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Consequences of changing the electoral system for the model of political competition – The case of the 2018 elections to municipal councils in Łódź Voivodeship

Abstract. The article is an attempt to assess the effects of the 2018 reform of local electoral law on a medium scale. The main goal is to investigate the consequences of these changes for the model of political rivalry. Through the use of a selection of quantitative methods, the authors verify hypotheses regarding the proportionality of local elections and the mechanical effect of the electoral system. The overall aim is to establish to what extent the new electoral system deforms the voting results when distributing seats among

the electoral committees. Apart from the hypotheses, the authors also verify whether Łódź Voivodeship is a suitable case study and representative of national trends.

Keywords: electoral system, Łódź Voivodeship, municipal councils, proportionality of elections, electoral formula.

Introduction

Łódź Voivodeship is located in the very centre of Poland, which means it is equally influenced by any of the other regions. From the electoral perspective it is situated between the eastern-south-eastern part of the country, which is generally more conservative and for some time has been voting for right-wing parties, and the western-north-western part, which is generally more liberal and in the recent elections showed more support for the liberal and left-wing parties. It is also reflected in the Łódź Voivodeship itself, with the capital (3rd biggest city in the country) strongly preferring liberals and social-democrats in the last decade, while the rural areas are characterised by an increase in conservative voting. Furthermore, on its territory, one may find the municipality of Wieruszów, which is generally regarded as one of the most representative municipalities of the whole country as its electoral results are very close to national ones and therefore it has held trial votings before general elections for many years now. All the above suggests that the Voivodeship could be an adequate case study in order to analyse any changes in the electoral law and the practical effects. As most of the researchers agree that the electoral system is the key determinant of the final electoral result, especially when it comes to the distribution of seats (see Rae, 1971; Taagepera, Shugart, 1989; Rule, Zimmermann, 1992; Lijphart, 1994; LeDuc, Niemi *et al.*, 1996; Norris, 1996, 1997) and the 2018 electoral reform made significant changes to the rules of the game, the authors have decided to have a closer look at the Łódź Voivodeship.

Literature review

Local elections are one of the predominant issues for political science research. Their analysis is both general (Oliver *et al.*, 2012) and specific (Michalak, 2021; Urbaniak, 2018). Even though they are regarded as second-order elections (Reif, Schmitt, 1980; Schackel 2014; Schmitt, Teperoglou, 2017; Pallarés, Keating, 2003; Bechtel, 2012; Majcherkiewicz, 2018) still they are of utmost importance.

The impact of the electoral system, with particular emphasis on the electoral formula, on the result of the election process remains in the centre of interest of researchers. To list only the most important publications devoted to this area, one

should point out those focusing on the legal and political conditions (Duverger, 1951, 1984; Rae, 1967; Rokkan, 1968; Rae *et al.*, 1971; Gallagher, 1991, 2005; Lijphart, Gibberd, 1977; Lijphart 1990; Benoit, 2000; Baldini, Pappalardo, 2009; McGhee, 2014, 2017; Shugart, Taagepera, 2017a, b), on political consequences (Benoit, 2007), devoted to social significance (Blais, Carty, 1991) or related to the size of polity (Dahl, Tufte, 1973; Denters *et al.*, 2014).

Changes in the electoral system used in local government units in Poland have also been the subject of numerous studies. In recent years, they initially focused on the effects of changes to the system that resulted in the adoption of the Electoral Code (Dz.U. 2011, nr 21, poz. 112), which were applied in practice for the first time in the 2014 elections (Gendźwiłł, Żółtak, 2016; Flis, Stolicki, 2017). The changes introduced in 2018 enjoyed no less research interest, which should also be related to their scope (going beyond the electoral system in the strictest meaning of local government units). They mainly remained in the field of legal sciences, such as analysis of the legal and constitutional grounds regarding both the content of the changes and the procedure for their adoption by the Polish authorities (Rakowska-Trela, 2018a), compliance with the principle of the democratic state of law (Rakowska-Trela, 2018b) or with standards functioning at the pan-European level (Rulka, 2018).

The reform introduced in 2018 was also the subject of numerous studies in political science and interdisciplinary studies, with the leading role of political science (Michalak, 2018, 2019, 2021; Gendźwiłł, Żółtak, 2020; Neumann 2020; Urbaniak, 2018). A research perspective similar to that used in this article was used by K. Glinka (2021) in relation to the municipalities of Lower Silesian Voivodeship. The reform introduced in 2018 was also the subject of earlier research by the authors of this article, both from the perspective of forecasting its effects and the subsequent verification of the effects on a national level (Klonowski, Onasz, 2018, 2021).

2018 reform

The local administration in Poland has undergone numerous changes since the fall of the communist regime. When it comes to the local elections, two moments require special attention. First of all, the year 1990, where the first self-governing units were created (at the municipal level only) and then the year 1999 when the administrative reform took effect and the self-governing administration was created at the county and Voivodeship level, and the municipalities were redesigned. It finally gave us three types of councils, which are elected directly; while the executive is elected directly only at the municipal level (since 2001). Throughout the next decades, the electoral law changed on a couple of occasions

alternating between proportional and relative majority methods. The last reform took place in 2018 and was one of the deepest reforms since 1999. First of all the electoral method moved from relative majority to proportional with the use of d'Hondt system to calculate the seat distribution, with the threshold settled at 5%. Simultaneously the structure of the constituencies changed in municipalities with more than 20,000 inhabitants from 1 seat per constituency to 5–8 sets. While in the case of city counties (CCS) it was reduced from 5–10 to 5–8. There were also other changes like the prolongation of the terms of the councils and executive from 4 years to 5, or the limiting of the maximum terms allowed for a person occupying the mayoral position to two terms only, however in this article we have just limited our interest to the electoral method and the size of constituencies.

Research design

The goal of this article is to investigate how the change of the electoral system in the municipalities with over 20,000 inhabitants (without CCS) has influenced the conditions of political rivalry there. Focusing on the effects of the change of the electoral formula, the authors have put forward the following research hypothesis:

1) The reestablishment of the proportional system in the municipalities with over 20,000 inhabitants (without CCS) will result in changing the model of political rivalry through the increase of the degree to which the electoral results (measured by the number of seats obtained) reflect the real political attitudes of the local societies.

2) The reestablishment of the proportional system in the municipalities with over 20,000 inhabitants (without CCS) will result in the decreasing of the power of the mechanical effect of the electoral system.

In order to verify the thesis put forward, the authors used the voting results and elections results to the municipal councils from 2014 and 2018, both at the Łódź Voivodeship level as well as the national one. The municipalities where the election was run on a different date or no election took place were excluded from the study. It refers to two kinds of cases: 1) elections to the municipality council of Zielona Góra (CCS) in 2014, which were run on a later date due to the changes in the borders of this municipality; 2) elections to the municipality councils where no voting took place, as the number of candidates was equal to the number of seats.¹

For the purposes of the study, the municipalities have been categorized into 3 groups:

Research group: the municipalities with over 20,000 inhabitants (without CCS) within the Łódź Voivodeship. In 2014 the electoral system applied in this group

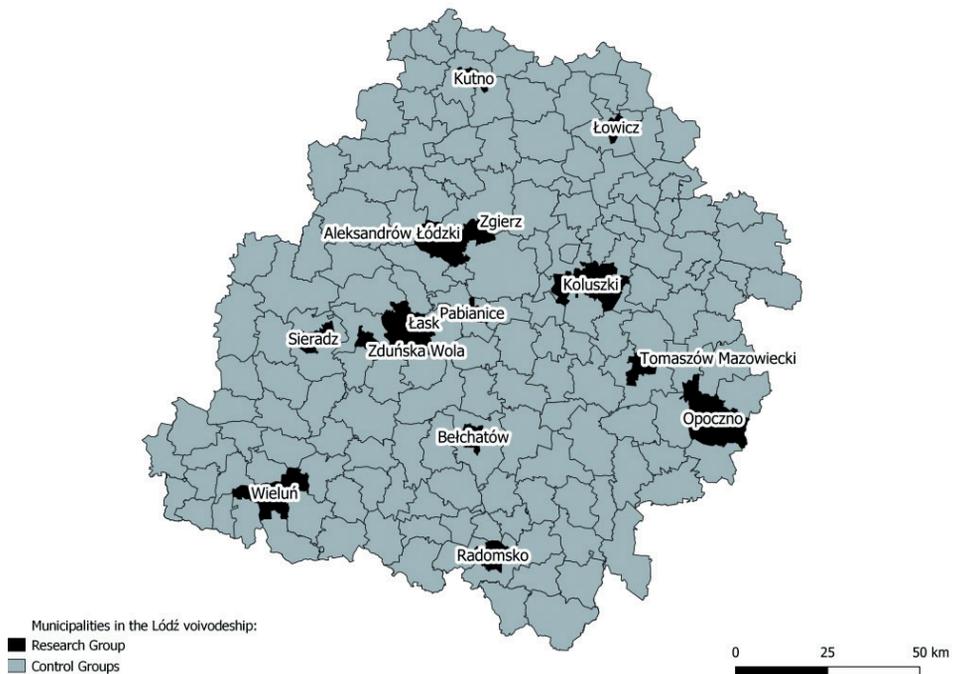
¹ There was 1 municipality of this kind in 2014 and 14 in 2018.

was identical to that in the first control group. Afterwards, the system was greatly changed and in 2018 it was identical to that used in the second control group. The municipalities included in the research group are presented on Map 1.

First control group: the municipalities with below 20,000 inhabitants within the Łódź Voivodeship. The electoral system applied there in 2018 was identical to the system applied in 2018.²

Second control group: the municipalities possessing city-county status (CCS) within the Łódź Voivodeship. The electoral system applied has undergone only limited changes between the 2014 and 2018 elections.³

In order to compare the state of political rivalry and its changes in the municipalities within Łódź Voivodeship and in the overall set of municipalities in Poland, the same categorization into three groups was applied at the national level.



Map 1. The municipalities included in the research group

Source: Map prepared by Paweł Stepień (Faculty of International and Political Studies, University of Lodz).

² There were only minor changes in some municipalities (eg. changes in the borders of the constituencies) which were caused for example by demographic processes. Nevertheless, the framework of the electoral system remained unchanged.

³ The major change was the decrease of the maximum number of candidates allowed in one constituency. The limit was lowered from 10 to 8.

The model of political rivalry was studied with the use of a series of quantitative indexes:

For measuring the level of the mapping of the set of individual electoral decisions of the voters the authors applied a Proportionality Index (PI), basing it on the Loosemore–Hanby Disporportionality Index (Loosemore, Hanby, 1971: 467–469). The value of this index is calculated using the following formula:

$$PI = \left(1 - \sum_{i=1}^n \frac{|v\%_i - s\%_i|}{2} \right) * 100$$

Where $v\%_i$ relates to the percentage of votes obtained by party i , $s\%_i$ refers to the percentage of seats obtained by party i and n to the number of parties that obtained at least 1 vote or 1 seat. The indicator ranges from 0 to 100. The value of 100 means full proportionality (the percentage of seats in each grouping is equal to the percentage of votes obtained), and the value of 0 represents extreme disproportionality (all seats were obtained by the party that did not get any votes).

For measuring the number of relevant participants of political rivalry, both on the voting and the municipal council composition levels, the Markku Laakso and Rein Taagepera's Effective Number of Parties Index was applied. The index is calculated using the following formula:

$$ENP_v / s = \left(\sum_{i=1}^n p\%_i^2 \right)^{-1}$$

Where $p\%_i$ refers to the percentage of votes (for ENP_v) or seats (for ENP_s) obtained by party i and n refers to the number of parties that obtained at least 1 vote (for ENP_v) or 1 seat (for ENP_s). The higher the value of the ENP index, the higher the number of relevant parties in the competition for power.

For measuring the power of the mechanical effect of the electoral system (in separation from the psychological effect) a modified ENP index, Effective Number of Parties Reduction Index (ENPRI), was applied. The index is calculated using the following formula:

$$ENPRI = 1 - \left(\frac{ENP_s}{ENP_v} \right)$$

Where ENPs refers to ENP at the seats level whilst ENP_v to ENP at the votes level. It indicated how strong the mechanical effect of the electoral system is when referring to the number of relevant participants of the rivalry – how strong the system reduction of the effective number of parties between the voting and the council composition is. The value 0 means no reduction, while the value 1 (purely hypothetical) means a full reduction (there is no effective player on the voting level – none of the voters have their representation). High scores of the ENPRI index mean that the mechanical effect is very strong – a significant part of electoral committees that are relevant at the voting level (and therefore they are important in the eyes of the voters) do not keep that status at the seats level.

Data sources and methods of their presentation

The data used in the research comes from the generally accessible webpage of the National Electoral Commission in Poland, as well as the Polish National Electoral Bureau, and was made accessible at the request of the authors.

Fundamental data, especially the values of indexes used in the article, together with their descriptive statistics, have been presented in tables and box-plots. That particular type of chart allows to depict a wider spectrum of data, compared to its simpler alternatives. Box-plots are used for the graphic demonstration of the locality, spread and skewness of groups of numerical data through their quartiles. Box-plots present the data through the use of a couple of elements. First of all the box contains the main part of the data, where its lower edge equals the value of the 1st quartile (lower quartile), and while its upper edge equals the value of the 3rd quartile (upper quartile). Therefore the length of the box presents the interquartile range (the distance between the 25th and 75th percentiles of the data). A longer box means the greater diversification of the values presented in the chart. Inside of the box, one can find two additional markings: the horizontal line indicates the value of the median, whilst the “x” the arithmetic mean. The box is also accompanied by two vertical lines – whiskers (the upper and lower ones). Each of them has a length of 150% of the value of the interquartile range. The values, which are out of the range of the whiskers are presented by dots – they are treated as outliers (DuToit, Steyn *et al.*, 2012).

Analysis

Based on the data from the National Electoral Commission, one can indicate several significant changes between the 2014 and 2018 elections.

Table 1. Averaged values of the ENPs, ENPv and PI index (2014 and 2018)

Type of municipality		ENPv 2018	ENPv 2014	ENPs 2018	ENPs 2014	PI 2018	PI 2014
Municipalities below 20,000 inhabitants	Łódź Voivodeship	3,20	3,80	2,36	2,70	78,68	77,96
	Poland	3,14	3,74	2,31	2,67	78,86	77,98
Municipalities over 20,000 inhabitants (without CCS)	Łódź Voivodeship	4,11	5,84	3,14	3,09	86,30	66,53
	Poland	3,69	5,03	3,03	3,05	89,53	72,64
CCS	Łódź Voivodeship	3,00	4,21	2,29	3,24	85,94	86,64
	Poland	3,95	4,63	2,93	3,25	85,43	83,22
All municipalities	Łódź Voivodeship	3,27	3,97	2,42	2,74	79,40	77,20
	Poland	3,22	3,91	2,41	2,72	80,19	77,54

Source: Authors' own compilation on the basis of the data of the National Electoral Commission.

Analysis of the data in Table 1 shows that the Łódź Voivodeship is following the main national tendencies, but also shows some specific regional characteristics. First of all, we may notice an increase in the proportionality of the elections, as the PI index has risen in both the study group and the first control group. The only exception here is the city counties (CCS), but as we have only 3 such cases in the voivodeship, those results may be misleading. That PI increase is most visible in the research group, especially when one has a look at Chart 1. The median in 2018 is significantly higher than in 2014. Actually, the lowest PI results from 2018 are just a bit lower than the highest results in 2014 (this is not confirmed on a national scale, where the difference between the minimum PI value in 2018 and the highest value in 2014 is $-36,28$). The span of the results has also significantly decreased in comparison to the 2014 election and it is worth noting that this tendency is not repeated in the 1st control group. Slight changes in the values of this index can be explained by the consolidation of the local political scene or other factors, but such a huge shift is definitely caused by the change of the electoral formula.

Table 2. Number of municipalities according to changes of ENP, PI indexes (2014 and 2018)

Type of municipality	ENPv 2018		ENPs 2018		PI 2018	
	increase	decrease	increase	decrease	increase	decrease
Municipalities below 20,000 inhabitants	49	111	61	94	84	76
Municipalities over 20,000 inhabitants (without CCS)	3	11	6	8	14	0
CCS	0	3	0	3	2	1
All municipalities	52	125	67	105	100	77

Source: Authors' own compilation on the basis of the data of the National Electoral Commission.

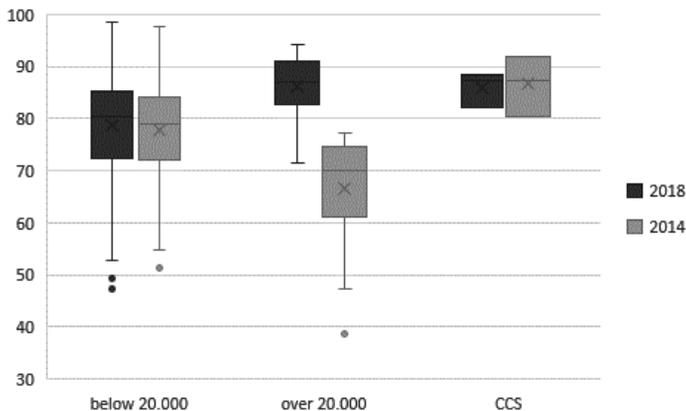


Chart 1. Aggregated values of PI (2014 and 2018) – scope of changes

Source: Authors' own compilation on the basis of the data of the National Electoral Commission.

When it comes to the effective number of parties at seats level we have most of the municipalities following the national decreasing tendency, with the exception of the research group. The ENPs increase in the research group is not very significant, but it is worth noting that within the group there have been more municipalities that actually showed higher values (check Table 2). That led us to analyse a bit deeper the municipalities of that kind.

The change is far more visible when we have a look at the ENP at the votes level. The ENPv change within the research group between 2014 and 2018 corresponds with the national tendencies (clear decrease). The degree of this change is even higher than the one observed at the national level (29.66% decrease in Łódź Voivodeship versus 26.66% decrease in the whole country [respectively -1.73 and -1.34 in absolute values]). Still, the values of the index observed for the research group in Łódź Voivodeship are higher than at the national level: +11%

in 2018 and +16% in 2014 (+0.42 and 0.81 respectively in absolute values). One may also notice that the distance between those values has decreased.

Deepening the analysis it is worth noting how the system change has influenced the relations between ENPs and ENPv. It will allow one to indicate the mechanical effect of the electoral system (taking into account the psychological effect which is crucial in shaping the ENPv values).

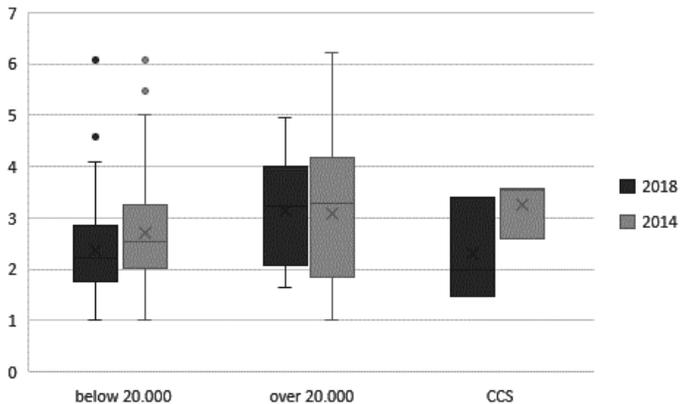


Chart 2. Aggregated values of ENPs (2014 and 2018) – scope of changes

Source: Authors' own compilation on the basis of the data of the National Electoral Commission.

In both the research group and the first control group there have been higher absolute differences observed between the ENP on the votes level (v) than on the seats level (s). It means that in the Łódź Voivodeship the electoral systems applied had a greater influence on the reduction of the number of relevant players in the councils (ENPs) than on the number of players relevant from the voting perspective and therefore also the social one. In the absolute values, there has been a visible reduction of the effect in all types of the municipalities – stronger in the research group and first control group. It should be underlined here that in the case of the first control group it is a sign of the adjustment of the electoral players to the changes (2018 was the second election in a row run with the use of the same system, which allows to presume that participants of the electoral process have used the knowledge and experience gained in 2014). While in the case of the research group it shows the mechanical effect of the electoral system applied. The value of the index for the research group in 2018 is very similar to the one observed in CCS (where the electoral system in 2018 was nearly identical to the system in previous elections).

Between 2014 and 2018 there were important changes in the ENPRI index. When referring to the overall set of municipalities in Łódź Voivodeship there has been a significant reduction of the mechanical effect of the system change (–5.03 percentage points [–16.24%]), which corresponds with both the tendency and the power of the effect on the national level. In particular types of municipalities, the tendencies and

the power also correlate between Łódź Voivodeship (LV) and the whole country. It has been strongest in the research group (−23.52 percentage points [−49.92%] for LV versus −21.49 percentage points [−54.54%] for Poland). It was still quite visible for the first control group (−11.21 percentage points [−20,84%] for LV versus −9,53 percentage points [−20.30%] for Poland). While in the second control group it remained nearly unchanged in Łódź Voivodeship (+0,65 percentage points [+2.82%]), which does not fully match the changes on the national level in this group (−3,95 percentage points [−13.29%]). The values for CCS may be misleading due to the very limited number of cases within the group (3), which makes any change in any of those municipalities far more significant. Still, it is worth underlining that the ENPRI values in the research group (and their equivalent at the national level) have undergone huge changes, as one should describe its reduction by more than a half. While one could explain the identical direction of changes (although with reduced power) in the first control group and in the second one at the national level by the adjustment of the actors to the electoral rules and the consolidation of the local party systems, the immense change in the research group may be elucidated only by taking into consideration the electoral system change. The shift of that index should be interpreted as the reduction of the power of the mechanical effect of the electoral system by at least a half. Still one should remember about other consequences of the system change that cannot be epitomized by the ENPRI value like the *de facto* elimination of one-man committees (or committees competing in one constituency only).

Table 3. Mechanical effects of the electoral system according to the effective number of parties

Type of municipality		ENPv-ENPs 2018	ENPv-ENPs 2014	ENPRI 2018	ENPRI 2014
Municipalities below 20,000 inhabitants	Łódź Voivodeship	1.75	3.14	in %	
	Poland	1.38	2.36	42.58	53.79
Municipalities over 20.000 inhabitants (without CCS)	Łódź Voivodeship	0.97	2.75	23.60	47.12
	Poland	0.66	1.98	17.91	39.40
CCS	Łódź Voivodeship	0.71	0.97	23.67	23.02
	Poland	1.02	1.38	25.78	29.73
All municipalities	Łódź Voivodeship	0.85	1.23	25.94	30.00
	Poland	0.81	1.19	25.16	30.38

Source: Authors' own compilation on the basis of the data of the National Electoral Commission.

Table 4. Values of the ENPv, ENPs and PI index (2014 and 2018) in municipalities with over 20,000 inhabitants and the CCS

Municipality	ENPv 2018	ENPv 2014	ENPs 2018	ENPs 2014	PI 2018	PI 2014
Over 20,000 inhabitants (study group)						
Bełchatów	5,80	5,70	3,92	2,01	81,01	57,49
Kutno	2,76	4,39	2,11	1,00	84,38	38,66
Łask	4,44	5,82	3,59	3,47	90,38	67,13
Łowicz	4,58	8,40	3,71	4,2	89,29	73,51
Koluszki	2,43	4,17	2,01	2,55	91,03	74,28
Opoczno	5,11	6,44	4,37	4,74	91,21	77,19
Pabianice	1,77	5,20	1,63	2,46	94,29	69,18
Radomsko	5,75	5,52	4,28	3,37	86,3	75,83
Sieradz	3,58	5,38	2,85	3,17	87,56	73,39
Tomaszów Mazowiecki	3,88	4,97	2,67	1,31	81,57	47,26
Wieluń	6,73	8,00	4,96	6,21	83,06	75,52
Zduńska Wola	3,65	6,86	2,00	3,37	71,36	70,74
Zgierz	4,19	8,56	3,60	4,17	91,61	69,01
Aleksandrów Łódzki	2,89	2,37	2,24	1,21	85,13	62,29
CCS (second control group)						
Łódź (CCS)	2,23	3,92	1,47	2,59	82,1	80,55
Piotrków Trybunalski (CCS)	4,27	4,47	3,41	3,55	88,44	87,48
Skierniewice (CCS)	2,50	4,24	2,00	3,59	87,28	91,88

Source: Authors' own compilation on the basis of the data of the National Electoral Commission.

Case studies

The most extraordinary case, both on the regional and national level, is definitely the municipality of Kutno. It is the only municipality of its type in which one committee managed to win all the seats in the council in the 2014 elections. The committee in question was a committee organized by the long-lasting president

of Kutno – Zbigniew Burzyński. Even though they managed to get only 39% of the votes they won 100% of the seats. Such a disproportionality was possible only because of the electoral formula applied. Thanks to careful planning, good organization and a significant bit of luck they achieved such a result. 4 years later that committee got more votes (slightly over 50%), but managed to win only 57% of the seats.

A slightly similar case was the municipality of Tomaszów Mazowiecki. The results of the 2014 elections also proved to be highly disproportional with one committee (Law and Justice) winning 87 % of the seats with the support of only 34% of the voters. The low PI in this municipality is further strengthened by the existence of committees which managed to get around 10% of the votes (both in 2014 and 2018), but 0% of seats.

Quite the opposite situation happened in the municipality of Wieluń. This municipality is characterized by the high fragmentation of the local political scene, which results in a high number of electoral committees both at the seats and votes levels. No committee managed to win more than 5 seats in the council in both elections. Surprisingly the municipality is also characterized by a relatively high proportionality. The PI could have been even higher in 2018 if the SLD/Lewica Razem committee had gotten just a couple more votes and would be included in the distribution of seats (0.01% below the threshold). We have a similar case in the municipality of Opoczno, with the main difference being the strongest committee winning more seats (7 in 2014 and 8 in 2018).

One of the main tendencies in the 2018 elections was the mobilization of the non-conservative parties, which in many places (mainly big cities) have competed as one committee, counterbalancing the conservative bloc ruling on the national level. In Łódź Voivodeship this pattern was not only applied in CSSs, but also in smaller towns; with Pabianice being perhaps the best example here. In 2014 10 committees were competing and this fragmentation together with FPTP mechanics allowed the Law and Justice committee to win 56% of the seats with the support of only 27% of votes. In 2018 only two committees were competing and even though the Law and Justice committee managed to convince more voters (31.8%) they got only 26% of seats. The reduction of competing committees was also visible in the municipalities of Zgierz, Łowicz and Zduńska Wola, although the reduction was less extreme. The case of Zduńska Wola possesses another characteristic. In the 2018 elections, 7 committees were competing, but only two of them managed to participate in the distribution of seats, even though there were another three committees that managed to get electoral results above the threshold.

Summary and conclusion

The research carried out by the authors allowed for the verification of the initial hypothesis put forward at the beginning of the article.

First hypothesis: “The reestablishment of the proportional system in the municipalities over 20,000 inhabitants (without CCS) will result in changing the model of political rivalry through the increase of the degree to which the electoral results (measured by the number of seats obtained) reflect the real political attitudes of the local societies” has been verified positively. The change expected is directly confirmed by the increase of the Proportional Index values. Both the PI average and the median in the research group has recorded a significantly higher increase than in the control groups (while in the second control group it was quite the reverse and the values decreased). The span of the results and the extremely low results have been reduced. It should be underlined that the lowest values observed in 2018 are only slightly lower than the highest ones observed four years earlier. Even though the PI values increased also in the first control group, there has not been observed any electoral system change, the limited power of the change allows linking it with the adaptation of the actors of the political process to the functioning system. The power of change in the research proves that it is a consequence of the electoral system change.

The second of the hypotheses: “The reestablishment of the proportional system in the municipalities over 20,000 inhabitants (without CCS) will result in decreasing the power of the mechanical effect of the electoral system” has been also verified positively. It is confirmed by the shift of ENP indexes, in particular by its variant allowing to directly show this phenomenon – ENPRI. The value of this index for the research group has been immensely reduced (nearly by a half, which corresponds with the change on the national level). The shifts recorded in the other groups haven’t had that power, which is particularly significant in reference to the first control group, where the electoral system remained unchanged.

On the margin of the verification of the hypotheses, one should notice that the research carried out by the authors proves that Łódź Voivodeship is a suitable example to epitomize the general tendencies of the effects of the electoral system changes. The results observed do not vary much from the national ones. The only exception being the municipalities with county status (CCS), which should be rather studied on the national level due to the very limited cases available in the region.

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