The concentration of votes for candidates in list PR systems. Measuring centralized and decentralized personalization with the Gini coefficient and the effective number of candidates

Jérémy Dodeigne (Université de Namur)
jeremy.dodeigne@unamur.be

Jean-Benoit Pilet (Université libre de Bruxelles-ULB)
jpilet@ulb.ac.be

Very first version of the paper, all comments and suggestions welcome!

The concentration of votes for candidates in list PR systems. Measuring centralized and decentralized personalization with the Gini coefficient and the effective number of candidates

Introduction

Over the last two to three decades, scholars have been debating about the personalization of politics. This broad concept refers to a shift in attention from collective actors to individuals (McAllister, 2007; Karvonen, 2010). Yet, this concept is subject to many controversies. The main one is about its empirical reality. Scholars are divided between those who support the idea that politics has been personalized over the last decades in Western democracies (McAllister, 2007; Garzia, 2014; Lobo and Curtice, 2015; Renwick and Pilet, 2016; Wattenberg, 1991), and those providing contradictory evidence showing that there is no robust evidence of such an evolution (Karvonen, 2010; Aarts et al., 2011; Kriesi, 2012; Holmberg and Oscarsson, 2011).

Yet, further than this debate about the extent of personalization, there is a need for more conceptual and empirical clarity about what is the actual meaning of personalization. In particular, there is a need to clarify what are the political personalities that are growing in importance? For most of the literature, the focus has been on political leaders. Personalization means presidentialization, that is the growing importance of a few leaders in elections, within political parties and in government (Poguntke and Webb, 2005). However, personalization may also refer to non-leaders, to all politicians that would become more independent from their political party.

This distinction has led to the publication of a few articles that are trying to clarify conceptually the two facets of personalization (Balmas et al., 2014; Van Holsteyn and Andeweg, 2010; Kriesi, 2012). The distinction that seems to be the most widely used is the one proposed by Balmas and colleagues. They differentiate centralized and decentralized personalization. The former refers to the growing role of a handful of top politicians, and the later to the growing role of politicians in general (Balmas et al., 2014).

Nevertheless, although the distinction has proven to be very useful conceptually and to be used in various studies (Van Aelst et al., 2012; Karlsen and Skogerbo, 2015; van Haute and Gauja, 2015; Renwick and Pilet, 2016; Cross and Pilet, 2016), it has remained rather vaguely operationalized empirically (but see Bergman et al. 2012).

Precisely, in this paper, we propose and test two new measures of vote concentration to capture what type of personalization characterizes competition between candidates in list PR systems (i.e. electoral systems that allow voters to vote for candidates – like open and semi-open list system). The two indicators follow overall the same logic that indexes of inter-party competition. The latter indexes capture the dispersion of votes across parties and allows differentiating fragmented from concentrated party systems. Our indexes are built on the same rationale. It describes the dispersion of votes among candidates within an electoral list in a given district. Overall, our indicators capture the difference between concentrated/centralized lists where a few candidates attract most votes, and deconcentrated/decentralized lists where many candidates attract roughly an equal share of votes. Based on this logic, we propose a first index of intra-party electoral

competition based upon the Gini coefficient. It captures the statistical dispersion of votes among candidates within a list. The second index is adapted from Laakso and Taagepera (1979)'s effective number of parties in order to propose an index of the effective number of candidates within lists.

The paper is divided as follows. We start with a general discussion of the literature on personalization and on the conceptual distinction between centralized and decentralized personalization. We then introduction the two indexes – the Gini coefficient and the effective number of candidates (ENC) – that capture these two forms of personalization. We apply the two indexes to two cases of list PR systems allowing multiple or single preference votes: Belgium and Finland. In the third and fourth sections of the paper, we explore the causes of the varying degree of concentration/centralization of votes for candidates within lists/parties that are captured by our two new measures. We therefore show that our indexes are not only valid to capture and describe the type of personalization of election in list PR systems, but could also prove to be extremely useful to understand what drives the different types of personalization. Finally, we conclude by opening up further avenues for research on how our indexes could also be used to study the consequences of both centralized and decentralized personalization.

1. Personalization: Centralized and/or Decentralized

Over the last twenty years, there has been a growing scholarly attention for the personalization of politics. This concept could be broadly defined as "the notion that individual political actors have become more prominent at the expense of parties and collective identities" (Karvonen, 2010: 4).

Starting from this general definition, studies on the personalization of politics have burgeoned over the last two decades. And interestingly, the main conclusion that one could reach at this stage is that there is clearly no consensus on whether personalization could be confirmed empirically. Karvonen, for instance, provides in his book summary tables of about 26 publications and show that there are as many confirming a personalization of politics than finding no support for this hypothesis (Karvonen, 2010: 7-9; 11-13; 15-19). The review by Balmas and her colleagues on the personalization of media coverage of politics leads to the same ambivalent results (Balmas et al., 2014: 38). More recently, Wauters and colleagues (2016) have reviewed 40 publications on the personalization of politics. And they conclude that these publications divide almost perfectly between those confirming empirically a growing personalization and those disconfirming it or showing mixed evidence from one case to the other.

For some authors, one of the reasons for these mixed findings lies in the lack of conceptual clarification: "it is more likely that inconsistent results stemmed from different theoretical and operational definitions of personalization" (Rahat and Sheafer, 2007: 77). Focusing on the literature on the personalization of media coverage of politics, Van Aelst and colleagues come to the same conclusion: "This is due in no small part to a lack of conceptual clarity and an absence of common operationalization which are a major cause of the unclear or conflicting conclusions about the personalization of political news" (Van Aelst et al., 2007: 203).

And one dimension on which conceptual clarity is required is the locus of personalization: who are the individual political actors that are being empowered at the expense of parties and collective identities? Most of the literature assumes that the individual political actors that are the beneficiaries of the trend towards more personalized politics are the main political leaders. The central reference within this perspective is to be found in the volume edited in 2005 by Pouguntke and Webb. They refer to a "presidentialization" of parliamentary democracies characterized by the increasing empowerment of leaders both in government and within political parties. Adopting the same perspective, many studies have been published focusing on the central role of leaders in elections and within political parties (Aarts et al., 2011; Bittner, 2011; Clarke et al., 2004; Clarke et al., 2009; Kriesi, 2012; Garzia 2012; Lobo and Curtice, 2015; Pilet and Cross, 2014;

However, other scholars have adopted a different perspective in their work about the personalization of politics. They have rather examined the role of all individual political actors, going beyond leaders (Caprara, 2007; Marsh, 2007; Mattes and Milazzo, 2014; Van Aelst et al., 2008; Renwick and Pilet, 2016).

A few authors have recently tried to theorize the distinction between the two perspectives. Andeweg and Van Holsteyn (2011) refer to first-order (leader) versus second-order (candidate) personalization. Kriesi (2012) has proposed to differentiate between generalized (all politicians) and concentrated (leaders only) personalization in his analysis of election coverage. In a similar way, Van Aelst and colleagues (2012) made the distinction between generalized and concentrated visibility in the news. But the most extensive conceptual discussion is provided by Balmas and her colleagues (2014). They separate centralized and decentralized personalization: *Centralized* personalization "implies that power flows upwards from the group (e.g. political party, cabinet) to a single leader (e.g. party leader, prime minister, president)", while *decentralized* personalization "means that power flows downwards from the group to individual politicians who are not party or executive leaders (e.g. candidates, members of parliament, ministers)" (Balmas et al., 2014: 37).

These distinctions constitute a significant improvement for the study of personalization. Any future study on the topic has to clarify from the very beginning in which of the two perspectives it is positioned, and how it relates to the other. However, empirically, some further work is required. In particular, tools to capture empirically whether a political situation is better characterized as a case of centralized or decentralized personalization are needed. It is precisely what we propose in the next section. We propose two indexes that would allow calculating whether competition between candidates from the same party in PR list systems is more centralized or decentralized. In the earlier case, a few candidates would dominate and capture most votes. In the later situation, votes would be spread across many candidates without clear leaders emerging on the list.

2. A new index: the Gini index and the Effective Number of Candidates (absolute)
Our two indicators of centralized and decentralized personalization are developed on two cases, namely Belgium and Finland. At this stage of the project, our case selection was primarily driven by our desire to cover countries with varying electoral systems (single and multiple preferential votes) based on data availability. Both countries use list PR systems allowing voters to mark preferences within the list of their choice. But they present a crucial difference: Belgium allows voters to cast multiple votes for candidates –

for as many candidates as there are seats to be filled in the district. Multiple preference votes are only applied in Cyprus, the Czech Republic, Greece, Iceland, Latvia, Lithuania, Norway and Slovakia. In Finland, by contrast, voters can only cast one intraparty vote for only one candidate. Single preference voting is also found in Austria, Denmark, Sweden, Estonia, Poland and The Netherlands.

We therefore propose to use the two cases – Belgium and Finland – as first tests of the two measures that we propose to capture centralized and decentralized personalization. Currently, we do not have satisfactory quantitative indicators to asses these contrasting situations. The indicators we propose are (1) the Gini coefficient (a *relative* indicator) and (2) the Effective Number of Candidates (an *absolute* indicator). These indicators are designed to measure the levels and the forms of choice-dispersion at elections when voters cast preferential votes for one or several candidates on the lists.

Gini coefficient: a relative indicator of concentration of votes

The first indicator aims at developing a general measurement that offers comparability across distinct electoral systems and districts' characteristics. The Gini coefficient allows the development of such indicator. In the economics literature, it is used as a measurement of economic inequality – measuring the concentration of resources (often income) in a given population. The Gini coefficient is calculated as a ratio of the areas on the Lorenz curve diagram (see illustration). If the area between the line of perfect equality and Lorenz curve is α, and the area underneath the Lorenz curve is β, then the Gini coefficient is

$$\frac{\alpha}{\alpha + \beta}$$

Illustration. Lorenz curve and estimation of the Gini coefficient
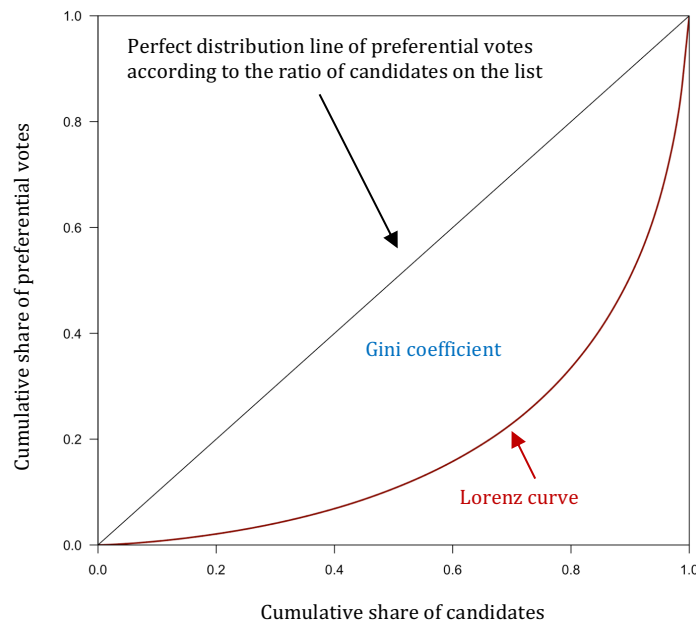
The Gini coefficient produces a *relative* measurement (from 0 to 100 percent) in which a score of 0 describes a situation of perfect equality in the distribution of resources while a score of 100 represents a situation of perfect inequality (i.e. all resources are captured by a single individual). Applied to the competition of candidates within an electoral list, the

Gini coefficient can thus describe the concentration of preferential votes by candidates. A list in which every candidate managed to attract the same ratio of voters would have a Gini score of 0 while an electoral list where a "list puller" obtain all preferential votes (and all other candidates attract nothing) would present a score of 100. In reality, none of the two extreme scenarios is ever encountered. Yet, the concentration of votes on a restricted number of candidates – i.e. scores closer to 100 percent – permits to empirically describe a form of centralized personalization on the lists. By contrast electoral lists with scores closer to 0 percent demonstrate a decentralized form of personalization (i.e. greater equality in the electoral weight of the candidates).

The Gini coefficient has valuable merits. First of all, it is not an indicator of the average electoral weight of the candidates on the list: it rather describes the concentration of preferential votes of specific candidates within the list. Secondly, as an index producing relative scores (0-100 percent), the Gini coefficient has considerable comparative power. Between party lists, the Gini coefficient permits, for instance, to assess the effects between traditional and emerging political parties upon (de)centralized forms of personalization. Gini coefficients can also be compared across countries using distinct electoral systems. Hence, figure 1 shows that the average score of the Gini coefficient is substantially lower in Belgium (mean= 0.38, std.=0.10) than in Finland (mean = 0.47, std.=0.14). This comparison permits to assess in a simple way the hypothesis that single preferential vote systems enhanced *centralized* personalization while multiple preferential votes systems tend to develop *decentralized* personalization. Likewise, the Gini coefficient allows to easily assess trends over time. For instance, the electoral reforms introduced at the 2003 federal Belgian elections is reflected by a substantial and statistically significant decrease of the Gini coefficient[1]: from 0.42 (1999) to 0.34 (2014). On the opposite, we can conclude to a relatively stable intra-party competition in Finland: there is merely a slight increase from 0.45 (2003) to 0.49 (2015).

Overall, the Gini coefficient presents three key properties for comparative research: (1) *scale independence* (the Gini coefficient provides relative scores between 0 and 100 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) *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 greater electoral equality between candidates, i.e. decentralized personalization).

Nevertheless, the concepts of centralized and decentralized personalization aim at describing the emergence of *specific* individual candidates over others. As a relative measurement, the Gini score does not capture well the *absolute* reality of intra-party competition in very distinct inter-party competition contexts. The following example illustrates clearly this issue. At the Walloon regional elections, the Greens and the Christian Democrats present two very similar Gini scores in two different districts, respectively 34.0 percent in *Neufchteau-Virton* district and 34.8 percent in *Nivelles* district. Yet these converging Gini coefficients hide contrasting forms of (de)centralized personalization.
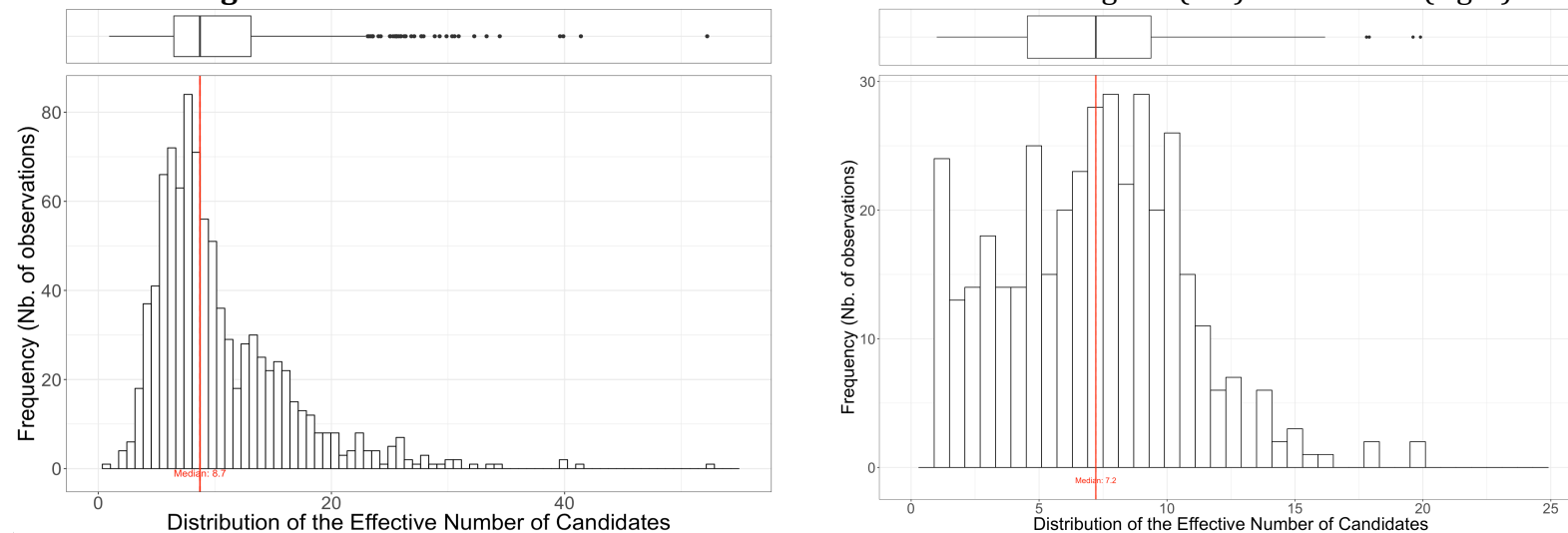
---

[1] The distribution of list votes to candidates according to their list rank was reduced by half, increasing intra-party competition.

Figure 1. Distribution of the Gini coefficients in Belgium (left) and Finland (right)
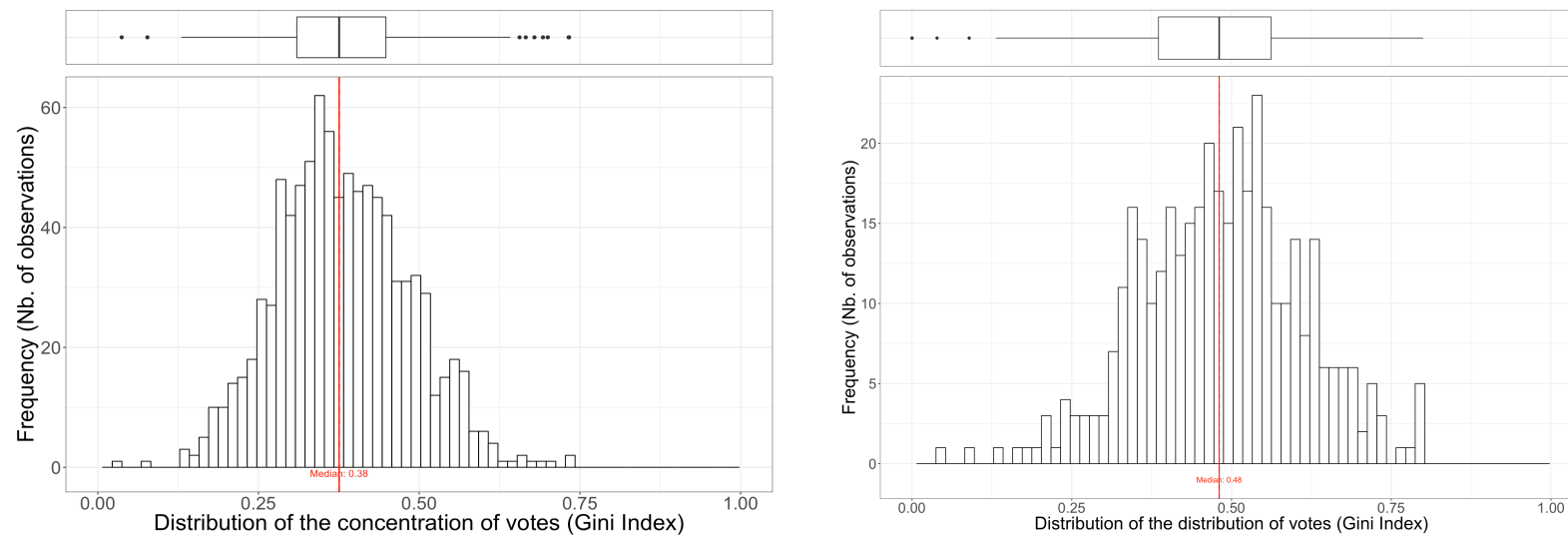
Figure 2. Distribution of the Effective Number of Candidates in Belgium (left) and Finland (right)

In Neufchateau-Virton two seats are in competition (six candidates per list, including substitutes) while, with a district magnitude of eight seats, inter-party competition in Nivelles is about three time more important (16 candidates per list, including substitutes). As a result, the Gini coefficient of the Greens (34 percent) is reflected by the presence of three "main" candidates while the Gini coefficient of the Christian Democrats (34.8 percent) overlooks nine "main" candidates on the list. In other words, despite the *relatively* similar intra-party competition on the two lists, inter-party competition ultimately influences the *absolute* number of candidates that emerged on these two lists. Notwithstanding the added-value of the Gini coefficient, its relative measurement becomes problematic when researchers seek to describe the actual number of candidates emerging during elections. For this reason, we suggest the development of a second complementary 'absolute' indicator, namely the effective number of candidates.

Effective number of candidates: an absolute indicator of concentration of votes
This second indicator seeks to operationalize (de)centralized forms of personalization in a way that takes into consideration the weight of candidates on a list. The goal is to provide a knowledge of the absolute effective number of candidates – 'effective' in the sense of 'candidates who electorally matter' on the list. For that goal, we use the formula developed by Laakso & Taagepera (1979) in their seminal article on the effective number of parties. Their measure refined the fractionalization index (Rae and Taylor, 1970) which itself derived from the *Herfindahl-Hirschman concentration index* (Herfindahl, 1950; Hirschman, 1945) used in market studies. Laakso and Taagepera's major goal was to provide a number of parties that intuitively allows to describe the fragmentation of the party system according to the electoral weight of the parties in competition at elections. Our formula of the effective number of candidates is presented below where *n* is the number of candidates with at least one preferential vote on the list and p_i^2 is the square of the sum of preferential votes casted for candidates on that list:

$$\text{Effective Number of Candidates (ENC)} = \frac{1}{\sum_{i=1}^{n} p_i^2}$$

The ENC can take any value superior to 0 (Figure 2). In Belgium and Finland, the average scores of ENC are respectively of 10.5 (std.= 5.8) and 7.0 (std.= 3.5). In this respect, the ENC rarely provides integer values which can be misleading as it does not represent a proper 'human' reality of electoral candidates (there is no such thing as 10.5 candidates). But these non-integer values precisely provide the best estimation of the genuine number of candidates who concentrate most of the preferential votes: an effective number of 10.5 candidates precisely tells us that this list has between 10 and 11 candidates 'who electorally matter'. As stated by Taagepera and Shugart (1989:80), one of the reasons explaining the widespread use of their measurement in the literature is its direct and intuitive meaning: "The effective number of components is the easiest to visualize in concrete terms: [ENP]=2.28 directly tells us that there are more than two but definitely less than three major parties [. . .] One can ask uninitiated students to estimate the effective number of parties and they respond with values approximating [ENP]". On a list of three candidates, an ENC of 2.5 reveals broadly the concentration of preferential votes on two major candidates plus an extra minor candidate (i.e. decentralized personalization). By contrast, an ENC of 2.5 on a list of 15 candidates describes a large concentration of votes on a restricted number of individuals (i.e. centralized personalization). As an absolute measurement the ENC must, therefore, always be

assessed according to the level inter-party competition (i.e. the district magnitude for the seats in competition). In this respect, we observe a mechanical effect of the district magnitude: lists with a longer number of candidates (because of greater district magnitude) tend to produce higher ENC scores. This can be explained by the fact that larger districts – with greater diversity and multiple segments of voters – offer more opportunities for candidates to emerge on the list (see our hypothesis below). In this respect, the large variance of district magnitude in Belgium (ENC=10.5, magnitude= 2 to 72 seats) contributes to explain why the Belgian effective number of candidates is, on average, larger than the Finnish effective number of candidates where districts are smaller (ENC=7.0, magnitude= 1-36 seats). Figure A.1 in the appendix illustrates very clearly the linear relationship between the ENC and district magnitude in both countries. On the opposite, Figure A.2 shows that the Gini coefficient is not that sensitive to district magnitude. Expect in small districts higher (district magnitude of five seats or less, both in Finland and Belgium), the relationship between the Gini coefficient and the number of seats in competition is not linear anymore (above the threshold of five seats, the Gini coefficient decreases or increases across various district sizes).

Summing up, as a *relative* indicator the Gini coefficient is of particular interest for researchers who seek to assess the effects of determinants explaining the concentration of votes on a list. Thanks to its properties of scale independence, population independence and transfer principle, the Gini coefficient allows researchers to develop theory-testing research design across various countries, electoral systems, districts and party lists configurations as well as over time. By contrast, as an *absolute* indicator the ENC is very sensitive to inter-party competition: the implications of a large or a small ENC scores must, therefore, be carefully assessed according to distinct contexts of inter-party competition. Nevertheless, researchers who seek to *analytically describe* the (de)centralized forms of personalization on a given list will probably find the ENC to be a more reliable measurement. Indeed, similar Gini coefficients can be misleading as they can reflect both centralized and decentralized personalization in absolute descriptive terms. Thus, the ENC permits to describe the concentration of candidates emerging on an electoral list – taking into account the broader context of inter-party competition – before concluding to (de)centralized personalization.

3. Hypotheses: factors affecting the Gini coefficient and the ENC
Having described the structure of intra-party competition, the next step is to examine what could be the factors that define this structure, that would either favour or deter (de)centralized personalization. We propose a first exploration of this question in this section.

We believe that three main sets of elements would be central in explaining whether a list is dominated by one or a handful (centralized personalization) or by a wider variety (decentralized personalization) of candidates. First, supply-side elements have to be taken into consideration. Voters would decide to spread their vote or to concentrate them on a few candidates depending on who are the candidates that are presented on the ballot. In a recent study, Wauters and colleagues (2016) have shown that Belgian voters were divided between those voting only for the candidate ranked first on the list and those voting for several candidates. And the earlier were more in numbers when the candidate ranked first on the list was a top politician, either a party leader or a minister. The presence of already prominent candidates appears therefore to be a strong impetus for

centralized personalization. Building upon this idea, we propose here to test whether the presence of prominent candidates would also reduce intraparty competition as measured by our two indicators (Gini coefficient and Effective number of candidates). And we will test it for three types of prominent candidates: party leaders, ministers and incumbent MPs[2]. We take into consideration not only incumbents but also individuals with a former experience for these mandates. It translates into the following three hypotheses:

> *H1: The presence of a (former) party leader on the list will increase the concentration of votes within lists.*

> *H2: The presence of (former) cabinet members on the list will increase the concentration of votes within lists.*

> *H3: The presence of former and incumbent MPs on the list will increase the concentration of votes within lists.*

A second element to take into consideration is the nature of the party itself. Various party characteristics could actually come into play. Previous studies have shown that parties were not equal when it came to the personalization of politics. First, a distinction could be made between newer and established parties (Aardal and Binder, 2001). The later are, by definition, around for a longer period of time. Voters are therefore more familiar to them, but also to their candidates. By contrast, within newer parties, voters often know a limited number of politicians, if they know anyone beyond the party leader. Electoral campaigns of newer parties tend indeed to be more personalized around the leader than with older parties (Van Aelst, 2007). We could therefore expect that newer parties are more likely to be affected by centralized personalization.

> *H4: The newness of a party will increase the concentration of votes within lists.*

In addition, it has also appeared that larger parties tend to be less dominated by a single leader than smaller parties (Wauters et al., 2016). The explanation is partly the same than for newer and older parties. Smaller parties have fewer prominent politicians. They have fewer MPs and ministers. And they are therefore more dominated by the party leader. Yet there are also other elements that differentiate between larger and smaller parties when it comes to intraparty competition. Larger parties have also more candidates elected within the list. It has an impact both on the behaviours of candidates and of voters. First, the more seats are to be won by the lists, the more there are candidates who have a chance of getting into parliament and who will invest in their campaign to seduce voters (Crisp et al., 2007). Second, some voters are also strategic in the way they cast their preference votes (André et al., 2012). They try to anticipate how many seats the list they support would obtain. And they concentrate their votes on candidates who have a chance of being elected. The number of viable candidates increases for larger parties. All these elements lead to expect a greater dispersion of votes within lists in larger parties. It is especially true in PR list systems like in Belgium (but not Finland) allowing for multiple preference voting.

---

[2] In Belgium, considering the large number of ministers and parliamentarians conducting level-hopping movements between elections (Dodeigne 2014), we recorded the presence such profiles, irrespective of their first place of elections.

H5: The number of seats won by a party (party magnitude) will have a negative impact the concentration of votes within lists.

Finally, a third set of factors that could happen to affect the concentration of votes for candidates within lists is the nature of the electoral district itself. It has appeared from previous studies that both campaign behaviours as well as the use of preference voting were different in different districts (Marsh, 1985; André et al., 2012; Wauters et al., 2012; De Winter and Baudewyns, 2015; Zittel, 2015). First, various studies have shown that larger districts, with higher district magnitude, increase incentives for candidates to build up their personal reputation. It is the case both for elected politicians but also for candidates within lists (Carey & Shugart, 1995). Therefore, concentration of votes within lists could be expected to be lower in larger districts.

H6: The size of the district (district magnitude) will have a negative impact on the concentration of votes within lists.

Second, we assess the effects of the geographical context of the district. Previous research suggests that a candidate's capacity to attract preferential votes on the list is determined by his/her geographical proximity with voters. According to Arzheimer and Evens (2012), "candidates living closer to a voter would be expected to have a greater probability of receiving that individual's support, other things being equal". In districts presenting higher population density, where crowdedness permits to conduct electoral campaigns covering a large number of voters at close distance, candidates are more likely to receive support thanks to the development of "friends-and-neighbours" politics (Jennings and Niemi, 1966: 89). On the opposite, when density is low in territorially large and less populated districts, prominent candidates can take advantage of their widespread public notoriety (even at 'large' distance) while other candidates faced greater difficulties to attract votes in such large territorial areas. Hence there is positive relationship between district density and concentration of votes but this is effect is, thus, moderated by the characteristics of the list composition. In absence of prominent candidates on the list, all candidates are more equal in the campaign over large and less populated territories. Therefore, we develop an hypothesis analysing the interaction between a micro-level characteristic of the list (H1: presence of prominent candidates) with a macro-level feature of the district (density of population on a territorial area*). We expect the positive effects of the presence of prominent candidates on vote concentration to be higher in districts with low density than in districts with high density. In the latter, an increasing number of candidates can successfully mobilize "friends-and- neighbours" politics as a vote-seeking strategy.

H7: The marginal effect of the presence of prominent candidates on the list for the concentration of votes is positive but this effect decreases as the district density increases.

4. Empirical analysis

Data collection and multilevel modelling
Our dataset covers the electoral lists presented by political parties with parliamentary representation in Belgium (1999, 2003, 2007, 2009, 2010 and 2014 elections: 20.478 regional, federal and European candidates) and in Finland (2003, 2007, 2011 and 2015 elections: 5.990 national candidates). Lists' electoral results and candidates' preferential

votes were collected via the official reports published by the Minister of Home Affairs of the respective countries. Information on the candidates' political career (in the party leadership, as members of regional, national and European parliaments as well as members of a cabinet at the different tiers of government) were recorded via multiple sources: the COSPAL database on party leaders (Pilet and Cross, 2016), a Belgian political career dataset (Dodeigne 2018), and the official information provided by the Parliament and Government of Finland[3]. Information on Belgian districts was collected via official information compiled by Dodeigne (2012) and official information provided by Finish authorities. In total, we analyse the distribution of preferential votes on 923 electoral lists in competition in 64 districts in Belgium (regional, national and European levels) and 392 electoral lists present in 15 districts in Finland (national level only). Table 1 shows the operationalization and distribution of the variables included in our models. The inclusion of multiple tiers of government from Belgium (regional, national and European elections) introduced large variance for some of our key hypotheses (district magnitude, district density, or party magnitude). In Finland, although the distribution of district magnitude is a bit more limited – because we only recorded national candidates – it nevertheless offers important diversity in terms of districts' features (district density) as well as the lists' composition (presence or absence of well-known political names) to explain (de)centralized form of personalization.

Because of the multilevel structure of the dataset where different electoral lists (level 1) are in competition in the same district (level 2), the ENC and Gini coefficient vary greatly from one district to another: in Belgium, 39.4 percent of the variance in the Gini score and 51.7 percent of the variance of the ENC is located at the district level; in Finland, the variance of the Gini score and the ENC at the district level is respectively of 7.9 percent and 22.5 percent. Our multilevel linear models aim at capturing and explaining (part of) this variance at the district level. The models are identical for both the Gini coefficient and the ENC and duplicated for the two countries under study.

$Gini/ENC_{ij} = \beta_{0j} + \beta_{1j}$ *Party Leadership* $_{ij} + \beta_{2j}$ *Cabinet Members* $_{ij} + \beta_{3j}$ *Parliamentarians*$_{ij}$ $+ \beta_{4j}$ *Emerging Parties* $_{ij} + \beta_{5j}$ *Party Magnitude* $_{ij} + \beta_{6j}$ *District Magnitude*$_{ij} + \beta_{7j}$ *District Territorial size* $_{ij} + \beta_{8j}$ *Elections Year* $_{ij} + \varepsilon_{ij}$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$
$$\beta_{1j} = \gamma_{10} + \gamma_{01} \text{ } District \text{ } density \text{ } j + u_{1j}$$
$$\beta_{2j} = \gamma_{20} + \gamma_{02} \text{ } District \text{ } density \text{ } j + u_{2j}$$
$$\beta_{3j} = \gamma_{30} + \gamma_{03} \text{ } District \text{ } density \text{ } j + u_{3j}$$

---

[3] In order to limit error during data collection, we used an algorithm based on the "Levenshtein distance" (Cesare and Xiang 2012: 64) to match the 26.468 candidates with other databases. Matching were then checked and validated by human coders significantly reducing risk of error during the data collection process.

Table 1. Operationalization and Distribution of the variables

Variables	Operationalization	Description	Belgium (Min-Max)	Finland (Min-Max)
Effective number of Candidates	Continuous variable	Effective number of Candidates	0.93 - 52.2	1.99 - 19.9
Gini Score	Continuous variable	Gini Score	0.04 - 0.73	0.04 - 0.79
Party Leadership Present	Continuous variable	Nb. of (former) party leaders	0 - 4	0 - 3
Nat.-Reg.-EU Cabinet Members	Continuous variable	Nb. of (former) Ministers on the list	0 - 5	0 - 6
Nat.-Reg.-EU MPs	Continuous variable	Nb. of (former) MPs on the list	0 - 26	0 - 10
Density of a district (Log.)	Continuous variable	Log. of the Population by Km2	1.99 - 8.89	0.67 - 13.8
Party Magnitude	Continuous variable	Nb. of seats won by a list in a district	0 - 27	0 - 16
District Magnitude	Continuous variable	Nb. of seats in competition in a district	2 - 72	1 - 35
Territorial size of a district (Log.)	Continuous variable	Log. of the districts' territory in Km2	5.1-9.74	5.4 -11.4
Elections year	Categorical variable	Reference category = first election recorded	1999-2014	2013-2015

Results

Tables 2a (Belgium) and 2b (Finland) present the results of the multilevel models. Regarding the time control variable, we observe a neat increase of Belgian intra-party competition after the introduction of the electoral reforms in the early 2000s. The results show therefore a trend towards decentralized personalization (i.e. the effective of number candidates increases while the concentration of votes is more equally distributed according to the Gini coefficient). Yet it plateaus in the 2000s while the effects are smaller in the 2010s. In Finland, the Gini coefficient presents a significant but limited decentralized personalization at the 2011 and 2015 elections in comparison to the 2003 elections (the ENC is also slightly higher in 2015 compared to the early 2000s).

We first discuss hypotheses about political parties' characteristics. Firstly, contrary to our expectations the highest concentration of votes is not encountered amongst emerging parties (H4). Traditional parties – with the longest and deepest implementation in the electoral districts – do not enhance the deconcentration of votes, on the opposite. A plausible line of explanation is that the lists presented by the Greens cover an important part of the emerging parties recorded in our dataset (both countries). As deconcentration of power is an ontological part of their political project (Burchell, 2011), the findings could be a 'Greens' effects. Secondly, for H5 the models confirm the negative effects that party magnitude has on the concentration of votes but only in Finland (see figures A.3 and A.4 in the appendix). Single preferential vote system seems to validate the thesis of the strategic behavior of voters where the higher number of seats – increasing the number of viable candidates – increase the voters' attractiveness of a greater number of candidates when they cast their ballot. Contrary to our hypothesis, party magnitude has a positive effect of in Belgium though. Voters have multiple preferential votes which raised the following question: do they use the option of multiple preferential votes to support various candidates – increasing decentralized personalization – or do they only vote for the most prominent candidates on the list – increasing centralized personalization. Our results suggest that the latter option predominates in voters' behaviour which explains why the concentration of votes increases with party magnitude. As a party leader attracts a large percentage of the total number of preferential votes to the list thanks to his/her own electoral performance – which is also mechanically increasing the overall performance of the party in number of seats – parties with larger party magnitude seem to be characterized by a greater form of centralized personalization.

Table 2a. Multilevel linear regression -Belgium (1999-2014)

	Gini	ENC
Constant	.21***	-.01
	(.06)	(3.01)
Party Leadership Present	.06**	-3.52***
	(.02)	(1.28)
Nb. of Fed-Reg-EU Gov. Members	.10***	-3.32***
	(.02)	(1.22)
Nb. of Fed-Reg-EU MPs	.005	.15
	(.01)	(.33)
Density of the districts (Log.)	.03***	.30
	(.004)	(.23)
Party Leadership Present | Density	-.01	.44**
	(.004)	(.20)
Nb. of Fed-Reg-EU Gov. Members | Density	-.01***	.40**
	(.004)	(.19)
Nb. of Fed-Reg-EU MPs | Density	-.001	-.01
	(.001)	(.05)
Emerging Parties	-.05***	1.11***
	(.005)	(.25)
Party Magnitude	.01***	-.42***
	(.001)	(.08)
District Magnitude	-.001***	.28***
	(.0004)	(.02)
Territorial size of the district (Log.)	.004	.52
	(.01)	(.32)
Elections Year (ref= 1999)		
ElectionsYear2003	-.06***	1.90***
	(.01)	(.46)
ElectionsYear2004	-.05***	1.59***
	(.01)	(.41)
ElectionsYear2007	-.10***	3.34***
	(.01)	(.46)
ElectionsYear2009	-.07***	1.87***
	(.01)	(.41)
ElectionsYear2010	-.09***	2.87***
	(.01)	(.46)
ElectionsYear2014	-.08***	1.28***
	(.01)	(.33)
Nb. of observations (electoral lists)	923	923
Nb. of groups (districts)	64	64
Log Likelihood	1,291.68	-2,375.54
Akaike Inf. Crit.	-2,489.36	4,845.09
Bayesian Inf. Crit.	-2,262.46	5,071.99
Note: . p<0.1; *p<0.05; **p<0.1; ***p<0.001. Standard errors in parentheses.		

Table 2b. Multilevel linear regression - Finland (2003-2015)

	Gini	ENC
Constant	.46***	1.26
	(.05)	(1.10)
Party Leadership Present	.06**	-2.24***
	(.03)	(.59)
Nb. of national Gov. Members	.01	-.65*
	(.02)	(.39)
Nb. of national MPs	.01	.97***
	(.01)	(.18)
Density of the districts (Log.)	-.001	.10*
	(.002)	(.05)
Party Leadership Present | Density	-.001	.04
	(.003)	(.06)
Nb. of national Gov. Members | Density	-.0001	.06
	(.002)	(.04)
Nb. of national MPs | Density	-.0005	-.05***
	(.001)	(.02)
Emerging Parties	-.01	1.12***
	(.02)	(.29)
Party Magnitude	-.01**	.46***
	(.005)	(.10)
District Magnitude	.003***	.18***
	(.001)	(.02)
Territorial size of the district (Log.)	-.003	-.003
	(.005)	(.10)
Elections Year (ref= 2003)		
Elections Year 2007	.03	.03
	(.02)	(.47)
Elections Year 2011	.05*	.82
	(.03)	(.57)
Elections Year 2015	.03**	.65*
	(.02)	(.35)
Nb. of observations (electoral lists)	392	392
Nb. of groups (districts)	17	17
Log Likelihood	302.03	-894.58
Akaike Inf. Crit.	-482.06	1,911.16
Bayesian Inf. Crit.	-239.81	2,153.41
Note: . p<0.1; *p<0.05; **p<0.1; ***p<0.001. Standard errors in parentheses.		

Regarding the district's characteristics, the results show contrasting empirical evidence according to our hypothesis of the negative effect of district magnitude on concentration of votes (H6). Although the effective number of candidates increases in larger districts (which is not surprising as it can be explained by mechanical effects already discussed above), the Gini coefficient is decreasing in Belgium (decentralized personalization) while increasing in the Finnish case (decentralized personalization). At this stage of the research, we suggest the following line of explanation: as Finnish party leaders tend to be candidates in the largest districts (51 percent of them are candidates in districts with a magnitude equal or superior to 21 seats, the maximum being 36 seats), there might be a cofounding effect of 'hypercentralization' in these districts used as a 'super platforms' for the national campaign conducted the leader of the party.

Finally, we assess the interactive effects of a list's composition (presence of prominent candidates in H1, H2, and H3) according to the concentration of the population in a district (H7). As predicted by our first set of hypotheses (presence of party leaders, members of regional, federal and European cabinets as well as parliamentarians), "big names" have an undisputable and statistically significant enhancing effect on the concentration of votes. In Belgium, the presence of "list puller" (but parliamentarians which invalidates H3) substantially reduces the ENC while the Gini coefficient increases remarkably. In Finland, party leadership and parliamentarians also increase considerably concentration of votes (but not cabinet members, H2). Last but not least, the interaction predictors demonstrate the enhancing effects of such profiles *according to* the district density: centralized personalization is the highest in districts with low density. These effects decrease as the concentration of population in the districts' territory increases. The reader will better appreciate the conditional effects of one variable on the other with visual representation of the marginal effects. Furthermore, as stated by Brambor et al. (2006, 74): "it is perfectly possible for the marginal effect of X on Y to be significant for substantively relevant values of the modifying variable Z even if the coefficient on the interaction term is insignificant"[4].

Figure 3b confirms the positive boosting effects of the presence of party leadership and parliamentarians on Finnish electoral lists (H1 and H3). Yet this positive effect does not vary (the confidence intervals do not permit conclude to a significant difference of the effects between various districts' density, H7 invalidated). In Belgium, "big names" (all but parliamentarians) strongly matter but more importantly in district with lower density (H1, H2, and H7 validated). For instance, each Belgian cabinet members increases the concentration of votes by .072 on the Gini coefficient in districts with the lowest density (which is extremely high as it represents seven times the standard deviation of the average score of the Belgian Gini coefficient). Yet, this boosting effect on concentration of votes decreases as the district density increases (both the Gini coefficient and the ENC), until a threshold of about log. 7 is reached (1096.633 per km2). In the latter districts, party leaders or cabinet members completely ceased to affect intra-party competition. In a context of crowdedness of voters, the electoral market seems to be big enough for a broader competition with a larger number of candidates (they can all obtain a 'piece of the cake'). This remains rather exceptional though: this threshold is beyond the 3rd quartile of the overall distribution of districts' density.

---

[4] On figure 3a and 3b, the X-axis displays variation in the district density, the Y-axis concentration of votes. The histogram at the bottom of the figure shows the distribution of observations (lists) along the axis while the dotted line indicates a null effect of predictors.

Figure 3a. Marginal effects – Effective number of candidates (left) & Gini index (right) – BELGIUM
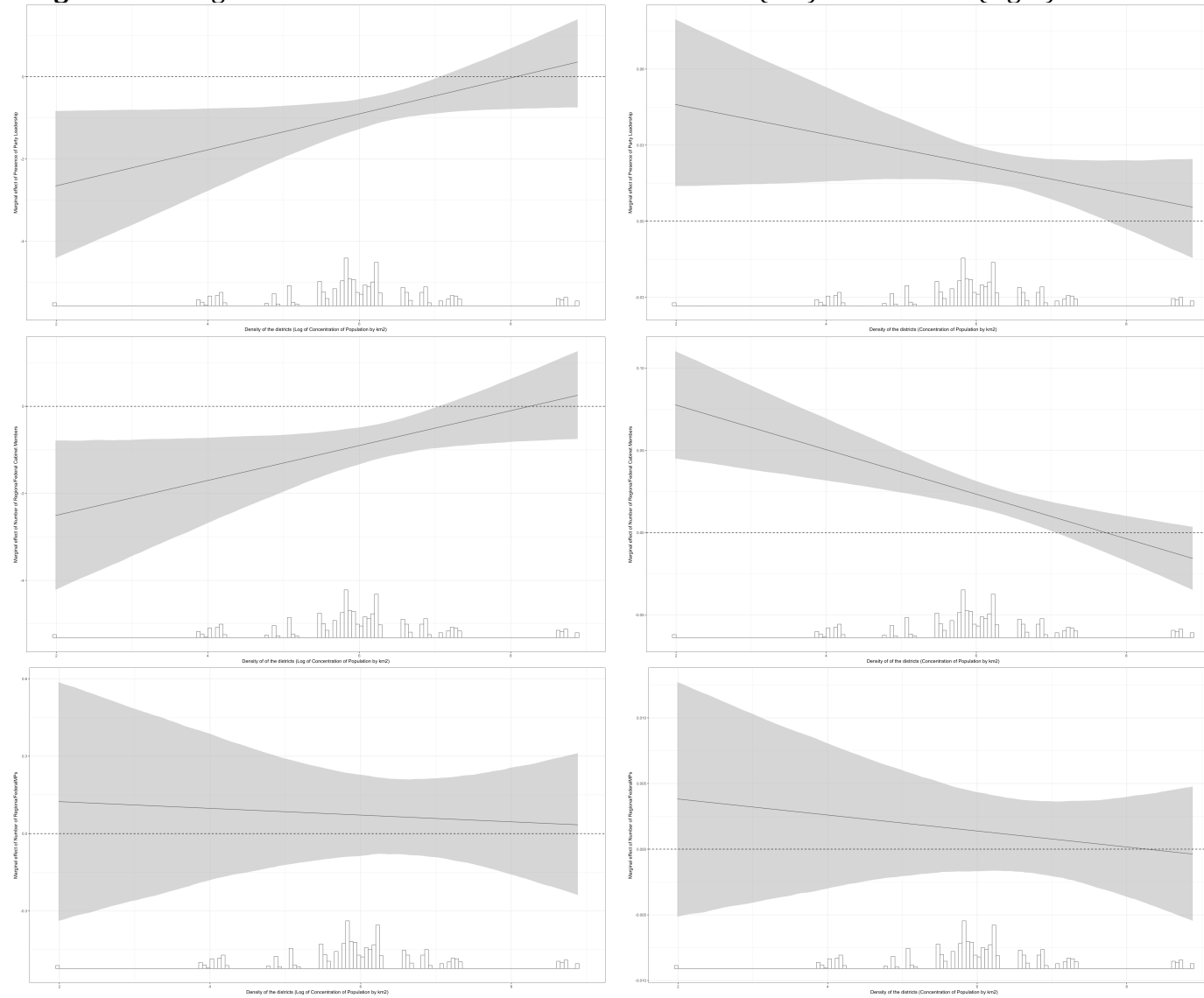
Figure 3a. Marginal effects – Effective number of candidates (left) & Gini index (right) – FINLAND
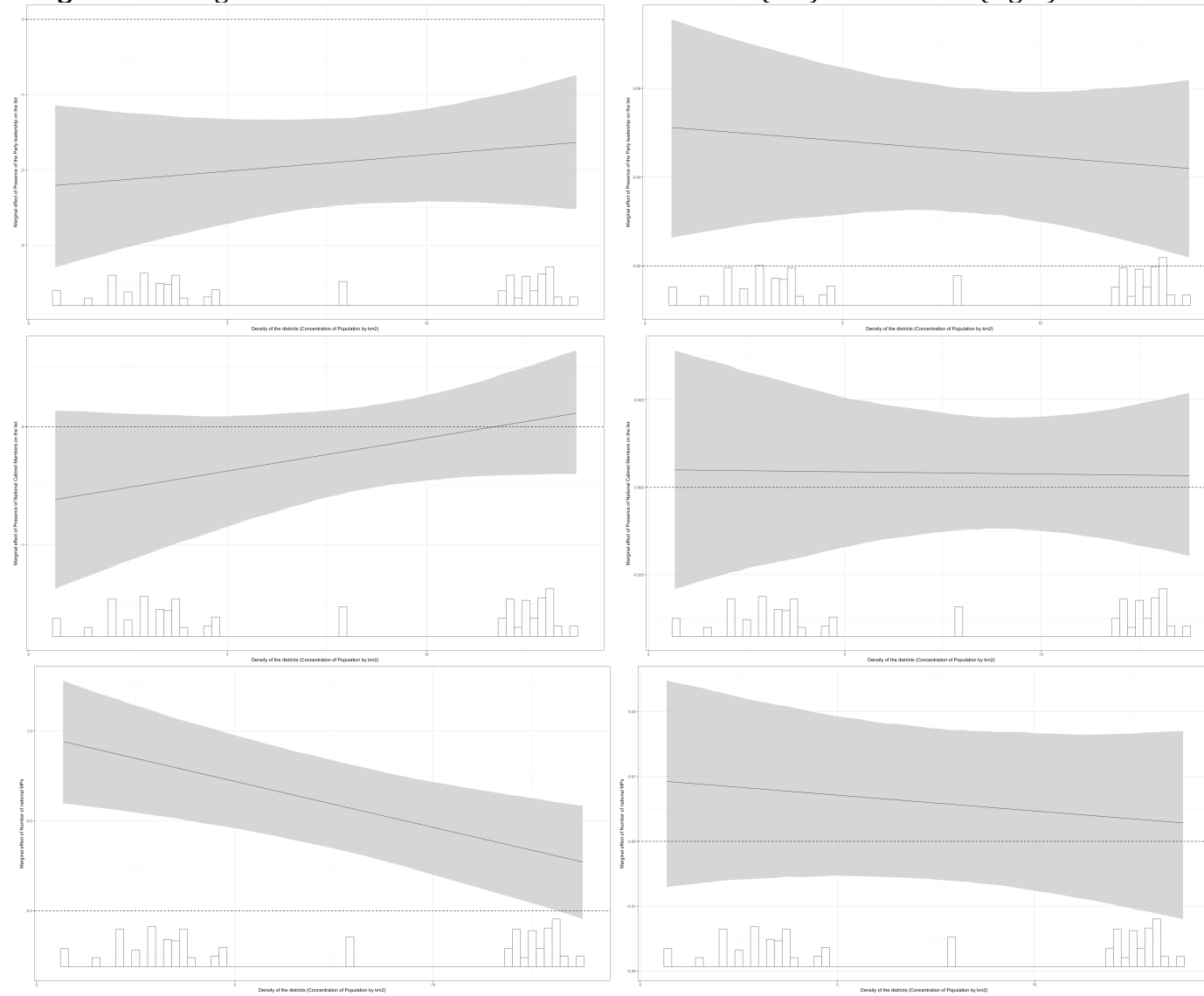
Conclusion and discussion

Nowadays, an extensive number of democracies elect multiple representatives per district via PR list systems. Although previous scholarship has shown the impact of electoral determinants to explain candidates' motivation to cultivate a personal vote (Carey and Shugart, 1995; Crisp et al., 2007, André et al., 2012), this literature is still scarce about the effects of the intra-party competition on the distribution of preferential votes between candidates on a list (but see Bergman et al. 2012). This sought to fulfil this gap by developing specific measurements of the concentration of vote: (1) a relative indicator based on the Gini coefficient which is of particular interest for theory-testing goals as its prosperities travel well across distinct electoral contexts; (2) an absolute indicator defining the effective number of candidates 'who really matters' on a list. The ENC is particularly useful to analytically describe the structure of intra-party competition within electoral lists.

Our results firstly indicate that the two new indicators behave according to the hypotheses developed in the literature of intra-party competition. Firstly, our indicators demonstrate efficiently that multiple preferential votes lead to decentralized personalization (Belgium) while single preferential votes trigger centralized personalization (Finland). Secondly, the Gini coefficient and the ENC permit to describe personalization as a process over time: hence, we observed a clear trend towards more concentration of Belgian votes directly after the introduction of electoral reforms in the early 2000s. Thirdly, in line with our hypotheses, our results confirm that list composition ("big names" on the lists) is a key determinant of centralized personalization. The models furthermore confirm that in Belgium the effects of these list pullers are, however, moderated by the structure of the electoral market (in terms of density of voters per districts' area). Finally, political parties (party magnitude and emerging parties) and districts' characteristics (district magnitude) showed contradicting results. But the development of these indicators will precisely contribute to develop better theories to explain results that looked counter-intuitive at first glance.

In addition to these elements, we also believe that the two indicators of intra-party electoral competition should also be used to analyse the effects of centralized and decentralized personalization on representation process. Several avenues for research could be explored. And mobilizing these two indicators would allow for robust and systematic comparative research.

First, the impact of both forms of concentration of votes on the electoral fate of political parties could be studied. Research on the personalization of voting behaviours is already well established. In particular, scholars have examined the effect of leaders on the vote (Aarts et al., 2011; Bittner, 2011; Clarke et al., 2004; Clarke et al., 2009; Garzia, 2012). A few studies have also explored the impact of individual candidates on the vote (Caprara, 2007; Marsh, 2007; Mattes and Milazzo, 2014; Norton and Wood, 1990). However, to our knowledge, no study has tried to capture how the structure of intra-party competition could affect the electoral performance of the party. Is a party dominated by a leader, or by a few prominent candidates doing better at the polls that a party with a greater dispersion of votes among candidates? Both indicators we propose here could contribute to answering these questions. They may even allow going beyond the mere electoral score of political parties and helping analysing what groups of voters parties are able to attract.

In their seminal work on candidate selection, Gallagher and Marsh (1988) underlined that in list systems one of the main criteria for parties to compose their list was to recruit candidates able to attract different segment of the electorate. Linking the effective number of candidates to the diversity of voters a party is able to attract could definitely prove very useful within that perspective.

Second, it could also be very interesting to articulate the structure of electoral competition within lists to the identity of those who are eventually elected. The big question is how personalization might affect who is making it into parliament, and more precisely whether some specific groups would be harmed, and other favoured, by (de)centralized personalization. Concerns are especially high for social groups that are already weakly represented in political institutions such as women or ethnic minorities (Dodeigne et al. Forthcoming). Within this perspective, the question we may pose is whether level of intra-party competition will favour or deter the election of candidates from such groups. Would a list dominated by several candidates be more positive for female and ethnic minority candidates to win a seat? Or would a leader-dominated list be better? Some insights could already be found in the literature on the impact of closed vs. open lists on the election of female candidates. This literature seems to show that closed lists are better for women representation (Htun, 2005; Norris, 2004). However, these studies relate to the rules of the games, to institutional personalization (Renwick and Pilet, 2016). Here, we propose to examine rather the actual structure of intraparty competition within lists based upon our two indicators.

Finally, our indicators of intra-party competition in PR list systems could feed into the broader literature on the impact of personalization on the behaviour of politicians once elected, and on their relationship with their party. A significant body of the literature has developed on the concept of 'personal vote' (Zittel, 2017). It broadly refers to the influence of the candidate himself on the decision made by voters on Election Day (Cain et al., 1987). In order to mobilize a personal vote, individual politicians would implement various strategies to cultivate their personal reputation. They would try to differentiate themselves from co-partisans. Adopting policy positions that would differ from the general party line could do it, even sometimes by voting against their party in parliament (Crisp et al., 2013). They would claim credit for their individual action in power. They would try to publicize their individual contribution to policy-making distinctively from the general action of their party. Or they would try to foster direct contacts with citizens by being more present in the media, or in their constituency (Pilet et al., 2012). Within this perspective, a new avenue for research could be to link our measures of intra-party electoral competition to personal vote-seeking behaviour of politicians. More broadly, they could also be used to examine whether and to what extent party unity may be affected by the (de)centralized forms of personalization that could characterize different lists and political parties.

These new avenues for further research are only, we believe, a few examples of the great potential of our measures of intra-party competition between candidates in PR list systems. They confirm that these measures would not only be appropriate to characterize centralized and decentralized personalization of elections, as well as its causes, but also to study how these different configurations may affect political systems more broadly.
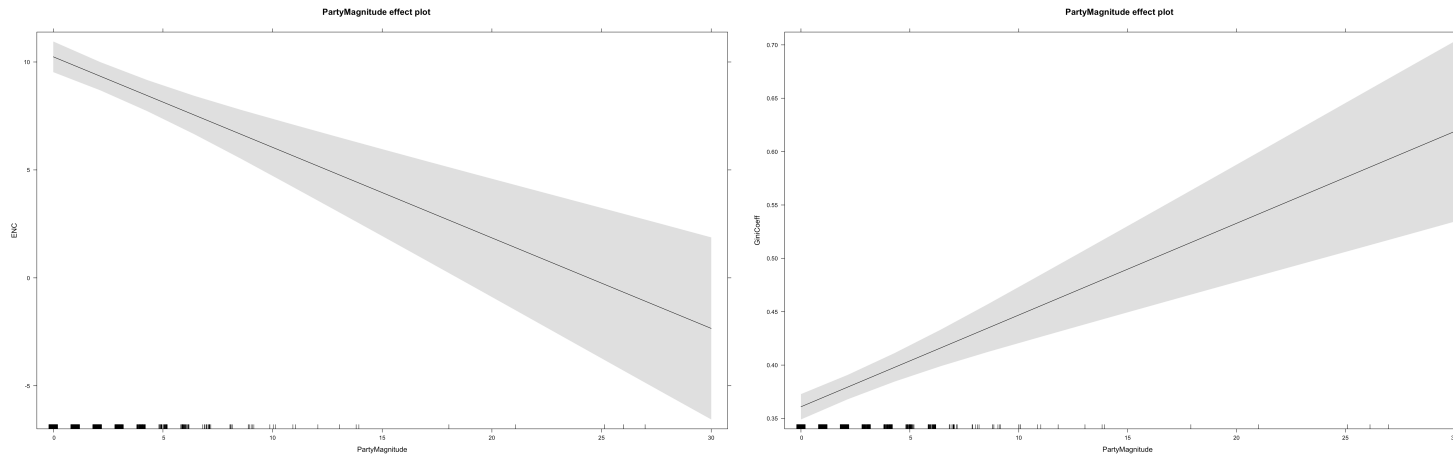
Appendix

Figure A.1. Relation between the Effective Number of Candidates and District Magnitude in Belgium (left) and Finland (right)
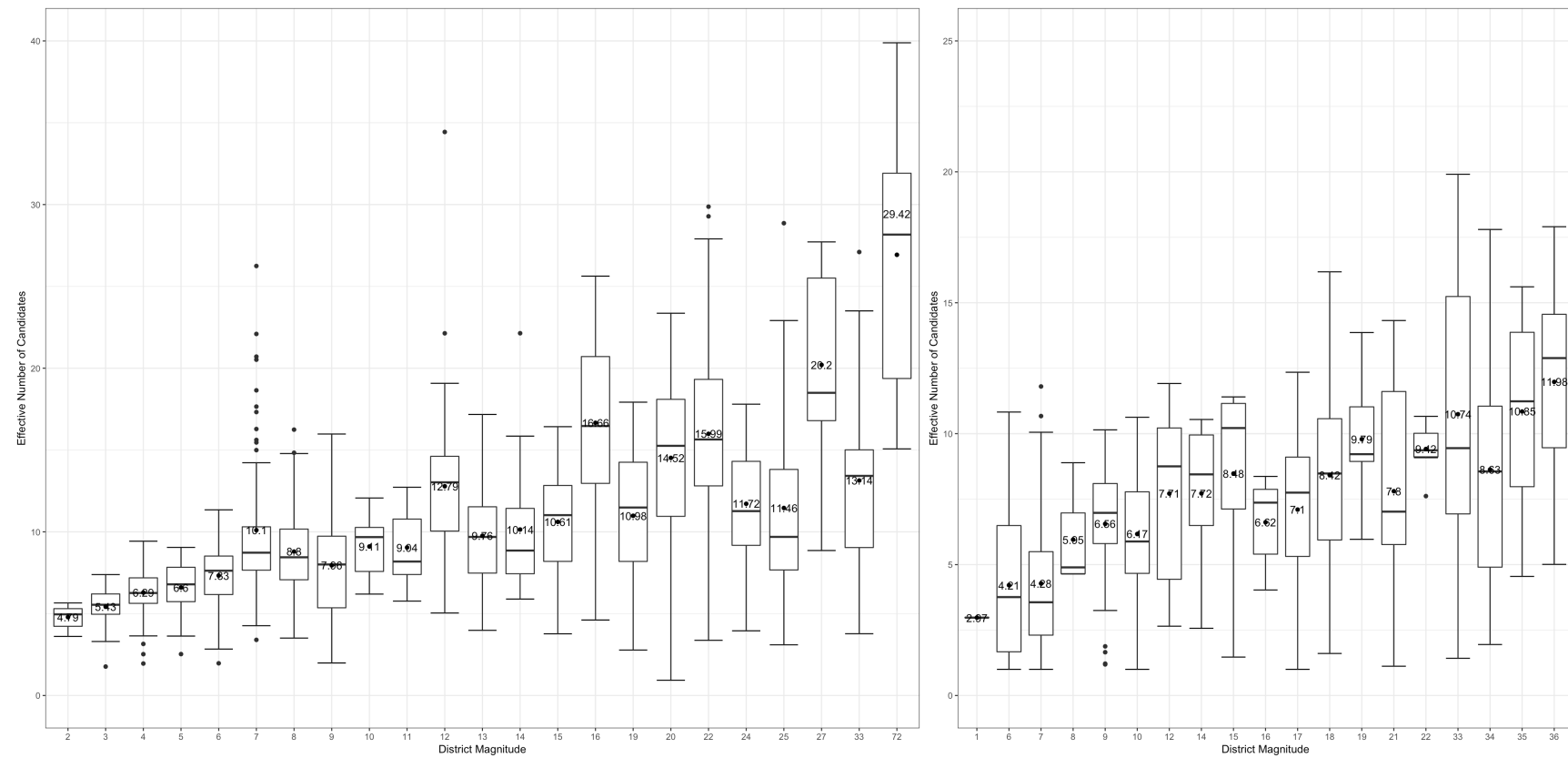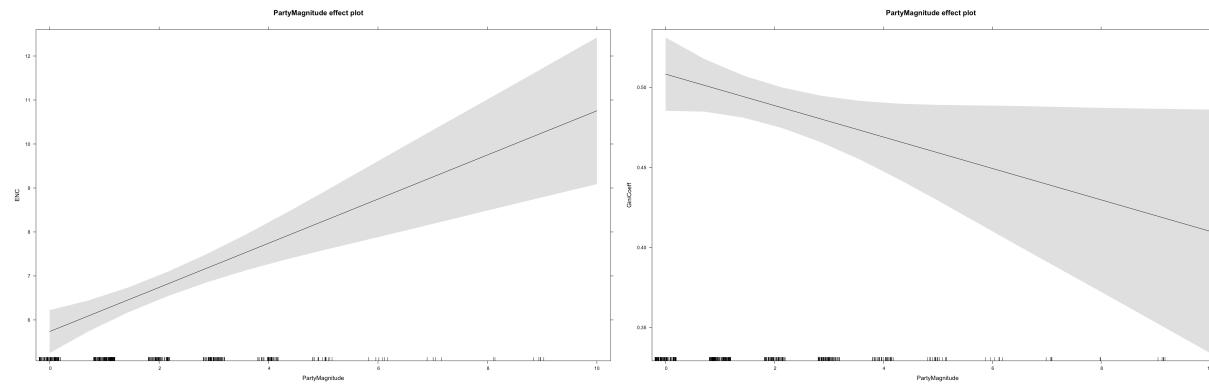
Figure A.2. Relation between the Gini coefficient and District Magnitude in Belgium (left) and Finland (right)
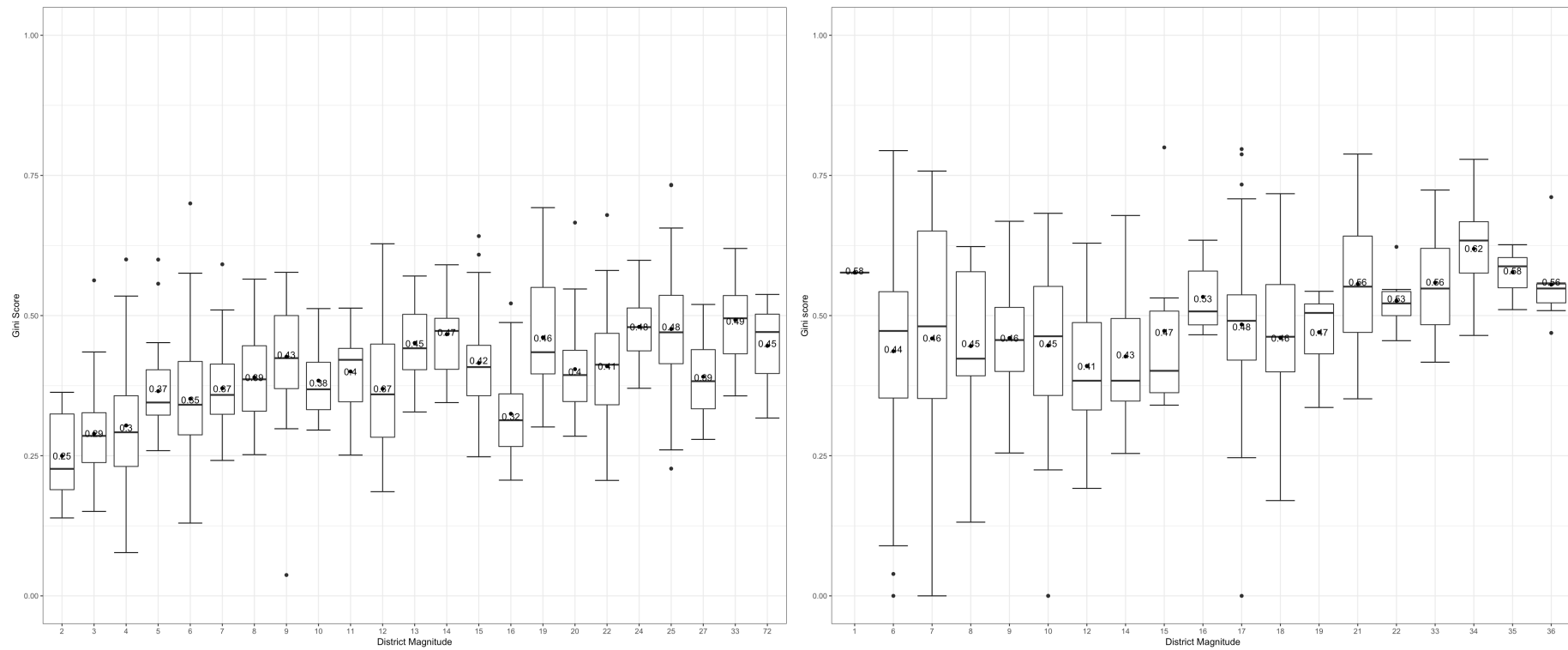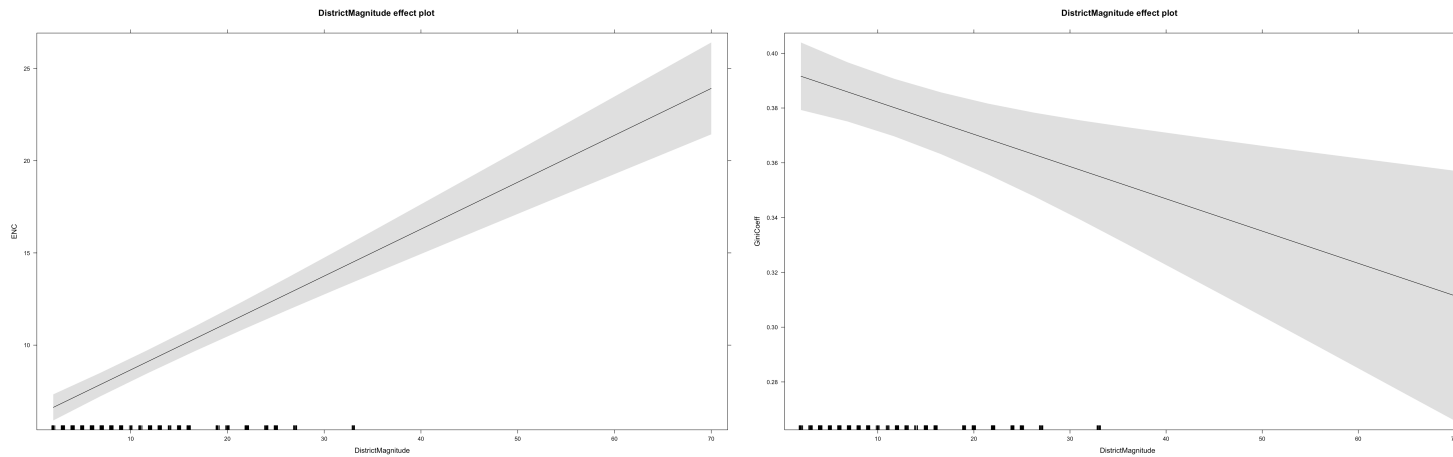
Figure A.3. Effect of Party magnitude on the Effective Number of Candidates (left) and the Gini score (right) - BELGIUM
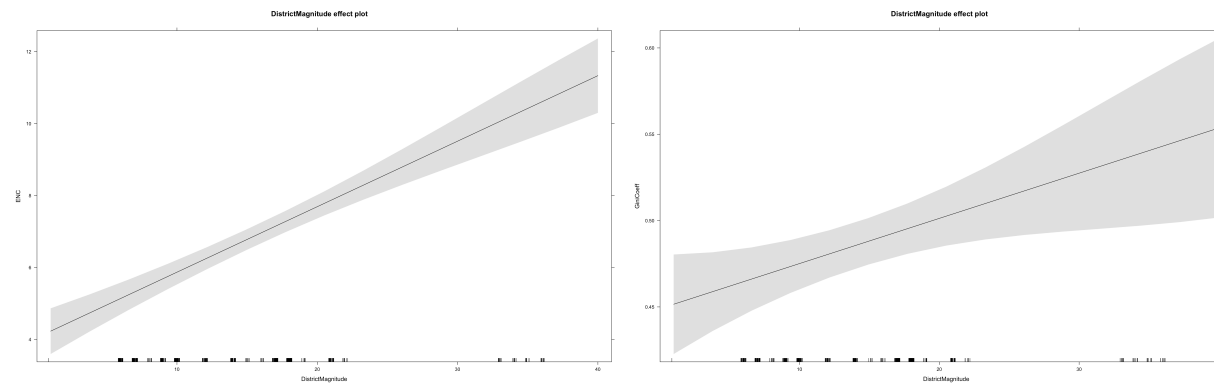

Figure A.4. Effect of Party magnitude on the Effective Number of Candidates (left) and the Gini score (right) - FINLAND

Figure A.5. Effect of District magnitude on the Effective Number of Candidates (left) and the Gini score (right) - BELGIUM

Figure A.6. Effect of District magnitude on the Effective Number of Candidates (left) and the Gini score (right) - FINLAND

List of references

Aardal B and Binder T (2011) Leader effects and party characteristics. In: Aarts K, Blais A and Schmitt H (eds) *Political Leaders and Democratic Elections*. Oxford: Oxford University Press, pp. 108-126.

Aarts K, Blais A and Schmitt H (eds) (2011) *Political Leaders and Democratic Elections*. Oxford: Oxford University Press.

Adam S and Maier M (2010) Personalization of Politics: A Critical Review and Agenda for Research. In Salmon C (ed) *Communication Yearbook 34*. London: Routledge, pp. 213–57.

Andeweg RB and Van Holsteyn JJM (2011) Second Order Personalization: Preference Voting in the Netherlands. In *ECPR General Conference*, Reykjavík, Iceland, 25–27 August 2011.

André A, Wauters B and Pilet JB (2012) It's not only about lists. Explaining preference voting in Belgium. *Journal of Elections, Parties and Public Opinion* 22(3): 293-313.

Arzheimer and Evans. (2012). Geolocation and voting: Candidate–voter distance effects on party choice in the 2010 UK general election in England. *Political Geography* 31(5):301-310.

Balmas M, Rahat G, Sheafer T and Shenhav SR (2014) Two Routes to Personalized Politics: Centralized and Decentralized Personalization. *Party Politics* 20(1): 37–51.

Bean, C and Mughan, A (1989) Leadership Effects in Parliamentary Elections in Australia and Britain'. *The American Political Science Review* 83(4): 1165-1179.

Bergman et al. (2012) Patterns of intraparty competition in open-list & SNTV systems", *Electoral Studies* 32 (2): 321-333.

Bittner A (2011) *Platform or Personality? The Role of Party Leaders in Elections*. Oxford: Oxford University Press.

Brettschneider F. and Gabriel O W (2002) The Nonpersonalization of Voting Behavior in Germany. In: King A. (ed) *Leaders Personalities and the Outcomes of Democratic Elections.* Oxford: Oxford University Press, pp. 127-157.

Burchell J (2001) Evolving or conforming? Assessing organisational reform within European green parties' *West European Politics*, 24 (3): 113-134.

Cain BE, Ferejohn J and Fiorina M (1987) *The Personal Vote: Constituency Service and Electoral Independence*. Cambridge, MA: Harvard University Press.

Caprara GV (2007). The Personalization of Modern Politics. *European Review* 15(2): 151–164.

Carey, J.M. & Shugart, M.S. (1995) Incentives to cultivate a personal vote: A rank-ordering of electoral formulas. Electoral Studies 14: 417–439.

Cesare, S. Xiang Y. (2012) *Software Similarity and Classification, Springer Briefs in Computer Science.* London: Springer.

Clarke HD, Kornberg A and Scotto TJ (2009) *Making Political Choices: Canada and the United States*. Toronto: University of Toronto Press.

Clarke HD, Sanders D, Stewart MC and Whiteley P (2004) *Political Choice in Britain*. Oxford: Oxford University Press.

Crisp, B.F., Jensen, K.M. & Shomer,Y. (2007). Magnitude and vote-seeking. Electoral Studies 26: 727–734.

Crisp, B. F., S. Olivella, M. Malecki, and M. Sher. 2013. 'Vote-Earning Strategies in Flexible List Systems: Seats at the Price of Unity'. Electoral Studies 32: 658–69.

Curtice J and Holmberg S (2005) Party leaders and Party choice. In: Thomassen J (ed) *The European Voter. A Comparative Study of Modern Democracies*. Oxford: Oxford University Press, pp. 235–253.

Dalton RJ Flanagan SC and Beck PA (1984) *Electoral Change in Advanced Industrial Democracies: Realignment or Dealignment?* Princeton: Princeton University Press.

De Winter Lieven and Baudewyns P (2015) Candidate centred campaigning in a party centred context: The case of Belgium. Electoral Studies 39 (3): 295-305.

Dodeigne J. and Binard, M. (2012) 'Annexe n°3. Les circonscriptions électorales depuis 1830', in Bouhon, F. and Reuchamps, M. (eds) *Les systèmes électoraux de la Belgique*. Bruxelles: Bruylant., pp. 569–588.

Dodeigne, J. (2014) '(Re-)Assessing Career Patterns in Multi-Level Systems: Insights from Wallonia in Belgium', *Regional & Federal Studies*, 24(2): 151-171

Dodeigne J. (2018) 'Who governs? The disputed effects of regionalism on legislative career orientation in multilevel systems', *West European Politics*. Online First.

Dodeigne, J., Vintila, D. & Morales, L. (Forthcoming). The social and political background of MPs of immigrant origin: are they any different? *Pathways to Power: The Political Representation of Citizens of Immigrant Origin in Seven European Democracies*. Morales, L. & S. (eds.). Oxford: Oxford University Press

Elmelund-Præstekær, C. and Hopmann, DM (2012) Does Television Personalise Voting Behaviour? Studying the Effects of Media Exposure on Voting for Candidates or Parties. *Scandinavian Political Studies* 35(2): 117-140.

Franklin, MN, Mackie TK and Valen H (eds.) (1992) *Electoral Change: Responses to Evolving Social and Attitudinal Structures in Western Countries.* Cambridge: Cambridge University Press.

Gallagher, M., & Marsh, M. (1988). Candidate selection in comparative perspective: The secret garden of politics. London: Sage

Garzia D (2012) Party and Leader Effects in Parliamentary Elections: Towards a Reassessment. *Politics* 32(3): 175–185.

Hazan RY and Rahat G (2010) *Democracy within Parties: Candidate Selection Methods and Their Political Consequences*. Oxford: Oxford University Press.

Htun Mala N. (2005). Women, political parties and electoral systems in Latin America. In Azza Karam, Jullie Ballington, (dir.), *Women in Parliament: Beyond Numbers,* Stockholm, International IDEA, p. 112–121.

Jennings, M. K., and R. G. Niemi. (1966) Party Identification at Multiple Levels of Government. *American Journal of Sociology* 72 (1): 86–101.

Kaase M (1994) Is there a Personalization in Politics? Candidates and Voting Behavior in Germany. *International Political Science Review* 15(3): 211–230.

Karsen R. and Skogerbo E. (2015) Candidate campaigning in parliamentary systems. Individualized vs. Localized Campaigning. *Party Politics* 21 (3): 428-439.

Karvonen L (2010) *The Personalization of Politics: A Study of Parliamentary Democracies*. London: ECPR Press.

Katz RS and Mair P (1995) Changing Models of Party Organization and Party Democracy: The Emergence of the Cartel Party. *Party Politics* 1(1): 5–28.

Kriesi H (2012) Personalization of National Election Campaigns. *Party Politics* 18(6): 825–844.

Laakso M. and Taagepera R (1979) "Effective" Number of Parties. A Measure with Application to West Europe. *Comparative Political Studies* 12 (1): 3-27.

Langer AI (2007) A Historical Exploration of the Personalisation of Politics in the Print Media: The British Prime Ministers (1945–1999). *Parliamentary Affairs* 60(3): 371–387.

Lobo, M C and Curtice, J (2015) *Personality Politics? The Role of Leader Evaluations in Democratic Elections*. Oxford: Oxford University Press.

Marsh, M. (1985) The voters decide? Preferential voting in European list systems. European Journal of Political Research, 13(4), pp. 365–378.

Marsh M (2007) Candidates or Parties? Objects of Electoral Choice in Ireland. *Party Politics* 13(4): 500–527.

Mattes K and Milazzo C (2014) Pretty Faces, Marginal Races: Predicting Election Outcomes Using Trait Assessments of British Parliamentary Candidates. *Electoral Studies* 34(1): 177–189.

Mazzoleni G and Schulz W (1999) 'Mediatization' of Politics: A Challenge for Democracy. *Political Communication* 16(3): 247–261.

McAllister I (2007) The Personalization of Politics. In: Dalton RJ and Klingenmann HD (eds) *The Oxford Handbook of Political Behavior*. Oxford: Oxford University Press, pp. 571–88.

McAllister I and Rose R (1986) *Voters Begin to Choose: From Closed-Class to Open Elections in Britain*. London: Sage.

Mughan A (2000) *Media and the Presidentialization of Parliamentary Elections*. Basingstoke: Palgrave.

Norton P and Wood D (1990) Constituency Service by Members of Parliament: Does It Contribute to a Personal Vote. *Parliamentary Affairs* 43(2): 196–208.

Norris Pippa (2004) *Electoral Engineering: Voting Rules and Political Behavior*. New York, Cambridge University Press.

Pilet, Jean-Benoit, Freire, André and Costa, Olivier (2012) "Ballot Structure, District Magnitude and Constituency-Orientation of MPs in Proportional Representation and Majority Electoral Systems", *Representation. The Journal of Representative Democracy*. 48 (4): 359-372

Pilet JB and Cross W (eds) (2014) *The Selection of Political Party Leaders in Contemporary Parliamentary Democracies: A Comparative Study*. London: Routledge.

Pilet JB and Wauters B (2014) Party leadership selection in Belgium. In Pilet JB and Cross W (eds) *The Selection of Political Party Leaders in Contemporary Parliamentary Democracies. A Comparative Study*. Oxford: Routledge, pp. 30-46

Pilet Jean-Benoit and Cross William (2016) COSPAL dataset. Comparative Study of Party Leaders.

Plasser F and Lengauer G (2008) Television campaigning worldwide. In: Johnson DW *Handbook of Political Management*. London: Routledge.

Poguntke T and Webb P (eds) (2005) *The Presidentialization of Politics: A Comparative Study of Modern Democracies*. Oxford: Oxford University Press.

Put GJ and Maddens B (2015) The Effect of Municipality Size and Local Office on the Electoral Success of Belgian/Flemish Election Candidates: A Multilevel Analysis. *Government and Opposition* 50(4): 607-628

Rae D (1968) A note on the fractionalization of some European party systems. *Comparative Political studies* (1): 413-418.

Rahat G and Sheafer T (2007) The Personalization(s) of Politics: Israel 1949–2003. *Political Communication* 24(1): 65–80.

Renwick A and Pilet J-B (2016) Faces on the Ballot. The Personalization of Electoral Systems in Europe. Oxford: Oxford University Press.

Swanson, D and Mancini, P. (eds) (1996). *Politics, Media and Modern Democracy*. Westport, Conn.: Praeger.

Taagepera and Shugart, M.S. 1989. *Seats and Votes: The Effects and Determinants of Electoral Systems*. New Haven: Yale University Press.

Thijssen, P (2013) Are parties stimulating candidate-centered voting? *Acta Politica* 48(2): 144-166.

Van Aelst P (2007) *Toeschouwer, speler of scheidsrechter? Een studie naar de rol van de media in de verkiezingscampagne van 2003*. Brugge: Vanden Broele.

Van Aelst P, Maddens B, Noppe J, and Fiers S (2008) Politicians in the news: media or party logic? Media attention and electoral success in the Belgian election campaign of 2003. *European Journal of Communication* 23(2): 193-210.

Van Aelst P, Sheafer T and Stanyer J (2012) The Personalization of Mediated Political Communication: A Review of Concepts, Operationalizations, and Key Findings. *Journalism* 13(2): 203–220.

Van der Brug W, Hobolt SB and De Vreese CH (2009) Religion and Party Choice in Europe. *West European Politics* 32(6): 1266–1283.

Van Holsteyn JJM and Andeweg RB (2010) Demoted leaders and exiled candidates: Disentangling party and person in the voter's mind. *Electoral Studies* 29(4): 628-635.

Wattenberg MP (1991) *The Rise of Candidate-Centered Politics: Presidential Elections in the 1980s*. Cambridge: Harvard University Press.

Wauters, B., Verlet, D. & Ackaert, J. (2012) Giving more weight to preferential votes: welcome or superfluous reform? The case of the local elections in Flanders (Belgium). Local Government Studies, 38(1), pp. 91–111.

Wauters B, Van Aelst P, Thijssen P, Rodenbach J, Smulders J and Pilet JB (2015) Presidentialisering vs. Personalisering. In: Deschouwer K, Delwit P, Hooghe M, Baudewyns P and Walgrave S (eds) *De Kiezer Ontcijferd. Over Stemgedrag en Stemmotivaties*. Leuven: Lannoo Campus, pp. 76-95.

Wauters B., Van Alest P., Thijssen P. and Pilet J-B (2016) Centralized personalization at the expense of decentralized personalization. The decline of preferential voting in Belgium (2003–2014). *Party Politics*. Online first.

Wilke J and Reinemann C (2001) Do the Candidate Matter? Long-Term Trends of Campaign Coverage. A Study of the German Press Since 1949. *European Journal of Communication* (16): 291-314.

Zittel Th. (2015) Constituency candidates in comparative perspective – How personalized are constituency campaigns, why, and does it matter? Electoral Studies 39 (3): 286-294.

Zittel T. (2017) The Personal Vote. In: Kai Arzheimer, Jocelyn Evans & Michael S. Lewis-Beck. The Sage Handbook of Electoral Behaviour. London: Sage, pp. 668-687.