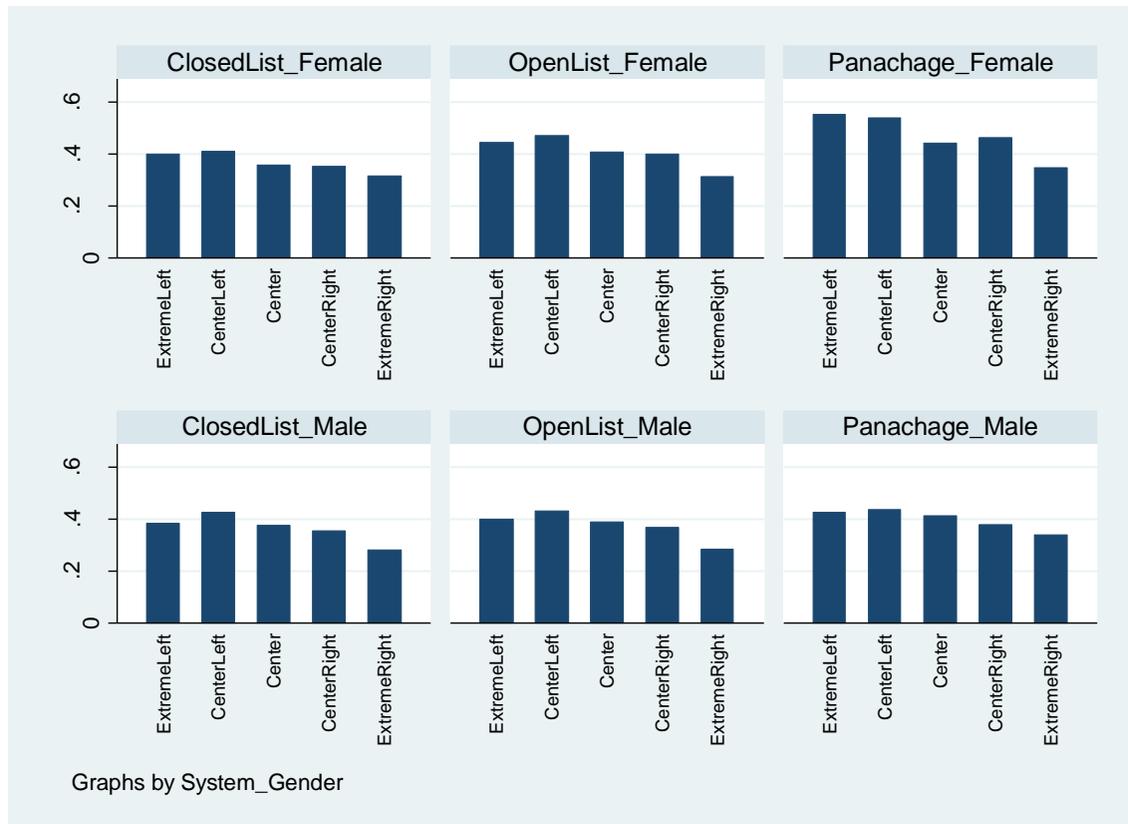


Figure 3: Mean value of Votes for Women in the closed, open and panachage electoral systems, by ideology categories for female respondents (top graphs) and male respondents (bottom graphs)



Tables

Table 1: Fraction of women on the lists, by party

| Party | Fraction of female candidates on the list | |
|--|---|-----------|
| | Mean | Std. Dev. |
| European United Left-Nordic Green Left (GUE/NGL) | 0.29 | 0.12 |
| Progressive Alliance of Socialists and Democrats (S&D) | 0.43 | 0.15 |
| Greens/European Free Alliance (Greens/EFA) | 0.48 | 0.15 |
| Alliance of Liberals and Democrats for Europe (ALDE) | 0.42 | 0.14 |
| European People's Party (EPP) | 0.34 | 0.14 |
| European Conservatives and Reformists (ECR) | 0.22 | 0.12 |
| Europe of Freedom and Direct Democracy (EFDD) | 0.06 | 0.06 |
| All | 0.32 | 0.05 |

Note: Groups are ranked in the order presented on the EP official website

See <http://www.europarl.europa.eu/news/en/news-room/infographics> (last access Nov. 24 2015)

Table 2: Ideology of respondents voting for each list under the closed list system, by party

| Party | Ideology of voters | |
|--|--------------------|-----------|
| | Mean | Std. Dev. |
| European United Left-Nordic Green Left (GUE/NGL) | 2.06 | 1.38 |
| Progressive Alliance of Socialists and Democrats | 3.20 | 1.31 |
| Greens/European Free Alliance | 3.27 | 1.40 |
| Alliance of Liberals and Democrats for Europe | 5.48 | 1.71 |
| European People's Party | 6.10 | 1.60 |
| European Conservatives and Reformists | 7.03 | 1.74 |
| Europe of Freedom and Direct Democracy | 5.88 | 2.30 |
| All | 3.94 | 2.14 |

Note: Groups are ranked in the order presented on the EP official website

See <http://www.europarl.europa.eu/news/en/news-room/infographics> (last access Nov. 24 2015)

Table 3: Impact of the proportion of female candidates on the electoral performance of the list (proportion of votes): Results of Logit (closed and open systems) and OLS (panachage system) analysis (coefficient and p-value)

| | Coefficient for <i>Fraction_Females_ListK</i> | Associated 2-tailed p-value |
|---|--|--------------------------------|
| List: European United Left-Nordic Green Left | | |
| Closed | 0.533 | 0.279 |
| Open | 0.429 | 0.388 |
| Panachage | 0.065 | 0.263 |
| List: Progressive Alliance of Socialists and Democrats | | |
| Closed | 0.710* | 0.053 |
| Open | 0.507 | 0.163 |
| Panachage | 0.127** | 0.014 |
| List: Greens/European Free Alliance | | |
| Closed | 0.978** | 0.011 |
| Open | 1.090*** | 0.005 |
| Panachage | 0.129** | 0.017 |
| List: Alliance of Liberals and Democrats for Europe | | |
| Closed | -0.308 | 0.495 |
| Open | -0.570 | 0.204 |
| Panachage | -0.014 | 0.778 |
| List: European People's Party | | |
| Closed | 0.552 | 0.305 |
| Open | 0.464 | 0.398 |
| Panachage | 0.039 | 0.302 |
| List : European Conservatives and Reformists | | |
| Closed | 1.149 | 0.294 |
| Open | 1.860* | 0.093 |
| Panachage | 0.023 | 0.434 |
| List: Europe of Freedom and Direct Democracy | | |
| Closed | 0.264 | 0.861 |
| Open | 0.175 | 0.908 |
| Panachage | 0.053 | 0.459 |

Note: Number of observations=1810

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

Table 4: Mean *VotesForWomen* (Proportion of votes), by electoral system (standard deviations in parentheses)

| | All (n=1,810) | Men (n=1,326) | Women (n=484) |
|-------------|------------------|------------------|------------------|
| Closed List | 0.39 (0.18) | 0.39 (0.17) | 0.38 (0.18) |
| Open List | 0.41 (0.21) | 0.40 (0.20) | 0.43 (0.21) |
| Panachage | 0.44 (0.27) | 0.42 (0.26) | 0.51 (0.28) |

Table 5: *VotesforWomen*: Effect of gender and electoral system

| Variable | Coefficient | Associated two-tailed p-value |
|----------------------------|-------------|-------------------------------|
| Gender : Female | -0.001 | 0.928 |
| System : Open List | 0.010* | 0.073 |
| System : Panachage | 0.028*** | 0.000 |
| Female * Open List | 0.038*** | 0.000 |
| Female * Panachage | 0.093*** | 0.000 |
| Ideology: Extreme-Left | 0.028** | 0.041 |
| Ideology: Center-Left | 0.047*** | 0.000 |
| Ideology: Center-Right | -0.018 | 0.246 |
| Ideology: Extreme-Right | -0.098*** | 0.000 |
| Proportion Women On Ballot | 1.163*** | 0.000 |
| Constant | -0.001 | 0.970 |
| | | |
| N | 5271 | |
| N of Groups | 1757 | |
| R^2 within groups | 0.055 | |
| R^2 between groups | 0.1414 | |
| R^2 overall | 0.1168 | |

Note: Each respondent is entered into the dataset three times, once for each electoral system.

* $p < 0.1$, ** $p < 0.05$, *** $P < 0.01$ (two-tailed).

On-line Appendix:

Table A1: Summary Statistics

| Variable | Mean | Std. Dev. | Min | Max | Obs |
|--|------|-----------|-----|-----|------|
| Female | 0.27 | 0.44 | 0 | 1 | 1810 |
| Ideology (0-10 scale) | 3.94 | 2.14 | 0 | 10 | 1755 |
| Vote Closed List European United Left-Nordic Green Left | 0.18 | 0.38 | 0 | 1 | 1810 |
| Vote Closed List: Progressive Alliance of Socialists and Democrats | 0.24 | 0.43 | 0 | 1 | 1810 |
| Vote Closed List: Greens/European Free Alliance | 0.23 | 0.42 | 0 | 1 | 1810 |
| Vote Closed List: Alliance of Liberals and Democrats for Europe | 0.16 | 0.36 | 0 | 1 | 1810 |
| Vote Closed List: European People's Party | 0.10 | 0.30 | 0 | 1 | 1810 |
| Vote Closed List: European Conservatives and Reformists | 0.03 | 0.18 | 0 | 1 | 1810 |
| Vote Closed List: Europe of Freedom and Direct Democracy | 0.06 | 0.24 | 0 | 1 | 1810 |

Table A2: Average vote received by each list under each system (in percentage), by gender composition of this list

| | Gender composition of the list: % female candidates | | | | | | | | | | | |
|---|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | Total |
| List: European United Left-Nordic Green Left | | | | | | | | | | | | |
| Closed | 23.08 | 15.76 | 16.63 | 18.20 | 18.16 | 17.12 | 28.57 | 0.5 | / | / | / | 17.84 |
| Open | 20.51 | 12.15 | 17.05 | 17.85 | 16.80 | 16.44 | 28.57 | 50 | / | / | / | 17.40 |
| Panachage | 20.38 | 15.74 | 16.97 | 17.92 | 17.37 | 18.46 | 24.63 | 37.5 | / | / | / | 17.63 |
| Nb of obs. | 39 | 165 | 475 | 577 | 369 | 146 | 35 | 4 | 0 | 0 | 0 | 1810 |
| (% of obs.) | 2.15 | 9.12 | 26.24 | 31.88 | 20.39 | 8.07 | 1.93 | 0.22 | 0 | 0 | 0 | 100 |
| Mean composition | | | | | | | | | | | | 29.23 |
| List: Progressive Alliance of Socialists and Democrats | | | | | | | | | | | | |
| Closed | 0 | 4.55 | 22.02 | 19.75 | 27.41 | 25.24 | 25.19 | 26.55 | 9.09 | 0 | / | 23.87 |
| Open | 0 | 4.55 | 22.02 | 20.38 | 29.12 | 25.73 | 25.19 | 23.01 | 9.09 | 0 | / | 24.31 |
| Panachage | 20 | 6.67 | 20.10 | 18.84 | 23.64 | 24.36 | 25.13 | 23.87 | 6.07 | 5 | / | 22.22 |
| Nb of obs. | 2 | 44 | 168 | 314 | 467 | 412 | 266 | 113 | 22 | 2 | 0 | 1810 |
| (% of obs.) | 0.11 | 2.43 | 9.28 | 17.35 | 25.80 | 22.76 | 14.70 | 6.24 | 1.22 | 0.11 | 0 | 100 |
| Mean composition | | | | | | | | | | | | 43.26 |
| List: Greens/European Free Alliance | | | | | | | | | | | | |
| Closed | 0 | 0.11 | 26.67 | 17.51 | 24.63 | 20.71 | 24.20 | 31.54 | 30.43 | 28.57 | / | 23.09 |
| Open | 0 | 0.11 | 26.67 | 18.29 | 24.38 | 20.51 | 25.07 | 31.54 | 32.61 | 42.86 | / | 23.37 |
| Panachage | 25 | 13.33 | 24.09 | 19.09 | 26.17 | 23.96 | 26.7 | 28.58 | 26.78 | 24.64 | / | 24.45 |
| Nb of obs. | 2 | 18 | 75 | 257 | 406 | 507 | 343 | 149 | 46 | 7 | 0 | 1810 |
| (% of obs.) | 0.11 | 0.99 | 4.14 | 14.2 | 22.43 | 28.01 | 18.95 | 8.23 | 2.54 | 0.39 | 0 | 100 |
| Mean composition | | | | | | | | | | | | 47.67 |
| List: Alliance of Liberals and Democrats for Europe | | | | | | | | | | | | |
| Closed | 50 | 13.04 | 20.67 | 15.30 | 14.53 | 16.35 | 17.62 | 6.59 | 37.5 | 0 | / | 15.75 |
| Open | 50 | 13.04 | 21.33 | 17 | 14.72 | 15.87 | 18.10 | 6.59 | 31.25 | 0 | / | 16.08 |
| Panachage | 45 | 14.49 | 18.76 | 16.18 | 14.55 | 16.01 | 18.8 | 10.72 | 30 | 0 | / | 16 |
| Nb of obs. | 2 | 46 | 150 | 353 | 523 | 416 | 210 | 91 | 13 | 3 | 0 | 1810 |
| (% of obs.) | 0.11 | 2.54 | 8.29 | 19.50 | 28.90 | 22.98 | 11.60 | 5.03 | 0.88 | 0.17 | 0 | 100 |
| Mean composition | | | | | | | | | | | | 42.14 |

| | Gender composition of the list: % female candidates | | | | | | | | | | | |
|---|---|-------|-------|-------|-------|-------|-------|------|-------|------|------|-------|
| | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | Total |
| List: European People's Party | | | | | | | | | | | | |
| Closed | 6.67 | 11.45 | 9.48 | 7.11 | 13.11 | 9.79 | 12.26 | 6.06 | 33.33 | 0 | / | 10.06 |
| Open | 6.67 | 10.69 | 9.48 | 6.71 | 12.47 | 9.79 | 10.38 | 6.06 | 33.33 | 0 | / | 9.61 |
| Panachage | 5.33 | 10 | 9.53 | 7.89 | 11.22 | 9.66 | 12.04 | 4.46 | 33.33 | 0 | / | 9.59 |
| Nb of obs. | 30 | 131 | 306 | 492 | 473 | 235 | 106 | 33 | 3 | 1 | 0 | 1810 |
| (% of obs.) | 1.66 | 7.24 | 16.91 | 27.18 | 26.13 | 12.98 | 5.86 | 1.82 | 0.17 | 0.06 | 0 | 100 |
| Mean composition | | | | | | | | | | | | 34.17 |
| List : European Conservatives and Reformists | | | | | | | | | | | | |
| Closed | 2.86 | 2.42 | 3.30 | 3.28 | 6.03 | 0 | 0 | / | / | / | / | 3.26 |
| Open | 1.90 | 1.94 | 3.33 | 3.49 | 6.03 | 0 | 0 | / | / | / | / | 3.15 |
| Panachage | 11.99 | 11.6 | 8.18 | 10 | 7.8 | 8.92 | 0 | / | / | / | / | 9.59 |
| Nb of obs. | 105 | 413 | 576 | 458 | 199 | 53 | 6 | 0 | 0 | 0 | 0 | 1810 |
| (% of obs.) | 5.8 | 22.82 | 31.82 | 25.30 | 10.99 | 2.93 | 0.33 | 0 | 0 | 0 | 0 | 100 |
| Mean composition | | | | | | | | | | | | 22.30 |
| List: Europe of Freedom and Direct Democracy | | | | | | | | | | | | |
| Closed | 6.24 | 5.73 | 7.45 | / | / | / | / | / | / | / | / | 6.13 |
| Open | 6.24 | 5.60 | 7.45 | / | / | / | / | / | / | / | / | 6.08 |
| Panachage | 6.17 | 6.67 | 7.28 | / | / | / | / | / | / | / | / | 6.48 |
| Nb of obs. | 881 | 768 | 161 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1810 |
| (% of obs.) | 48.67 | 42.43 | 8.90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| Mean composition | | | | | | | | | | | | 6.02 |

Note: **For the Closed List system:** For each individual, for each list, we created a dummy variable that equals 1 if the individual votes for the list under the closed list system. The rows labelled “Closed” show the mean of this variable, in the whole sample (last column) and by gender composition of the list. For example, for the Left list, the table can be read as follows. The average number of votes is 17.84% in the whole sample (1810 observations). Among respondents who faced a Left list with 0 female candidates (39 observations, that is 2.15% of our total number of respondents), the average number of votes is 23.08%; among respondents who faced a Left list with 10% female candidates (165 observations, that is 9.12% of our total number of respondents), it is 15.76%; etc. In the “Mean composition” row one can read that the average percentage of female candidates on the Left list in all the ballots is 29.23%.

For the Open List system: For each individual, for each list, we created a dummy variable that equals 1 if the individual votes for the list under the open list system. The “Open” rows show the mean of this variable, in the whole sample (last column) and by gender composition of the list. For example, for the Left list, the table can be read as follows. The average number of votes is 17.40% in the whole sample (1810 observations). Among respondents who faced a Left list with 0 female candidates (39 observations, that is 2.15% of our total number of respondents), this number is 20.51%; among respondents who faced a Left list with 10% female candidates (165 observations, that is 9.12% of our total number of respondents), it is 12.15%; etc. In the “Mean composition” row one can read that the average percentage of female candidates on the Left list in all the ballots is 29.23%.

For the Panachage system: For each individual, for each list, we created a variable that equals the total number of votes given by the individual to candidates of the list, divided by the total number of votes given by the individual. The “Panachage” rows show the mean of this variable, in the whole sample (last column) and by gender composition of the list. For example, for the Left list, the table can be read as follows. The average fraction of votes is 17.63% in the whole sample (1810 observations). Among respondents who faced a Left list with 0 female candidates (39 observations, that is 2.15% of our total number of respondents), it is 20.38%; among respondents who faced a Left list with 10% female candidates (165 observations, that is 9.12% of our total number of respondents), it is 15.74%; etc. In the “Mean composition” row one can read that the average percentage of female candidates on the Left list in all ballots is 29.23%.

Table A3. *VotesforWomen*, by Male and Female Respondents

The table below reports the t-statistic and the two-tailed p-value of paired t-test comparing *VotesforWomen* in the closed list system to the proportion of females on the ballot (line 2), comparing the *VotesforWomen* in the open list system to *VotesforWomen* in the closed list system (line 3), and comparing the *VotesforWomen* in the panachage system to *VotesforWomen* in the open list system (line 3).

Results are presented for the whole sample (n=1810) and in the last two columns for male respondents and female respondents separately.

| Comparison between: | All (n=1,810) | Men (n=1,326) | Women (n=484) |
|---|-----------------------|-----------------------|----------------------|
| <i>VotesForWomen</i> in closed list and <i>ProportionFemalesOnBallot</i> | t=16.5177 p=0.0000 | t=14.2618 p=0.0000 | t=8.3360 p=0.0000 |
| <i>VotesForWomen</i> in open list and <i>VotesForWomen</i> in closed list | t=6.9239 p=0.0000 | t=3.2037 p=0.0014 | t=7.3468 p=0.0000 |
| <i>VotesForWomen</i> in panachage and <i>VotesForWomen</i> in open list | t=6.5869 p=0.0000 | t=3.3579 p=0.0008 | t=6.8828 p=0.0000 |

Table A.4: VotesforWomen: Effect of ideology and electoral system

| Variable | Coefficient | Associated two-tailed p-value |
|----------------------------|-------------|-------------------------------|
| Ideology: Extreme-Left | 0.020 | 0.233 |
| Ideology: Center-Left | 0.053*** | 0.001 |
| Ideology: Center-Right | -0.012 | 0.507 |
| Ideology: Extreme-Right | -0.091*** | 0.000 |
| System : Open_List | 0.025* | 0.056 |
| System : Panachage | 0.052*** | 0.000 |
| Extreme-Left * Open List | -0.0004 | 0.978 |
| Center-Left * Open List | -0.006 | 0.693 |
| Center-Right * Open List | -0.006 | 0.750 |
| Extreme-Right * Open List | -0.022 | 0.324 |
| Extreme-Left * Panachage | 0.025 | 0.110 |
| Center-Left * Panachage | -0.011 | 0.484 |
| Center-Right * Panachage | -0.011 | 0.534 |
| Extreme-Right * Panachage | 0.002 | 0.942 |
| Proportion Women on Ballot | 1.163*** | 0.000 |
| Female | 0.043*** | 0.000 |
| Constant | -0.014 | 0.648 |
| | | |
| N | 5271 | |
| N of Groups | 1757 | |
| R^2 within groups | 0.0381 | |
| R^2 between groups | 0.1414 | |
| R^2 overall | 0.1120 | |

Note: Each respondent is entered into the dataset three times, once for each electoral system.

* $p < 0.1$, ** $p < 0.05$, *** $P < 0.01$ (two-tailed).