

THEORETICAL AND METHODOLOGICAL NOTES ON CURRENT OPTIONS RELATED TO EXAMINATION OF VOTING BEHAVIOUR – THE GEOGRAPHICAL APPROACH

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Abstract: Elementary knowledge of the causes and consequences concerning the electoral behaviour is necessary to break the continuing apathy of the public towards political and social processes in most countries of the democratic world. Electoral geography as a scientific discipline is able to describe and explain the spatial context of electoral behaviour, to determine the causes of different territorial patterns regarding voter support according to societal or local conditions and thus seek answers to questions on varying degrees of space-time stability or volatility in relation to political preferences of people. Capturing the geographic context of all types of elections helps to better understand the electoral motives of people in different parts of the given territory and the reasons for their particular view regarding the nature of governance. In addition to innovative statistical procedures using modern methodological apparatus of human geography and related scientific disciplines, aimed at analysing the nature and the territorial context of electoral behaviour under the existing socio-economic predispositions of regions, cities and communes, it is equally necessary to apply a qualitative approach focused on identifying political and ideological values of society as a whole, to be aware of their current status, durability over time and the factors shaping their long-term nature. Only by seeking answers to questions that are directly related to the electoral behaviour of population as a political expression of public attitudes to the current state of society, we can resist political and social radicalism, which is growing in the area of Western democracy.

Key words: electoral behaviour, theoretical background, methodological tools, geographical approach

1 INTRODUCTION

In the process of contemplating electoral behaviour under geographical context we have to assume that voters' decision-making is being shaped by the wide range of socio-economic and demographic influences changing over time. When applying the socio-structural and geographical approach to understand the nature of electoral be-

behaviour several prerequisites or hypotheses can be drawn. For example, electoral behaviour in the lagging regions differ from the socio-economically developed ones, not only in terms of parties preferences according to politico-ideological values of the political parties, but with respect to turnout as well (generally we can assume that economically more developed regions, with higher living standard and well-educated population, are more active in terms of turnout). It can be expected that the regions with accumulated socio-economic problems that are not dealt with systematically by central government for long period of time are tend to take greater political support for non-standard parties of populist, extreme right or left-wing orientation. Moreover, it can be said that under the influence of ongoing socio-economic changes shaping the character of urban and rural environment, their turnout is being modified (changing urban-rural profile of the political parties). Voting behaviour also differ depending on the size category of municipalities. Population ageing relates directly with the development of preferences of certain political subjects. Some of them are highly dependent on the support of the older people, while others gain preferences exclusively by younger voters (contribution of so called generational conflict). Regions with the fastest growing number and share of elderly people may notice the fastest growth of preferences for leftist parties (respectively a below average decrease if the general trend line is decreasing), which appeal to voters more sensitive to changes in the social system. In this context it is crucial to investigate the changing patterns of electoral behaviour with respect to the specific phase of the life cycle of individuals. It can also be foreseen that higher preferences of those parties with the strong pro-family programme are recorded in the regions with high birth rate; territorial pattern of electoral preferences for traditionalist (conservative, Christian-democratic) parties is directly related to a spatial distribution of households with a large number of family members; respectively that electoral support of liberal parties is higher in the regions with higher non-marital fertility. At the same time it is necessary to evaluate time-space stability between electoral support of nationalist (far right parties) and ethnic composition of population in given territorial context. Is a phenomenon of electoral support of radical parties linked with a certain category of marital status? Increasing number of census households and at the same time decreasing of its average size (demographic atomisation of society) might have a potential influence on demographic behaviour. Do breadwinners vote rather standard political subjects and so called "lost generation" of 30-year old under the influence of a life circumstances rather far left or far right political parties? Nowadays, at the time of uncertainty on the one hand and great opportunities on the other, migration movement are even more pronounced and intensified (as for example process of suburbanisation in the narrow meaning), which influence the character of the election results in the territorial units to a great extent (as those who gain or lose the human capital). Some migration studies (Jurčová, 2010; Šprocha et al., 2013) point out the increasing effectiveness of migration in the recent period as well as the increase of net migration east-west flows. Age selective migration changes the social structure of population and may cause not only the spatial population redistribution, but redistribution of electoral behaviour through the changing social structure as well.

At the mezo-regional level within the functional urban regions a suburbanisation process occurs. Significant changes in the electoral preferences might be expected. Thus, if a certain general trajectory in the differences of electoral behaviour exists, the aim would then be to find out whether there are any future trajectories in the change of electoral behaviour and socio-economic structure of society. From the perspective of political parties, the tracking spatial differences of preferential votes, respectively the context of additional elections, for example at local level. Last but not least it is necessary to respect the fact, that political preferences derive from such indicators such as personal character of the party leader, gender and age of candidate, qualification, personal history, political umbrella, independence of a candidate or even his/her charisma. Nevertheless, the reaction to this inputs is also significantly spatially differentiated.

Since establishment of the independent republic, electoral behaviour of Slovak population has never been dealt with comprehensively, that means, reflecting all the elections made so far and at the same time with direct connection to the importance of spatial context in which the election decision was made. Except of traditional capture of the election results and their territorial fragmentariness, it is also needed to answer questions about the relationship between the electoral behaviour of the population and the regional differentiation of socio-economic and demographic phenomena, to name reasons for their territorial patterns of electoral behaviour of the population, depending on the degree of social and economic development of the spatial units or phenomena affecting the demographic development of our society. Shifts in the character and the power of the explanatory factors significantly influencing the election results in the aftermath of a fundamental change of social climate constitute an original contribution to understand the changing mosaic of political parties representing the views of the public at different levels of governance, from local to European. In the electoral geography, the transition from the national and regional (district, regional) analysis and scales of research (concept of space) to the local context (neighbourhood effect, place) is gradually seen, with an emphasis on determining of the importance of spatial differentiation of electoral behaviour (households, election precincts), that means, not only the questions “*who is a voter*”, but also “*where they live, with whom, and who / what is around them*” (Madleňák, 2010). In Slovakia, however, there are still rare election studies focused on analyses of the effect of distance and neighbourhood effects which focus on e.g. the results of the elections, the candidates pre-election strategy (Sui and Hugill, 2002), spatial policy diffusion (Dorling et al., 1998), resp. identification and analysis of spatio-temporal patterns using interpolation and approximation techniques (Waller, 2009; Janika and Scott, 2010).

2 THEORETICAL BACKGROUND

The current science-based approach examining voting patterns of the population comes from the tradition of three academic institutes in the US. Sociological trends

is primarily associated with the “School of Columbia” and ground-breaking work entitled “*The People's Choice*” (Lazarsfeld et al., 1944), which emphasizes the influence of social factors on the formation of citizens’ political attitudes. Another approach to examining the issue of electoral behaviour is offered by “School of Michigan” focused on the psychological aspects of the voters’ decision-making at the time of election. In terms of the development of theoretical and methodological base of this line the monograph “*The American Voter*” (Campbell et al., 1960) played a decisive role, highlighting the relevance of the *party identification* concept as a determinant of political behaviour of citizens. Classical approach examining issue under study is also a rational choice theory understood in terms of the concept of economic voting coming from a tradition of “School of Rochester”, whose main plank is represented by the study of Anthony Downs (1957) “*An Economic Theory of Democracy*” emphasizing premise of rationally acting and perfectly informed voter.

Theoretical assumptions of sociological model related to voting behaviour have been defined in three ground-breaking works, “*The People's Choice*” (Lazarsfeld et al., 1944), “*Voting*” (Berelson et al., 1954) and “*Personal Influence*” (Katz and Lazarsfeld, 1955). Lazarsfeld’s hypothesis assumes that the act of voting is highly subjective, formed mainly by personality of voter and his suggestibility to media. The result of this analysis, however, greatly undermined its foundations, since it was found that the impact of the media on electoral decision-making was minimal at that time. On the contrary, the effect of social stratification was considered as a factor contributing to the final election results to the greatest extent.

Politico-sociological approach taken in Europe (the idea of electoral choice to a limited number of cleavage) is based on the pioneering work by Lipset and Rokkan (1967) “*Party systems and voter alignments: Cross-National Perspectives*”. The authors argue that the party system, which originated in Western Europe when universal suffrage was introduced, reflected four historical cleavages (conflict lines), namely between the centre and the periphery, church and state, agriculture and industry, and between employers and workers, whilst the actual party systems, almost without exception, endured all the turbulent political events experienced in the first half of the last century. Of these four dimensions of conflict, just social class (owners of capital vs. employees) and the conservative-liberal cleavage (church vs. state) have become the most important and resistant during the historical development in most Western European countries.

More recent approach explaining the issue of electoral behaviour was brought by Thomassen (2005). He emphasizes the fact that the same aspects of the modernization process that could lead to a change of political engagement of citizens and to decrease in their electoral participation, can also cause a change in the factors determining electoral choice of the voters. Due to changes in the composition of the electorate and the relationship between social position and voting behaviour, a significant reduction of the link between social structure and politics (between the voters’ social position and the party choice) occurs in Anglo-Saxon countries gradually. For the same reason it can’t be the truth that people are expected to be faithful to only

one political party during their lifetime. Ideologies reflecting the traditional cleavages are becoming less important in terms of the factors that determine people's political attitudes and party choice in Europe. Voters are increasingly making their decisions which party to vote from one election to another, taking into account current issues, performance of incumbent government and their trust in the individual political leaders. However, these findings of weakening links between social anchor of electorate and decision-making are currently losing on relevance, because considering, e.g. 2016 US presidential election there is a broad discussion about electoral behaviour of different ethnic (African Americans, Hispanics, the traditional "white" population) or social groups of the population (young voters, women, population with higher socio-economic status, etc.) and whole spatial units (rich vs. poorer states), and their impact on the final election results.

Determining factors as well as other circumstances of socio-economic development can be called as causes of considerable differences in the election results, relative instability of the election results concerning established parties and periodic success of the new political formations over the recent decades. Just party system institutionalization in terms of status, durability and rules of party competition (Mainwaring and Scully, 1995; Mair, 2001; Lindberg, 2007) is the key to a healthy democratic development of society as a whole. In this regard, interactions between parties and voters as well as political actors each other are considered as very important (Sartori, 1976; Mainwaring, 1998; Mair, 2006). Thanks to scientific knowledge that we are aware of it can be assumed that the relationship between the parties of a certain political orientation as well as the nature of their electorate are relatively easy to predict (Mair, 2001; Bakke and Sitter, 2005).

Although there is a fairly wide range of empirically oriented studies targeted on the issue of conflict lines around which the party system and electorate in the territory of Central and Eastern Europe are formed (e.g. Evans and Whitefield, 1998; Lawson, Römmele and Karasimeonov, 1999; Rohrschneider and Whitefield, 2009; Berglund, Deegan-Krause and Ekman, 2013), theoretical works were more popular only at the turn of the century (Kitschelt, 1995; Berglund, Hellén and Aarebrot, 1998; Karasimeonov, 1999; Kitschelt, 1999; Evans and Whitefield, 2000; Whitefield, 2002). Over the last decade, the theoretical discussion on the causes and sources of social cleavage formation in the former Eastern bloc countries showing many of distinctive features compared to the original ones of Western Europe was the relatively lethargic. Despite this fact, the results of empirical studies suggest that many specifically moulded socio-political conflicts (e.g. communism vs. anti-communism) can outmatch even traditionally strong class cleavage in the certain spatial context (Kitschelt, 1992; Mateju, Rehakova and Evans, 1999; Letki, 2013). In the case of these countries, other authors, in turn, highlight the importance of the political-ideological, cultural and value cleavages (Nieuwbeerta and Grotenbreg, 2000; Rohrschneider and Whitefield, 2009). Given the recent findings there is an ample scope for theoretical and methodological grasp of other approaches in the post-socialist countries, e.g. of geographical nature, seeking to clarify the role of cleavages at the time of electoral decision-making. In the period after the change of the social

and political regime, many Slovak and Czech authors have paid attention to geographical analysis of the election results and causes of territorial patterns concerning electoral behaviour, such as Kostecký and Blažek (1991), Jehlička and Sýkora (1991), Jehlička et al. (1993), Brunn and Vlčková (1994), Buček (1994), Vlčková (1995), Kostecký (1993, 2000), Krivý, Feglová and Balko (1996), Mariot (1999, 2003), Krivý (1999, 2007), Szöllös (2000, 2006), Madleňák (2006, 2012), Kyloušek and Pink (2007), Plešivčák (2011, 2013, 2014), Mikuš (2014), Mikuš and Málíková (2015), Mikuš, Gurňák and Máriássyová (2016).

The issue of the population electoral behaviour represents not only the current but also the wide-ranging subject, requiring consideration of many political, social, economic, cultural, psychological, geographical or demographic of phenomena. Within it is necessary to solve relatively large diapason of partial topics that try to explain its causes, consequences and related phenomena.

The socio-spatial polarization of the society, which largely affects the final election results, as closely related to the existence of marginal regions. Especially in post-socialist countries, including Slovakia, which have undergone major social and economic transformation, the spatial polarization and its related regional disparities become an important issue for across academic research (e.g. Dickie-Clark, 1966; Crewe, 1991; Marada, 2001; Gurung and Kollmair, 2005; Havlíček et al., 2005; Pileček, 2005; Vaishar and Zapletalová, 2005; Jeřábek, 2006). The research itself of electoral issues (e.g. Electoral behaviour) in the context of marginality and peripherality unfortunately has not yet been extensively processed (Mikuš and Málíková, 2015). And yet many authors confirm that it is the space as such has in the analysis of electoral preferences their foundation and influence of the differentiated electoral behaviour (Johnston and Pattie, 2006; Charney and Malkinson, 2015; and others). Franklin and Wlezien (2002) at the same time pointed out the geographic essence of many factors influencing voting behaviour and the fact that it is the genius loci (and also the way of life) to some extent determinant their behaviour (election not excluding) may in the future become one of the central topics of electoral geography. Finally, the study of an extensive series conditions and relationships in the lagging regions (especially of rural character) while constitutes a fundamental requirement of their subsequent development. In the context of broader socio-political relations, their development is largely related to the nature of their voting behaviour (and their political and preferential orientation).

One of the most critical problems of contemporary democracy is the problem of citizen participation in public affairs, in which the turnout is crucial. Turnout has a fundamental impact on the legitimacy of the results, effectiveness of governance and citizen satisfaction with the overall functioning of the society. Trends of turnout/non-turnout belongs to the leading research topics of particular importance for society. This topic has not yet been given to systematic and long-term research in Slovakia. It is known that non-turnout is differentiated in space-time and should be very useful to know the context of such a differentiation, as well as to identify and explain the determinants of different turnout. It is necessary to try to explain the differences in turnout between the various elections. In this context, research should be

concentrated on the identification of regions with a low voter turnout, with a lower legitimacy of elected institutions, as well as analysis of possible factors lower / higher turnout (by socio-economic profiles/variables, information about elections – candidates, parties and key topics). The phenomenon of electoral involvement would be monitored on the basis of information from various space-hierarchical levels and all types of elections.

Political geography and study of voting preferences is closely connected with the study of political ideologies and policies based on identity (identity politics). It is necessary to reveal the extent to which promoted the political preferences except the main political ideologies (socialism, liberalism, conservatism, nationalism), and less influential ideologies (feminism, environmentalism, multiculturalism) and what is their spatial distribution and spatial combinations (e.g. also with using the referendum results).

Study, theorization and eventually generalization of knowledge and spatial aspects of the electoral system (including legislation), national, regional and local electoral systems and their connections/ linkages in the perspective of multi-level governance (i.e. personal, thematic) and search spatial context and differences in the intensity such a connection is also a topic that requires proper attention. Important in this respect is not to remain only in a separate perspective of different elections levels, but try to search for connections (if they are or are systems of preferences separated) and certain common features or differences (not just elections, but the political system at all). Worthy of a more thorough review is also the subject of differences between highly personalized elections (presidential, elections of self-governing region, local elections) and more partisan (parliament and councils). The question of nomination and methods of formulation and implementation of the policy actors, especially in the context of local and regional democracy, is one of the other unexplored areas within the electoral research.

The basic motivation for application of the further approach, especially demographic, is the fact that the relationship of various demographic variables in the context of the election results has been examined only marginally so far. The ability to track the spatial manifestations of electoral preferences in the context of various regional demographic characteristics can be therefore seen as highly beneficial in the field of electoral geography. At the same the knowledge acquired in this oriented research can be further advance to practical use (for example, targeted implementation of policy measures, and more specifically the compilation of election programs, etc.). For this purpose it is necessary to consider the relationship between the electoral preferences of the various political parties and present demographic characteristics. This quantification has to be implemented at different scales: from the national level down to the level of inner city structures.

In Slovakia, current forecasts warns that population is aging significantly and will be getting old at the national as well as regional level (Bleha et al., 2013). Some demographic differences between regions has deepened despite the convergence in the same attributes of demographic reproduction (Šprocha et al., 2013). Over the years, the census household, composition, family composition and their average size

have been changed (Šprocha et al., 2014). Quite extensively it discusses the socio-economic implications and consequences for the economy, social systems and healthcare. In Slovakia, however, the impact of aging and other demographic changes on the electoral behaviour of the population is uncharted area. Also abroad is an area there is not frequent significantly research, but the scientific and technical studies do exist, especially in the American provenance (e.g. McNown, 2008; Teixeira, 2010).

Demographic system and its future development can and most probably will change the electoral behaviour in two ways: a) a change in the demographic structure (especially by age) - mechanical effect of changing the representation of seniors with different electoral preferences b) quality changes in the processes – such as changes in the timing of life cycle, an increase in the phenomenon of singles (Drotován and Bleha, 2008), which have a direct or indirect impact on voting preferences and behaviour of the population. Both levels represent the basis for research of examining the relationship in the demographic processes, composition and electoral behaviour.

3 METHODOLOGICAL OPTIONS

In the field of political and electoral geography we often encounter research, which is using statistical and mathematical analysis. However, much less has the following analysis uses the now quite familiar concept of spatial autocorrelation. Tobler (1970) defined the known verdict: *“everything is related to everything else, but near things are more related than distant things.”* The concept of spatial autocorrelation belongs to the important areas of spatial analysis. It works with global and local indicators, which by properly selected spatial scales show whether the phenomenon is in a space autocorrelated or just random. This concept is also used in scientific contributions in the field of electoral geography. At the level of the presidential election has been used for example in USA (Kim et al., 2003; Burnett a Lacombe, 2012), at parliamentary elections it was used in Hungary (Mészáros et al., 2007). There are also contributions, in which is this concept used for the analyses of spatial behaviour in a smaller regions or cities (Kinsella et al., 2015; Mansley a Demšar, 2015). The phenomenon of spatial autocorrelation can move issues in the theme of electoral geography into a complex analysis, compare election results with others, especially demographic and socio-economic indicators and reveal hidden patterns of the election results and voting patterns at different levels of examined electorate.

When verification of the research hypotheses several methodological tools must be used. For the measurement of the level of horizontal and vertical inequality (Gajdoš and Pašiak, 2006) geo-statistical methods are needed to be applied. Basic tools of descriptive statistics for the expression of differentiation (variation range, standard deviation, coefficient of variation (Litchfield, 1999; Subramanian, 2004) as well as the more advanced approaches such as Theil index (Theil, 1967), and index

of dissimilarity (Allison, 1978) are also very common. Classical analytical approach is represented by multivariate correlation analysis, as well as factor and cluster analysis. In the cluster analysis, methods of statistical and also spatial proximity of monitored variables are used very often (Arabie et al., 1996; Switzer, 2013). The aim of the factor and the component analysis is to locate and uncover regional differentiation of electoral behaviour in relation to demographic differences and particularities of the regions (primarily on district level).

Another innovative approach to the evaluation of territorial expressions of electoral behaviour may include single-factor method ANOVA, one of the most widely used methods of research experience in natural science as well as in social science. ANOVA is a statistical method to compare middle distance for some of the population, while the value of quantitative variables may depend on one or more qualitative variables, so called factors (Markechová et al., 2011). By applying this method would be possible to analyse, for example, potential differentiated impact of space for electoral behaviour and by using longer time series point out also possible dynamics of spatial patterns.

We assume that the attributes of the observed facts and the quality of their mutual relations from one to another place are more or less different. That is why it is necessary for the correct assessment of the link between electoral preferences of the population and socio-economic parameters in the regional context take into consideration also spatial impacts, which naturally come into this relation. A set of methodologies and techniques that take effort to deal with the individuality of features caused by the space effects within the statistical analysis of regional model includes spatial econometrics, for example Durbin spatial regression model. This disciplinary intersection between spatial science and econometrics basically deals with the construction of models and using them for estimating, evaluation and prediction of spatial relationships existing within the society (Anselin et al., 2004; LeSage, 2011).

Part of the presented problems, such as the time stability and volatility of the value and politically-ideological patterns of the population behaviour should be researched also through the usage of the qualitative research methods (survey of public opinion, structured interview) as effective tools in terms of explanation and interpretation of the findings of used quantitative analyses. There is also need to focus on the analyses from the long term perspective point of view instead of the previously preferred short term and medium term analyses. In human geography, qualitative methods, particularly questionnaire surveys (on the border of quantitative and qualitative methods), expert interview and mentally mapping are more and more important. This confirms also the fact that such researches represents an important part of several studies, mainly because of their subjective character, which often reveals information that is not obtainable only by applying quantitative statistical methods (Falt'an, Gajdoš, Pašiak, 1995; Havlíček et al., 2005; Vaishar a Zapletalová, 2005; Džupinová et al., 2008). Limb and Dwyer (ed.) (2001) also points out those qualitative methods are characterized by in-depth approach and searching of individual understanding of reality rather than statistical description and generalized predictions. So they represent suitable alternative methods to reveal deeper context within the se-

lected topic. During the research of the electoral behaviour, it is possible to apply those methods mainly in the form of case studies to uncover the specifics of the region.

The possibility of democratic elections in post-socialist countries establishes the current need not only for geographic analysis, but cartographic visualization. Apart from use of standard statistical analysis and cartographic methods (cartogram, pie chart) designed for the development and verification of geographic patterns of the elections and the associated socio-economic spatial structures, when evaluating electoral behaviour the current trend stresses the use of geostatistical and spatial analysis (spatial autocorrelation, geographical weighted regression models) and new forms of cartographic visualizations such as anamorphosis (Pravda, 2006) or regular networks – Grid (Dorling et al., 1998; Dorling, 1995) using GIS tools with a gradual transition from static to interactive visualization in the Internet (Ballas et al., 2014). The condition of the use of a new scientific visualization techniques of ESDA (Exploratory Spatial Data Analysis), is the existence of well-structured spatial database along with the development of available interactive tools (web mapping, WebGIS), which have not been fully utilized in the field of electoral geography till today in our conditions (Anselin, 2005; Xia and Fotheringham, 1993; Goodchild and Haining, 2004). High importance of spatial research of the electoral behaviour of the Slovak population stems mainly from uncertainty vectors of further development. By using spatial statistical and cartographic analysis it is possible to define conclusions from the point of spatial aspects, but also indicate possible future development trends. Those methods have brought relevant analysis in a number of previous outcomes. Use of these spatial statistical and cartographic analyses can formulate conclusions in terms of spatial aspects but also indicate possible future developments. Cartographic method belongs to the most synthetic form of data presentation, which is also accessible to the widest professional, but also the general public.

Perhaps one of the most original as well as visible practical outcomes of the geographers when evaluating geographical aspects of elections are maps or atlases. Cartographic atlas is an original way of cartographic interpretation not only for the election results, but also as a tool for electoral analyses of geographical context, building on experience and knowledge of GIS programs and harmonization of geographic databases. It is often a strong erudition of human geographers at work with database systems and scientifically corrects cartographic visualization in GIS programs, which allows being in a leading position in this field. In the terms of data organization we see as a fundamental solution uses of the MySQL database system, which is standard in efficient organization and subsequent data distribution. Together with the scripting language PHP present a long time proven and affective tool for data processing. Graphic data processing should be based on the use of “Google Visualization API” that allows data processing in the form of various graphs familiar to the possibilities of chart creation in programs like MS Excel. Specific type of output could be also data in the form of circular visualization, which are now also used in the field of “Data Journalism” in the majority of the world’s newspapers (New York Times, Washington Post, The Daily Mail, etc.). Cartographic visualization

should be based on the use of the library “D3” (Data Driven Documents) and TopoJSON format. D3.js is a JavaScript library for manipulating documents based on data. D3 helps you bring data to life using HTML, SVG, and CSS. D3’s emphasis on web standards gives you the full capabilities of modern browsers without tying yourself to a proprietary framework, combining powerful visualization components and a data-driven approach to DOM manipulation. By using D3 library can developers connect any input data to document elements, apply dynamic transformation and modify their contents (Bostock et al., 2011). Detail information about D3 are well described also in contributions of Maclean (2013) and Zhu (2013), with an emphasis on syntactic rules, as well as insights of authors, whose have good experiences with programming in JavaScript. In terms of data format for displaying map outputs should be used TopoJSON format. Discrete representation of geometry is in this format replaced by writing topology between objects (compared with GeoJSON format). The result of such coding, is significant reduction in the size of the resulting file TopoJSON compared with GeoJSON format, which is a considerable advantage when retrieving files to the client. Just the universal character of D3 library in combination with the presentation of spatial data in a format TopoJSON, may be currently considered to be highly efficient, user-engaging way of cartographic data visualization. The advantage of using this notation of spatial data is the fact, that it is relatively easy to convert map layers in *.shp (shapefiles) to this entry. In the comprehensive cartographic works, an emphasis on combining mentioned scientific visualization methods should be given. Data and subsequent analyses receive a multi-dimensional size, which can capture just scientists in the field of electoral geography in the best way. Through suitable setting of queries is possible observe various structural features, which is a subject to electoral geography. We can see past, present and future of electoral behaviour of the population in time and space. Detailed capture of this development enables the formulation of conclusions substantiated by clear and accurate data. Voluminous statistical and election data and availability of already developed statistical databases at the communes’ level, form a basis for the creation of quality geographical database as well as cartographic atlas works which reflects election issue. By practice welcome output of such cartographic work containing the results of all types of elections could be, for example, contribution devoted to the issue of the definition of election areas and research of their effectiveness and fairness (Johnston et al., 1988), as well as freely available geodatabase of historical territorial units (boundaries of electoral districts) in the form applicable for users of GIS programs thorough web application (webmapping).

Outcomes of geographical approach to examination of electoral behaviour must be offered to the wide professional as well as general public community in an accessible form. We live in an electronic era, which is full of interactive accesses to the actual information. One of the most significant signs of this age is constant development of various formats, APIs and digital libraries focused on data visualization via Internet. The issue of these formats is detailed described in several professional contributions (Bostock and Davies, 2013; Sack and Roth, 2016; Lederman et al., 2015). Visual data distribution to the end clients is important in many aspects.

Apart from the technical aspects play an important role the possibility of promotion and popularization of scientific research results to a wide range of users. Research results in the online world can be distributed with minimal financial costs. It exists many tools of graphical (Google Visualization, HighCharts, ChartsJs, EmberCharts, etc.) and cartographical (D3, MapBox, Mapael, Cartograph, VectorMap, etc.) visualization, which are specifically targeted to the online presentation of research results in the form of interactive maps and graphical outputs (Rybár and Bačík, 2015). The advantage of these solutions is their platform independence as well as the use of a web browser, when the client gets the opportunity to interact with the results of research on own device. The basis of data visualization is their effective use on a client side.

One of the newest possibilities in order to understand development tendencies of complex systems which are subject to a wide range of methodological approaches to its evaluation (qualitative as well as quantitative) is represented by historical and evolutionary institutionalism and evolutionary approaches in geography (Boschma and Lambooy, 1999; Martin and Sunley, 2006). With respect to set of research objectives that must be covered by electoral geography, it is therefore essential to apply complex evolutionary oriented approach to study of the electoral preferences development, combining the diffusion of support to its transformation and creation of related models.

It is also inevitable to offer a long term time-space insight into the complex context of the socio-economic development of electoral preferences. At the same time is of vital importance to reveal the impact of the critical junctures and long term processes (path dependency) on electoral behaviour and preferences. It is also about the overall institutional framework as well as partial significant changes, such as public administration reforms, economic reforms, the overall socio-economic development and international context. Attention should be paid to these influences and circumstances in terms of the sequence of development and impact of politico-economic and electoral cycles (and back to socio-economic development) as well as differences in the electoral behaviour during various social-economic and political situations, during the stable development or in time of increasing instability. Political system and electoral preferences have strong self-assembling and adaptive features, enabling them to respond to current development trends, containing many shifts, including creative destruction.

4 FINAL REMARKS

Post-socialist European countries have undergone turbulent social, economic and political development over the past quarter century. A significant majority of them have managed to integrate into international organisations, while addressing the identical problems of socio-economic development very often. Due to the events of recent years party system has been transformed when standard parties dominating this territory for decades, are putting in the shade by emergence of populist move-

ments and parties (often formed on the principle of a strong leader charisma and one theme program). These formations have significantly rewritten the political map of the country and brought into the system hitherto unseen elements in the struggle for voters. Single-issue parties, as we can name these new political formations, use dissatisfaction and frustration of voters with the existing situation of the society and try to reach electorate through topics that enjoy considerable public and media attention, such as euroscepticism, fight against corruption, issue of mass immigration, and ethnic conflict, to fill the existing gap in the political demand. Large number of such parties in the country's political system leads to its substantial instability. This instability is then characterized by large fluctuations in the support of the parties, the low turnout and justified concern about the democratic character of the state. Knowledge of factors influencing voting decisions of people and their causes, consequences and socio-spatial nuances is therefore crucial to stop the proliferation of populist parties and movements of extreme politico-ideological and value orientation threatening elementary foundations of democratic governance. When examining electoral behaviour, geographical approach should cover mainly several key areas:

- assessment of electoral involvement (through participation in elections, in terms of active election law usage) and its spatial differentiation, considering degree of volatility over time and determinants as well,
- assessment of party preferences of the public (in terms of the election results concerning political parties and candidates) and their spatial differentiation, considering degree of volatility over time and determinants as well,
- determination of political character related to different territorial units (state, regions, districts and municipalities) based on the election results and redistribution of votes among the running parties (fragmentation / polarization of party preferences, resp. strong support of the electorate in favour of only one party), considering degree of volatility over time and determinants as well,
- identification of regional support for the parties in terms of political values and ideologies (*socialism, conservatism, liberalism, nationalism, euroscepticism, etc.*), considering their current status, trends over time and determinants as well,
- assessment of the relationship between socio-economic conditions and party preferences of the public across the territorial unit, in terms of ethnic, religious, educational, age structure of the population and the state of socio-economic development,
- evaluation of the impact of current significant socio-demographic processes (aging, migration flows – suburbanization, changing model of households, etc.) on the spatial distribution of election results,
- identification of the level concerning political-ideological and value shifts of the public over time (through public opinion research), the nature of the determining factors, with a primary focus on the certain territorial unit (e.g. supporting the radical / eurosceptic political forces).

We cannot forget that formulation of recommendations for strengthening the legitimacy of the election results, as regards promotion of electoral participation, as

well as suggestions of spatially specific solutions suitable to fight growing political radicalism should be also presented by electoral geographers.

Pod'akovanie

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Teoreticko-metodologické poznámky k súčasným možnostiam skúmania volebného správania elektorátu – geografický prístup

Súhrn

Poznanie elementárnych príčin a dôsledkov volebného správania obyvateľstva možno považovať za nevyhnutný predpoklad k prelomeniu pretrvávajúcej verejnej apatie k politickým a spoločenským procesom prebiehajúcim v našej krajine. Vzrastajúci radikalizmus nachádza živnú pôdu v socio-ekonomickej stagnácii spoločnosti využívajúc súčasne voličskú letargiu a vzdáľovanie sa štandardných politických strán od rozhodujúcich oblastí života bežného občana. Volebná geografia je schopná popísať a vysvetliť priestorové súvislosti volebného správania, pomenovať príčiny formovania sa odlišných teritoriálnych vzorcov voličskej podpory v závislosti od celospoločenských či miestnych podmienok a hľadať tak odpovede na otázky týkajúce sa rôznej miery časopriestorovej stálosti či volatility politických preferencií ľudí. Okrem inovatívnych matematicko-štatistických postupov využívajúcich moderný metodologický aparát humánnej geografie a príbuzných vedných disciplín, zameraných na analýzu charakteru a teritoriálnych súvislostí volebného správania v kontexte existujúcich socio-ekonomických predispozícií regiónov, miest a obcí, je však rovnako tak potrebné realizovať kvalitatívny prieskum orientovaný na identifikovanie politických a hodnotovo-ideologických noriem spoločnosti ako takej, spoznať ich aktuálny stav, trvácnosť v čase a faktory, ktoré dlhodobo formujú ich charakter. Pri skúmaní volebného správania obyvateľstva by mal geografický prístup k riešeniu danej problematiky pokrývať oblasti ako:

- posúdenie volebnej angažovanosti ľudí (prostredníctvom účasti vo voľbách, v zmysle využitia aktívneho volebného práva) v kontexte jej priestorovej diferenciácie, miery volatility v čase a pomenovanie určujúcich faktorov,
- zachytenie volebných preferencií verejnosti (v zmysle volebných výsledkov politických strán a kandidátov) v kontexte ich priestorovej diferenciácie, miery volatility v čase a pomenovanie určujúcich faktorov,
- určenie volebno-preferenčného charakteru parciálnych častí krajiny (kraje, regióny, okresy, obce) v zmysle volebných výsledkov a prerozdelenia hlasov medzi kandidujúce strany (fragmentovanosť, resp. polarizovanosť volebných preferencií, resp. výrazná podpora elektorátu v prospech jednej strany), miery volatility v čase a pomenovanie určujúcich faktorov,
- identifikovanie regionálnej podpory jednotlivých blokov strán z hľadiska reprezentácie politicko-ideologických prúdov (socializmus, konzervativizmus, liberalizmus, nacionalizmus, euroskeptizmus, a pod.), zhodnotenie ich súčasného stavu, vývoja v čase a pomenovanie určujúcich faktorov,
- posúdenie vzťahu medzi socio-ekonomickými podmienkami a volebnými preferenciami obyvateľstva naprieč regiónmi Slovenska, napr. z pohľadu etnickej, religióznej, vzdelanostnej, vekovej štruktúry obyvateľstva, či stavom socio-ekonomického rozvoja spoločnosti,
- zhodnotenie dopadov významných sociálno-demografických procesov súčasnej doby (starnutie, migračné pohyby – suburbanizácia, meniaci sa model domácnosti z hľadiska početnosti členov, a pod.) na priestorový charakter volebných výsledkov,
- zistenie miery politicko-ideologických a hodnotových posunov verejnosti v čase (prostredníctvom prieskumov verejnej mienky), povahy určujúcich faktorov, s primárnym zameraním na časti Slovenska inklinujúce k podpore radikálnych politických síl či eurospekticizmu.

Nemožno taktiež zabúdať na skutočnosť, že formulácia odporúčania na posilnenie legitimity volebných výsledkov z hľadiska podpory volebnej účasti a pomenovanie priestorovo špecifických riešení vhodných na boj so vzrastajúcim politickým radikalizmom by mali byť taktiež oblasti, ktoré by nemali uniknúť pozornosti voleb-

ných geografov. Totiž, len prostredníctvom hľadania odpovedí na otázky, ktoré priamo súvisia s volebným správaním obyvateľstva ako vyjadrením politického postoja verejnosti k aktuálnemu stavu spoločnosti, môžeme vzdorovať politickému a spoločenskému radikalizmu, ktorý bujnie nielen na Slovensku, ale v celom priestore západnej demokracie.

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