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The “paradox of choice” and (de)centralization of electoral intraparty competition

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**The “paradox of choice” and (de)centralization of electoral intraparty competition.
A worldwide comparative analysis of 29 countries (1994-2023)**

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Abstract

In many democracies across the world, members of parliament are elected under list PR systems. Voters are asked to cast a vote for a party list, and to mark preferences within those lists about the candidates they want to see elected. Yet, the detailed rules for preference voting greatly vary across countries. In particular, there exist differences regarding how many preference votes that voters are allowed to cast (from 1 to as many as district magnitude), as well as the number of candidates that voters can support. We do not know exactly how these rules affect the nature of intraparty competition (i.e. competition between candidates within lists). The general expectation is that widening voters’ freedom of choices, by allowing to cast preference votes among a large range of candidates, would lead to decentralized electoral intraparty competition (H1). Top list leaders do not dominate such elections and must share power with other candidates that gained some public support. On the opposite, following the literature in social psychology (the “paradox of choice”), it could also be argued that “too many choices kill the choice”. Assessing the profiles of a large set of candidates according to a voter’s preference requires complex and costly information-seeking behaviour. Instead, voters would simply opt for ‘simpler’ behaviour by casting a few votes to prominent and well-known candidates. This would lead to a centralization of electoral competition (H2). The present contribution tests these two competing hypotheses by analysing 131 elections across 29 countries worldwide over 30 years.

Data collection & cleaning under progress (please do not cite without permission)
All comments and suggestions are welcome!

Introduction

A growing literature has developed over the last decades on what used to be an understudied dimension of electoral systems, namely the nature of the vote cast by voters. In particular, the scholarship has burgeoned on list PR systems that allow voters to mark preference votes for candidates within lists. Even though such electoral systems remain list systems, i.e. political parties keep extensive control over who gets elected, preferential list PR systems allow voters to express their preference for candidates. As a result, voters can try and modify the order of the list set up by political parties. Likewise, candidates seek and gain popular support to signal their legitimacy to trust strategic positions in future elections (André et al., 2017). A core consequence of preferential list PR systems is, therefore, that they generate competition between co-partisan candidates within party lists, and not only between parties. In other words, PR electoral systems are not only about *interparty* competition but also about *intraparty* competition. A few recent studies have looked at the nature of this intraparty competition (Villodres 2003; Arter 2013, Wauters 2023). The scholarship identified a tension between two dynamics: a highly centralized intraparty competition dominated by one or a few candidates that attract most of the preference votes within their lists, and a decentralized intraparty competition where preference votes are spread across many candidates with no clear leader dominating all other co-partisans (Wauters et al., 2018; Emanuele and colleagues 2022; Dodeigne and Pilet, 2023; Dodeigne et al. 2023).

The literature has established that the openness of PR systems (flexible vs. open lists) critically affects the degree of electoral centralization in intraparty competition. Even though this distinction between flexible and open lists is fundamental, it exclusively refers to the importance of preferential votes in the allocation of seats between co-partisans within the lists (Karvonen 2010; Passarelli 2020). By contrast, other technical dimensions of preferential PR systems have been largely overlooked (number of preference votes authorized, modes of expressions of votes, paper ballots versus electronic ballots, number of candidates present...). We argue that the literature should pay more attention to the large variety of electoral rules that are present across countries using PR systems. Most specifically, we seek to demonstrate that the types of efforts that voters face (when they practically cast their preference vote on the ballot) substantially affect the degree of electoral centralization (Shugart et al. 2005; Renwick and Pilet 2016). For that goal, this contribution focuses on two aspects of the complexity of electoral systems shaping the nature of electoral (de-)centralization.

First, PR systems greatly vary in terms of the number of preference votes that voters may cast for co-partisan candidates. Some countries authorize merely the use of a single preference vote in which voters can only vote for one candidate (for instance, in Brazil, Peru, Austria, Poland, Denmark, or Croatia); while other electoral systems allow voters to cast as many preference votes as there are seats to be allocated in the electoral district (like in Belgium, the Czech Republic or Slovakia). Second, the 'length of the menu' – that is to say, the number of candidates on the ballot – greatly differs not only across countries, but as well within countries. In Slovakia and the Netherlands, there is one single (national) constituency of 150 seats. Lists are thus ranked with 150 candidates, offering a very wide set of choices to voters to cast a preference vote. By contrast, other countries have very short lists of candidates, most often in electoral districts electing hardly a few MPs. Hence, in most Latin American countries, it is very common to have lists of candidates with hardly 2 or 3 candidates on the list. Although rarer, this is not uncommon in some European countries (e.g. Belgium, Luxembourg, Sweden, or Switzerland) for the smallest districts with hardly 2 seats in competition. This even questions the proportional nature of such elections.

Therefore, the question that we investigate in this article is the following: Do voters' preference vote choices in preferential list PR systems affect the nature of intraparty competition? One could expect that allowing voters to express more preferences and providing them with longer lists with more candidates would decentralize party competition. Voters with more votes can support a large set of candidates, which favours a more decentralized intraparty competition. Following this same logic, the greater the number of candidates on the ballot, the greater the decentralized intraparty competition across many candidates. However, one could argue the exact opposite arguing from the literature on social psychology (relating to human cognitive abilities and limited rationality when voters face choices). In particular, the "paradox of choice" (Perennial 2004) states that multiple options do not always increase the effectiveness of choices (and the associated satisfaction); on the opposite, humans facing a large set of options can saturate individuals' capacity and willingness to make any choice at all. In other words, studies from social psychology indicate that "too many choices kill the choice". Applied to the context of elections, it implies that voters facing very long lists of candidates, and allowed to cast as many preference votes as possible, could 'feel completely lost' when completing this electoral duty. Because collecting information on many candidates is simply too demanding, voters might opt out for easier solutions such as casting a single preference vote on the few widely known candidates (e.g. incumbents and media stars).

Those contradictory expectations are at the core of our contribution. To test them, we study the concentration of candidates' electoral votes across 29 countries and 136 elections from the early 1990s. More especially, we investigate the link between (1) the *number of preferential votes* that voters are allowed to cast and (2) *the number of candidates* that voters are presented on their ballot. This question may inform scholars interested in electoral systems and in electoral competition (and especially preferential list PR systems), but also engineers of electoral systems. As demonstrated by Renwick and Pilet (2016) there has been a personalization of electoral systems over the last decades. And this personalization has especially occurred through more minor electoral reforms, such as increasing the number of preferential votes that voters can cast or by expanding the set of choices offered to voters. Most of those reforms have been justified by the desire to free voters from the influence of political parties in deciding which candidates ought to be elected. Legislators wanted to boost voters' capacity to select candidates beyond the main party leaders. However, it is not clear whether allowing voters to mark more preference votes among a larger pool of candidates is an efficient way to achieve such goals. Again, if the rules lead to a vote choice that becomes too complex, voters may simply give up and vote for one single candidate, most often in favour of the leaders on the party lists. Our study provides for the first time robust empirical evidence that contributes to this discussion. Our empirical findings establish that electoral systems with "single preference votes" (and to a lesser extent "limited preference votes") produce very distinct degrees of (de-)centralized elections according to the number of candidates on the lists. By contrast, systems using "many preferences votes" are consistently associated with decentralized forms of elections.

2. Theory and hypotheses

Since the early 2000s, a growing body of research has developed on preferential list PR systems. In those systems, voters are presented with lists of candidates, and they are allowed to mark preferences for one or several of those candidates. In a few systems, like in Luxembourg or Switzerland, they are even allowed to spread their preferences for candidates across several lists. PR list systems are used for the election of national parliament in 21 countries in Europe (Austria, Belgium, Bulgaria, Croatia, the Czech Republic, Cyprus, Denmark,

Estonia, Finland, Greece, Iceland, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Slovakia, Sweden and Switzerland) and as well as in various countries across South America (Brazil, Chile, Colombia, Ecuador, Panama, Peru, El Salvador, Honduras, and Suriname), and Asia (Fidji, Indonesia, and Sri Lanka). Furthermore, European elections are also based on PR systems – albeit with varying modalities across the member states.

In this wake, many scholars have tried to understand the dynamics of preference voting (see Wauters et al. 2020; Holli and Wass, 2010; Christensen et al. 2021; Söderlund et al. 2021; Däubler, Chiru and Hermansen 2022). A growing number of studies have looked at how preferential voting affects the nature of intraparty competition. Allowing voters to mark preferences among co-partisan candidates triggers incentives for candidates to cultivate their personal reputation (Carey and Shugart 1995). But the structure of intraparty competition may vary a great deal from cases where a single leader completely dominates all other candidates, to very fractionalized competition where many candidates can attract a small share of preference votes. A few scholars have tried to investigate intraparty competition in list PR systems (Wildgen 1985; Villodres 2003; Arter 2013; Wauters 2023). This body of research connects to the broader debate on the nature of the personalization of politics and elections. Building on Balmas and colleagues (2014), the literature has defined three patterns of intraparty competition: centralized personalization (dominated by a single leader), decentralized personalization (preference votes spread across many candidates), and oligarchized personalization (with a few "subtop » candidates attracting most preference votes, see Dodeigne and Pilet 2021).

This literature has also tried to examine the factors explaining the concentration of preference votes within lists. Most of the factors investigated relate to (1) characteristics of candidates (their profiles, their positions on the list, and their campaigning styles) (Maddens and Put 2013; Van Erkel et al. 2017; Söderlund et al. 2021; Marien, Wauters, and Schouteden, 2017), as well as factors at (2) lists and parties-level (list length, list composition, party ideology, established versus entrepreneur parties) (Wauters et al. 2018; Dodeigne and Pilet 2021). Factors at the country-level have not been as systematically examined, though. The reason is quite simple: most of the literature is based on (in-depth) single-country studies, or upon comparison across a limited number of countries (see Popescu and Chiru 2020). While systematic comparative approach requires extensive data collection efforts (hundreds of thousands of electoral candidacies to be studied), this approach is the only way to assess the impact of macro-level factors upon intraparty competition.

A systematic comparative approach permits to assess the effect of a large and significant variation in the details of the rules organizing preferential voting. We can go back to Carey and Shugart's seminal work (see also Renwick and Pilet 2016; Passarelli 2020). List PR systems may differ in the weight attributed to preferential votes to disturb the rank order of candidates defined by parties when they made up their lists. They may also differ a great deal in how voters are allowed to express their preferences, and especially in how many preference votes they are allowed to express. District magnitude may also vary significantly. Hardly a few studies have provided a systematic comparative approach – with sufficient countries and election variations – to open the 'black box' of the impact of electoral rules on the nature of intraparty competition in list PR systems. A first attempt in this direction has been proposed by Emanuele and colleagues (2022), which covers 11 West European countries. They examine intraparty fractionalization in leadership races as a proxy of intraparty competition and they find that giving voters more capacity to alter the rank ordering of candidates on the list leads to greater intraparty competition. In the same vein, Dodeigne and Pilet (2021) compare patterns of

intraparty competition in Belgium, the Czech Republic, Luxembourg, and Finland over 20 years. They find that allowing voters to cast more preference votes for candidates leads to greater intraparty competition and a form of decentralized personalization.

In this wake, our contribution seeks to examine in detail how the voters' preference options affect patterns of intraparty competition. We explore the *vote* dimension of electoral systems (Carey and Shugart). More precisely, we study the number of preference votes that voters are allowed to express, and the freedom they have in expressing those votes (panachage). Our first hypothesis directly builds upon Dodeign and Pilet's findings. We expect that allowing voters to cast more preference votes would lead to more decentralization of party competition. In systems where voters can only cast one single preference vote, or a few, many voters will concentrate their vote on a handful number of candidates who enjoy more notoriety. Indeed, there is a substantial body of research that has shown that more prominent candidates like incumbents, party leaders, ministers, or simply politicians with more media visibility do attract more preference votes (van Holsteyn and Andeweg, 2010; Thijssen, 2013; Maddens and Put 2013; Górecki and Kukołowicz 2014; Wauters et al. 2018; Brauninger et al. 2023). And if voters have fewer preference votes to allocate, they will likely be concentrated on those few prominent politicians, making intraparty competition more concentrated.

H1: The greater the number of preference votes allowed to voters, the stronger the *decentralized* electoral intraparty competition.

However, one could dispute this first hypothesis arguing in favour of the opposite causal mechanism: when voters face a large set of options, centralization prevails. Indeed, the main rationale behind the extensive use of preference votes is the ability for voters to assess a set of choices they face. In the context of preference voting, this implies that voters must examine who are the candidates and support them according to their given set of preferences. A voter's preferences can be relatively extensive: a voter can support candidates with a specific gender, age, ethnicity, policy positioning, issue campaigning, etc. When only a few candidates are running in a given electoral district, the voter's task is not too complex requiring limited efforts to gather information about these few candidates. It is, therefore, more likely that voters would use their preference votes in order to maximize their set of preferences.

By contrast, when the number of candidates running is very large, it is a very demanding and complex task to perform for voters. Following the "paradox of choice" (Perennial 2004), individuals facing a large set of choices cannot act as 'maximizers', because the task is not only too demanding, but it can even become a source of anxiety. In other words, "Too many choices kill the choice" as research in cognitive psychology has long demonstrated. It has been shown that individuals face difficulties in forming fully reasoned choices when the number of options goes above seven (Miller 1956). In this wake, the literature of human and social sciences has demonstrated that human individuals best act as 'satisficers' – instead of 'maximizers' – when facing problem-solving situations (Simon 1956). Building on those elements, we posit that voters have limited cognitive abilities which will translate into specific behaviour in casting preference votes. When facing a large set of choices, voters will rely on easily accessible information like media visibility or incumbency as a cognitive proxy for selecting "appropriate" candidates ('satisfied'), instead of assessing the profiles of every single candidate in line with their set of preferences ('maximizers'). We thus argue that in a context of high choice (many co-partisan candidates on the list) voters would limit their preference to a single or limited set of candidates. In other words, larger lists of candidates result in larger centralized electoral intraparty competition. This hypothesis is, furthermore, empirically informed by the recent

work of Dodeigne & Pilet (2023). Their findings do suggest that leaders on lists tend to obtain a much larger proportion of single preference votes in Belgium, especially in larger districts (this study is, however, restricted to the 2018 local elections).

H2: The greater the number of preference votes allowed to voters, the stronger the centralized electoral intraparty competition.

3. Research design: a worldwide comparative approach from the 1990s

3.1. Data collection: the IntraPartyComp project

The IntraPartyComp project covers a comprehensive database that allows to describe the level of electoral intra-party competition across countries and over time. First, the research design is thus cross-sectional, covering currently 29 democracies using PR list systems for national and European elections (see table 1)¹. This worldwide dataset permits to test in a systematic way our theoretical hypotheses: if electoral are of one of the central drivers behind personalized electoral behaviour, we shall observe those effects across countries – beyond political and cultural geographical specificities. In line with our H1 (i.e. electoral (de)centralized personalization occurs according to the number of preference votes allowed), our case selection includes countries with large diversity (see table 1). Furthermore, the variation in the number of candidates (H2) as well as distinct district and party magnitudes permit to robustly test our findings under various electoral conditions.

Second, the research design is cross-temporal encompassing three decades of electoral results (since the 1994 elections in Panama and Luxembourg, until the most recent 2023 elections in Estonia). This allows us to test our two main hypotheses across a large set of elections, controlling for the potential effects of the “personalization thesis” over time – albeit disputed in the scholarship as there is no clear indication of a reinforcement of individual candidates in the electoral process over time. As display on figure 1, the time scope greatly varies across political systems, though: some countries present an extensive time-scope coverage, while other countries hardly cover a few elections (because of limited elections organized under PR rules and/or data availability). Hence, intraparty competition is measured since the mid-1990s in a few countries (e.g. Panama, Finland, and Czech Republic), whereas other countries present hardly a couple of elections since the mid-2010s (e.g. Colombia, Suriname). This is a methodological limitation to take into consideration.

Finally, data collection for national elections was based on official electoral information online as well as electoral archives (publicly available or obtained on request via official authorities). For European elections, we used the COMPELDA project dataset (Daübler et al. 2021). European elections arguably differ from national elections in terms of interparty and intraparty competition (especially its second-order nature while it is more centralized, Dodeigne & Pilet 2021). However, it is also a unique institutional and political context to test the effect of electoral rules on intraparty competition for the same supranational legislative assembly. Last but not least, including European elections permit to increase the geographical coverage in European democracies where majoritarian systems are generally used for national elections.

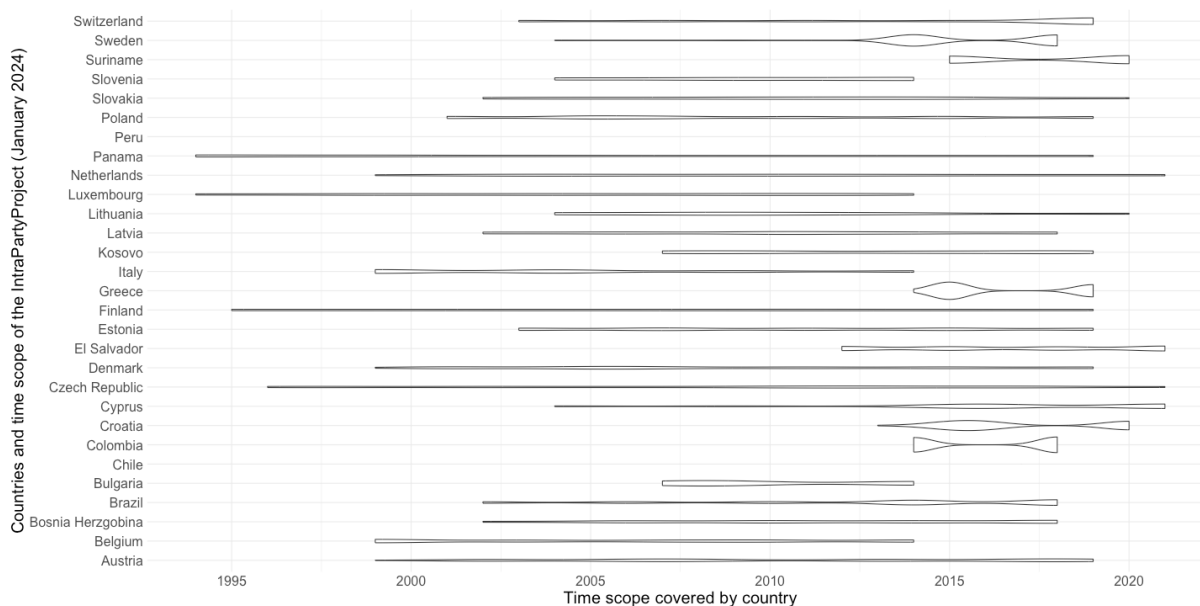
¹ Although we are currently facing important challenges in terms of data accessibility and availability, we seek to include the following six countries: Iceland (Europe), Indonesia & Sri Lanka (Asia), Lebanon (Middle East), Ecuador and Honduras (Latin America)

Table 1. Overview of the country covered by the IntraPartyComp Project (1994-2023)

Countries	Nb. elections	Nb. candidates	World areas	Electoral systems	Preference Votes (PV)
*Brazil	5	32.302	Latin America	Open	Single PV
*Chile	1	960	Latin America	Open	Single PV
*Colombia	2	2.714	Latin America	Open (> 2003)	Single PV
*El Salvador	4	2.416	Latin America	Free	As many PV
*Panama	6	3.501	Latin America	Mixed / Open	Single PV
*Peru	3	6200	Latin America	Open	Single PV
*Suriname	2	984	Latin America	Flexible	Single PV
Austria	6	37.090	Western Europe	Flexible	Limited PV
Belgium	5	9.627	Western Europe	Flexible	As many PV
Luxembourg	4	2.341	Western Europe	Free	As many PV
Netherlands	7	8.072	Western Europe	Flexible	Single PV
*Switzerland	5	17.905	Western Europe	Free	As many PV
Czech Republic	7	37.621	Eastern Europe	Flexible	Limited PV
Poland	6	44.358	Eastern Europe	Open	Single PV
Slovakia	6	6.122	Eastern Europe	Flexible	Limited PV
Bulgaria	3	374	Eastern Europe	Flexible (> 2013)	Single PV
Latvia	6	8.860	Eastern Europe	Open	As many PV
Lithuania	5	6.356	Eastern Europe	Mixed / Open	Limited PV
Sweden	2	15.402	Northern Europe	Flexible	Single PV
Denmark	10	6.221	Northern Europe	Open	Single PV
Estonia	5	6.486	Northern Europe	Flexible	Single PV
Finland	9	15.038	Northern Europe	Open	Single PV
Bosnia-Herzegovina	5	3.139	Southeastern Europe	Open	As many PV
Croatia	3	7.401	Southeastern Europe	Flexible (> 2015)	Single PV
*Kosovo	5	5.592	Southeastern Europe	Open	Limited PV
Slovenia	3	2.968	Southeastern Europe	Flexible	Single PV
Cyprus	5	1.213	Southern Europe	Open	Limited PV
Greece	2	9.523	Southern Europe	Open	Limited PV
**Italy	4	4.485	Southern Europe	Open	Limited PV

Note: * National elections only; ** European elections only. Remark: some of these countries are only covered for parliamentary parties while others include all candidacies according to data availability. For the sake of parsimony, only lists presented by parliamentary parties are presented below.

Figure 1. Time scope covered by the IntraPartyComp project, by country



3.2. Descriptive statistics of the level of electoral (de-)centralization

Before testing our hypotheses in multivariate regression models, we briefly present our two main variables of interests, namely (1) the measurement of the degree of intraparty competition, as well as its distribution following (2) the voters' range of choice for preference votes.

First, in line with recent research (Arter, 2013; Passarelli, 2020; Arter, 2021; Dodeigne & Pilet 2021)², we use the Gini scores to measure the degree of intraparty competition. The Gini scores describe the dispersion of preference votes between co-partisan candidates within the same lists. The Gini scores produce a *relative* measurement (from 0 to 1) in which a score of 0 describes a situation of perfect equality in the distribution of preference votes (i.e. decentral personalized elections), while a score of 1 represents a situation of perfect inequality (i.e. central personalized elections, where all preference votes are captured by a single candidate). For the comparative research of the IntraPartyComp project, the Gini scores present three key properties: (1) *scale independence* (the Gini coefficient provides relative scores between 0 and 1 percent for each list, irrespective of the electoral weight of the lists); (2) *population independence* (the Gini coefficient can be estimated irrespective of the number of candidates present on electoral lists)³; (3) *transfer principle* (when preferential votes switch from a very popular candidate to a least successful candidate between two elections, the Gini coefficient automatically reflects the greatest electoral equality between candidates, i.e. decentralized personalization).

Some countries present highly centralized intraparty competition as indicated by their large average scores on the Gini index: the Netherlands (0.90) and Slovakia (0.77). By contrast, other

² Other measurements have also been used in the scholarship and have their own merits (Arter, 2013; Dodeigne & Pilet 2021).

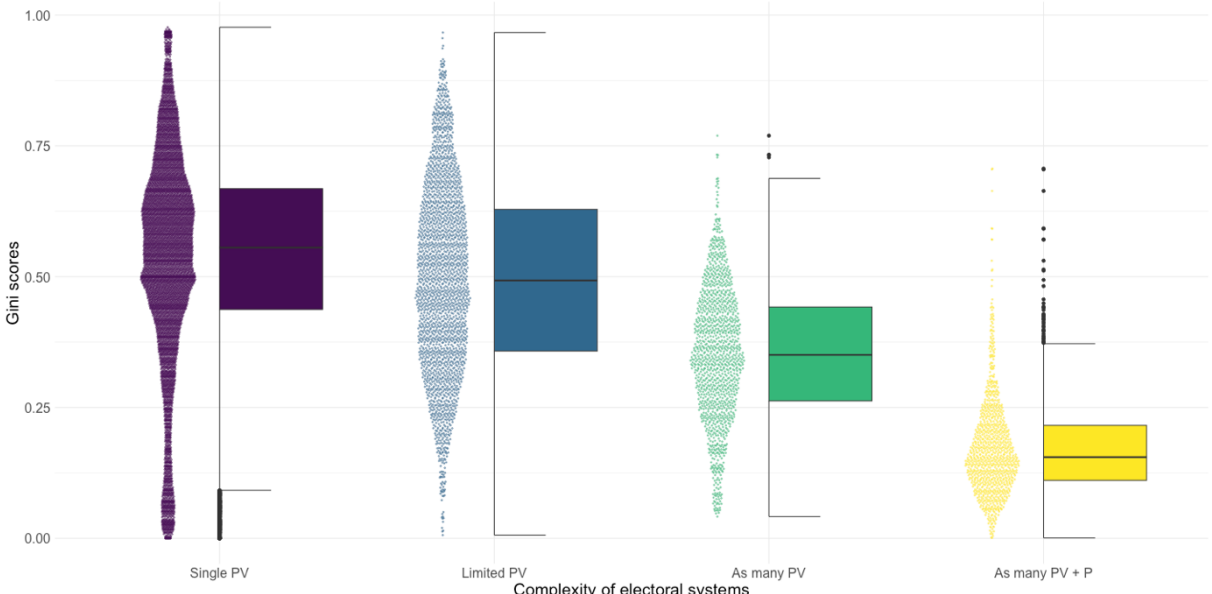
³ The Gini score presents a small-sample bias: when the number of observations (n) is low, the Gini coefficient does not strictly vary between 0 and 1 (it varies between 0 and $(n-1)/n$). However, most electoral lists are big enough not to be affected by this small-sample bias. In the next steps of the project, we seek to include the "adjusted Gini score" that accounts for these biases (see for instance Deltas 2003).

countries such as Switzerland (0.16), Luxembourg (0.25) present the lowest Gini scores. This indicates a very intense intraparty competition with decentralized elections. In between these two groups of countries, we find many political systems with Gini scores in the 0.40-0.60 interval. Furthermore, we observe that intraparty competition can be associated with a clear national pattern (that is to say, limited within-country variance, see figures A1 and A2 in appendix). Hence, the Netherlands present a standard deviation of 0.06 (with a mean Gini score of 0.90), namely a strong centrality of personalized elections across – irrespective of party lists, electoral districts and over time. In most political systems, a substantial variance of intraparty competition seems to be located within the country (with large differences across electoral districts, and the number of co-partisan candidates in competition)⁴.

Secondly, our goal is to explain that variance “across countries” can be explained by electoral systems allowing distinct modes of preference votes (H1). In addition, we seek to demonstrate that electoral personalized, furthermore, depends upon the choices that voters face in terms of the number of co-partisans present “across and within countries” (H2). To test these two hypotheses, electoral systems is, therefore, operationalized according to the number and mode of preference votes for which we distinguish 4 types:

1. Voters can cast as many preference votes with panachage– “AS MANY VP +P”
2. Voters can cast many preference votes – “AS MANY VP”;
3. Voters can cast a limited number of preference votes – “LIMITED PV”;
4. Voters can cast a single preference vote – “SINGLE VP”;

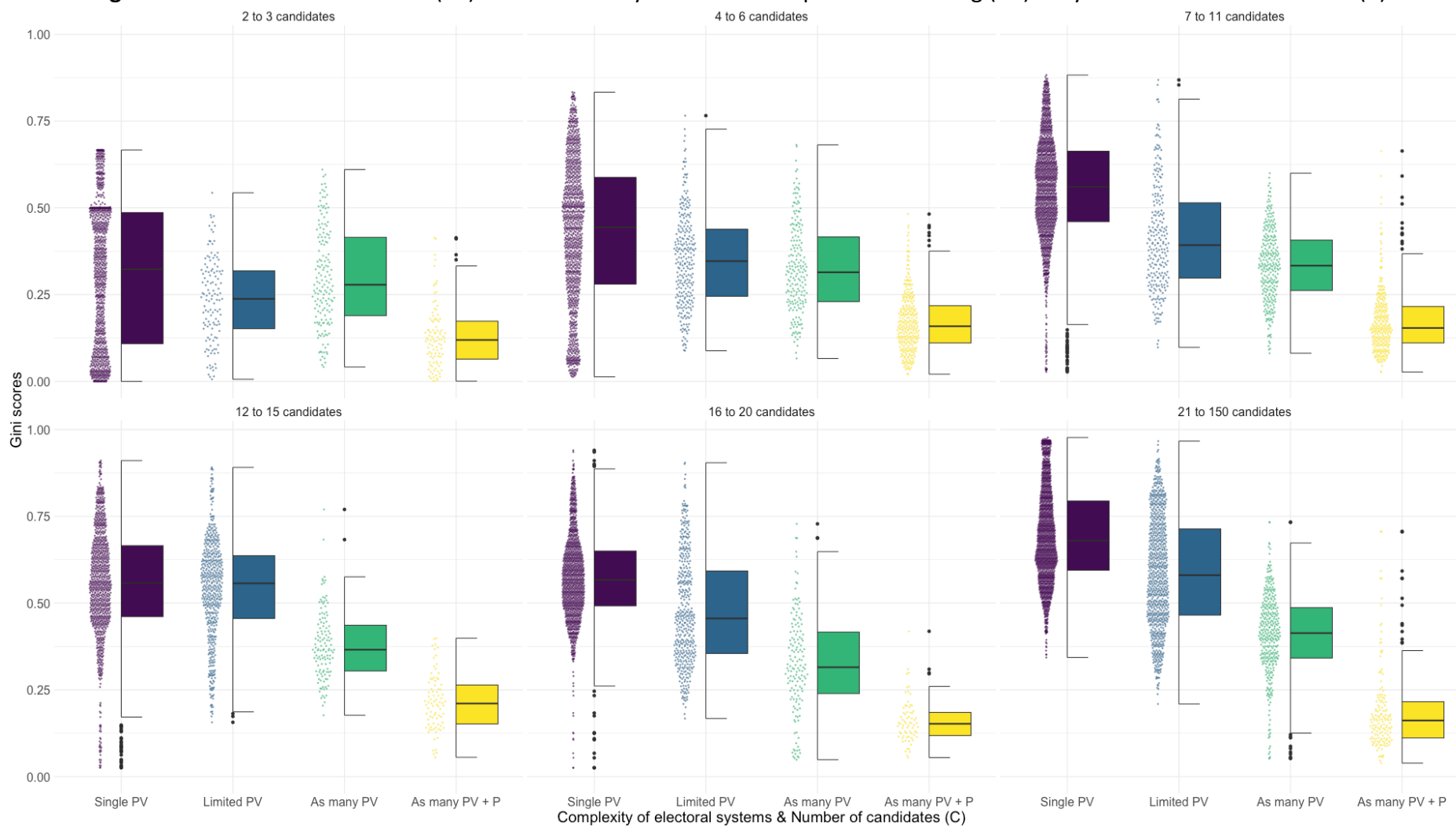
Figure 2. Gini scores according to number of preference voting (PV)



Electoral systems	Single VP	Limited PV	As many PV	As many PV +P
Gini score	0.54	0.49	0.35	0.17
Mean (std)	(0.21)	(0.18)	(0.13)	(0.10)
Nb. of lists (N)	7.099	2.362	975	1.249

⁴ This is clearly identifiable with the flat density curves on figure A1 (e.g. Brazil has a std of 0.18, with a mean Gini score of 0.59).

Figure 3. Distribution of electoral (de)centralization by the number of preference voting (PV) & by the number of candidates (C)



Nb. of candidates (C)	2 to 3 candidates	4 to 6 candidates	7 to 11 candidates	12 to 15 candidates	16 to 20 candidates	21 to 150 candidates
Nb. of lists (N=11.685)	1365	1854	2197	1631	1787	2851

Figure 2 clearly shows that the number of preference voting is strongly correlated to the degree of electoral intraparty competition at a statistically significant level ($p < 0.0001$). Single preference voting clearly favours the highest electoral centralization (the average Gini score by list is 0.54)⁵. In line with H1, decentralized elections are also found in electoral systems where the number of preference votes allowed is the largest (electoral centralization is three times bigger under “Single PV” than under “As many PV+ P”). Nonetheless, a large of variance is presence within each type of electoral systems. This is clearly due to the variety of countries covered in this dataset, but also the diversity of electoral contexts within countries (number of candidates, district magnitude, types of parties, and party magnitude to cite but a few).

Finally, H2 posits that the number of candidates presented to voters also matters. Too many choices trigger effortless preference voting behaviour – resulting in greater electoral centralization. By contrast, effective preference voting behaviours emerge when voters are presented with a manageable set of choices. Figure 3 clearly tends to confirm our hypothesis. We observe that Gini scores on lists with no more than 6 candidates⁶ are convergent – irrespective of the electoral system used. The only exception are Switzerland and Luxembourg where extreme electoral decentralization is observed even on smaller lists. Likewise, single PV still presents higher levels of centralization but the difference with other electoral systems is now much milder. In this wake, we observe an intermediary situation for lists between 7 and 11 candidates or between 12 and 15 candidates⁷. While single PV clearly triggers centralization, differences between “limited” and “as many” are hardly visible. Finally, it is only in electoral districts where voters are presented with 16 and more candidates that we observe the clear general patterns presented above. This finding is important because it shows that number of PV in PR electoral systems should not be merely studied across countries, but also within countries – paying attention to the effects of preference voting district by district according to list size. We will come back to this point in the conclusion.

4. Multivariate regressions

We now assess the effects observed in descriptive statistics while considering other control variables. For that goal, we include a variable about the openness of electoral systems (flexible and opens systems), district Magnitude (M), Party magnitude (P) and the number of Candidates (C). First, openness of electoral systems are based on Renwick & Pilet (2016) with a distinction between “open” list systems (including free panachage systems) and “flexible” list systems (see table 1 for classification by country). We know from this literature that the openness of electoral systems directly shapes the intensity of intraparty competition: this is also observed in our dataset with flexible systems that present a mean Gini score of 0.56 (std= 0.18), while the mean is lower in open systems with 0.45 (std= 0.22). Second, district magnitude (M) is defined as the number of seats in competition in a given electoral district, party magnitude (P) equals the number of seats obtained by a party list in a given electoral district, while number of co-partisan candidates (C) equals the number of candidates recruited on the party lists. M is based on official information from electoral regulations, while P and C are district-level variables that must be calculated for each party list across all elections. While M and C are positively correlated ($r=0.62$), they are not entirely associated in a linear way. This is because electoral regulations often require a slightly

⁵ We furthermore distinguished “optional” and “mandatory” single voting, but differences were hardly noticeable with 0.01 difference

⁶ We use 6 as the upper limited because it is the 1st quartile in our dataset.

⁷ 12 is the median value observed while 16 is the mean.

higher number of co-partisan candidates on the list than the number of seats in competition as a way to elected successors. For H2, we are mostly interested in C and not M. Finally, the descriptive statistics also show that a quadratic term is necessary to describe evolution of intraparty competition according to P.

Because of the hierarchical structure and cross-classified data configuration of our dataset (i.e. electoral lists are presented by parties across multiple electoral districts in different countries), we develop regression models with random intercepts. In total, the regression models cover 11.685 electoral lists (the main unit of observations) presented by 551 parties (level I) in competition in 601 electoral districts (Level II) across 29 countries (Level III). Furthermore, we consider the longitudinal structure of our dataset, by controlling for autocorrelation of repeated measures of the Gini scores over multiple elections (1994-2023). We, however, do not detect any noticeable effect of time on electoral personalization. Because of the bounded limits of our DV (Gini scores range from 0 to 1), we did not opt for a linear regression with ordinary least squares (as the model would fit a regression line that can take values below 0 and above 1)⁸. Instead, we implement a generalized linear mixed model using beta distribution. Note that our observations can theoretically take 0 and 1 values on the Gini scores, while a beta distribution implies that 0 and 1 are strictly non-inclusive values (i.e. $0 < DV < 1$). Empirically, none of the electoral lists achieve a Gini score of 1, but 49 lists obtained a Gini score of 0 (0.4% of all our observations). For the sake of simplicity at this stage of the project, we excluded these 49 observations (an alternative model would be to use a zero-inflated beta regression model that deals with 0 scores). Overall, Table 2 presents our models are based on 11.636 observations.

First, we observe that in the baseline model (not reported on table 3), most of the hierarchical variance is located at the country-level (76.4 %) and more marginally at the party and district levels (respectively, 12.6 % and 11.0 %). Also note that a baseline model with random effects substantially increase the Efron's R-Squared from 1% to 74.4%. Goodness-of-fit is unmistakably much better when considering the hierarchical structure and cross-classified data configuration of electoral competition. Once we consider the country-level factor (electoral systems) and the districts-level factor (district magnitude M), Efron's R-Squared slightly improves to 76%. The inclusion of election years makes, however, no improvement (identical Efron's R-Squared), while this temporal variable is hardly significant in terms of directional effects. As a final note, diagnoses provide good indication of goodness-of-fit for most models – even though some residual variance remains not entirely normally distributed and could deserve further considerations.

Second, we observe that our two hypotheses are verified – with or without interactive effects, respectively in model 1 and model 2. Because the results are highly convergent for both models 1 and 2, we only comment the results of model 2 (with interactive effects). For the sake of interpretation, we plotted the predicted values of Gini scores of model 2 on figures 4 and 5. On the one hand, H1 is clearly verified as the greatest number of PV (“as many PV”) always lead to a stronger form of decentralization of elections in comparison to “single PV” systems. All things being equal, the predicted values for lists under “single PV” present a Gini score of 0.53, while it hardly reaches 0.33 for lists competing under “As many PV + P”. Differences in predicted Gini scores with “As many PV” are milder but remain substantial (0.10 of difference). On the other hand, we also observe that our assumption about the “paradox of choice” finds empirical support to confirm H2

⁸ The OLS models were, however, extremely convergent with the models presented in this contribution with high R-squared values (between 70 and 81 percent).

as centralization of elections dramatically increases as C and M increases: the predicted Gini scores are twice as bigger between the smallest and the largest C (figure 4).

Last but not least, the most striking empirical results are found in the interactive effects of C and the number of PV used. While figure 5 distinctively shows that “As many PV” and “As many PV + P” rules always trigger stronger decentralization (H1 seems to prevail over H2), the results are more complex for “single PV” and “as many PV”. Our findings show that when the number C substantially increases (i.e. with 50 or more candidates on the lists), the “paradox of choice” distinctively appears as predicted Gini scores dramatically increase to reach scores close to 1 (yellow dots on figure 5). This provides strong evidence for H2 for these electoral systems. Even though the effects are milder, H2 also finds empirical evidence under “limited PV” rules. Interestingly, such effects do not exist in countries using “as many PV” and “as many PV + P” rules: decentralization remains high – irrespective of the number C present. In other words, H1 is always verified under all electoral systems, while H2 is only verified under “single PV” and “limited PV”.

Table 3. Multilevel Beta regression upon the degree of intraparty competition (Gini Scores)

	Model 1			Model 2		
	Estimates	CI	P values	Estimates	CI	P values
Intercept	60.19	0.94 – 3840.41	0.053	69.64	1.10 – 4390.25	0.045
ElectionsYear	1.00	1.00 – 1.00	0.077	1.00	1.00 – 1.00	0.054
ElectionsLevel (ref=European)	0.58	0.50 – 0.66	<0.001	0.58	0.51 – 0.66	<0.001
ElectoralSystems (ref=Flexible)	0.54	0.40 – 0.73	<0.001	0.60	0.45 – 0.79	<0.001
District magnitude (M)	1.01	1.01 – 1.01	<0.001	1.01	1.01 – 1.01	<0.001
<i>Electoral System Modes (ref= Single PV)</i>						
Limited PV	0.79	0.58 – 1.08	0.141	0.98	0.72 – 1.32	0.885
As many PV	0.63	0.38 – 1.05	0.073	0.78	0.48 – 1.28	0.328
As many PV + P	0.42	0.24 – 0.74	0.002	0.53	0.31 – 0.92	0.024
Nb. of co-partisan candidates (C)	1.02	1.02 – 1.02	<0.001	1.03	1.03 – 1.03	<0.001
Party mangitude (P) (1st knot)	1.19	1.14 – 1.24	<0.001	1.18	1.14 – 1.23	<0.001
Party mangitude (P) (2nd knot)	0.09	0.06 – 0.14	<0.001	0.10	0.07 – 0.15	<0.001
Party mangitude (P) (3rd knot)	4.34	0.81 – 23.27	0.087	5.98	1.06 – 33.83	0.043
<i>Interactive effect (ref=Single PV)</i>						
Limited PV X Nb. of co-partisans (C)				0.99	0.98 – 0.99	<0.001
As many PV X Nb. of co-partisans(C)				0.98	0.97 – 0.99	<0.001
As many PV + P X Nb. of co-partisans (C)				0.98	0.97 – 0.99	<0.001
Random Effects						
σ^2		-0.92			-0.92	
τ_{00} Districts		0.05			0.05	
τ_{00} Parties		0.07			0.06	
τ_{00} Countries		0.20			0.17	
ICC		-0.54			-0.45	
<hr/>						
N Districts		602			602	
N Parties		551			551	
N Countries		29			29	
Observations		11.636			11.636	
Efron's R-Squared		0.76			0.76	

Figure 4. Marginal effects of electoral systems, district magnitude (M), party magnitude (P), number of co-partisans (C), and Electoral systems (number of PV)

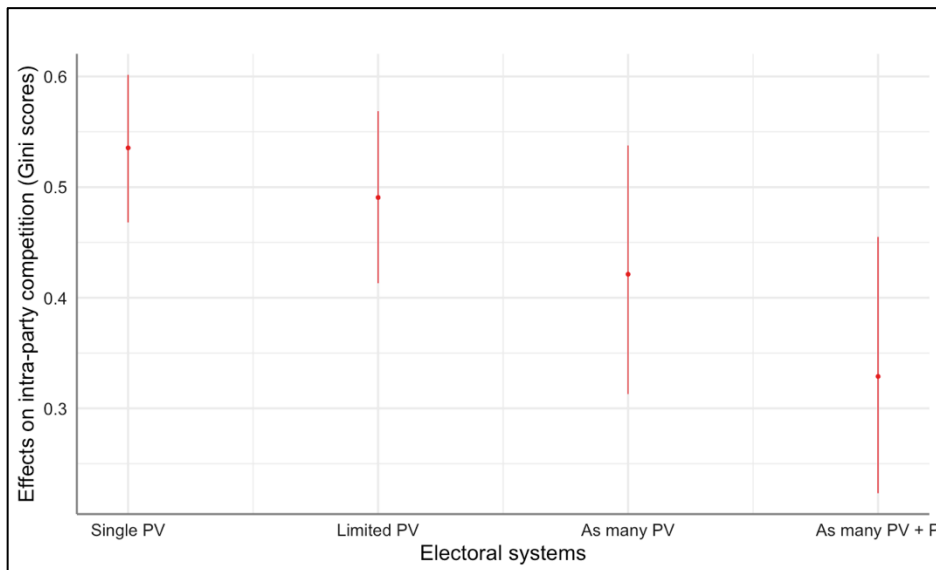
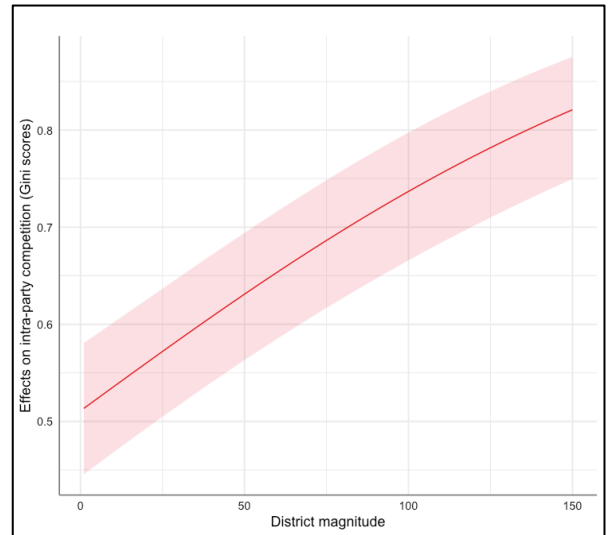
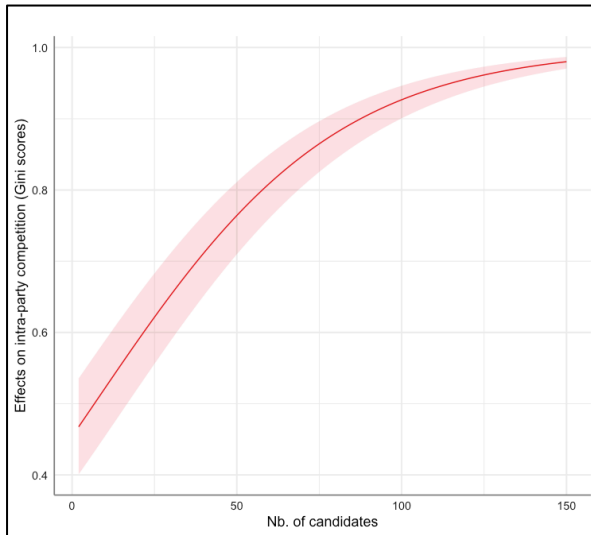
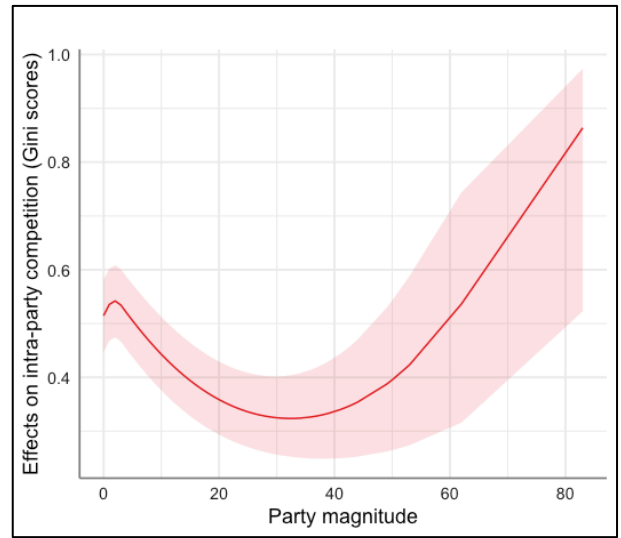
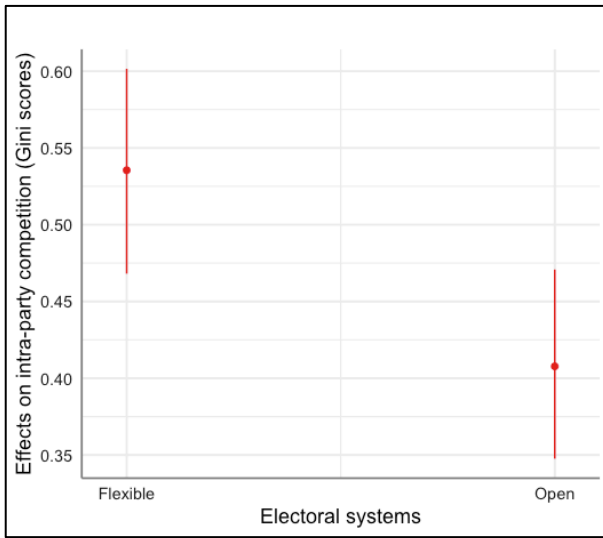
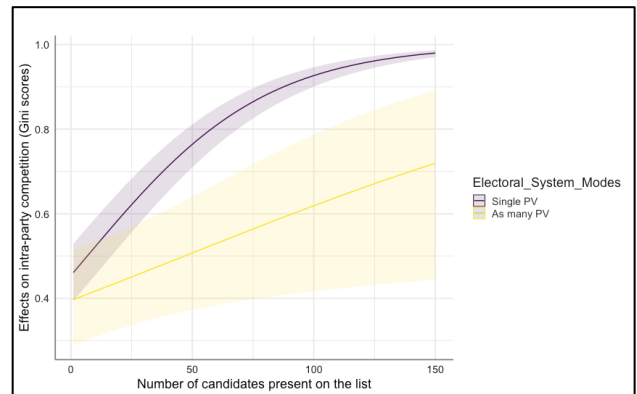
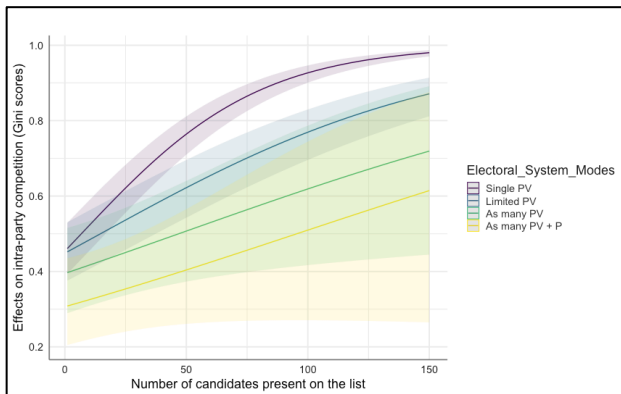
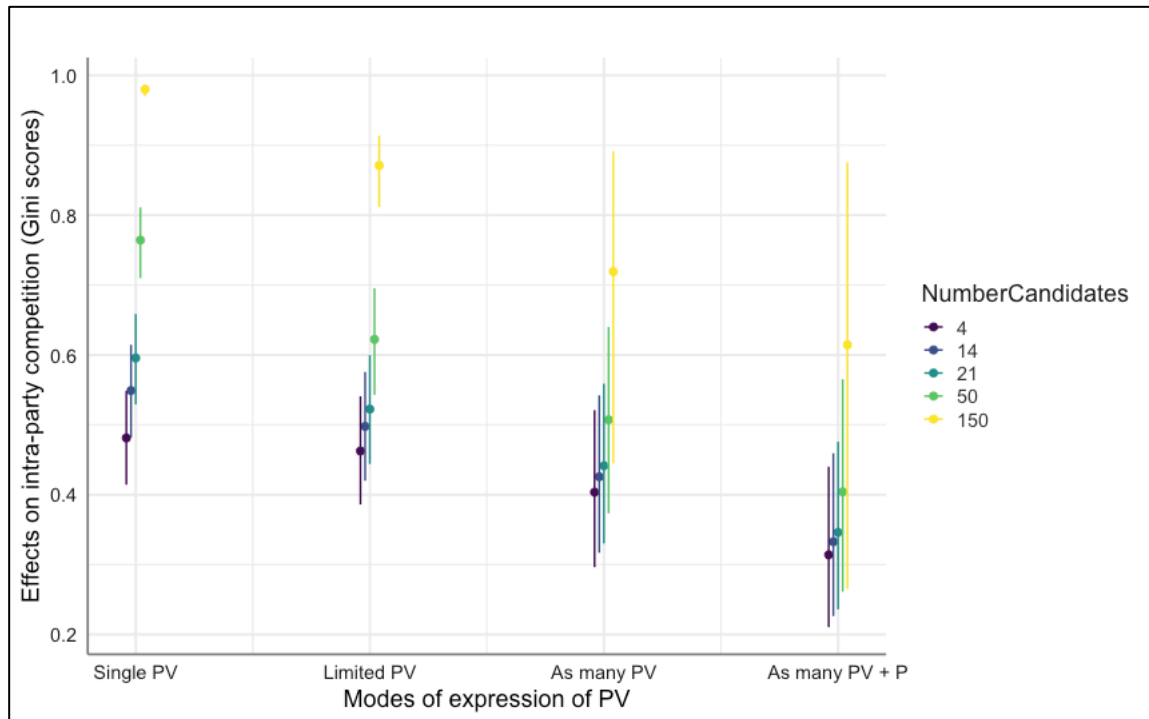


Figure 5. Marginal effects of interactions between PV and the number of candidates C



Discussion and conclusion

The goal of this contribution was to examine how the complexity of the voting task in preferential list PR systems affects the structure of electoral intraparty competition. We were testing two contradictory hypotheses. Following H1, we argued that widening the voters’ freedom of choice (extending the range of preference votes to support a wider set of candidates) would lead voters to spread their votes across more candidates. This would result in decentralized electoral competition on party lists: a larger voters’ freedom of choice empowers “subtop” candidates, at the expense of “leading” candidates who face fiercer competition for the control of preference votes. On the opposite, following H2, we posited that expanding the voters’ freedom of choice would also increase the complexity of the voters’ task. Assuming that voters want to cast support candidates that ‘matter to them’, supporting a large set of candidates requires extensive efforts to know the profiles of these candidates. This is a very demanding and costly task for most voters. As a result, most voters would opt for cognitive shortcuts and cast instead only a single/a few

preference votes – mostly towards well-known candidates. Following the “paradox of choice”, greater freedom of choice would lead to more centralized electoral intraparty competition.

To test these competing hypotheses, we studied the effects of the number of preference votes (C) as well as number of preferences votes allowed (PV). From our empirical analyses of elections in 29 democracies over 30 years, it seems that we observe a complex interaction between the two dimensions studied. On the one hand, we observed an effect of the number of PV voters: when they can cast a large number of PV (with or without panachage), there is indeed more decentralization with a large set of candidates attracting a significant number of preference votes. And it seems to hold irrespective of the number of candidates on the ballot. On the other hand, when the number of preference votes allowed is limited (single PV or limited PV), the number of candidates on the ballot starts to matter. Under such rules, when there are many candidates on the ballot, we see that intraparty competition gets more concentrated, with fewer candidates attracting a significant number of preference votes. What appears to be a very complex and demanding task for voters is to select a small number of candidates in a wide set of choices. Selecting a few candidates with a limited set of choices on the ballot is doable, and preference votes are more dispersed on the electoral lists. Distributing a lot of preference votes across many candidates is also apparently not too complex. But opting for a few candidates among many appears to be harder.

Those findings are relevant for the scholarly literature that aims at understanding better intraparty competition and the dynamic of preference voting under preferential list PR systems (see Arter 2013, Passarelli 2020, Dodeigne and Pilet 2021, Emanuele et al. 2022, Wauters 2023).

First, they may contribute to the ever-going scholarship debate on what would be the ‘best’ electoral system for our representative democracies (Bowler et al. 2005). Most of this literature has focused on the proportionality of electoral systems, as well as on the balance between the plurality of parties that access parliamentary representation and stability of governments under fragmentation of party systems (Shugart and Wattenberg 2001; Carey and Hix 2011). Yet, the debate is also present in studies on voters’ capacities to vote for candidates in list PR systems. Several arguments are made in favour of awarding voters some capacity to support some candidates even if those are not widely supported by their party and do not occupy the top positions on the list drafted by their party. Such systems are expected to promote closer ties between voters and their representatives (Mitchell 2000; Römmele et al. 2005), to foster voters’ satisfaction with their political system (Farrell and McAllister 2006), and in line with growing public discontent with political parties as key players in democracies (Renwick and Pilet 2016). Such positive outcomes of preferential list PR systems are only possible in context where preference voting is not undermined by the complexity of the rules of the electoral game. Far from redistributing power amongst parties, our findings show that preference voting can – on the opposite – reinforce existing power distribution toward a few top politicians, most often those that are already dominating their party. Such empirical information is crucial for a real assessment of the virtues of preferential voting, both for scholars as well as for legislators, and for electoral engineers.

Second, our findings have important implications for debates on the link between electoral systems and the stability of political systems. While personalization of elections has initially been discussed as a way to reconnect voters and elected officials, other scholars have underlined the negative effects it conveys for the functioning of our political systems. In a context of democratic backsliding

and the empowerment of authoritarian figures (especially in new democracies), the centralization of elections has been seen as a potential threat to democracy. In this context, our results confirm that certain electoral rules can foster or limit (de)centralization of elections under specific contexts. Hence, centralization of electoral intraparty competition chiefly appears in electoral systems using “single PV” and “limited PV” as well as in electoral districts with large number of candidates in competition demanding higher information-seeking efforts for voters who cast a preference vote (i.e. larger freedom of choices of candidates in the largest districts, typically above 21 candidates on the lists). Likewise, our results show decentralization of electoral intraparty competition seem almost inevitable in countries using “as many PV” (especially with panachage). In this context, the district magnitude or the number of candidates hardly reduce the competition between co-partisan candidates. In that case, political systems that would be plagued by the negative effects of extreme decentralization (e.g. fractionalization within parties and government instability it creates) can only be “fixed” by changing the modes of PV authorized (restricting them to “limited PV” and “single PV”).

Overall, our findings suggest that the technical dimensions of preference voting of PR systems have significant effects on the nature of electoral intraparty competition. As we discussed, these effects can critically inform scholars but also electoral engineers implementing reforms directly affecting the functioning of democracies (i.e. empowerment of authoritarian figures, fractionalization of parliaments and stability of governments, or stronger personalized links between elected officials and voters). We invite other scholars to systematically pay more attention to the large variety of electoral rules that are present across countries using PR systems and that might affect the quality of representative democracies (modes of expressions of votes, paper ballots versus electronic ballots, number of preference votes authorized, number of candidates present...).

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Appendix

Figure A1. Distribution of Gini scores of electoral lists, by country (time scope: 1994-2023)

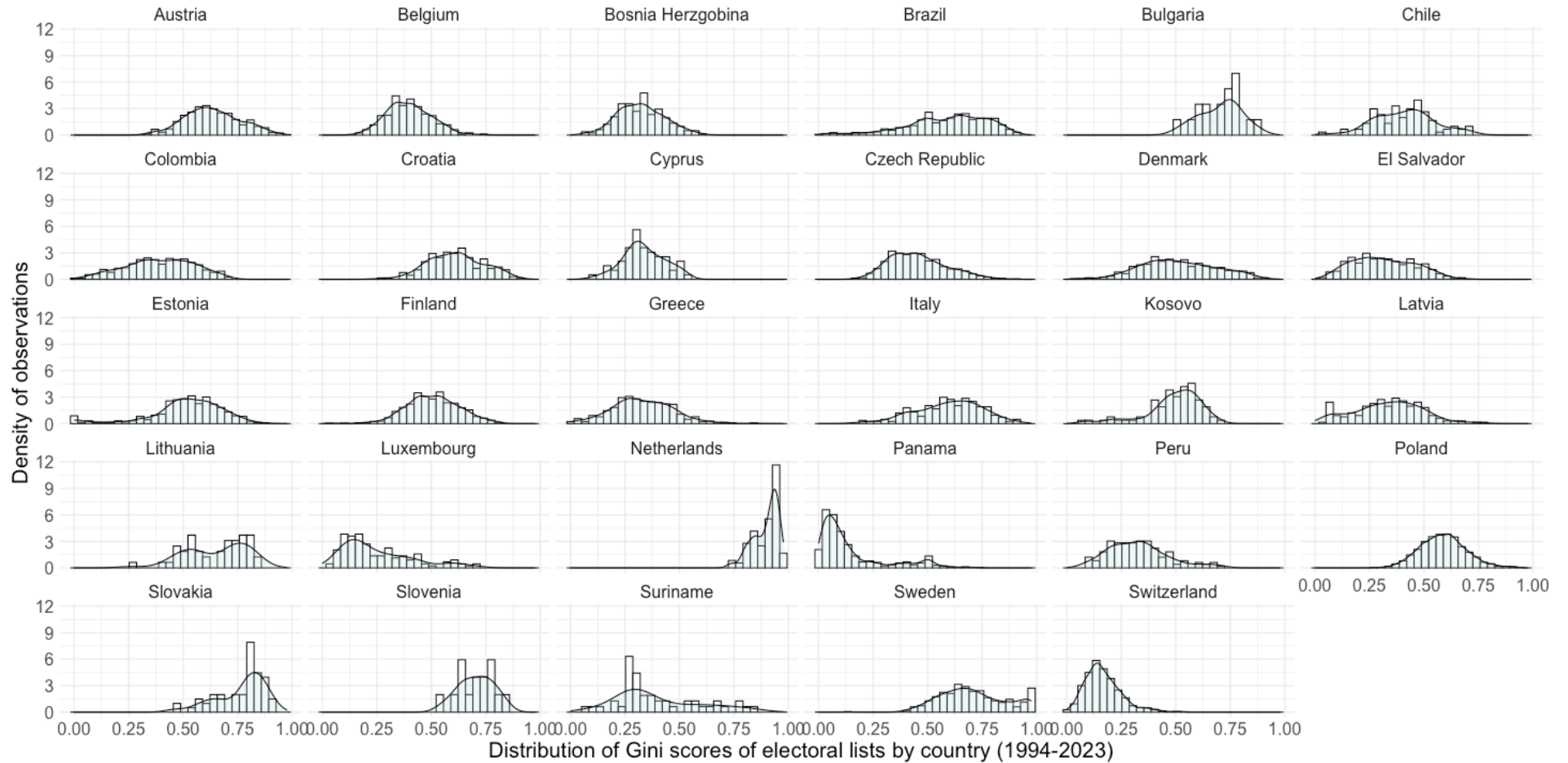


Figure A2. Distribution of Gini scores of electoral lists, by descending country mean scores (time scope: 1994-2023)

