Democratic Innovations at the local level in selected post-communist countries of Central Europe: Testing the Causal Mechanism between Membership of Municipality in Healthy Cities of the Czech Republicand the Use of Geoinformation Systems[1]

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Abstract

The proposed research reacts to the need for overcoming the gap in the general discourse of research in the tools of participative and deliberative democracy at the local level, i.e. the process of implementation of such tools in common municipality practice. The presented research is a follow-up to the already published part of the research project (Hurtíková, Soukop 2019) observing the relationship between political characteristics of municipalities with extended powers in the Czech Republic and the introduced tools of participative and deliberative democracy. The first part of the paper provides the basic description of the utilization of such tools in the Czech Republic and the Slovak Republic[2]thirty years after the shift to democracy. The second part focuses on constructing and testing a causal mechanism of implementation of a particular democratic innovation (the use of geoinformation systems) in municipalities being members of the Healthy Cities of the Czech Republic. The research utilizes the method developed by Beach and Pedersen (2013, 2019) and proposes a procedure for testing the causal process between the membership of a particular municipality in the association supporting the implementation of participative and deliberative tools in municipalities and the implementation of a particular participative tool.

Key words: *Democratic innovations, Municipality, Czech Republic, Slovakia, Process-tracing, mechanism-based approach*

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[2]Theresearchprojectalsoincludestheinvestigationfocused on Poland. This country is not included in thepresentpaper, sincethecollectionof data isstill in progress.

Introduction

Democratic innovations are instruments or procedures of participative and deliberative democracy which are designed to improve the functioning of politics at various levels. They could enhance participation in political decision-making and policy making (Fung et al., 2001; Geissel, 2009; Fishkin, 2012; etc.), support the development of civic competences and increase of interest in politics (Fung, 2001; Newman et al., 2004; Coenen, 2009; etc.). The most suitable area for the introduction of such innovations is the local level, where the smaller the democratic unit, the higher the potential for the participation of the citizens in decision-making (Dahl, 1998, p. 110). There is also a closer relationship between the local political representatives and the citizens. The events taking place within the municipality directly affect the citizens' quality of life, who, in turn, can easily impact them (Geissel, 2009, p. 52).

The aim of this paper is to introduce the implementation of democratic innovations at the local level in selected post-communist countries of Central Europe. The research consists of two parts. The first part is a case study concerning the frequency of occurrence of these participative tools in municipalities with extended powers in the Czech Republic and district cities in Slovakia in the year 2019. The Czech Republic and Slovakia were selected on purpose, because they were joined throughout their historical development until 1 January, 1993 (when the Czechoslovak Federative Republic was separated). They are two neighbouring states in Central Europe with a similar administrative division, close relationships, and mutual political influence. The aim of this part of the research is to answer the following question:

***Q1**:What democratic innovations were implemented in the selected countries thirty years after the shift to democracy? Which of them are used most frequently, and which are rather marginal?*

The second part of the research focuses in greater detail on testing the implementation of democratic innovations in municipalities in the Czech Republic. This part is a follow-up to our previously published research (Hurtíková&Soukop, 2019) and it proposes the procedure for testing the causal process between the membership of municipalities in the association supporting the implementation of participative and deliberative tools in municipalities (in particular in the Healthy Cities of the Czech Republic) and the implementation of a selected participative tool (in particular the use of geoinformation systems). We aimed to answer the

question investigating the relation between the membership of a municipality in the Healthy Cities of the Czech Republic (hereinafter HCCZ) and the implementation of democratic innovations, particularly the utilization of geoinformation systems, in their territory:

***Q2**: What causal mechanism occurs between the membership of a municipality with extended powers and the adoption of democratic innovations (particularly the utilization of geoinformation systems) as a standard tool for collection and presentation of data in the municipality practice?*

This research question is tested within a case study concerning the membership of municipalities in the Healthy Cities of the Czech Republic. It is an association of 130 local authorities that endorse the Local Agenda 21 (LA21) program (HCCZ, 2019). The participative process is a central idea behind the LA21 program. We expect that the implementation of the participative and deliberative methods (democratic innovations) will be systematically more supported with the members of HCCZ in comparison with municipalities which are not members of the network. Due to the presumed equifinality of the research, we use Beach and Pedersen's process-tracing method (Beach&Pedersen, 2013, 2019), which allows for observation of the causal mechanism between the presumed cause and the presumed outcome when observingone particular case of a municipality with the possibility for subsequent generalization involving typical cases sharing key characteristics with the tested case.

Current research into participative democracy and deliberative methods that support participation of citizens in political decision-making is extensive. It aims at determining how to increase the quality, efficiency, and legitimacy of governance by engaging citizens (Pateman, 1970; Barber, 1984; Torell et al., 2007; Geissel, 2009; Smith, 2009; Cini, 2011; Geissel& Newton, 2012; Della Porta, 2013; Font et al., 2014; etc.). Systematic research into democratic innovations has only just begun. The majority of studies are conceived as case studies that draw conclusions from specific areas (for instance Fung, 2001; Lang, 2007; Piper, 2014;etc.). A more comprehensive view, in the form of assessment of established democratic innovations, is presented, for example, by Brigitte Geissel and Kenneth Newton (Geissel&Newton, 2012). Systematic study of democratic innovations is impeded by the fact that their effects are best observed in the long term and can only be reliably captured by in-depth qualitative research or experiments due to their multi-causal nature (Newton 2012, p. 6, 13).

The majority of studies investigating the participative and deliberative tools at the local level are focused on testing the effect of implementation of particular tools concerning the increase in the quality of democracy (measured with various types of indexes), or they are case studies investigating particular countries or towns, particular implemented tools and their impacts. This opens up the space for investigation of the equally important process of the implementation of participative and deliberative democracy tools. This issue is addressed in the second part of our research.

Theoretical Starting Points

Participative democracy is based on the assumption that the public directly participates in creating political outputs. It is based on active and permanent participation by the citizens in making decisions regarding issues that influence the quality of their life (Cini, 2011). An ideal participative democracy is a society based on active citizens who are sufficiently informed and independent in their decision-making (Barber, 1984; Fung& Wright, 2001). It is important, however, to point out that there are authors who question the benefit of a deeper engagement of citizens in political decision-making (Schumpeter, 1976; Popkin, 1994; Miessen, 2011). They point out that citizens lack sufficient information and experience in order to be fully competent for making decisions on political issues (Schumpeter, 1976, p. 262).

In deliberative democracy, the participation of citizens is represented by their involvement in joint discussions, in which all the participants are fully equal. The debate is an institutional tool for achieving democratic results in the form of a joint collective political decision (Miller, 1992, p. 55). Providing citizens with an opportunity to participate and express views in equal discussion can increase the quality of democratic opinions. This argument is the fundamental principle, for example, behind democratic innovations in the form of deliberative elections (Fishkin, 2012, p. 72), participative planning and budgeting together with the citizens, holding round-table discussions, etc. (Geissel, 2009, p. 53).

The arguments of participative and deliberative democracy theorists gain more ground with regard to the current decrease in the traditional method of citizen participation in the political process (lower voter turnout, growing mistrust in political representatives and their ability to effectively manage community affairs etc.). This should not be seen as a crisis of democracy as a form of governance, rather the opportunity for democracy to react to the requirements of the public and transform in order to preserve the democratic principle of governance (Newton, 2012, p. 4). A potential solution could be implementing the methods of

participative governance (democratic innovations), which can offset the imbalance between the representatives and the voters and restore the citizens' confidence in political processes (Della Porta, 2013, p. 39).

Suitable conditions in this respect are provided on the local level where civil experience is of a different nature compared to the national level (Čmejrek et al., 2010, p. 8). This setting is well-known to citizens who are familiar with relevant information, thus providing space to train competence in democratic citizenship. By preparing suitable conditions for the actual equality of citizens (voter awareness, active citizenship education, etc.), people can be familiarized with political decision-making, increase their participation in the administration of local community affairs, and contribute to increasing the quality of their life in the municipality. On the local level, participative tools can therefore suitably balance the aforementioned limitations of modern representative democracy, prevent abuse of power, and contribute to more legitimate decisions and increase of confidence in politics.

Methods for the introduction of the participative and deliberative principle in the process of political decision-making (governance) can be referred to as democratic innovations (Geissel, 2009, p. 52). They represent new ways and tools for deepening the direct involvement of citizens in public policy administration in order to improve the quality of the democratic process (Smith, 2009, p. 1).

There are several types of democratic innovations at the local level (Geissel, 2009, p. 53). This research is based on our typology created on the basis of aprincipal component analysis of data from municipalities with extended powers in the Czech Republic. These are in particular: 1) participative-deliberative municipalities – municipalities that utilise municipal surveys, participative planning, participative budgeting and round-table discussions, i.e., techniques aimed at directly engaging the citizens of the municipality in the decision-making process; 2) e-municipalities – municipalities that utilise social networks, clickable budgets, on-line broadcasts of the municipal assembly meetings, and geoinformation systems, i.e., tools primarily intended to increase awareness among the citizens of the municipality by electronic means (for instance data collection and elaboration of feelings maps in order to increase the quality of life in the municipality etc.); and 3) transparent municipalities – municipalities that utilise clickable budgets, publish their contracts on-line on a broader scale, use transparent accounts, and, to a certain extent, utilise on-line broadcasts of the municipal assembly meetings and provide open data. These municipalities do not involve their citizens in the decision-making process, but make efforts to be as transparent as possible (Hurtíková&Soukop, 2019, p. 381-382).

The actual effects of the selected democratic innovation in order to make the decision-making process more democratic are hard to specify. It is often difficult to unambiguously prove that a participative tool has made the system more effective immediately after implementing. This is caused by the fact that the introduction of democratic innovations is a comprehensive process. It is quite problematic to capture the direct effects of the democratic innovations introduced. Some will become evident after a long period of time, while others can only be reliably captured by in-depth qualitative research or experiments due to their multi-causal nature (Newton 2012, p. 6, 13). Democratic innovations may be useful on their own, however, despite the fact that they have no direct measurable impact at present on democratic decision-making. In the long term, they can improve the political knowledge of citizens and their interest in making decisions over issues that directly affect them.

Characteristics of the Local Area in the Czech Republic and in Slovakia

The local area of the Czech Republic and the Slovakia is distinguished by a high level of fragmentation. In terms of efficiency of functioning, the key variable is the municipality size. A municipality is viewed as the lowest organisational unit of the territorial administration, a community of citizens entitled to independently manage local affairs. Both the Czech and the Slovak Republic presently implement the two-level model of territorial administration. The first level consists of municipalities, and the second level comprises self-governing regions.

The territorial administration system in the Czech Republic is heavily fragmented, consisting of a high number of municipalities – 6,257 municipalities in 2017 (CSO, 2017a). The backbone of the national public administration system comprises 205 municipalities with extended powers (MEPs) (CSO, 2017b), in which the majority of the population of the Czech Republic lives. This category of municipalities was created in conjunction with the public administration reform of 2003 (Act No. 314/2002 Coll.). The said municipalities exercise delegated public administration powers for smaller municipalities within their administrative districts. Almost 80% of the remaining municipalities have less than 1,000 citizens (CSO, 2017a).

Similarly to the Czech Republic, the basic territorial unit in Slovakia is a municipality. The Slovak territorial administration system is consisting fewer municipalities than in the Czech Republic – 2,937 municipalities in 2017 (SSO, 2017). The Slovak equivalent to Czech municipalities with extended powers could be district cities (71 in total); within the structure of the territorial administration systems of both the countries, they are at a similar level to

Czech municipalities. In addition, similarly to the Czech Republic, the majority of inhabitants of Slovakia also live in these administrative centres.

In reality, small municipalities both in the Czech Republic and Slovakia are not able to manage the needs of their own citizens (chiefly due to insufficient funding) and ensure their independence guaranteed by the law. Inter-municipality cooperation is of utmost importance due to the level of division of the Czech and Slovak local area. This cooperation primarily takes two basic forms: municipal associations (so-called microregions) and local action groups. An example is Healthy Cities of the Czech Republic, an association of 130 local authorities that endorse the Local Agenda 21 (LA21) program.[3] The program is based on a UN international document entitled Agenda 21, adopted in 1992. The idea behind the document is promoting the sustainable development principle, addressing local problems, and improving the efficiency of public administration, through a consultative process and dialogue. It emphasises partnership with local organisations, cooperation with citizens and their actual participation in public life (Kašpar&Petrová, 2018). Cooperation is aimed at developing and fulfilling the municipality's sustainable development strategy and policy to enhance the quality of life of its citizens. Chapter 28 of the document directly encourages local authorities to open up dialogue with local citizens, organisations and businesses. It urges the public to take a new form of participation in the decision-making where the local authorities receive suggestions from citizens and consult them over establishing the municipality's sustainable development strategy (Agenda 21, 1992). The participative process is a central idea behind the LA21 program. It is based on the prerequisite that local authorities have the best qualifications to establish a dialogue with the citizens because they are the most accessible authorities in terms of the public administration level (Coenen, 200, p. 165–167).Healthy Cities of the Czech Republic currently systematically supports its members in organising public forums with citizens, compiling emotional maps (work with geoinformation systems), data transparency, methodical consultations and further education of the municipal authority members, etc.[4]

Research design and methodology

[3]HealthyCitiesofthe Czech Republic currently has 130 memberswithregional influence over 2,109 municipalitieswith 5,390 millioncitizens (51 % ofthe Czech population). More informationabouttheassociationcanbefoundat https://www.zdravamesta.cz (September 09, 2019).
[4]Fordetails, seetheHealthyCitiesofthe Czech Republic website https://www.zdravamesta.cz/cz/sluzby-nszm (September 09, 2019).

As already mentioned above, the presented research has two main aims. The first one is to introduce the democratic innovations implemented in the Czech Republic and Slovakia thirty years after the shift to democracy. This part of the research employs basic descriptive statistics with emphasis on the prevalently utilized tools and the reasoning for their utilization. The second aim is to test the correctness of the construction of causal mechanism between the particular cause and consequence of implementation of a democratic innovation in the Czech Republic. For the research purposes, based on the theoretical and empirical starting points the cause is determined as the membership of a municipality in the Healthy Cities of the Czech Republic, and the consequence is determined as the introduction of geoinformation tools as a common tool for collection and presentation of data in the municipality practice.

The research presented in this paper uses the mixed-methods approach and, unlike the majority of studies from this field, focuses primarily on testing the causal processes leading to the implementation of tools of participative and deliberative democracy, rather than on the consequences of the implemented innovations regarding the quality of democracy. We follow up on our previously conducted research (the study was published earlier this year (Hurtíková, Soukop, 2019)), which was focused on testing the assumption that the selected political characteristics of municipalities support implementation of tools of participative and deliberative democracy. Such a kind of research is limited only to dealing with correlations, and despite the substantial theoretical background utilized, it can only discover a causal effect (which the cause may potentially have on the consequence). The follow-up research presented in this paper focuses on an in-depth insight into the issue of implementation of participative and deliberative democracy tools. It focuses on proposing and testing the procedure of a causal mechanism (i.e. testing the influence of a particular cause on the occurrence of a particular consequence) which mediates the causal effect. In this case, we propose a testing procedure regarding the causal process between the membership of municipalities in the association supporting the implementation of participative and deliberative tools in municipalities (in particular in the Healthy Cities of the Czech Republic) and the implementation of a selected participative tool (in particular the utilization of geoinformation systems).

With regard to the multi-causal character of the relationships tested, including the presumed equifinality (Newton 2012),we use the mechanism-based approach and the process-tracing method presented by Beach and Pedersen (Beach &Perdersen2013, 2019; cf. also Beach &Rohlfing, 2018; Bennett &Checkel, 2015; Mazák 2017; etc.), which allows not

only for observing, but also empirically testing an isolated causal mechanism and its individual steps between the deterministically defined cause (HCCZ membership) and consequence (adoption of GIS in common municipality data collection and presentation practice)[5]. For every step,we determine the presumed empirical evidence as verification of the existence and correct succession of the individual steps of the causal mechanism. If the presumed causal mechanism is empirically verified, it can be generalized with a certain probability to involve the typical cases represented by municipalities being members of HCCZ and sharing even other demographic or political characteristics with the tested case. In order to obtain the final results of the research, the QCA method and the Bayesian approach need to be employed in the process of generalization of the potentially verified causal mechanism; these are, however, not presented in this paper with regard to the present progress stage of the research.

Empirical results

The last update to the database of democratic innovations in the Czech Republic from 2019 monitored eight tools of participative and deliberative democracy together with the membership of a municipality with extended powers (MEP) in HCCZ. As obvious from Table 1, the most frequently used tool adopted in the Czech Republic are social network profiles (83 %); these, however, tend to be taken for granted at present. As to purely participative, or interactive tools, the most frequent is the clickable budget (68 %). Approximately one half of MEPs use the geoinformation systems as an interactive tool for providing citizens with information, and for collection of data from the citizens to the municipality (for instance the so-called feelings maps (Pánek, 2015; Pánek et al.,2014)). Both these tools are systematically supported as part of the membership in HCCZ; approximately one fourth of MEPs are members of HCCZ. We can therefore state the assumption that membership in HCCZ may have a positive influence on the adoption of these tools, but it is not an obligatory precondition for the implementation of such a tool, because there are many municipalities using such tools that are not members of HCCZ. The membership of a municipality in HCCZ in itself may not, however, be the crucial factor, since the representatives of numerous municipalities commonly attend conferences, lectures and seminars participated in by HCCZ, so the transfer of information regarding the options for

[5]Theselectionofthe cause and consequenceisbased on a seriesofstatisticalanalyses, someofwhich are presented in thispaper.

implementation of participative and deliberative tools may happen even without the formal membership.

Table 1: Spread ofdemocraticinnovationsthroughczechMEP's in 2019

Democraticinnovation	Yes (n)	%	No (n)	%
HCCZ membership	53	25,85	152	74,15
Socialnetworks	171	83,41	34	16,59
Clickable budget	140	68,29	65	31,71
Transparent account	19	9,27	186	90,73
On-line municipalassemblymeetings	77	37,56	128	62,44
Participativeplanning	102	49,76	101	49,27
Geoinformationsystems (GIS)	105	51,22	100	48,78
Participative budget	30	14,63	174	84,88
Open data	12	5,85	193	94,15

Source: Own data; owncalculation

Note: Sum ofmunicipalitiesis 205; Sometools are not included in 2019 update

According to the information from representatives of municipalities, a very widespread tool is participative planning (approximately 50 %). However, in this case it is necessary to concern the respondents' perception of the tool. What is often mistakenly regarded as participative planning is listening to the requirements of commissions of the individual city districts, but according to the expert definition, this is not a case of participative planning (since the citizens are not directly involved in the process of planning or realization). A similar problem arises in the case of participative budget (14 %). The results for these two categories are probably overrated and shall be refined based on the subsequent expert observation.

The greatest problems faced by Czech municipalities belong to the category of transparency. Less than 10 % of MEPs use a transparent bank account where they openly provide information about the individual financial transactions with the municipality finance. In addition, less than 6 % provide publicly accessible open and machine-readable data for further processing. In general, Czech municipalities do not respond well to evidence-based criticism from the public and are therefore unwilling to provide these data despite their potential for increasing the quality of life in the particular municipality.

Table2 presents similar data from Slovakia acquired by interviewingrepresentatives of district cities combined with manual collection where possible. Similarly to the Czech Republic, one of the most frequently employed tools are accounts of municipalities on social

networks where interaction between the municipality and citizens takes place (approximately 89 %). What is by far the most frequent, according to the statements of representatives of the individual cities, are open data (91 %), but a dramatic decrease regarding the utilization of this tool may be expected after the subsequent expert clearance of the data cohort. The reason is that the category of open data is frequently mistakenly believed to include any publicly available scanned documents; according to the expert definition, however, these have nothing in common with open data. Approximately half district cities use participative planning and budget, clickable budget, or online broadcasting of meetings of the municipal council. For the former two, a further significant decrease in utilization of these tools may be assumed after expert clearance of the data cohort. One third of municipalities have also reported using geoinformation systems. Taking into account the experience from the Czech Republic, where the expert clearance of the data cohort resulted in a significant decrease in utilization, we may also expect a decreasein this case. The least frequently used tool, analogically to the Czech Republic, is the transparent bank account. While it may seem that establishing a transparent account is rather simple with regard to finance or the difficulty of its establishment, this tool is used in general by neither the Czech nor the Slovak municipalities.

Table 2: Spread ofdemocraticinnovationsthroughslovakdistrictcities in 2019

Democraticinnovation	Yes (n)	%	No (n)	%
Socialnetworks	63	88,73	8	11,27
Clickable budget	33	46,48	19	26,76
Transparent account	3	4,23	31	43,66
On-line municipalassemblymeetings	39	54,93	20	28,17
Participativeplanning	42	59,15	14	19,72
Geoinformationsystems (GIS)	22	30,99	15	21,13
Participative budget	33	46,48	38	53,52
Open data	65	91,55	6	8,45

Source: Own data; owncalculation
Note: Sum ofmunicipalitiesis 71

When comparing both countries, it is obvious that the least problematic tools are those that are not financially and organizationally demanding and at the same time provide one-way information flow from the municipality towards the citizens. Two-way tools based on interactive participation of citizens in planning and control are introduced less frequently. The least frequently implemented tools are those strengthening the transparency; the reason is probably that municipalities fear evidence-based criticism.

With regard to the above stated descriptive statistics, multiple models have been tested, observing various types of municipalities in the Czech Republic according to the extent to which they introduce particular tools of participative and deliberative democracy in relation to the standardized index of democratic innovations. As shown in the table 3 presenting the principal component analysis (PCA), three types of municipalities have been identified: participative municipalities, e-municipalities, and transparent municipalities (for more information about the individual types, see Theoretical Starting Points). These were used in the subsequent regression modelling.

Table 3: Factoranalysisofdemocraticinnovations in the Czech republic

	Factors (typesofmunicipalities)		
Democraticinovation	**Participative**	**e-municipalities**	**Transparent**
HealthyCitiesmembership	0,135	**0,540**	0,016
Socialnetworks	0,035	**0,475**	0,08
Geoinformationsystems (GIS)	0,053	**0,768**	0,003
Open data	0,209	**0,356**	0,209
Municipalsurveys	**0,691**	0,197	0,025
Participativeplanning	**0,746**	-0,15	0,155
Participativebudgeting	**0,463**	0,242	-0,165
Round-table discussions	**0,631**	0,123	0,115
Clickable budget	-0,07	**0,386**	**0,574**
On-line contractsbeyondthestatutoryrequirements	0,066	0,147	**0,704**
Transparent account	0,05	-0,205	**0,668**
On-line municipalassemblymeetings	0,136	**0,342**	**0,389**

Source: Hurtíková& Soukop 2019

Note: PCA extractionmethod; Varimaxrotation; threefixedcomponents.

It may be presumed that in each of the identified types of municipalities there is a different causal mechanism leading to the implementation of a particular tool; in the case of HCCZ members, it is the introduction of e-municipality tools (based on correlation it's mostly GIS). Based on PCA, multiple models were tested, divided according to factor analysis. The results of the linear regression model are presented in Table 4.

Table 4: Linearregressionmodelsofpoliticalcharacteristicsfordemocraticinnovations (CZ)

Variablesfor 2014	**Participative municipalities**	**e-municipalities**	**Transparent municipalities**	**Overall model**
Percentageofnewrepresentative	-0,011	0,006	0,089	0,08

s	(0,005)	(0,004)	(0,005)	(-0,003)
Averageageofmunicipalassembly	-0,147 (0,017)	-0,221** (0,015)	-0,198* (0,017)	-0,22** (0,010)
Sizeofmunicipalassembly	0,11 (0,017)	-0,028 (0,015)	-0,17 (0,016)	0,01 (0,010)
Numberofparties in municipalassemlby	-0,154 (0,046)	0,093 (0,041)	0,046 (0,045)	0,02 (0,026)
Percentageofnewcouncillors	-0,029 (0,002)	-0,009 (0,002)	-0,099 (0,002)	-0,08 (0,001)
Numberofparties in municipalcouncil	0,181 (0,051)	0,054 (0,045)	0,109 (0,050)	0,09 (0,029)
Mayorincumbent	-0,02 (0,106)	0,011 (0,094)	-0,122 (0,103)	-0,05 (0,060)
Municipal budget (2018)	0,246* (0,000)	0,346*** (0,000)	0,379*** (0,000)	0,46*** (0,000)
Constant	- (0,980)	- (0,884)	- (0,970)	- (0,562)
R^2	0,153	0,167	0,169	0,294

Source: Hurtíková& Soukop 2019
Note: Dependent variable "standardized index of democratic innovations"
**p<0,05; **p<0,01; ***p<0,001.*

The only two statistically significant variables related to the political setup of the particular municipality, were the average age of members of the municipality council, where the younger the council, the more likely the adoption of tools from the category of e-tools and transparent tools, and the municipal budget, where the higher the budget (under the control of municipality size), the more likely the adoption of the tools (Hurtíková&Soukop 2019, p. 386). These political characteristics may therefore serve as contextual conditions for the design of the causal mechanism; this applies in particular to the municipal budget, which is easier to investigate than the average age of municipality council members. The average age was eventually not used as a contextual condition, because there is no difference, according to the t-test statistics, between HCCZ member municipalities and non-member municipalities. Even though there is no statistical difference between these municipalities with regard to the municipal budget, there is a difference in relation to the size of the municipality which is strongly correlated to the municipal budget. We are not able to separate these two variables to a satisfactory degree, so the budget is left as a necessary contextual condition initiating the causal process, which at the same time partially controls the size of the municipality.

One of the key factors supporting implementation of tools of participative and deliberative democracy is the membership of municipalities in the HCCZ. According to the assumptions based especially on expert observation and entries in the database of good practice, as well as on empirical statistical outputs, we may say that the membership itself and the related measures and activities support implementation of some participative and deliberative tools. The first part of the research (Hurtíková&Soukop, 2019) involved elaborating t-test statistics based on the significance of the difference in the adopted tools of participative and deliberative democracy between members and non-members of HCCZ. The results are presented in Tables 5 and6.

Table 5: T-test ofdemocraticinnovationsbased on the HCCZ membership (CZ)

	t-test fortwo independent samples				
Democraticinnovation	**t**	**Sig. (2-tailed)**	**Differenceofmeans**	**S.E. difference**	**Eta**
Municipalsurveys	-3,483	0,001	-0,613	0,158	0,24
Socialnetworks	-1,320	0,188	0,061	-0,201	0,09
Clickable budget	-1,937	0,054	-0,149	0,077	0,13
On-line contracts	-1,115	0,268	-0,158	0,142	0,08
Transparent account	-0,098	0,922	-0,005	0,047	0,01
On-line municipalassemblymeetings	-2,945	0,004	-0,225	0,076	0,20
Participativeplanning	-0,360	0,720	-0,029	0,081	0,03
Geoinformationsystems	-3,261	0,002	-0,250	0,077	0,22
Participative budget	-1,088	0,278	-0,038	0,346	0,08
Open data	-0,594	0,554	-0,025	0,150	0,04
Round-table discussions	-1,372	0,171	-0,225	0,164	0,10

Source: Hurtíková& Soukop 2019
Note: Comparedgroupsbased on themembershipofthe municipality in theHealthyCitiesofthe Czech Republic association.
Levene's test ofhomogeneityof variance wascarriedout.

Table 6: T-test ofpoliticalcharacteristicsbased on HCCZ membership (CZ)

	t-test fortwo independent samples				
Politicalvariable (2014)	**t**	**Sig. (2-tailed)**	**Differenceofmeans**	**S.E. difference**	**Eta**
Percentageofnewrepresentatives	-2,470	0,014	-4,781	1,936	0,17
Averageageofmunicipalassembly	1,098	0,274	0,494	0,450	0,08
Sizeofmunicipalassembly	-2,140	0,034	-2,446	1,143	0,15
Numberofparties in	-1,852	0,065	-0,383	0,207	0,13

municipalassembly					
Percentageofnewcouncillors	-1,452	0,148	-6,859	4,725	0,10
Numberofparties in municipalcouncil	-1,197	0,233	-0,209	0,174	0,08
Mayorincumbent	1,808	0,074	0,145	0,079	0,13
Municipal budget (2018)	-1,437	0,152	-542 mio.	377 mio.	0,10

Source: Hurtíková& Soukop 2019
Note: Comparedgroupsbased on themembershipofthe municipality in theHealthCitiesofthe Czech Republic association.
Levene's test ofthehomogeneityof variance wascarriedout.

As obvious, members and non-members of HCCZ manifest a non-incidental statistically significant variability in the adoption of municipal surveys, geoinformation systems, on-line municipal assembly meetings and nearly clickable budget. In fact, all these tools are systematically supported as part of the membership in HCCZ, so we may formulate the assumption that membership in HCCZ has a positive causal effect on the implementation of these participative and deliberative tools and there is a causal mechanism between the membership and the adoption of these tools.

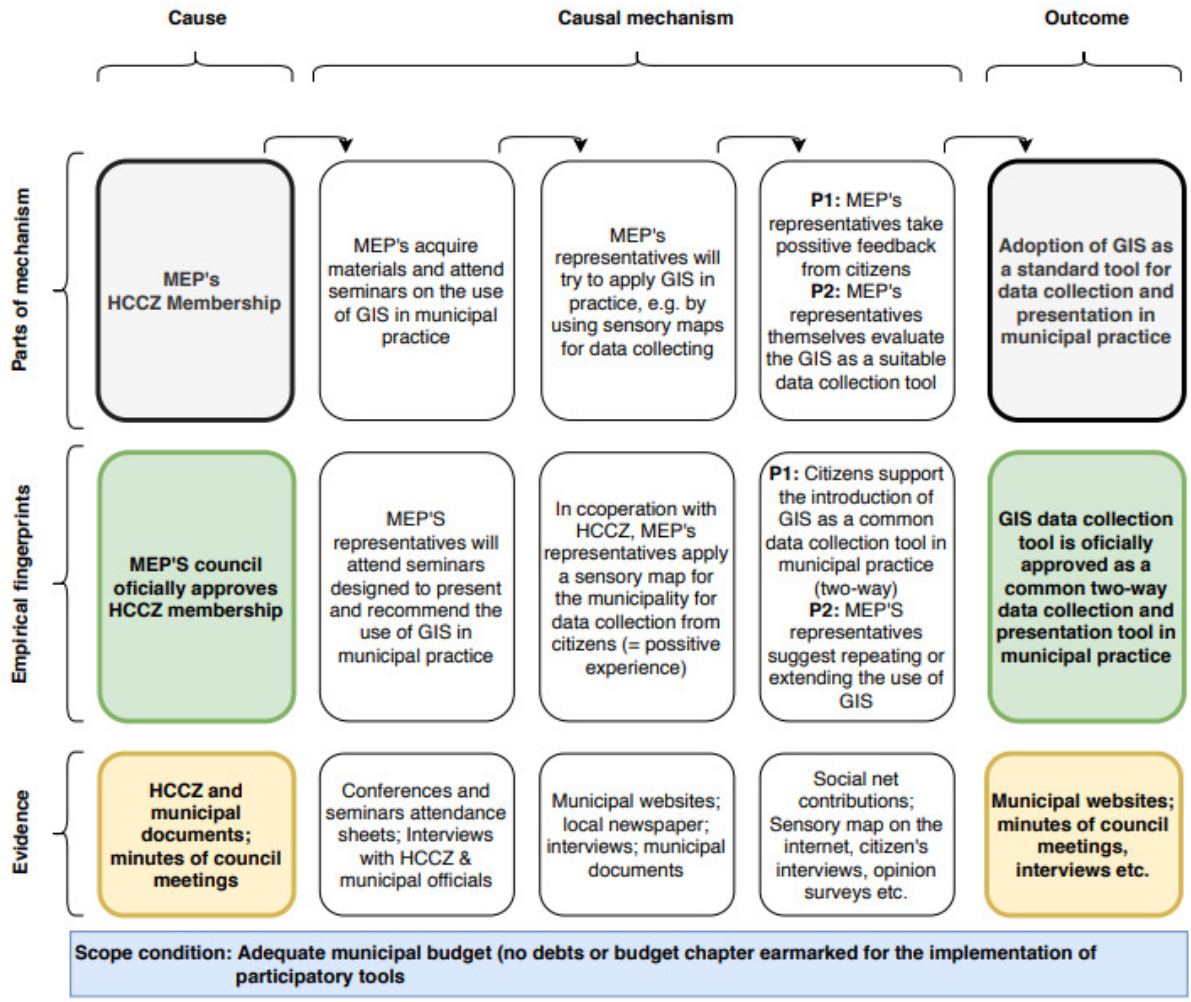
We follow up on our previously published research (Hurtíková&Soukop, 2019). Based on its results, the presumed causal mechanism is constructed using the process-tracing method relating the membership in the HCCZ as a causal cause and the adoption of some of the tools of participative and deliberative democracy as a presumed outcome of the causal mechanism. The key contextual condition is determined to be the sufficient municipal budget (an unencumbered municipality with a budget section allocated for implementation of such tools or for the support of membership in HCCZ), in accordance with the statistical significance of the variable in the regression model. The younger average age of the council is a feature that correlates according to the model with the implementation of democratic innovations, but it is apparent from t-test statistics that it is not a necessary condition related to the membership of a municipality in HCCZ. It is therefore not regarded any further in the mechanism. The causal mechanism is rather minimal in its nature, as in the first stage of research and with the absence of in-depth studies of causal mechanism we are not able to identify all potentially present constituents; this, on the other hand, enables further generalization of the constructed causal mechanism to municipalities with similar demographic and political characteristics. For every particular step of the causal mechanism, we determined the observable mechanistic evidence monitoring both the structural characteristics at the level of municipalities with extended powers and the individual characteristics of representatives of municipalities involved in the causal process, i.e. to the process of implementation of the tested tool of participative or deliberative democracy.

Testing the causality between HCCZ membership and adoption of GIS

In the comparison of the Czech Republic and Slovakia, the utilization of tools of participative and deliberative democracy is distributed very similarly, with the difference in the utilization of geoinformation systems, where we may presume (after manual clearance and refinement of the cohort) a decrease in the data related to Slovakia, and the related stronger adoption of this tool in the Czech Republic. Since utilization of geoinformation systems is supported in the Czech Republic within the membership in HCCZ as well as within other activities supporting municipalities (while in Slovakia the extent of support is much smaller), we will focus in greater detail on the relationship between the membership in HCCZ and the utilization of geoinformation tools in the Czech Republic.

Testing the adoption of tools of participative and deliberative democracy with quantitative analytical tools has certain limitations. Despite utilization of data on a lower local level, it is only possible to speak about correlations and the presumed causal effect the presumed cause has on the outcome. In order to be able not only to test the presumed causal effect, but also to observe the causal mechanism itself, which is equally as important in the context of implementation of such tools, using the process-tracing method according to the work of Beach and Pedersen (Beach & Pedersen,2013, 2019; see also Bennett &Checkel, 2015; Beach & Rohlfing, 2015; Mazák, 2017; etc.), we constructed the causal mechanism based on expert observation and a database of good practice which may be empirically tested. As presented in thescheme 1, the causal mechanism starts with the official approval of membership in HCCZ and results in the adoption of geoinformation systems as a standard tool for collection and presentation of data in the municipality practice.

Scheme1: Presumed causal mechanism relating the membership in HCCZ to the adoption of GIS in municipal practice



The minimal, i.e. incomplete causal mechanism consists of three parts. After the approval of the municipality's membership in HCCZ, the representatives of the municipality meet at conferences and seminars with the authors of geoinformation systems for municipal practice, are provided with methodological materials and other information, including examples of good practice, the options for utilization of feelings maps and other tools when collecting

data in their municipality and their utilization for increasing the quality of life – and democracy – in the municipality.

The second step in the causal mechanism is trial utilization of geoinformation systems in the municipal practice for collection or presentation of data. Municipalities in the Czech Republic often try applying geoinformation systems for the collection of data related to current problems in the municipality and thus acquire valuable data directly from the citizens in the individual city districts. Testing of geoinformation system in the municipal practice is often implemented through feelings maps which can geographically localize the places within the particular municipality where the pre-defined problems are concentratedbased on the opinions of citizens living in the particular area. The measures taken by the municipal bodies thus may be evidence-based and precisely targeted to achieve the greatest efficacy possible when solving the problems.

The third step of the presented causal mechanism is the most problematic one; it consists of two branches of the process. One option is that the representatives of a municipality acquire very positive feedback in the way that exist a large number of citizens who are willing to participate in providing data to test feelings map(a two-way interactive process). Positive feedback creates the pressure from citizens on the introduction of geoinformation systems as a common data collection and presentation tool in the municipality practice. The other option that may be a sufficient condition for continuation of the causal mechanism is the positive experience of municipality representatives with utilization of geoinformation systems for the collection of data (one-way non-interactive process), which enables precise application of evidence-based policies for problem solving in the particular municipality. This consequently leads to the implementation of geoinformation systems as a standard tool for data collection and presentation in the municipal practice, even without the pressure from the public. A necessary contextual condition enabling the initiation of the entire causal mechanism, and particularly the last step, is the positive municipal budget or budget section allocated for implementation of participative tools in the particular municipality.

If the outlined causal mechanism is empirically verified usingempirical fingerprints on the presumed mechanistic evidence, it may be said that the municipalities with similar demographic (and possibly also political) characteristics that are simultaneously members of HCCZ will also share even the causal mechanism being verified, connecting the HCCZ membership with adoption of geoinformation systems as a standard tool for data collection and presentation in the municipal practice. In such a case, the HCCZ membership would be a

positive causal externality supporting the quality of democracy and life in municipalities, as suggested by empirical studies.

Conclusion

The presented paper was focused on introducing the state of implementation and utilization of participative and deliberative democracy tools in the Czech Republic in Slovakia thirty years after the shift to democracy, and it proposed the procedure of the follow-up research into the process of implementation of such tools in the common municipality practice. This proposal was subsequently tested in a case study including Czech municipalities with extended powers being members of the Healthy Cities of the Czech Republic.

We determined two research questions: (Q1) What democratic innovations were implemented in the selected countries thirty years after the shift to democracy? Which of them are used most frequently, and which are rather marginal? and (Q2) What causal mechanism occurs between the membership of a municipality with extended powers and the adoption of democratic innovations (particularly the utilization of geoinformation systems) as a standard tool for collection and presentation of data in the municipality practice?

Using the basic overview descriptive statistics, the paper presents frequency and percentage ratio of individual observed tools of participative and deliberative democracy in Czech municipalities with extended powers and the equivalent Slovak district cities thirty years from the shift to democracy. We may say that municipalities both in the Czech Republic and Slovakia implement most often the financially less demanding tools, commonly one-way non-interactive ones, in contrast to two-way interactive tools; the least frequently used tools are those related to greater transparency. The probable reason is the natural fear of municipality representatives of the critical reaction from citizens to discrepancies e.g. in the municipal budget or inefficiently used finance, inadequately applied policies, etc.

With regard to the character of relationships within the process of implementation of participative and deliberative democracy tools (the multi-causal character, equifinality, etc.), the problematic utilization of statistics tools, no matter how sophisticated, working with mere correlations, and testing of the causal effect instead of the causal mechanism, the paper proposes a qualitative approach to investigation of the adoption process of such tools. Using the work by Beach and Pedersen, it applies the process-tracing method and constructs the causal mechanism between the membership of a municipality in HCCZ and the implementation of geoinformation systems in common municipal practice. The paper presents a three-stage mechanism with determined presumed observations and mechanistic

evidence which will subsequently, in the next stage of the research, result in confirmation (or disproval) of the presumed causal mechanism, and possibly to a revision of the theory and further reasoning for the outputs from observation studies and the influence of examples of good practice on the process of implementation of the tools.

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