

Intraparty competition in urban versus rural settings. The Belgian Lower House elections (2003-2019)

Jérémy Dodeigne (Université de Namur)

Gert-Jan Put (Université de Namur)

Ferdinand Teuber (UCLouvain)

Abstract

The use of preferential voting and the level of intraparty competition have a profound effect on the way politics is played out within a political system. Extant studies often focus on the role of candidate characteristics in explaining electoral success, or analyze voters' inclination to cast preferential votes. These empirical efforts typically control for contextual effects such as the degree of urbanization, as rural settings are believed to represent fertile grounds for stronger candidate-voter relationships. This paper focuses on mechanisms linking urbanization and intraparty competition. In contrast with earlier work which equates urbanization with population density, we operationalize the urban character of an electoral environment using three indicators: (1) population density, (2) population mobility (i.e. citizens moving in and out of the area), (3) population diversity. We analyze the link between these indicators and intraparty competition by focusing on preferential vote patterns on lists for five Lower House elections in Belgium (2003-2019). To this end, we aggregated 584,973 preferential vote scores for candidates-in-municipalities/cantons to a dataset of intraparty competition scores for 5,308 lists-in-cantons (2003-2019). We run hierarchical linear models and control for the presence of 'big fish' on the list: locally rooted political office-holders, and parliamentary/executive incumbents more generally.

Key words: Intraparty competition, Urbanization, Preferential votes, Belgium

1. Introduction

This paper investigates heterogeneity in the level of intraparty competition between election candidates in urban versus rural areas. Is this type of electoral competition more intense in highly urbanized settings, and if so, which underlying mechanisms explain these differences? We measure patterns of competition within political parties by looking at preferential vote distributions across candidates running under the same party label. Very recently, the topic of intraparty competition has experienced a strong surge in research attention by election scholars (e.g. Cheibub and Sin, 2020; Dodeigne and Pilet, 2019; Folke and Rickne, 2020; Isotalo et al., 2020; Passarelli, 2020; Put et al., 2020). In light of the trends towards personalization of electoral behavior and partisan decline taking place in most established democracies, competition within parties is indeed becoming a more crucial aspect of theories and empirical studies on electoral and party politics. According to Musella and Webb (2015: 226), “the century that has just started will be the age of personalization, just as the previous one was the century of mass collective actors—a trend that political science has a duty to consider with greater attention” . While personalization of politics is not - per se - a threat to democracy, various authors have underlined the negative effects it conveys. Some of the regular concerns are (Rahat & Kenig 2018): the increased fractionalization of the political parties and the government instability it creates; the “vicious circle” of the development authoritarian figures (especially in new democracies); or the inability of societies to articulate (legitimate) collective actions over individual interests.

At the same time, differences in political behavior and attitudes between urban and rural areas have recently fueled a growing body of scholarly literature. It is sometimes argued that the urban-rural divide in political attitudes is developing as the dominant political conflict line in established democracies (Rodden, 2019). In terms of inter-party competition, empirical work already demonstrated that this rising conflict line explains the success of ‘cosmopolitan’ parties

in urban contexts and ‘nationalist’ parties in rural contexts (Huijsmans et al., 2020). Yet to the best of our knowledge, no earlier studies have investigated the importance of the urban-rural divide for *intraparty* electoral competition. The present study provides a first empirical effort to analyze differences in intraparty competition patterns between urban and rural areas.

Building on the political science literature on personalization of politics and preferential voting on the one hand and urban studies literature on the concept of ‘urbanicity’ on the other hand, we develop a set of theoretical arguments to explain intraparty competition differences between urban and rural areas. More specifically, we contend that the electoral market in urban areas provides more fertile grounds for high levels of intraparty competition (i.e. strong dispersion of preference votes over candidates running under the same party label) than rural areas. We unpack the concept of urbanicity and distinguish theoretically and empirically between three concrete urban indicators: population density, population mobility (i.e. the number of citizens moving in and out of a given territory) and population diversity.

We use a unique and built-for-purpose dataset on the distribution of preferential votes over candidates on the same party list for five consecutive Lower House elections in Belgium (2003-2019). To this end, we aggregated 584,973 preferential vote scores for candidates in the different cantons (available for 2003-2019) of their electoral district to a dataset of GINI-coefficient scores, an established indicator of intraparty competition (Dodeigne and Pilet, 2019). We link these intraparty competition scores to data by the public authorities on the demographic characteristics of cantons in mentioned election years, and to data on the political composition of party lists. We run hierarchical linear models to analyze the association between urban-rural characteristics and the nature of party lists on the one hand, and the level of intraparty competition on the other hand.

The results show that the three urbanicity indicators in itself do not affect the level of intraparty competition. Unsurprisingly, the presence of locally rooted ‘big fish’ (i.e. local officeholders or

incumbents living in the canton) leads to a substantially stronger concentration of preference votes and thus lower intraparty competition on the list. However, those ‘big fish’ seem to be less likely to dominate intraparty competition in urban cantons than in rural cantons. Indeed, the urban character of an area interacts with the composition of the list and creates a more level playing field. This result is confirmed for all three indicators of urbanicity. Our findings are in line with previous research showing that the candidate locality effect is less important in urban settings, and suggests that prominent politicians have significantly greater chances of dominating the election in rural hometown areas. For challengers, the electoral market seems more attractive in urban settings where those prominent politicians are less likely to have strong connections to voters.

2. Preference votes, the personalization of politics and intraparty competition

The nature of political representation in established democracies is strongly affected by the way in which electoral competition is regulated. Electoral systems matter and can be different in a number of dimensions, which has profound consequences for the way politics is played out in a political system. One of the most notable dimensions of an electoral system is the option of preferential voting. If voters are able to directly cast a vote for individual candidates, the electoral system in place allows to establish a personal connection between politicians and their electorate. The classic literature on the personal vote theorizes and empirically establishes that parties and candidates themselves behave differently according to the presence of a preference vote option (Cain et al., 1987; Carey and Shugart, 1995).

Even within the category of electoral systems that allow preferential voting, substantial differences exist in the nature and importance of the preferential vote. Whereas some countries implement a system where selecting one or multiple party candidates is compulsory, other cases

apply optional preferential voting which permit voters to either cast votes for individual candidates or to endorse the party list as given (Passarelli, 2020). Another important difference within the category of preferential-list PR systems deals with the ballot structure. While voters in open-list PR systems exclusively decide who gets elected on the party list, their counterparts in flexible-list PR systems can only directly affect intraparty seat allocation when a legally predetermined threshold is reached (Renwick and Pilet, 2016).

For quite some time, the topic of preferential voting has received fairly little scholarly attention (but see: Marsh, 1985; Katz, 1986). In recent years, both single-country studies and cross-national efforts have been conducted to study the determinants of preferential voting. At the individual voter level, time and again studies have confirmed that variation in the use of preferential votes is rooted in political sophistication and partisanship (e.g. André et al., 2012; Bengtsson et al., 2014; van der Kolk, 2003). A second recurrent finding is that the political and institutional context in which citizens cast their vote determines their use of preference voting as well. The stronger the impact of preference votes on intraparty seat allocation, the greater the propensity to cast preference votes (André et al., 2012; André and Depauw, 2018). Moreover, a too large number of candidates for voters to choose between also significantly lowers the inclination to vote for individual candidates (André and Depauw, 2018).

Another crucial aspect of the voters' context is the local environment, which refers to the urban or rural character of the area in which voters live and vote. A robust finding is that voters in urban contexts are less inclined to cast preference votes, as social distance between voters and candidates is larger than in rural areas (André et al., 2012; Passarelli, 2017; Wauters et al.,

2012).¹ In the empirical analyses of these studies, urbanization is typically measured by using an urban-rural dichotomy which distinguishes areas on the basis of population density.

An important explanation for this clear surge in research attention devoted to preferential voting is the trend towards the personalization of politics (Karvonen, 2010; McAllister, 2007). Since individual political actors such as party leaders, MPs and election candidates are becoming more important at the expense of collective actors, preferential voting also received a higher place on the research agenda. A first way in which personalization affects the importance of preferential voting is the well-documented trend in electoral system changes making preferential votes more important in a large number of electoral democracies over the last decades (Renwick and Pilet, 2016). Second, and relatedly, the personalization of politics might also lead to the increased use of preferential votes. However, the empirical research does not always convincingly show support for the personalization hypothesis (Aarts et al., 2011), or the hypothesized increase in preferential vote use more specifically (Wauters et al., 2015; Wauters et al., 2018). Indeed, certain types of personalization might not lead to more preferential voting but instead decreases its use. Balmas et al. (2014) conceptually distinguish between centralized and decentralized personalization. While the latter refers to a process where individual politicians in general become more important, the first type of personalization implies that power flows from collective political actors to only a handful of prominent politicians (i.e. presidents, party leaders, prime ministers, members of the executive).

¹ A notable exception is Allen (2015), who finds moderate support for a positive correlation between urbanization and the increased rate of preference votes. The alternative argument presented in this work on the case of Indonesia is that voters in urban centers have more expansive media markets with increased information about candidates, which leads to higher levels of personal voting.

Evolutions in the use of preferential votes – whether or not as a result of specific types of personalization – also have consequences for the degree of intraparty competition, which has long remained the neglected dimension of electoral competition. Intraparty competition refers to the level of competition between candidates running under the same party label in the same multimember district (Herron et al., 2018). This type of competition within parties can be fierce with an equal distribution of votes over co-partisans, or rather limited with a strong concentration of preferential votes for only a few candidates (Andeweg, 2005; Folke et al., 2016). As is the case with empirical work on preferential voting, only recently empirical studies on different aspects of intraparty competition have been mushrooming. This includes research on party strategies to contain intraparty competition (Cheibub and Sin, 2020), successful candidate positioning strategies in terms of ideology (Isotalo et al., 2020; von Schoultz and Papageorgiou, 2019; Folke and Rickne, 2020), the development of indicators measuring intraparty competition (Dodeigne and Pilet, 2019), or studies looking into the effect of the institutional and electoral context on the degree of intraparty competition (Pachon and Shugart, 2010; Söderlund, 2019).

What is lacking here, however, are empirical studies investigating the effect of the local environment on intraparty competition. Contrary to what was the case for preference voting, we do not know how differences between urban and rural areas affect the distribution of preference votes over candidates running from the same party list. In the next section, we present a set of arguments as to why and how the degree of urbanization strongly impacts intraparty competition.

3. How urbanization affects intraparty competition: theory and hypotheses

Over the past half century, the world has witnessed a substantial growth of the population living in urban settings. Today, a majority of 55% of the global population lives in urban areas, a

percentage that is expected to increase to 68% by 2050 (United Nations, 2018). Similar to other disciplines in the social sciences, comparative politics has recently shown a novel interest in urbanization as a key factor explaining political behavior and attitudes in established democracies. According to some scholars, the urban-rural divide is gaining importance at the expense of traditional political cleavages. Whereas voters in densely populated urban areas would be characterized as having more cosmopolitan and open attitudes, their counterparts in rural areas with low population densities take on more nationalist attitudes in issues of migration and European integration (Jennings and Stoker, 2017; Maxwell, 2019). The increasing polarization between these two groups of citizens is sometimes even considered as becoming the most important political cleavage shaping inter-party electoral competition (Rodden, 2019; Huijismans et al., 2020). While cosmopolitan parties develop strongholds among voters in urbanized areas, nationalist parties are clearly more popular in peripheral areas.

In this paper, we contend that not only *interparty*, but also *intraparty* competition is strongly shaped by the urban nature of the electoral market. We already know from earlier studies that the inclination to cast preference votes is affected by the urban character of a voter's local environment (cf. *supra*). In what follows, we present the argument that the stronger urban nature of an area leads to a more level playing field in terms of preference vote distributions over candidates from the same party.

A contentious issue in urban studies is how to adequately measure the concept of urbanicity, which refers to the features of modern urban areas and the aspects of urban living. A great deal of empirical research looking at the effect of urban environments on human behavior uses the urban-rural dichotomy to describe urbanicity, which is increasingly considered inadequate (e.g. Vlahov and Galea, 2002; Dahly and Adair, 2007; Champion and Hugo, 2004). Following this simple measurement approach, urban and rural environments are typically juxtaposed based on differences in one dimension, such as population size or density. There are at least two

underlying problems with using this dichotomy. First, modern urbanicity is a complex concept which comprises more than just an area with a strong concentration of population. Literature on the link between urbanization and health presents alternative approaches where various aspects of an urban environment – such as changes in size, population mobility, density, economic activity, population heterogeneity, segregation – are combined in urbanicity scales (e.g. Vlahov and Galea, 2002; Cyril et al., 2013). Second, while urban and rural areas were clearly separable in the past, modern rural areas are now experiencing changes traditionally linked with urban areas, such as rural gentrification processes (e.g. Phillips and Smith, 2018). As a result of this intra-urban and intra-rural heterogeneity, the urban-rural dichotomy is becoming even more problematic as a valid measure.

By the same token, a simple binary variable disentangling urban and rural areas to investigate the effect of urbanization on political behavior raises many concerns. A lot of the cited research on preference voting follows a similar approach, all the more because urbanization only takes the role of control variable in many of those studies. As it is our main ambition, however, to assess the role of urbanicity in explaining levels of intraparty competition, we propose to disentangle at least three relevant indicators that can affect the distribution of preference votes over candidates: (1) population density, (2) population mobility (i.e. citizens moving in and out of the area), and (3) population diversity. For each of these indicators, we now discuss the underlying mechanisms which affect intraparty competition and develop accompanying hypotheses.

Population density is the first and most classical indicator of urbanicity, and measures the number of people living in an area or administrative unit per square kilometer. Large urban centers typically concentrate high numbers of voters, which has consequences for electoral competition between individual candidates. In line with the central argument raised in the literature on preference voting, social distance between voters and candidates is larger in urban

areas. In rural areas, social networks are generally denser and voters are more likely to know one or more specific local politicians directly (André et al., 2012). Urban voters tend to be more individualistic and atomized, which leaves them less sensitive to local identities and less attached to local communities (Nemoto and Shugart, 2013). As candidate-voter relations are more loose in urban areas with strong voter concentrations, it will be harder for candidates to stand out in election campaigns and carve out personal constituencies (Cheibub and Sin, 2020). We therefore expect population density to be associated with higher levels of intraparty competition, i.e. more equal distributions of preference votes on party lists.

H1a: Population density is associated with higher levels of intraparty competition.

In addition to being more densely populated areas, urban centers are also characterized as having higher levels of *population mobility* (e.g. Leviton et al., 2000). Different mechanisms explain why the *in-* and *out-*mobility of citizens – and thus voters – is considerably higher in urban versus rural contexts. First, as mentioned in the discussion on population density, urban dwellers have lower levels of local attachment which makes them less likely to live in the same local environment for their entire lives. Second, as housing prices are often considerably higher in city centers than elsewhere, urban voters are less likely to be homeowners and thus move more frequently than do rural voters (Ramseyer and Rosenbluth, 1993; Hicken, 2007). Third and somewhat related to the previous point, global processes of urban change significantly alter the composition of inner-city neighborhoods. More specifically, gentrification of traditional working-class neighborhoods leads to the influx of a wealthier, new urban middle class population with limited previous connections to the city, and the physical displacement of longstanding neighborhood inhabitants who cannot afford to stay (Ley, 1996; Smith, 2002). All these elements contribute to greater difficulties for candidates to develop and maintain a core group of supporters. Put another way, winning personal votes is more costly for any type of

politician in such a dynamic urban area, which again leads to a more level playing field in terms of preference votes.

H1b: Population mobility is associated with higher levels of intra-party competition.

The third and final indicator for urbanicity included in this study is the level of population diversity. In earlier empirical work on the link between urbanicity and health, urban environments are often associated with more diverse populations in terms of ethnicity (e.g. Acevedo-Garcia, 2001). We argue that higher levels of ethnic, cultural or religious diversity in urban settings also affects patterns of intraparty competition. Azabar et al. (2020) show that voters who belong to Muslim faith are more likely to vote for Muslim candidates. Another study on local elections in Brussels demonstrates that candidates with certain ethnic minority backgrounds receive significantly higher preference vote shares as their ethnic group's concentration in the population increases (Janssen, 2020). Farrer and Zingher (2018) find that party selectorates themselves are responsive to demographics during candidate recruitment, and therefore select more ethnic minority candidates. Urban contexts with their greater population diversity provide more incentives for parties to balance their ticket. We expect that the increased level of descriptive representation on party lists leads to higher levels of intraparty competition in urban areas. As ethnic, religious or cultural groups are likely to behave as a "voting bloc" according to voter-candidate similarities, the number of candidates on the party list with a substantial share of preference votes increases and it becomes harder for a limited group of candidates to dominate intraparty competition.

H1c: Population diversity is associated with higher levels of intraparty competition.

In sum, we hypothesize that these three separate indicators of urbanicity are positively associated with intraparty competition. However, previous research demonstrates that the specific composition of party lists affects the structure of intra-party competition as well. The

presence of prominent candidates leads to a greater concentration of preference votes, as these politicians have the potential to dominate intra-party competition (Dodeigne and Pilet, 2019; Poguntke and Webb, 2005; Wauters et al., 2018). What constitutes well-known candidates or ‘*big fish*’ largely depends on the level of observation. While at the electoral district level only party leaders, cabinet members and MPs will have the capacity to convincingly dominate electoral competition within the same list, on a more disaggregated and local level of observation, we expect that incumbent local office-holders (i.e. mayors, aldermen and local councilors) are able to do the same. When looking at preference vote distributions on party lists in specific local areas, one can expect that the concentration of preference votes will be higher with locally rooted political office-holders present. These prominent politicians thus include national or regional level politicians as well as local-level politicians.

H2: The presence of locally rooted political office-holders on party lists is associated with lower levels of intraparty competition.

However, in line with the theoretical arguments on the link between aspects of urbanicity and intraparty competition outlined earlier in this paper, the capacity of big fish to dominate their party lists will be lower in urban settings. Locally rooted incumbents will more easily connect with their local electorates and stand out on the basis of their political experience in rural areas. Urban dwellers are less likely to be seduced by experienced politicians with local ties, leading to a lower concentration effect of the presence of locally rooted office-holders.

H3: The negative effect of the presence of locally rooted political office holders on intraparty competition is stronger in rural areas than in urban areas.

4. Data, case selection and methods

We use a unique and built-for-purpose dataset on the Belgian Lower House elections to analyze the link between urbanicity and intraparty competition. This dataset was compiled using three

different sources of information. *First*, the distribution of preference votes over candidates running on the same party list was analyzed for five consecutive Lower House elections (2003-2019). For every party list, preference vote results are available for distinct subdistrict levels (only cantons available for 2003-2010; both cantons and municipalities available for 2014-2019). Both the canton and municipality level are interesting, as these more disaggregated preference vote scores can be leveraged to analyze the effect of heterogeneity in urbanicity indicators on preference vote distributions. For instance, for a given party list running in the electoral district of Antwerp (province) in the 2014 elections, we have preference vote scores for the hyper urban setting of Antwerp (city) as well as for the rural municipality of Meerhout. We web-scraped 584,973 preference vote scores for Lower House candidates in the different electoral cantons (2003-2019) and municipalities (2014-2019) in the electoral district where they ran from the official election results websites hosted by the Federal Public Service Home Affairs. Subsequently, these preference vote scores of candidates-in-cantons (or candidates-in-municipalities) were used to calculate the level of intraparty competition on lists-in-cantons or lists-in-municipalities (cf. *infra*). In this version of the paper, we limit ourselves to the analysis of intraparty competition at the canton level.

Second, we collected data on the political offices served by candidates on the lists (i.e. cabinet positions or MP at regional or federal level, MEPs, mayor, alderman or local councilor) and the place of residence of 5,700 federal election candidates running for ten Belgian political parties with permanent parliamentary representation during the period under investigation: CD&V, cdH, sp.a, PS, (Open) VLD, MR, Agalev/Groen, Ecolo, N-VA and Vlaams Belang. With this information, we can take into account the composition of party lists – i.e. the presence of ‘big fish’ – and examine how many prominent candidates are locally rooted in the canton or municipality under consideration.

Third, we collected data on the three urbanicity indicators at the municipality level from the General Directorate Statistics of the Federal Public Service Economy. For population density, we use the number of inhabitants per squared kilometer (this was recalculated for the electoral cantons based on the sum of inhabitants and surface areas of municipalities included in the respective canton). Regarding population mobility, yearly municipal data on the internal immigration and emigration were used, which is the absolute number of inhabitants moving in and out of the respective municipalities. Subsequently, the population mobility was calculated as the sum of internal immigration and emigration per 1,000 inhabitants.² This was again recalculated for the respective electoral cantons. Finally, for the population diversity indicator, we use the percentage of Belgian citizens in the municipalities with a different nationality at the time of birth. While this percentage does not represent a perfect measurement of the share of inhabitants with different ethnic, cultural or religious backgrounds, we contend that it is a proxy that can be used to tap the level of diversity in a municipality's population. Similar as for the other indicators, we also recalculated this percentage for the different electoral cantons.

The five Belgian Lower House elections taking place between 2003 and 2019 are organized using a flexible list proportional representation system. Belgian voters are able to cast one or multiple (as many as there are candidates on the list) preference votes, or a list vote which endorses the party list and its pre-electorally determined order of candidates. As is the case for all flexible list PR systems, in Belgium there are specific rules on the weight of preference votes in the intra-party seat allocation process. Renwick and Pilet (2016) coin the Belgian flexible list variant as the transfer type, where candidates are elected in the order of the preference votes they receive, but list votes are ascribed to the highest pre-electorally ranked candidate to reach the necessary number of votes to get elected. The remaining list votes are cascaded down the list until all are used. In practice, the pre-electoral rank order and list votes are more decisive

² This indicator is also referred to as the 'internal migration intensity' by the General Directorate Statistics.

than preference votes to determine who gets elected. However, Belgian voters use preference votes to communicate about their candidate preferences to parties, which subsequently use electoral success to decide on rank promotions (André et al., 2017; Put et al., 2019).

Over the years, the use of preference votes has been growing and reached its top with 66% of all voters casting candidate preferences in 2003 (Wauters et al., 2015). After those elections, the share of voters casting preference votes has consistently gone down as a result of a growing pattern of centralized personalization and declining rates of decentralized personalization (Wauters et al., 2018). Our data on the presence of ‘big fish’ on the party lists allows us to disentangle these effects of list composition on intraparty competition from the characteristics of the local environment. While our country case is located in the heart of Western Europe, which is one of the most urbanized areas in the world, Belgium still displays considerable within-country variation in terms of urbanization, especially for the south of the country. According to Eurostat’s cross-national classification of local administrative units over three categories of urbanization (1: cities; 2: suburban areas and towns, 3: rural areas),³ in 2018 40.4% of all Belgian municipalities could be considered as rural, 53.7% as suburban areas or towns, and the remaining 5.9% as cities. We can therefore expect that the different urbanicity indicators will vary substantially over the Belgian cantons.

As regards the dependent variable for the empirical analysis, we calculate the Gini coefficient which captures the statistical dispersion of votes among candidates on a given party list (Dodeigne and Pilet, 2019; Wildgen, 1985). This coefficient measures how much of the preference votes are concentrated on prominent candidates or spread out over all candidates, and produces scores between 0 (which equals perfect intraparty competition where all candidates attract an equal amount of votes) and 1 (which represents party lists where one

³ <https://ec.europa.eu/eurostat/web/gisco/geodata/reference-data/population-distribution-demography/degurba>

candidate receives all preference votes).⁴ The Gini coefficient provides both scale and population independence, implying that scores are comparable for party lists with different electoral strengths and with varying numbers of candidates running for election. Three independent variables of interest are included regarding canton characteristics: population density, population mobility and population diversity. We use a logged version of these three variables are positively skewed which might lead to heteroscedasticity issues. In addition, we include a variable measuring the share of locally rooted office-holders on the party list, and the share of non-locally rooted incumbents on the list. The first variable allows to test H2, the second variable allows to separate the effect of locally rooted prominent politicians *vis-à-vis* incumbents who are present on the list, but not locally connected. Number of candidates running on the party list is added as control variables, while party and year fixed effects are included to account for unobserved differences between these groups. We run two-level linear hierarchical models (random intercept, fixed slopes) with party lists-in-cantons as level 1 and cantons as level 2. By using hierarchical models, we avoid underestimating standard errors of coefficients for higher level predictors (i.e. the three urbanicity indicators) as a result of nested data structures. As a matter of fact, the variance of intraparty competition observed at the canton is substantial (44 percent) and significantly decrease once including fixed-canton variables (30 percent, and even 19 percent once including some random effects for some of them).

5. Results

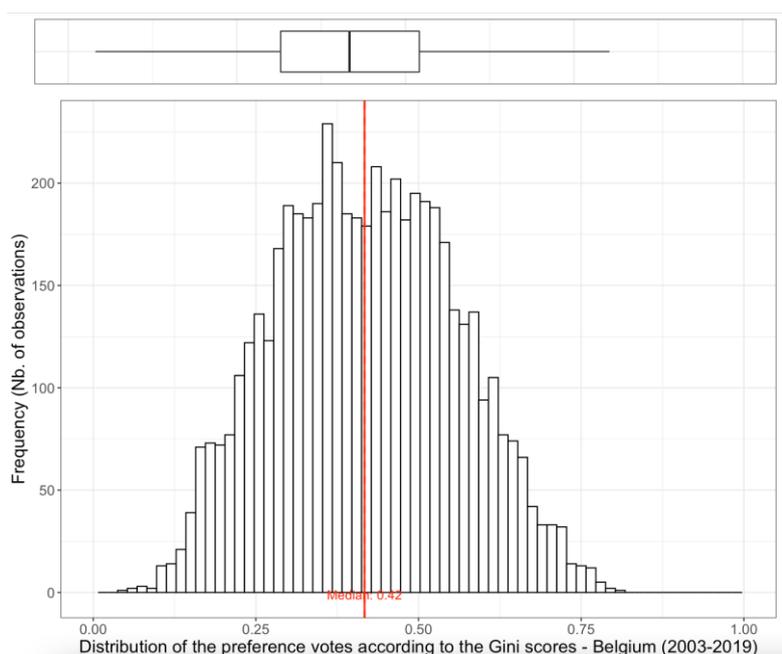
To begin with, we look at some descriptive statistics of the different variables of interest included in the empirical analyses. Table 1 summarizes these statistics for the dependent

⁴ We only look at the distribution of preferential votes on lists of effective candidates. The lists of successor candidates (and therefore also the composition of successor lists) are excluded from the analysis.

variable (Gini-coefficient), the three urbanicity indicators and the two variables indicating the presence of officeholders on party lists.

Table 1: Descriptive statistics on variables of interest in hierarchical models.

	N	Mean	Median	St. Dev.	Min.	Max.
Gini	5,308	0.42	0.42	0.13	0.04	0.80
Population density	5,308	1,005.16	342.99	2503.85	25.69	19,986.23
Population mobility	5,308	100.47	95.64	28.65	34.39	220.66
Population diversity	5,308	5.93	3.94	5.65	0.41	30.34
Number of candidates on list	5,308	15.86	16	5.81	4	24



The Gini-coefficient in our dataset is normally distributed with a mean and median of 0.42. The lowest Gini-score – and therefore highest level of intraparty competition – can be found on the Ecolo list for the electoral district of Luxembourg in 2003, and in the canton of Florenville specifically. Indeed, the 198 preference votes casted for the four effective candidates on that list are distributed almost perfectly equal (i.e. 49, 54, 51 and 44 votes respectively). The highest Gini-score – and thus the strongest concentration of preference votes we detected in the entire

dataset – is linked to the party list of Cdh for the electoral district of Hainaut in 2019, in the canton Merbes-le-Château. Unsurprisingly, David Lavaux, who since 1995 has been the mayor of Erquelinnes which is one of the two municipalities included in this electoral canton, strongly dominates intraparty competition in ‘his’ canton with a more rural character. With 1,520 preference votes behind his name, Lavaux beats the first-placed candidate Catherine Fonck, federal Lower House incumbent who only collected 376 votes, by a landslide. Apart from these two candidates, only two other candidates received more than 100 preference votes. None of the remaining 14 candidates even received more than 25 votes, leading to a very high score on the Gini-coefficient.

As for the urbanicity indicators, we see that especially population density and diversity have more rightly skewed distributions. While density is lowest in the electoral canton Etalle in Luxembourg (25.69 inhabitants per square kilometer), it reaches one of the highest levels in Europe in the electoral canton of Saint-Gilles (19,986.2 inhabitants per square kilometer) in the Brussels capital district (or BHV district before the 2014 election). Regarding population diversity, we find the lowest absolute number of inhabitants with a different nationality at birth in the electoral canton Horebeke in the electoral district of West Flanders. In 2003, only 0.41% of all inhabitants had a different nationality at birth. The electoral district of Molenbeek-Saint-Jean reported the highest share of inhabitants with a different nationality at birth in 2019 (i.e. 30.34%). Finally, population mobility expresses the number of inhabitants moving in and out of the canton per 1,000 inhabitants. Mobility is highest in Saint-Gilles with 220.64 inhabitants either moving in or out of the canton in the election year 2010, and lowest in the canton Comines-Warneton where only 34.39 out of 1,000 inhabitants emigrated or immigrated in 2003.

Table 2 reports the results of five hierarchical linear models which analyze the level of intraparty competition on 5,308 lists-in-cantons over five consecutive Lower House elections in Belgium (2003-2019). Model 1 includes the three urbanicity indicators and the number of

candidates on the list as control variable, as well as the party family and election year fixed effects. The results indicate that population density and mobility bear no effect on the Gini-coefficient. Population diversity, on the contrary, is significantly associated with higher Gini-scores and thus stronger concentration of preference votes on party lists. This runs counter to H1c which expected to see higher dispersion of preference votes over candidates in more diversely populated areas. The coefficient indicates that a percentage point increase in diversity (i.e. the percentage of inhabitants born with a different nationality) increases the Gini-coefficient by 0.02 points. An increase by one standard deviation in population diversity can lead to a substantial 0.11 increase in the Gini-score. The number of candidates on the list also leads to higher concentrations of preferential votes. This might indicate that voters are more likely to use informational shortcuts (e.g. highest ranked candidate, incumbent) to simplify their voting decision when party lists tend to get longer.

In Model 2, the two variables tapping the composition of party lists are added to the analysis. As expected, the presence of ‘big fish’, both locally rooted in the canton as well as incumbents who are not from the canton lead to an increase in the Gini-coefficient and thus a decrease in the level of intra-party competition. The effect is stronger for locally rooted candidates than for incumbents in general. Disaggregating the preferential vote scores to the canton levels already shows the importance of local prominent politicians in explaining intra-party competition dynamics. An analysis based on the municipal results (2014 and 2019) will follow in future iterations of this paper and is expected to impact the Gini-scores even more. For now, we find support for H2 that the presence of local ‘big fish’, either incumbents or local officeholders living in the canton, decreases intra-party competition.

Table 2: Hierarchical linear models analyzing intra-party competition (GINI-coefficient scores) on party lists-in-cantons.

	Model 1	Model 2	Model 3	Model 4	Model 5
Population density	-0.001 (0.005)	0.004 (0.005)	0.01 (0.005)	0.004 (0.005)	0.004 (0.005)
Population mobility	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Population diversity	0.02*** (0.003)	0.01*** (0.004)	0.01*** (0.003)	0.01*** (0.004)	0.02*** (0.003)
Proportion locally based political officeholders on list		0.23*** (0.02)	0.59*** (0.07)	1.44*** (0.27)	0.93*** (0.09)
Proportion incumbents on list		0.12*** (0.01)	0.13*** (0.01)	0.12*** (0.01)	0.13*** (0.01)
Number of candidates on the list	0.01*** (0.001)	0.01*** (0.001)	0.01*** (0.001)	0.01*** (0.001)	0.01*** (0.001)
Prop. locally based officeholders x Population density			-0.06*** (0.01)		
Prop. Locally based officeholders x Population mobility				-0.26*** (0.06)	
Prop. Locally based officeholders x Population diversity					-0.09*** (0.01)
Party family fixed effects	Yes	Yes	Yes	Yes	Yes
Election year fixed effects	Yes	Yes	Yes	Yes	Yes
Constant	0.20*** (0.06)	0.18*** (0.06)	0.17*** (0.06)	0.14*** (0.06)	0.16*** (0.06)
AIC	8,134.84	11,845.02	11,870.36	11,862.94	11,909.11
N (level 2)	215	215	215	215	215
N (level 1)	5,308	5,308	5,308	5,308	5,308

Notes: Standard errors are indicated between brackets; * p < 0.05, ** p < 0.01, *** p < 0.001.

Models 3, 4 and 5 add an interaction term between each of the urbanicity indicators on the one hand and the share of locally rooted ‘big fish’ (i.e. the proportion of locally based officeholders) on the other hand. Separate models are presented as a simultaneous inclusion leads to multicollinearity issues (VIF scores amount to substantially high levels). In each of these models, we see a negative and significant coefficient for the interactive term, which is in line with H3. The effect of locally rooted ‘big fish’ is conditional on the urban character of the canton, in terms of density, mobility as well as population diversity. The negative sign of the interactive terms indicates that the presence of these prominent politicians is less important when the urban character increases. Put differently, in highly urban settings the level of intraparty competition will be high regardless of the presence of locally rooted incumbents on the list. In the more rural cantons in our dataset, however, we see stronger concentrations of preferential votes on party lists where locally rooted candidates are present.

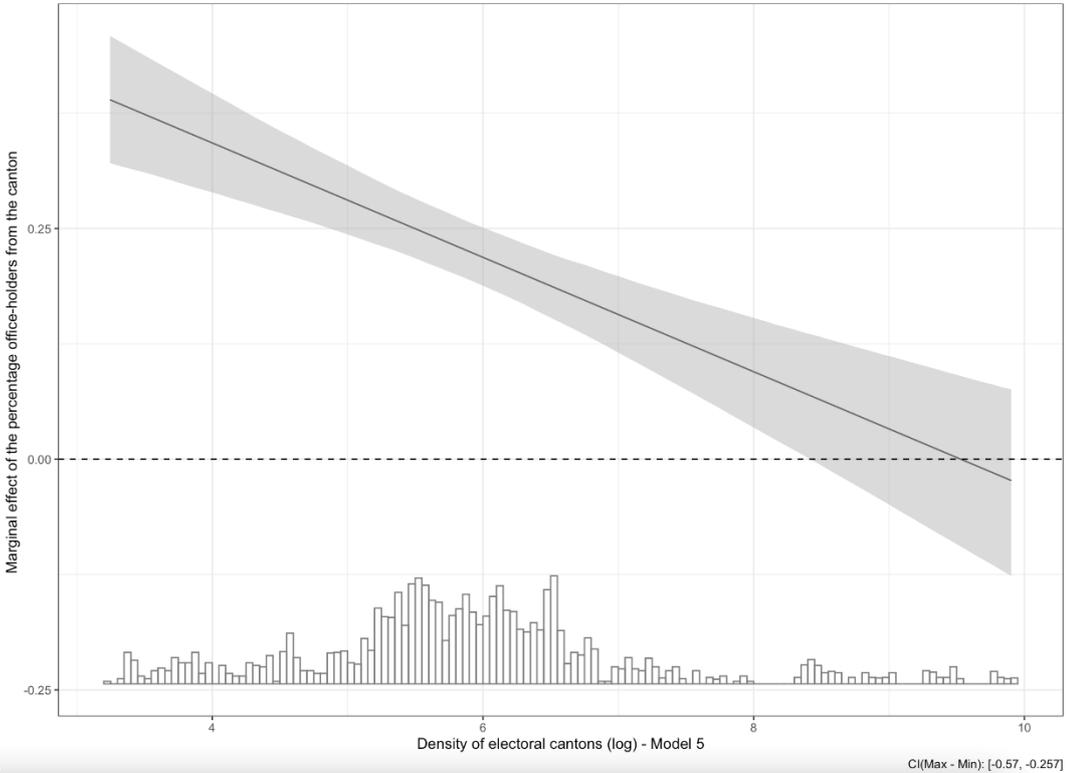


Figure 1: The average marginal effect of the presence of locally rooted officeholders conditional on the population density of the canton. Grey areas indicate 95% confidence intervals. The distribution of population density is summarized in the histogram. Estimates are obtained from Model 3 in Table 2.

To ease the interpretation of these interactive effects and their substantive effect sizes, we show the marginal effects of the presence of locally rooted officeholders conditional on the values of the three urbanicity indicators. Figure 1 shows the average marginal effect of the presence locally rooted prominent politicians conditional on the values for population density in the canton. While an increase in locally based officeholders clearly has a positive effect on the Gini-coefficient in areas with low density, we see that their presence makes no difference in the highly dense cantons present in the dataset. In terms of substantive interpretation, a 0.10 increase⁵ in the proportion of prominent locally rooted politicians might lead to 0.33 increase in the Gini-coefficient in very low density areas such as the canton of Fauvillers in the electoral district of Luxembourg, a 0.12 increase in the Gini-coefficient for the canton of Liège and no significant increase in the different cantons of the Brussels capital region.

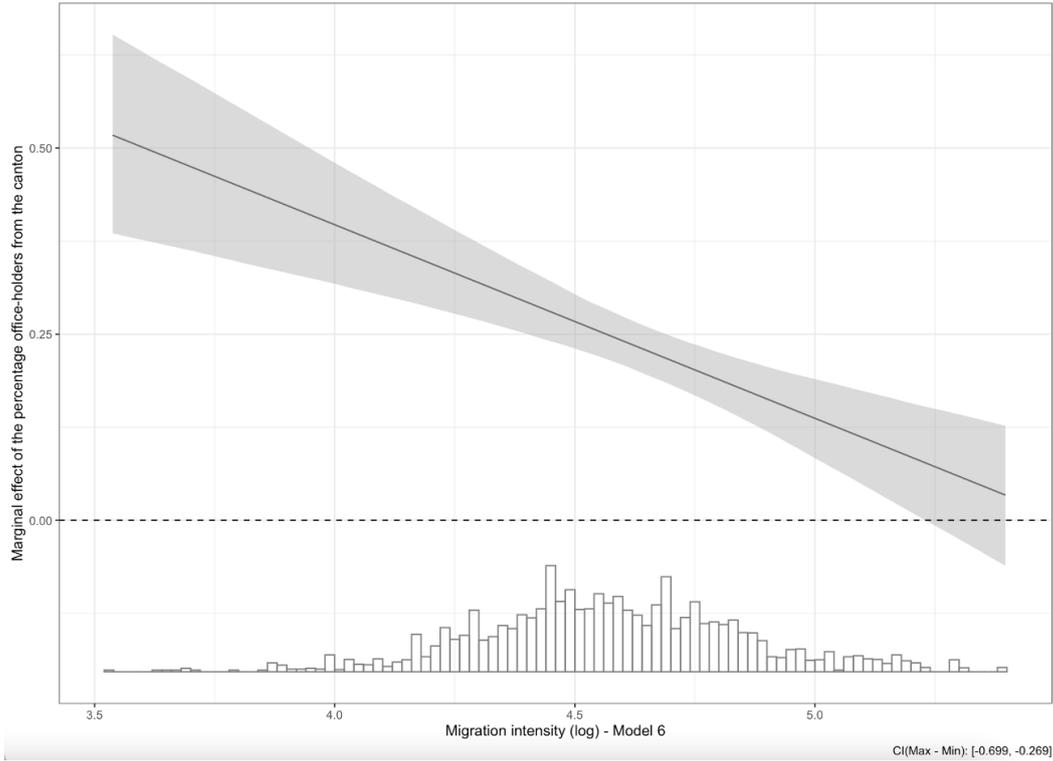


Figure 2: The average marginal effect of the presence of locally rooted officeholders conditional on the population mobility in the canton. Grey areas indicate 95% confidence intervals. The distribution of population mobility is summarized in the histogram. Estimates are obtained from Model 4 in Table 2.

⁵ A one-point increase is nonsensical as the locally rooted office-holders variable represents a proportion, and the one point increase implies moving from a list with 0 officeholders to a list with nothing but officeholders, which is theoretically possible but empirically unobserved, as Table 1 shows.

Figure 2 presents a similar conditional marginal effect plot conditional on population mobility scores. In those cantons where mobility is low, for instance where around 35-55 out of 1,000 inhabitants have moved in or out of the canton during the election year, an increase of 0.10 in the share of locally rooted prominent politicians can lead to a 0.5 increase in the Gini-score. Indeed, the effect of those politicians on intra-party competition is quite substantial in areas with more static populations. Figure 2 also shows that the marginal effect is only insignificant for a very small set of hypermobile cantons (180-220 out of 1,000 inhabitants moving in or out) which are gain located in the Brussels capital region.

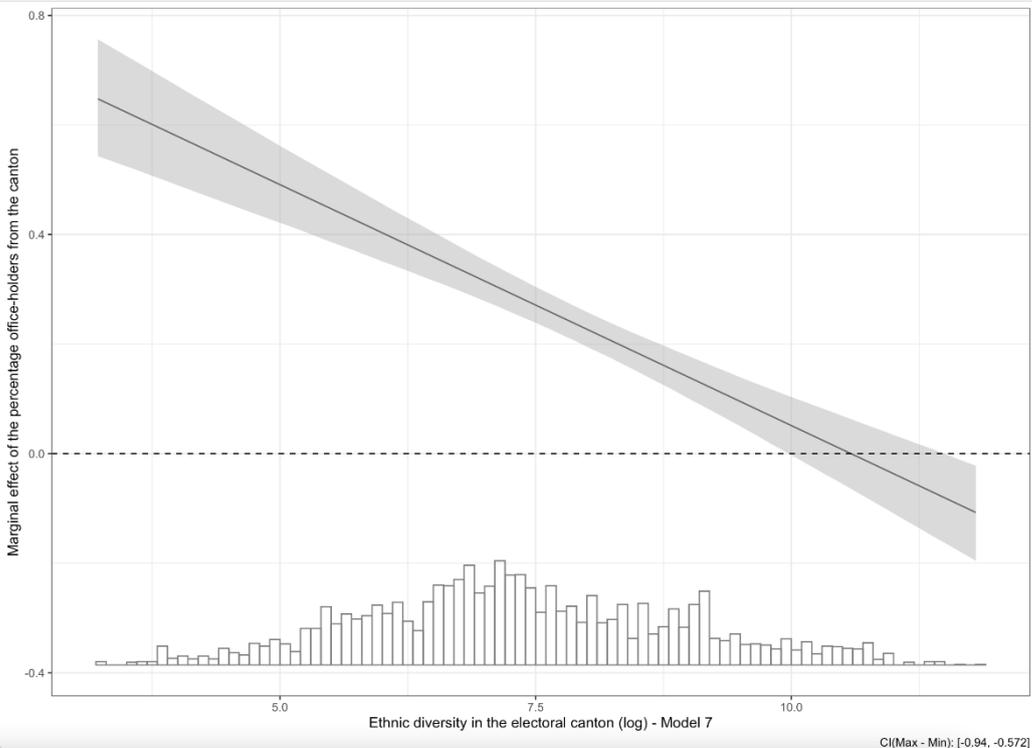


Figure 3: The average marginal effect of the presence of locally rooted officeholders conditional on the population diversity in the canton. Grey areas indicate 95% confidence intervals. The distribution of population diversity is summarized in the histogram. Estimates are obtained from Model 5 in Table 2.

Finally, Figure 3 shows a similar story for the conditioning effect of the third urbanicity indicator. Big fish are able to dominate intra-party competition in areas where diversity is very low, but in highly diverse cantons their presence makes no difference for the Gini-coefficient score.

6. Discussion and conclusion

In this paper, we analyzed how intraparty competition patterns differ between urban and rural settings. The preliminary findings indicate that urban characteristics indeed shape the concentration or dispersion of preference votes on party lists. Moreover, we find that the urban nature of an area strongly determines whether prominent politicians can dominate intraparty competition.

We envisage a number of next steps for this project, which we will briefly discuss next. First, while this paper analyzes canton-level data, we aim to analyze the municipality level data for the two most recent federal elections in Belgium. As municipalities provide stronger levels of attachment both from the voter and candidate perspective, we expect to see stronger effects and confirmations of your hypotheses based on the analysis of this second dataset. Second, the current analyses control for the number of candidates on the list, but we aim to take into account party magnitude in future iterations of the paper. In line with the arguments provided by Crisp et al. (2007) the expected number of seats to be won by each party in a given district might be a more accurate indicator of the degree of competition on a list than ‘copartisan crowdedness’ (i.e. the total number of candidates on the list). Third, we also want to run analyses excluding the Brussels cantons, as these indicate the more extreme values on the urbanicity indicators and therefore beg the question whether much of the reported results are driven by voting behavior in the capital region.

Fourth, we intend to better include the effects of political parties in our future models because the latter determine the degree of intraparty competition in two ways. The first reason is related to the historic electoral context of cantons: Belgian political parties are differently established at the local level with varying local electoral successes. Therefore, some of these cantons are

local party strongholds, resulting in a stronger concentration of power on a few local politicians which affect personalization of elections. The second reason is about the characteristics of political parties themselves. While some of them are long-established parties with larger “tanks” of political persons for recruitment; others are new parties with more limited organizations for candidate selection. In those parties, voters are less familiar with the parties – and their candidates – while campaign tend to be concentrated on the prominent figures of the party (Van Aelst, 2007). Overall, a better sophistication of the party effects should, therefore, be taken into account. Hence, exploratory manipulations show that random effects of political parties substantially explain up to 50% of the variance remaining at the canton level in our models. A more simplistic and minimal solution would be to split models for the different parties as robustness-checks.

Last but not least, our first analysis of the data reveals that intraparty competition seems to be – almost systematically – a non-linear political phenomenon: the degree of competition seems to increase as our three indicators of population increases whereas it stabilizes – or even decreases – after having reached a certain threshold. This observation is also verified when considering the profiles of candidates such as list incumbents (see appendix). The inclusion of such quadratic effects would, however, require careful thinking as this means three terms interactions with lists and cantons’ variables.

In conclusion, the first results of this paper confirmed that intraparty competition is a complex phenomenon that needs to be unpacked at multiple levels of analysis (candidate, list, party, cantons, district and over time) in which urbanization plays unmistakably a decisive role. That is to say, the nature of competition between candidates is heavily conditioned by the places in which they run their electoral campaigns.

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Appendix.

A1. Figure of the Gini scores according to proportion of list incumbents

