The geography of electoral volatility in Hungary: a core-periphery perspective

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Abstract

Electoral volatility is understood in the literature as a sign of political instability, weakening social cohesion and the declining influences of existing political parties which threatens the healthy functioning of representative democracy. In this paper, using the Pedersen Index we measure electoral volatility in Hungary at the settlement level between the last three parliamentary elections (2010, 2014 and 2018), with special attention to the geographical aspects of the phenomenon. According to our preliminary assumptions those social groups switch their votes frequently who are marginalised, therefore, the level of volatility may reflect peripherality. Our results show that high volatility can be detected in the two opposite sides of the settlement hierarchy in Hungary: in bigger cities and smaller villages, but for very different reasons. This study gives evidence that electoral volatility can also be considered as a possible indicator in the delimitation and classification of peripheral areas and settlements. The paper aimed to contribute to the understanding of cleavage formation at the regional level by adding a spatial perspective while connecting the socioeconomic profile of the voting population and electoral volatility.

Introduction

In democracies, political parties have the primary role for integrating diverse interests and social forces in the governing institutions, hence they are crucial for legitimizing the regime (Diamond, L.J. *et al.* 1989; Pridham, G. 1990; Toka, G. 1995; Elster, J. *et al.* 1998; Kitschelt, H. *et al.* 1999). Highly volatile elections and abrupt shifts in the party system often reflect political instability, economic and social tensions within the society. Electoral volatility is understood in the literature as the total change in the percentage of seats or votes won or lost by all parties between elections caused by a mix of party-switching, differential turnout rates and generational re-

placement (Gomez, R. 2015). Electoral volatility is usually measured by the Pedersen Index which can be calculated as the sum of percentage gains of all winning parties in an election or the sum of the losses, and has a theoretical range running from zero to 100 (Ascher, W. and Tarrow, S. 1975; Pedersen, M.N. 1979). Since the index has significant variability over time and space, it seems to be a suitable proxy indicator for economic prosperity versus decline, political and social stability versus instability at the regional and local level. Highly volatile election results are thought to endanger governability and even the stability of democratic regimes, hence researchers consider high electoral volatility as a sign of weakening social cohesion and the

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structural decline of parties which is threatening to the healthy functioning of representative democracy (Mainwaring, S. and Scully, T. 1995; Mainwaring, S. and Zoco, E. 2007; Powell, E. and Tucker, J. 2014; Bértoa, F.C. and Rama, J. 2020).

Comparative analysis of Bakke, E. and Sitter, N. (2005) revealed that different patterns of stabilisation have been driven largely by strategic choices made by parties. Haggard, S. and Kaufman, R.R. (1995) argue that stable and strong party systems are crucial for the success of economic reforms in new democracies. This paper focuses on the recent parliamentary elections of postcommunist Hungary (i.e. 2010, 2014 and 2018). The so-called new democracies of East Central Europe have seen several twists and turns in parliamentary party-representation since the collapse of communism along the main national-populist / civic-democratic divide, albeit with a stable core (Szabó, B. 2013; Kovács, Z. and Vida, Gy. 2015; Szczerbiak, A. 2017; Kevický, D. 2021). Hungary was no exception in this regard, and right-left voter fluctuations were significant in the country between 1990 and 2010. However, in 2010 the Fidesz-KDNP party alliance established itself as the anchor on the centre–right side of the party system, concentrating the majority of non-left-liberal votes, winning three subsequent elections (2010, 2014, 2018) and securing a comfortable two-third majority in the parliament (Kovalcsik, T. *et al.* 2021). The weak position of the left-liberal parties (MSZP and SZDSZ) routed in the political scandals during the previous government period (2006–2010) and the 2008 monetary crisis which affected Hungary more severely than other countries in the region. Due to the financial crisis the country was close to bankruptcy and the rate of Hungarian public debt increased from 60.0 percent to 79.7 percent between 2005 and 2010 (KSH, Eurostat). Consequently, the parliamentary elections held in 2010 resulted in a substantial rearrangement among the parliamentary parties. The moderate-right MDF fell out of the parliament, while the national radical party

(Jobbik) got into the Hungarian National Assembly with a robust voters' support of 16.7 percent (Ágh, A. 2016; Enyedi, Z. 2016; Palonen, E. 2018). The expansion of the radical right continued until 2014 when Jobbik won its second parliamentary term with 20.3 percent (Ilonszki, G. and Várnagy, R. 2016). By 2018 the support of Jobbik slightly decreased (19.1%), nevertheless, it remained the second biggest party in the parliament. Simultaneously, the mainstream conservative party Fidesz-KDNP gradually shifted to the right in order to attract voters' support from Jobbik. The ruling Fidesz-KDNP party alliance enjoyed a seemingly stabile voting base in the last three elections (winning 52.7%, 44.9% and 49.3% of the votes) and a comfortable majority in the parliament, nonetheless, it is an intriguing question if electoral volatility could be measured in Hungary in the 2010s.

The main aim of this paper is to measure electoral volatility in Hungary after 2010, with special attention to the geographical aspects of the phenomenon. We focus on electoral volatility between 2010 and 2014, and 2014 and 2018, when the economic downturn seemed to reverse and electoral volatility became more moderate compared to the previous decades. We would like to investigate regional differences of electoral volatility within Hungary and explore possible reasons behind it. The main question is whether electoral volatility reflects socio-economic and/or regional factors of party preference? Are poorer, deprived people living in peripherized regions tending to change their vote more likely? For the sake of analysis, we use various socio-economic indicators and methods to explore possible factors of volatility vs. stability at the settlement (i.e. municipality) level.

The rest of this paper is organised as follows. The second section discusses existing works on electoral volatility and their interpretations in different countries. The third section presents the methods of data acquisition and processing. A section then follows with the main findings of the research, pre-

senting the differences of electoral volatility within settlement hierarchy and its regional pattern. Finally, we present our conclusions, discuss their wider implications, highlight the limitations of our method and explore possible future work in the field.

Concepts on electoral volatility: a literature review

Studies on electoral volatility have identified three main groups of causal variables: (1) economic factors, (2) political institutions, and (3) social cleavages (Bartolini, S. and Mair, P. 1990; Roberts, M. and Wibbels, E. 1999; Birnir, J.K. 2004; Coppedge, M. 2018). Electoral volatility can be an important indicator of economic conditions, as a prosperous economy may reduce electoral volatility by solidifying support for the political status quo, making volatility an inverse linear function of the strength of economic performance. Many researchers pointed out substantial evidence of economic voting in the United States (Kinder, D.R. and Kiewiet, D.R. 1979; Fiorina, M.P. 1981; Kiewiet, D.R. 1983; Markus, G.B. 1988), Latin America (Remmer, K.L. 1991; Roberts, M. and Wibbels, E. 1999), Western Europe (Lewis-Beck, M.S. and Rice, T.W. 1984; Lewis-Beck, M.S. 1990; Powell, G.B. and Whitten, G.D. 1993), and East Central Europe (Pacek, A.C. 1994). Most of these studies emphasize that economic inequality leads to political polarisation, higher levels of protest voting, elite-challenging behaviour, and lower levels of support for democratic institutions (Kern, A. et al. 2015; Kriesi, H. and Pappas, T. 2015). The literature on economic voting assumes that incumbent governments are more likely to be punished for bad management of the economy in countries where inequality is high, because voters' perceptions of the economy are more likely to shape voters' behaviour in these societies (Goubin, S. et al. 2020).

Second, political institutions may also affect electoral volatility through the stability of the broader regime institutions in which parties compete, as well as through the properties of the party system itself. Haggard, S. and Kaufman R.R. (1996) identified political institutions and the degree of their fragmentation an important factor in the political consolidation of economic reforms in emerging democracies. Bartolini, S. and Mair, P. (1990) noted that institutional modifications (e.g., the amendment of the electoral law) resulting significant changes in voter turnout or the proportionality of representation can be associated with higher levels of volatility. The permissiveness of the institutional arrangements toward new competitors in the electoral arena has also effects on electoral instability. The positive relationship between volatility and the number of parties is often confirmed. Pedersen, M.N. (1983) also suggested that volatility increases in multiparty systems because the greater the number of parties and the smaller the ideological differences between them voters can more easily transfer from one party to another. Roberts, M. and Wibbels, E. (1999) claim that the degree of polarisation of the party system reduce electoral volatility by increasing the policy distance between different parties, furthermore the age of the main parties also affects the degree of electoral volatility since older parties are likely to have deeper, more stable roots in society than younger ones.

The third approach explaining electoral volatility – i.e. social cleavages – is structural, as it links electoral volatility to the structure of socio-political cleavages and their degree of organisational closure. Cleavages of class, religion and ethnicity are institutionalised through partisan competition and the construction of mass party and labour union organisations (Lipset, S.M. and Rokkan, S. 1967). A group of scholars argues that major changes in political representation have occurred in Western Europe after World War II, often in association with the structural transformation of national economies and labour markets when the 'materialist' values – emphasising economic and physical security – declined, while 'post-materialist' values – emphasising autonomy and self-ex-

pression – became increasingly widespread (Inglehart, R. 2008). Traditional class cleavages have been undermined by the growth of white-collar service sector, the relative decline of the industrial proletariat, the weakening of blue-collar labour unions, and the emergence of a post-materialist dimension of political competition, which in turn result higher volatility in voting behaviour (Daalder, H. and Mair, P. 1983; Crewe, I. and Denver, D. 1985). Many authors claim that party systems are more stable when they are grounded in well-defined and well-organised societal cleavages (Dalton, R.J. *et. al.* 1984; Inglehart, R. 1990; Piven, F.F. 1991; Franklin, M.N. *et al.* 1992; Kitschelt, H. 1994; Dalton, R.J. 1996). Bartolini and Mair (1990) provided quantitative evidence, showing that high levels of working class organisation and ethnic and religious diversity tended to dampen electoral volatility in Europe between 1885 and 1985. Authors argue that, "the stronger and more pervasive is the strength of the cleavage system of a given country or period, the lower will be the elasticity of the vote and, therefore, the lower will be the level of electoral instability" (Bartolini, S. and Mair, P. 1990).

There is a growing body of literature on electoral volatility in post-communist East Central Europe, too (Powell, E. and Tucker, J. 2017; Emanuele, V. *et al.* 2020). As an antecedent Johnston, R.J. *et al.* (1987) analysed the geographical stability in the pattern of electoral support for political parties in East European countries. Authors argue that the nature of each party's electoral appeal is the major determinant of the geographical stability of its support and parties with a strong class base depend very much on "socialisation in place" and have high levels of stability. Tavits, M. (2005) used longitudinal cross-section data on election results from 15 East European countries and found that, right after the collapse of communism electoral volatility increased but the trend gradually reversed when democracy stabilised. Author also investigated ethnic cleavages and argued that it had no effects on stability while

social cleavages affected electoral stability only during economic downturns. She also claimed that, both institutions and economic performance influence the stability of party support; but the effect of the latter diminishes over time when democracies mature. Findings of other studies also imply that, instability is more likely in the initial phase of party system evolution, and it is often associated with the behaviour of inexperienced voters (Van Biezen, I. 2003; Tavits, M. 2008).

In their studies Powell and Tucker (2014, 2017) gave a new impetus to volatility studies in post-communist countries, elaborated a new approach and expanded the time frame of investigation. Authors differentiated Type A and Type B electoral volatility based on the expanded collection of elections in the region. They defined Type A Volatility when volatility is caused by party entry and exit, i.e. the change in the party system. In their approach, Type B Volatility occurs when voters switch their votes among stable parties and this type of volatility considered a healthy component of representative democracy, which essentially reallocates power between political actors that are already integral parts of the political process. The sum of Type A Volatility and Type B Volatility is equal to the traditional Pedersen Index. Authors argue that the best predictor of electoral volatility is the GDP change between two elections, and that mixed systems (like e.g. in Hungary) tend to be more volatile than presidential systems. They measured only in Hungary higher Type B Volatility than the traditional Type A Volatility. Authors also suggest that post-communist young democracies may at some point start to resemble the more traditional volatility patterns of consolidated democracies.

Birch, S. (2001, 2003) measured the average volatility scores by countries in East Central Europe and found that Latvia and Lithuania had been the most unstable along with Romania. Until 2003 the countries of the former Soviet Union had only two or three democratic elections, so it was difficult to describe a trend there, but all countries have

experienced a decrease in volatility after the first elections. The representative patterns in the Czech Republic, Slovakia, and even Ukraine seem to be more stable than in the Baltic States. To date most research on electoral volatility in post-communist countries has measured on volatility at the national level and only few focused on the sub-national level (see e.g., Schaub, M. and Morisi, D. 2020). This aspect seems to be especially relevant because the free movement of global capital has resulted in a rapid polarisation and a weakening cohesion within post-communist societies, reconfiguring core-periphery relations at the sub-national level (Szabó, B. and Tátrai, P. 2011; Lang, T. 2015; Voda, P. and Svačinová, P. 2020).

Data and methods

If we try to measure electoral volatility several difficulties appear. For instance, incumbent vote change could not be measured with absolute values. In addition, there is the question of how to handle votes that do not result mandate due to threshold restrictions, as party systems are increasingly characterised not only by the emergence of new parties, but also by splits, splinters and mergers (Ocana, F. 2007; Bértoa, F.C. *et al.* 2017). Even when focusing on post-communist countries some of the parties in East Central Europe can be labelled as 'genuinely new' (Sikk, A. 2005), but many more fall to the category of old. The changing ideological platforms of small parties make longitudinal comparative studies of electoral volatility nearly impossible. Due to these reasons, we do not engage here with the results of parties below the parliamentary threshold. Present study focuses on the results of three last parliamentary elections in Hungary when only two 'newcomer' parties won seats in the parliament in 2010 (Jobbik and LMP) next to the mainstream Fidesz-KDNP and MSZP, but later Democratic Coalition (DK) separated from Socialist Party (MSZP) in 2018. Thus, our study focuses on the results of five par-

ties during the last three consecutive parliamentary elections in Hungary.

In political science the electoral volatility index of Mogens Pedersen (1979) is widely used to measure the changes in party systems. It calculates the absolute value of the net change of a particular characteristic (P), for every entity (i) between two periods (t and t+1) divided by the sum of the same characteristic (P) at both time periods. Most of the researchers use this formula:

$$Volatility = \frac{\sum_{i=1}^{n} \mid p_{i,t} - p_{i(t+1)} \mid}{2},$$

where $p_{i,t}$ is the vote (or seat) share of party (i) at the first election (t) and is the vote (or seat) share of party (i) at the second election ($t + 1$) (Pedersen, M.N. 1983). The main advantage of the index of electoral volatility as an indicator is that it can be obtained for a great number of countries, regions and elections, which allows for large-n comparative analyses.

In this research a cluster analysis of electoral volatility was performed on the basis of the results of three parliamentary elections in 3,151 Hungarian municipalities (i.e. settlements) between 2010 and 2018. The electoral system of Hungary is unicameral and mixed since the collapse of communism (1990) where each voter is eligible to cast two votes: one for a district candidate and another for a political party list. The country consists of 106 constituencies since the 2011 Electoral Act, when the number of electoral districts was reduced from 176 to 106, and the number of parliamentary seats decreased from 386 to 199. Due to these fundamental changes in the electoral system, we investigated only the party list votes and the results of constituencies were not considered.

This paper focuses on stability versus volatility in the electoral behaviour of people in Hungary based on the assumption that ethnic and social cleavages will affect electoral volatility. If ethnic minorities and socially disadvantaged groups do not feel well represented by the mainstream par-

ties, they may exhibit high levels of electoral volatility. To test Lipset and Rokkan's (1967) classic concept, we would like to explore the voting behaviour of different socio-economic and ethnic groups that are marginalised and suffer from socioeconomic disadvantages. According to our preliminary assumptions, these groups switch their votes particularly frequently since they have little reason to establish enduring ties to political parties that fail to cater to their needs and often choose another party.

For the sake of analysis, we selected different socio-economic indicators from the National Census in 2011, and from TeIR published by the Hungarian Central Statistical Office annually. We collected data at the settlement level, reflecting local demographic, socio-economic and ethnic conditions. We used the following five indicators in the research:

(1) settlement size / population,
(2) age structure,
(3) rate of higher educated,
(4) rate of unemployment,
(5) rate of minority (Roma).

The so-called Pedersen Index was calculated for each settlement and groups of settlements according to socio-economic indicators. By combining all these data, we could get information on voters' behaviour in the light of settlement size, demographic, socio-economic and ethnic conditions reflecting the presence of different social cleavages and the effects of socio-economic factors on voters' behaviour. During the research different statistical analyses were applied, among them cluster analysis.

Results

In this section first we focus on the five main socio-economic indicators and measure electoral volatility of Hungarian settlements. Second, we take a closer look at the smaller settlements and use cluster analysis to investigate the role of different factors behind volatility. During the calculations the votes

of Democratic Coalition (DK) a fraction of the Socialist Party (MSZP) splitting by 2018 were considered both jointly with the mother party and independently, since the voting base of these two parties are very close to each other (*Table 1*).

According to our results electoral volatility shows a U-shape in the settlement hierarchy and it is high at the upper and lower levels of the hierarchy. Smaller settlements below 2,000 inhabitants and bigger towns above 50,000 people are more volatile than the middle part of the settlement hierarchy (typically big villages and small towns), but for completely different reasons. Voters of bigger towns and cities (especially Budapest) are more open to new political movements and new ideas, and they tend to change their preferences more frequently. On the other hand, residents of smaller settlements are more vulnerable to challenges caused by economic restructuring, globalisation and changes in lifestyle. They tend to be more inclined to follow the advices of local politicians (e.g. mayors) and opinion formers (e.g., priests, general practitioners, entrepreneurs) and change their vote between two elections. Tiny villages below 500 inhabitants seem to be especially volatile in the parliamentary elections.

Regarding the demographic structure of the population, our data show that increasing weight of elderly is accompanied by a higher rate of volatility. As small and tiny villages are hit by population ageing, and they are home to a disproportionately large share of elderly, the demographic conditions reinforce high volatility experienced in small settlements. This suggests also that the decline and the reorganisation of left-liberal parties after 2010 and the rise of the radical Jobbik resulted in shifts in party choice especially among the elderly. In terms of the level of education (measured by the proportion of higher education graduates) we can observe again a dichotomy similar to the settlement hierarchy. Volatility is high if the share of university graduates is either high or low. The former is the case in cities and the latter in small vil-

Table 1 Explanatory factors of electoral volatility (2010–2018)

Indicator		Electoral volatility	Electoral volatility where DK calculated jointly list with MSZP
Population size			
< 500		14.8	14.5
500–2,000		12.8	12.4
2,000–5,000		12.1	11.5
5,000–10,000		11.9	11.1
10,000–20,000		12.6	11.7
20,000–50,000		13.3	12.2
50,000 <		13.9	13.4
Age structure, %			
under 40 years	< 20	18.6	18.6
	20–30	14.5	13.9
	30–40	14.2	13.8
	40–50	13.2	12.6
	50 <	13.3	12.8
over 65 years	< 5	12.9	12.5
	5–10	14.6	14.3
	10–20	13.2	12.7
	20–30	13.6	13.2
	30–40	14.9	14.4
Higher education graduates, %			
< 5		14.6	14.3
5–10		12.9	12.5
10–15		12.7	12.0
15–20		13.1	12.3
20 <		14.1	13.0
Unemployed people, %			
< 5		13.0	12.3
5–10		13.2	12.7
10–20		13.9	13.6
20–30		14.1	14.0
30 <		19.9	18.4
Roma minority, %			
< 5		13.8	12.6
5–15		13.5	13.3
15–30		14.0	13.7
30–45		14.0	13.9
45 <		15.3	15.0

Source: Own calculations based on data of the National Census 2011, and the National Election Office.

lages. Regarding labour market conditions higher unemployment rates are accompanied by higher volatility which is an obvious consequence of economic vulnerability.

The role of ethnic factor in electoral volatility is measured by the share of Roma population, the biggest ethnic minority in Hungary with a great deal of marginalisation (Taylor, A. *et al.* 2018). According to our results higher proportion of Roma results higher volatility

at the settlement level. Our results correspond previous findings of Madrid, R. (2005) and contradict the claims of Birnir, J.K. (2006). Studying ethnic vote stability in new democracies since 1945 worldwide Birnir found that ethnic diversity stabilises initial vote behaviour in heterogeneous countries above and beyond that of homogeneous countries. Ethnic heterogeneity tends to induce stability of voting, but an important prerequisite of

voting stability is the existence of ethnic parties. However, if the interests of ethnic groups are not represented properly in government (or parliament) ethnic vote instability can be observed. MADRID, R. (2005) found higher volatility rates in regions of Latin America with high proportions of indigenous groups. Leading parties in these countries failed to address the needs and demands of indigenous people and they have regularly shifted their votes away from these parties towards unstable new parties (MADRID, R. 2005). Although volatility in these regions was more robust than in the Hungarian case, we should bear in mind that as previous research findings confirmed the ruling party alliance Fidesz-KDNP enjoys significant support among the Roma minority, which gives certain level of stability (BERTUS, Z. 2014).

As a next step we analyse the spatial pattern of electoral volatility versus stability in Hungary. The maps showing settlements with low and high electoral volatility clearly reflect geographical differences within the settlement system. The eastern lowland part of the country (Great Plain) is dominated by larger settlements, typically between 5,000–10,000 inhabitants with market town character, where volatility is relatively low *(Figure 1)*. In this part of the country the ruling party alliance Fidesz-KDNP is also traditionally strong, which reinforce voter stability. Similarly, low level of volatility can be observed in the economically most prosperous North Western region of the country. However, in the North Hungarian Range and in Southern Transdanubia, where the share of settlements with less than 500 inhabitants is high, the economy is less prosperous and the share of Roma population is above the national average we find high values of the Pedersen Index, reflecting high levels of volatility *(Figure 2)*. Research results also confirm that the more liberal political climate of cities and the openness of their residents towards emerging political actors (i.e. newcomers) like Hungary's Green Party (LMP) a "green-liberal" party as well as dissatisfaction with the government's politics is accompanied by increasing levels of electoral volatility in highly urbanised regions (e.g. the agglomeration of major cities, most notably Budapest).

As the first stage of our analysis confirmed, even though rural areas show relative electoral stability among them the smaller settlements are highly volatile regarding voting. However, we also assume that next to settlement size the conditions of the local economy and the socio-demographic composition of the population also matter. Therefore, as a next step we focus exclusively on the settlements with less than 10,000 inhabitants (altogether 3,007 municipalities with ca. 40 percent of the population in Hungary) and investigate their socio-economic circumstances more thoroughly using various indicators in order to refine the picture. We examine the differences regarding electoral volatility within this group of settlements by using the method of cluster analysis. The indicators considered are: the proportion of people employed in the agricultural sector, data on ageing, income (on the basis of tax payments) the proportion of people who are involved in public work, the proportion of corporations and unincorporated enterprises in the agricultural sector and the proportion of the long-term (at least one year) unemployed among active earners *(Table 2)*. We assume that due to globalisation and economic transformation (EGEDY, T. *et al.* 2018) the previous role of agriculture has been lost in many rural communities (HRUŠKA, V. *et al.* 2015) resulting in unemployment, relative poverty and social insecurity which in turn provides fertile ground for increasing electoral volatility.

Using the complex methodology and considering the Pedersen Index we could distinguish three major groups of settlements with less than 10,000 inhabitants, what we called 'volatile rural', 'less volatile rural' and 'stable urban' clusters. The size of these groups varies significantly, 70 percent of the investigated settlements (n = 2,104) belong to the 'volatile rural' group with an average of 553 inhabitants. The 'less volatile rural' group contains 24 percent (n = 721) of the settle-
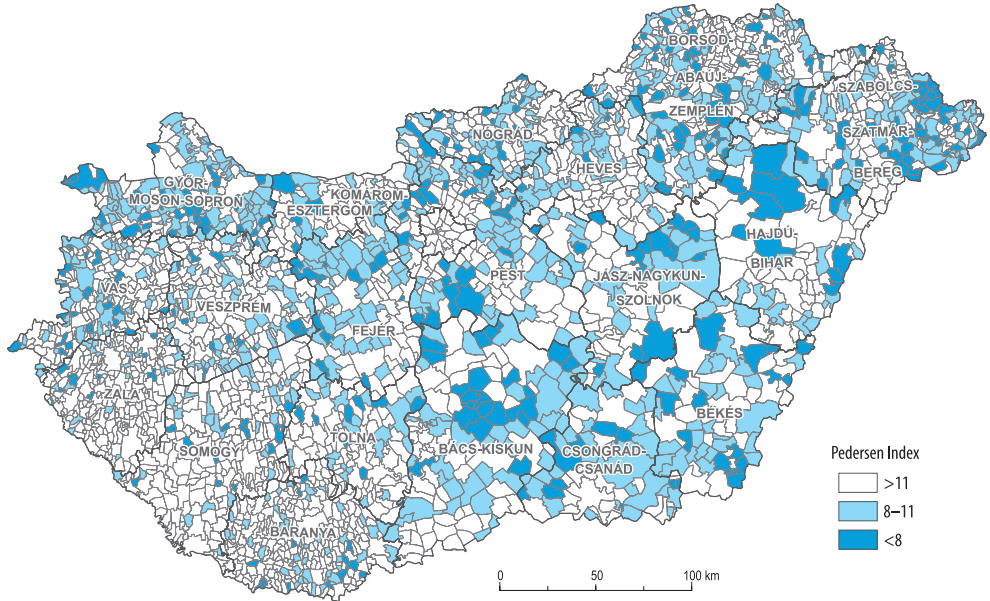
Fig. 1. Settlements with low electoral volatility in Hungary (2010–2018). *Source*: Own calculations based on data of the National Election Office.
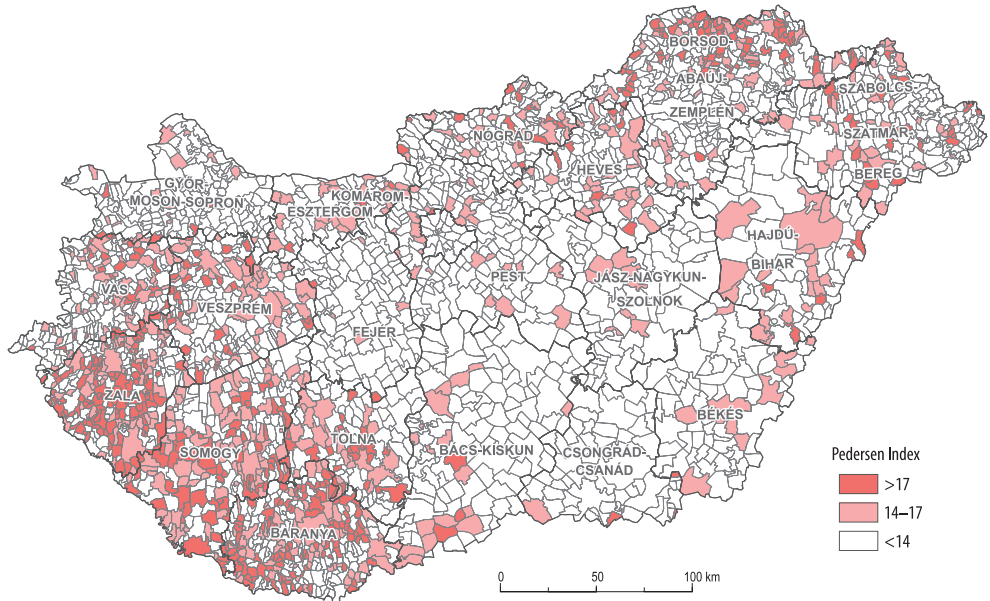

Fig. 2. Settlements with high electoral volatility in Hungary (2010–2018). *Source*: Own calculations based on data of the National Election Office.

Table 2. Cluster analysis of settlements below 10,000 inhabitants (Cluster Centres)

Indicator	Cluster		
	Volatile rural	Less stable rural	Stable urban
Average electoral volatility, 2014–2018 (Pedersen Index)	13.6	11.7	11.2
Number of settlements	2,104	721	182
Average population size	553	2,344	6,188
Average change of population, 2014–2018, %	-2.2	-0.2	0.0
Average amount of personal income tax base per taxpayers, 2018	2,054	2,347	2,485
Ageing: average proportion of population aged under 40 years	45.3	48.6	48.8
average proportion of population aged over 65 years	18.9	16.2	16.1
University graduates as a percentage of 25-year-old population, 2018, %	6.9	10.1	12.7
Proportion of Roma minority, 2011, %	6.6	5.3	3.8
Share of jobseekers registered for more than one year, 2014, %	1.4	1.2	1.1
Share of jobseekers registered for more than one year, 2018, %	1.1	0.9	0.8
Employment by major economic sectors:			
– Agriculture and forestry, 2014, %	11.7	8.7	7.4
– Manufacturing, construction, 2014, %	33.3	34.6	32.2
– Services, 2014, %	55.0	56.7	60.4
Share of active earners participating in public works, 2014, %	5.2	3.3	2.6
Share of active earners participating in public works, 2018, %	5.0	3.0	2.0
Number of enterprises in agriculture and forestry per 1,000 inhabitants, 2018	9.5	5.0	4.1

Source: Own calculations based on data of TeIR, Lechner Knowledge Centre.

ments with an average size of 2,344 people. The smallest group (6%) is comprised by the so-called 'stable urban' settlements (n = 182) with an average of 6,188 residents. The mean values of population size reflect that bigger municipalities with more urban character tend to be more stable, although there are significant differences within each group. In the 'volatile rural' group we find several bigger municipalities with around 1,500 inhabitants (Hangony, Pusztaszer, Petőfiszállás), just like in the 'stable urban' cluster we find settlements with slightly above 4,000 inhabitants (e.g., Pilisszentiván, Tószeg, Etyek). Therefore, next to size we should consider other factors that may influence electoral volatility. As data show residents of 'volatile rural' settlements are generally older and less skilled than those in the other two groups and the share of Roma is higher. People in active-age (below 65) tend to work in these settlements above average in agriculture and forestry, they suffer more from long-term unemployment and the amount of personal income tax is the lowest here among the three groups.

As a next step we split up the 'volatile rural' group and we considered only those settlements where the Pedersen Index of volatility was above 10.0 both between 2010–2014 and 2014–2018. Altogether there are 1,158 such municipalities where approximately 6.5 percent of the Hungarian population lived in 2018. The spatial distribution of settlements with persistent volatility shows a distinct geographical pattern and reaffirms the historically evolved core-periphery dichotomy in the country *(Figure 3)*. Peripherisation of communities is often conceptualised as powerless and passive victims of some superordinate processes beyond their control (Pénzes, J. 2013; Lang, T. 2015; Pósfai, Z. and Nagy, G. 2017; Pénzes, J. and Demeter, G. 2021). However, peripheral position of settlements, their vulnerable position is also well reflected in fluctuating voting behaviour, abrupt shifts among different political parties and ideological traits. In frustrated peripheral settlements it is common that opposition attitudes develop, furthermore the continuous transformation of opposition parties has in many cases been accompanied by the instability of their voting base.
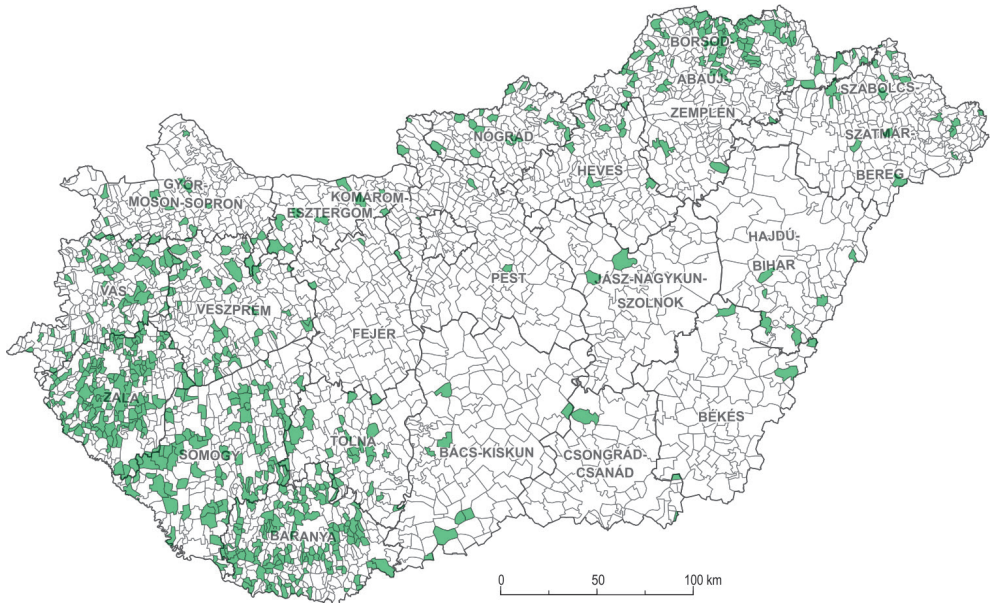
Fig. 3. Settlements with persistent electoral volatility in Hungary after 2010. *Source*: Own calculations based on data of the National Election Office.

Discussion and conclusions

In this paper, building on previous findings of Bartolini, S. and Mair, P. (1990), Mainwaring, S. and Scully, T. (1995), Roberts, M. and Wibbels, E. (1999), Madrid, R. (2005), Mainwaring, S. and Zoco, E. (2007), Powell, E. and Tucker, J. (2014) we investigated the socioeconomic and geographical aspects of electoral volatility in post-socialist Hungary between 2010 and 2018. The results show that high volatility can be detected in the two opposite sides of the settlement hierarchy: in bigger cities and smaller villages. However, the reasons behind this phenomenon are very different. Residents of bigger, economically striving cities are more open to new political ideas and parties, and they are also more critical towards the ruling party, therefore, they tend to change their political opinion more often, search for political alternatives and change their vote. Voting behaviour of people in smaller settlements is also volatile but as our research showed not only the group of the smallest and at the same time the most vulnerable settlements show higher electoral volatility. In this case socioeconomic factors, labour market conditions attached to long-term core-periphery relations play a significant role.

With this paper we aimed to contribute to the understanding of cleavage formation at the regional level by adding a spatial perspective while connecting the socioeconomic profile of the voting population and electoral volatility. During the study we focused on different groups of settlements as possible explanatory framework of volatility deepening our understanding on factors shaping the level of volatility, including the age structure of inhabitants, economic performance (economic factors), social factors such as income, class and ethnic divisions.

As our research findings suggest economic factors and social cleavages (Powell, E. and Tucker, J. 2014) played a dominant role in the post-2010 Hungarian elections, and the role of political institutions remained limited. Only

two new parties (Jobbik and LMP) appeared in the parliament after 2010 replacing two leading parties (MDF and SZDSZ) of the 1990 change of regime (Ilonszki, G. and Várnagy, R. 2016). The newly formed LMP incorporated much of the traditional (mostly urban) voters of SZDSZ, while Fidesz-KDNP managed to attract much of the centre-right votes. Thus, only Jobbik represented a genuinely new political alternative with its radical nationalist narratives. The analysis of the electoral volatility between 2010 and 2018 period showed that the urban-rural cleavages have clearly increased in Hungary compared to the previous elections.

Based on our research results we can say that a strong correlation exists between electoral volatility and peripherality at the local level. As recent studies demonstrate (e.g., Pénzes, J. 2013; Papp, S. *et al.* 2017; Pósfai, Z. and Nagy, G. 2017; Uzzoli, A. *et al.* 2020; Pénzes, J. and Demeter, G. 2021) the delimitation of peripheral areas has been high on the agenda in Hungary, and authors generally consider multiple indicators and different methods in defining peripheriality. This study provided evidence that electoral volatility can also be considered as a possible indicator in the delimitation and classification of peripheral areas and settlements.

Regarding electoral stability versus volatility an important question for the future whether the Hungarian party system develops further towards a two-party system, as it is desired by Fidesz-KDNP and DK, or a proliferation of new political movements (and parties) takes place after the 2022 elections. In the latter case the dimensions of electoral volatility and the role of political institution in the process will most probably increase. Scholars distinguish within-system and extra-system volatility in the literature. Extra-system volatility is an important phenomenon in the so-called new democracies where new parties appear, whereas within-system volatility means transitory shifts within the existing system. The processes described in this paper resemble within-system volatility as there have been no rearrangements in the Hungarian party-system, but this might change in the future.

As far as future research in the field is concerned it is an intriguing question whether the aftermath of Covid-19 would impact the public perception of existing political parties resulting in transformations in the party system and vote transfer, and increasing volatility, after the relatively stable 2010s. We also think that future studies in the field of electoral geography should focus more on the role of local politicians, opinion leaders and various government programmes (e.g., public works) and analyse to what extent they are able to influence the votes of vulnerable social and ethnic groups, like the Roma.

Acronyms used in this paper:
Fidesz-KDNP: Federation of Young Democrats and Christian Democratic People's Party.
DK: Democratic Coalition.
Jobbik: Movement For a Better Hungary.
LMP: Hungary's Green Party ('Politics Can Be Different').
MSZP: Hungarian Socialist Party.
MDF: Hungarian Democratic Forum.
SZDSZ: Alliance of Free Democrats.

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