



Central European Review of Economic Issues

EKONOMICKÁ REVUE



Evaluation of transparency in local decision making through the information availability on Czech municipal websites

Eva ARDIELLI^{a*}, Roman VAVREK^b

^a *Department of Public Economics, Faculty of Economics, VSB – Technical University of Ostrava, Sokolská 33, Ostrava, Czech Republic.*

^b *Department of Management, Faculty of Management, University of Prešov, Konštantínová 16, Prešov, Slovakia.*

Abstract

Transparency is considered to be the fundamental element of well-functioning and effective public administration on the local level of government. Open and straightforward access to information considerably supports transparency with better public control as well as supporting compliance with the public interest. One suitable tool that allows better public access to information, greater transparency and citizen participation in decision making is the use of the Internet in the public sector and the development of e-government. This paper focuses on e-government on the local level, especially the disclosure of information on municipal websites. The research was conducted on selected Czech municipal websites. The main goal was to evaluate the availability of information about decision making in the Czech municipalities and the availability of participation tools for citizens. For this purpose, selected information published on the municipal websites in the Moravian-Silesian Region was analysed. The results of the research pointed out the shortcomings in the publishing of information on municipal websites. The low level of citizen participation on the local level of government was also stressed.

Keywords

Local government, municipal websites, transparency.

JEL Classification: H10, H11

* eva.ardielli@vsb.cz

This paper has been developed in the framework of the financial support of the student grant of the Faculty of Economics, Technical University of Ostrava, in project no. SP2012/163. It was also supported by the Operational Programme Education for Competitiveness (Project No. CZ.1.07/2.3.00/20.0296).

Evaluation of transparency in local decision making through the information availability on Czech municipal websites

Eva ARDIELLI, Roman VAVREK

1. Introduction

Public information availability and respectively the disclosure of public information by the state administration are regarded as the expression of the fulfilment of the principle of transparency and openness in public administration (see Hill, 2007). These principles concern an open and transparent public administration that is essential for the protection of the public interest and the reduction of corruption (Marek, 2006), and they play a significant role in the modernization trends of public administration nowadays (Osborne and Gaebler, 2006). They belong to the so-called principles of good governance, which were first defined in 1999 by the SIGMA organization and gradually became the basis of efficient public administration in democratic states. They originally arose from experience, which made them distinctive across countries with different systems of public administration, but gradually they became widely recognized as a prerequisite for good governance in democratic states (Klenk and Nullmeier, 2004). Another important trend of contemporary public administration modernization is the development of citizen participation (UNPACS, 2014). This is the development of innovative tools that allow citizens to become actively involved in the decision-making processes of government.

Transparency, information openness and the participation of citizens in public administration are currently significantly supported by the entry of modern technologies into this sector. A suitable means that allows better public access to information and greater transparency in decision making is the application of information and communication technologies (ICT) in the public sector or e-government development (for more see Gupta et al., 2008), for example an electronic marketplace for small-scale contracts or electronic options (e-voting). In addition, as stated by Vaníček et al. (2011), online services and electronic processing of applications without a personal touch are able to eliminate corruption and to ensure uniform treatment of all subjects. Electronization of public administration thereby contributes to increasing transparency in the public sector.

The aim of the paper is to evaluate the availability of information about decision making in selected Czech municipalities situated in the Moravian-Silesian Region on official municipal websites.

The article contains a theoretical part and an empirical part. First, the approaches of various authors to the evaluation of e-government on the local level are introduced. The dominant approach in this area is the evaluation of local government websites (see Borja and Castells, 1997; Ziemba et al., 2014). The following are the outcomes of an e-government survey on the local level of government in the EU (Torres et al., 2005). The empirical part contains the researchers' own investigation of e-government on the local level of government using the example of selected municipalities in the Czech Republic. A description of the methodology is provided, the research outputs are introduced and a discussion of the results is presented.

2. Evaluation of e-government on the local level

E-government has been monitored as part of the activities of many organizations. However, the approaches to e-government monitoring differ considerably across organizations. On the international level, the evaluation of e-government is mainly carried out through the assessment of the availability of information and services on the websites of central, regional or local levels of government (see Khosrow-Pour, 2005; West, 2004).

2.1 Evaluation of local government websites

The evaluation of public administration websites has been discussed by many authors, such as Ancarani (2005), Carrizales (2008) or Špaček and Malý (2010). Evaluation by monitoring the information availability on the websites is not only the domain of national states, as described for example by Khosrow-Pour (2005) and Bannister (2007), and it is performed annually in the international dimension by various international organizations, such as the United Nations (see UNPACS, 2014) and the European Union (EC, 2014). It is possible and desirable to perform an evaluation on the level of local bodies, for example on the local government websites in the EU countries (see

Pina et al., 2009) or on the municipal websites in the Slovak Republic in 2010, 2012 and 2014 (see TIS, 2014). Torres et al. (2005), for example, evaluated e-government on the regional and local levels of government among 47 selected administrative units in the EU in terms of the availability of services for citizens and businesses online. The survey also included the city of Ostrava, which was ranked in the last places, similar to the French region of Loire, the capital of Cyprus, Nicosia, and the Danish city of Aarhus. On the contrary, the top regions in providing e-government services online were the French region of Limousin, the Luxembourg community Petange and the Irish region of Louth.

In recent years, transparency has been increasingly discussed and promoted in the Czech Republic as well. The results, however, according to the analyses performed for example by the Ministry of the Interior (for more see MV ČR, 2013a and 2013b) or the OECD (Šmídová, 2011), are not convincing. In 2012, the websites were analysed at the level of higher local government units (FOM, 2012), and in 2014, selected Czech municipal websites were studied (OS, 2014). The outputs obtained showed wide result diversification across regions in individual areas of evaluation and pointed out a large number of deficiencies.

2.2 Main approaches to website evaluation

Many significant approaches to the evaluation of the content of municipal websites exist. Suitable means of website evaluation are, for example, the Website Attribute Evaluation System (WAES), the approach of the organization Transparency International of Slovakia or the Rutgers-SKKU Municipal E-Governance methodology. The WAES methodology is aimed at the assessment of the content of websites and is a binary tool. It analyses the content of websites in the context of specific, detailed criteria (types of information, services and web tools). A component of the content either exists or is absent. As a result, a score of either y or n is assigned to the specific criterion (Porebski, 2011).

The methodology of Transparency International of Slovakia is aimed at assessing municipal websites from the perspective of the openness of public administration. The openness is evaluated in 11 areas: access to information, public participation, the provision of public services, the selling and renting of property, budget, subsidies and grants, flats and social facilities, personnel policy, ethics and conflicts of interest, spatial planning and municipal enterprises and investment. For a more detailed description of the methodology, see TIS (2014).

The Rutgers-SKKU Municipal E-Governance methodology is based on the Rutgers-SKKU E-Governance Performance Index. This is the instrument used to evaluate municipal web portals with respect to the delivery of public services and citizen participation in governance. The instrument consists of five components: security and privacy, usability, content, services and citizen participation (for more see Holzer and Kim, 2006). The method is based on 100 measurements. Each component contains 20 measurements. Almost half of the measurements are coded on a dichotomy of two points (no, yes) representing un/availability of the requested parameter on websites. Other measurements can be evaluated on a scale of 0–2 or 0–3 points.

Despite the above-mentioned approaches and the research conducted, the local level of government still attracts much less attention than the national level (see Hill, 2007). Furthermore, the majority of research projects focus mostly on the consequences of ICT use on the macro-scale of political and administrative processes (Bannister, 2007). However, since the local level of public administration is the closest level to the citizens, it is vital to provide them with current information on public decision making that they can access as effortlessly as possible, as discussed by Lim and Tang (2008) and Osborne and Gaebler (2006). It is also necessary to consider the local and regional levels because most services are provided through local governments; in addition, the degree of participation in public life should be higher on the local level than on the national level (see Čermák, Vobecká et al., 2011; Khosrow-Pour, 2005; Klenk and Nullmeier, 2004).

3. Methods and data

The basic territorial self-governing unit in the Czech Republic is the municipality. In terms of administrative structure, it is possible to distinguish between municipalities with extended competences (ORP, municipality III), which are responsible for the widest range of government administration in delegated privileges, and municipalities with an authorized municipal office (municipality II). The state transfers some of its privileges to these municipalities but not to such an extent as it delegates to municipalities with extended competences. The status, rights and obligations of municipalities are defined in the Municipalities Act No. 128/2000. In the context of local bodies, the article is focused on municipalities with extended competences in the Moravian-Silesian Region, defined by law in Regulation No. 314/2002. The analysed websites of the municipalities are listed on the website of the RIS (2015).

The research sample included the total number (all 22) of municipalities with extended competences in the

Moravian-Silesian Region of the Czech Republic. The analysis of web portals of municipalities with extended competences was realized on the basis of publicly available data obtained through remote access to municipal web portals. These data were collected in the period from 2013 to 2015. The research sample of municipalities and their numbers of inhabitants are summarized in Table 1.

Table 1 Research sample of municipalities

<i>Municipality</i>	<i>Number of inhabitants</i>
Bilovec	7558
Bohumín	21663
Frýdek-Místek	57135
Haviřov	76109
Hlučín	14042
Karviná	56848
Kravaře	6737
Nový Jičín	23676
Opava	57931
Ostrava	295563
Třinec	36077
Frýdlant nad Ostravicí	9773
Jablunkov	5727
Kopřivnice	22597
Krnov	24315
Odry	7361
Rýmařov	8492
Orlová	30345
Vitkov	5912
Bruntál	16913
Český Těšín	25000
Frenštát pod Radhoštěm	10878

Source: Own processing according to the RIS (2015)

To meet the defined objectives, a total of 20 indicators related to the information availability on the websites were monitored for all the selected municipalities (Table 2). The municipal websites were visited and the monitored information (parameters) sought. Within the information found, no detailed analyses of the accuracy and comprehensiveness of the information, such as whether the annual accounts were complete or whether the minutes of the meeting contained the expected data, was performed. Their simple occurrence was considered to meet the existence of the monitored indicator. The search was carried out in accordance with the logical breakdown of websites within 20 minutes as an acceptable term for a web page (see Chen et al., 2009; Ziemba et al., 2014). In the case that the desired information was not found within the

expected logical location in the menus and submenus of the websites and even by using a search function in a sustainable time, the information was considered to be unavailable. Data that were two years old or more were considered to be archives.

Table 2 List of monitored parameters

P1	The electronic board and its archives.
P2	Materials for the meetings of the council (publication before the meeting starts) and their archives.
P3	Minutes of the council and their archives.
P4	Audio/video recordings of council meetings and their archives.
P5	Procurement notices and their archives.
P6	The commission for the evaluation of procurement and its archives.
P7	The results of procurement decisions and their archives.
P8	Public tenders for the sale and rental of real property – offer, minutes of the process and outcome – and their archives.
P9	Annual final accounting and its archives.
P10	The current budget and its archive.
P11	Supplier invoices.
P12	Subsidies and grants – evaluation of applications and allocation decisions – and their archives.
P13	Land use plans.
P14	Publication of e-mail addresses of employees.
P15	Generally binding regulations and city decrees online.
P16	Free access to public information (no registration or passwords).
P17	Discussion on issues of city management or a message board for questions and answers directed to citizens' representatives.
P18	Online voting and decision making and their interim and final results.
P19	Search tool.
P20	Disclosure of information requests and their archives.
P21	Minutes of the meetings of the Board and their archives.
P22	Audio/video recordings of the meetings of the Board and their archives.
P23	List of contracts.

In the year 2013, the monitoring was focused on 13 parameters (P1–P13) in a pilot project as an exploratory analysis in 11 selected municipalities with extended competences in the Moravian-Silesian Region. In the year 2014, the research was expanded to 20 monitored parameters observed in all the existing municipalities with extended competences in the Moravian-Silesian Region, which total 22. This research was also performed in the year 2015, when 3 new parameters were added concerning new trends on municipal websites.

The monitored parameters (P1 to P23) were marked by y in the case of availability on the concrete website of the municipality and n otherwise. Almost all of the monitored indicators are multi-valued (e.g., the occurrence of current information and non-occurrence of an archive – the parameter value is then y, n). Multi-valued indicators could refer to only part of the information available for that category. The availability of information in this situation was determined proportionally (50%).

The difference between the average availability of information (indicators) on the municipal websites (in 2013, 2014 and 2015) and the individual parameters was statistically tested by ANOVA (see Table 3).

Table 3 ANOVA – output illustration

Source	Sum of Squares	Df	Mean Square	F-Ratio
Factor A (between groups)	SSA	$k - 1$	$MSA = \frac{SSA}{k - 1}$	$F = \frac{MSA}{MSE}$
Random E (within groups)	SSE	$n - k$	$MSE = \frac{SSE}{n - k}$	
Total (Corr.)	SST	$n - 1$		

Source: Own processing based on Pacáková et al. (2009)

Analysis of variance (ANOVA) divided the overall variability of data (SST) into two parts – variability within groups (SSE) and variability between groups (SSA) – as described in Table 3. The output of ANOVA is the F-characteristic, based on which it is possible to define the calculation of SSE, SSA and SST (see Pacáková et al., 2009), and it is calculated according to formula (1):

$$F = \frac{MSA}{MSE} = \frac{\frac{SSA}{k - 1}}{\frac{SSE}{n - k}} = \frac{\frac{\sum_{i=1}^k (\bar{y}_i - \bar{y})^2 n_i}{k - 1}}{\frac{\sum_{i=1}^k \sum_{j=1}^{n_i} (y_{ij} - \bar{y}_i)^2}{n - k}} \quad (1)$$

We tested the null hypothesis $H_0: \mu_1 = \mu_2 = \dots = \mu_k = 0$ compared with the alternative $H_1: non H_0$.

The ANOVA assumptions were tested using the Levene test and Shapiro–Wilk test according to formulas (2) and (3):

$$L_E = \frac{(N - k) \sum_{i=1}^k N_i (Z_i - Z_{..})^2}{(k - 1) \sum_{i=1}^k \sum_{j=1}^{N_i} (Z_{ij} - Z_i)^2} \quad (2)$$

where k is the number of values of a monitored categorical variable, N is the number of observations, N_i is the number of observations in the i -th group, Y_{ij} is the measured value of the j -th unit in the i -th group, \bar{Y}_i is the average value of the i -th group, $\bar{Y}_{..}$ is the median of the i -th group, $Z_{..}$ is the average of the groups Z_{ij} and Z_i is the average Z_{ij} for the i -th group.

We tested the null hypothesis $H_0: \sigma_1^2 = \sigma_2^2 = \dots = \sigma_k^2 = 0$ compared with the alternative $H_1: non H_0$.

$$W = \frac{(\sum u_i x_i)^2}{\sum u_i^2 \sum (x_i - \bar{x})^2} \quad (3)$$

where u_i is constant, x_i is the value of the i -th statistical unit and \bar{x} is the average value.

We tested the null hypothesis $H_0: F(x) \in N(\mu; \sigma^2)$ compared with the alternative $H_1: non H_0$.

The individual differences were tested using the paired T-test; see (4):

$$T = \sqrt{n} \frac{\bar{X} - \bar{Y}}{S} = \sqrt{n} \frac{\bar{Z}}{S} \quad (4)$$

where \bar{X} is the average value of the first variable, \bar{Y} is the average value of the first variable and S is the standard deviation.

We tested the null hypothesis $H_0: \mu_z = 0$ compared with the alternative $H_1: \mu_z \neq 0$.

A comparison of the indicators reflects the difference in the number of monitored parameters (2013 – 13; 2014 – 20; 2015 – 23) and the number of municipalities (2013 – 11; 2014, 2015 – 22).

The linear correlations between selected variables were also tested statistically. In the case of confirmation of normal distribution of both sets (by the Shapiro–Wilk test), the relationship between the population (the number of inhabitants in the municipality) and the results achieved was tested using the Pearson correlation coefficient (5):

$$r = \frac{\bar{x}\bar{y} - \bar{x}\bar{y}}{s_x s_y} = \frac{\frac{1}{n} \sum_{i=1}^n x_i y_i - \bar{x}\bar{y}}{\sqrt{\left(\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2\right) \left(\frac{1}{n} \sum_{i=1}^n (y_i - \bar{y})^2\right)}} \quad (5)$$

where n is the number of observations, s_x is the standard deviation of the first variable, s_y is the standard deviation of the second variable, x_i is the value of the i -statistical unit of the first variable, y_i is the value of the i -statistical unit of the second variable, \bar{x} is the average value of the first variable and \bar{y} is the average value of the second variable.

In the case of rejection (normal distribution) of one of the monitored variables, the relationship between variables is tested using Kendall’s coefficient of concordance; see (6):

$$r_K = \frac{n_c - n_d}{n(n - 1)/2} \quad (6)$$

where n is the number of observations, n_c is the number of concordant pairs and n_d is the number of discordant pairs.

The output of the paper also included the detailed characteristic of results obtained in the year 2014 using selected torque characteristics. As the characteristics of

the basic file, selected torque characteristics were used, which Markechová et al. (2011) divided into three groups:

- Degree position (mode, median, average).
- Degree of variability (standard deviation).
- Degree of asymmetry (skewness coefficient, kurtosis coefficient).

The analyses were performed in MS Excel and the statistical programs Statistica and Statgraphics.

4. Results and interpretation

The analysis of web portals of municipalities with extended competences was realized on the basis of publicly available data obtained through remote access to the web portals of the municipalities in the Moravian-Silesian Region included in the research. These data were collected during the period from 2013 to 2015; see Figure 1 for the 13 parameters captured in time series throughout the entire monitored period and Figure 2 for the parameters P14–P23, which were monitored partially in the years 2014 and 2015.

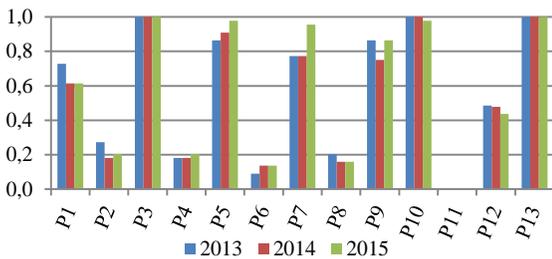


Figure 1 Availability of monitored parameters (in %)

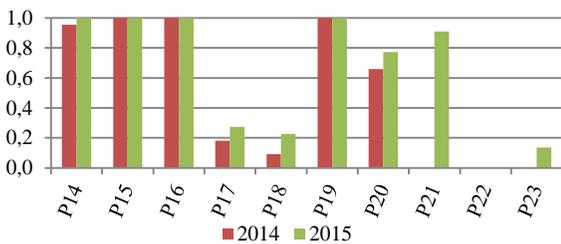


Figure 2 Availability of monitored parameters (in %)

The data in both figures mentioned were converted into an index with a 0–1 scale.

Figure 3 indicates the decline in the average availability of information on municipal websites over the monitored period. For 2014 we can see an average decrease in information published of 13%. This decrease was offset by a further 4% increase. The differences between the amounts of available data on municipal websites expressed by a standard deviation are reduced.

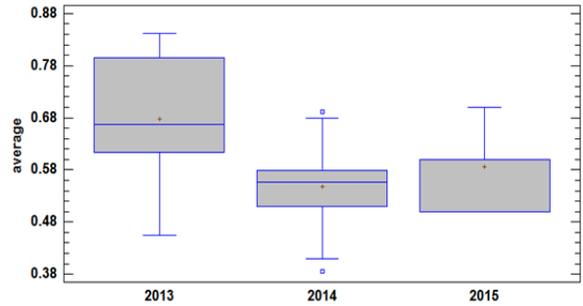


Figure 3 Average availability of information on municipal websites in the period 2013–2015

Despite the graphic differences, the Levene test ($L_E = 2.508$; $p = 0.091$) does not confirm the significant difference between the variances of individual years. According to the ANOVA, the difference in the average availability of data on municipal websites in 2013, 2014 and 2015 is statistically significant (Table 4).

Table 4 ANOVA – difference in the average availability on municipal websites

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Between groups	0.123932	2	0.0619662	9.02	0.0004
Within groups	0.357261	52	0.0068704		
Total (Corr.)	0.481193	54			

The reason for the rejection of the null hypothesis of the ANOVA is the average results in 2013. The paired t-test confirms the difference between websites in individual years. From this perspective, the results in 2014 and 2015 are equivalent ($t = -1.667$; $p = 0.102$).

In a comparison of individual indicators, we can observe (Figure 4) an increasing trend of full availability of the indicators over the years. Other moment characteristics (mean, standard deviation) document the stability of data availability and, respectively, show that municipalities do not continuously add new information to their websites.

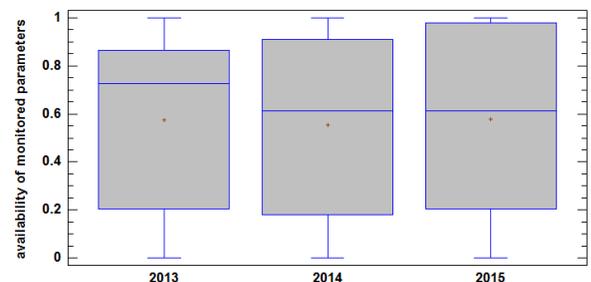


Figure 4 Availability of the monitored parameters on each website

The Levene test confirms the graphic assumption and the homoscedasticity of parameters' availability ($L_E = 0.102$; $p = 0.902$). It also verifies the conformity in the availability of parameters in the years 2013–2015 using one-way analysis of variance; see Table 5.

Table 5 ANOVA – availability of parameters on websites

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Between groups	0.00518008	2	0.00259004	0.02	0.9828
Within groups	5.3632	36	0.148978		
Total (Corr.)	5.36838	38			

The paired t-test also verifies the conformity in the availability of parameters on individual websites.

The next, more detailed, description is focused on the results of the research conducted on the basis of the monitoring in the year 2014. The graph in Figure 5 shows the availability of the monitored parameters. Full availability of information (100%) for all the monitored municipal websites was traced for seven parameters, which are the minutes of council meetings and their archives, the current budget and its archives, the published land use plan, the publication of e-mail addresses of employees, the publication of generally binding regulations and city decrees online, free access to public information and a search tool. On the contrary, none of the monitored websites disclosed supplier invoices. For example, in the Zlín Region, the first publisher of invoices on the Internet was the city of Kroměříž, starting on 1 September 2013. The level of information provided about committee members who evaluate public procurement is also very low.

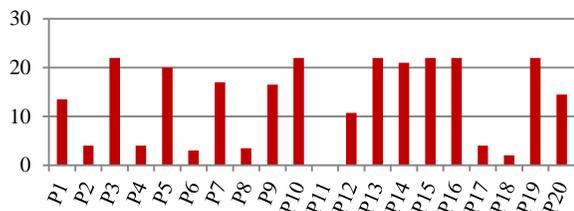


Figure 5 Absolute frequency of the monitored parameters

On average, the municipality had 12 of the 20 monitored parameters ($\bar{x} = 12.068$) available on its website. The results of the municipalities Orlová (8.5 points) and Nový Jičín (14.95 points) were identified by a box plot as outliers (Figure 6).

We conclude that a relatively higher range of variation of the results exists ($R = 6.7$) along with a low level of variability ($VR = 14.47\%$). Up to 75% of municipalities had published at least 55% of the parameters ($Q_1 = 11.2$) on their website.

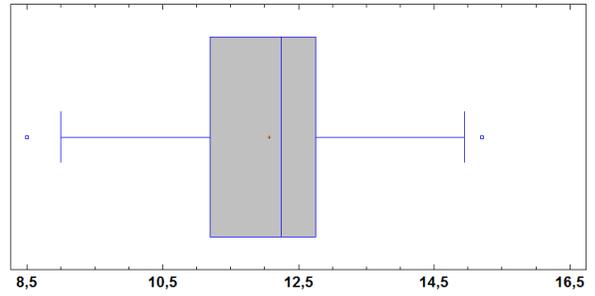


Figure 6 Number of points obtained in individual municipalities

Normal distribution of the first variable (population – Figure 7) was rejected by the Shapiro–Wilk test ($W = 0.491$, $p = 0$).

Despite the normal distribution of the results ($W = 0.972$, $p = 0.748$), we used Kendall's coefficient of concordance to identify the correlation between variables. This coefficient confirmed the statistical significance of this correlation ($r_K = 0.306$, $p = 0.048$).

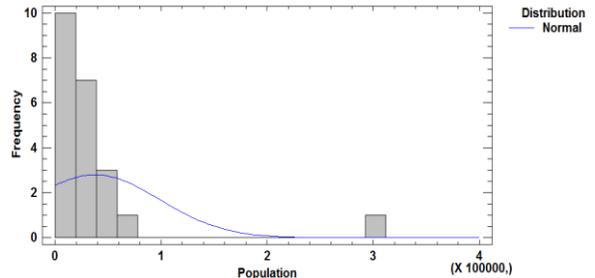


Figure 7 Structure of municipalities by population

The availability of indicators on the municipal websites, which is described statistically in more detail above, is presented in Figure 8. The map shows the spatial distribution of the results of all 22 municipalities with extended competences in the Moravian-Silesian Region for the year 2014.

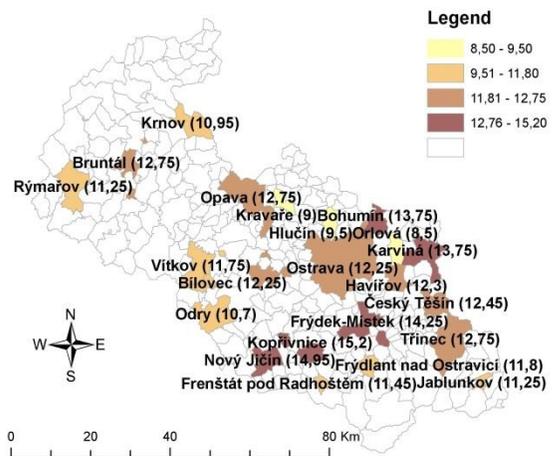


Figure 8 Spatial distribution of the results

5. Discussion

Based on this survey, the rate of information availability about decision making at the local level of government was evaluated and the municipal websites were ranked according to the availability of information. It was found that the top-rated municipalities in the year 2014 offered 65–76% of the monitored parameters. Most websites (75%) showed an availability of parameters greater than 56%. The best-rated municipalities in the Moravian-Silesian Region were Kopřivnice, Nový Jičín and Frýdek-Místek. The worst rated were the municipalities Orlová, Kravaře and Hlučín.

In the Czech Republic, the municipal websites within the Infoliga initiative were also evaluated; for more information see OS (2014). This initiative focused on selected aspects of the praxis of the transparency principle. The municipalities were assessed according to the content of the municipal websites. The evaluation considered, for example, the publication of municipal budgets, the municipal board and the public procurement announcements. The best-rated municipalities in the Moravian-Silesian Region in the last evaluated year, 2012, were the municipalities Kopřivnice and Nový Jičín, confirming the results of our own research (Figure 8).

Through remote access, in our own research, there was at least accessible information about the materials for council meetings, audio and video recordings of the council meetings and the commission for the evaluation of procurement. None of the municipalities disclose suppliers' invoices and generally a very low level of citizen participation in decision making through electronic access was found (Figure 5). Some municipal websites were very confusing and it was particularly difficult to find the required information. For this reason, it would be appropriate to introduce some kind of standardization of municipal web pages, so that the important data are easily obtainable.

The area of e-participation has not been sufficiently analysed in Czech research yet, but the actual results of website evaluation in the Czech Republic (FOM, 2012; OS, 2014) point out the low level of citizen participation in the decision-making process. As well as the mentioned research and studies conducted on the local level of government in Slovakia (TIS, 2014) or Poland (Porebski, 2011; Ziemba et al., 2014), our own research on the second level of government in the Moravian-Silesian Region of the Czech Republic identified a low participation level of citizens in the decision-making process. For example, Porebski (2011) reported in the year 2009 only 13.7% availability of discussion forums on Polish municipal websites. In our own research, the availability of online discussion forums on the monitored websites was 14%.

In addition, TIS (2014) in Slovakia evaluated the state of transparency on municipal websites in the years 2010, 2012 and 2014. The level of citizen participation was evaluated as very low. Shortcomings were found in the areas of publication of council meetings and insufficient tools for decision-making participation, similar to the findings of our own research on selected Czech municipalities in the Moravian-Silesian Region.

Despite this fact, communication with citizens and citizens' involvement in various discussions and decision making should be among the main roles of the city website. The participation of citizens should therefore be encouraged with the implementation of online discussion and thematic forums. Leaders of municipalities should participate in these discussions and citizens should be involved in decision making through electronic elections or surveys. The results of these surveys should also be published online. This approach can effectively improve the management of public affairs in municipalities.

6. Conclusion

Availability of information is a topical issue concerning the subjects of the private as well as the public sector. The paper focuses on the availability of data about decision making on the websites of selected municipalities in the Moravian-Silesian Region in the period from 2013–2015.

Selected statistical methods confirmed the difference between selected municipal websites regarding the average availability of data. The differences between the availability of parameters ($P1-P13$) in individual years were not statistically confirmed, that is, municipalities already publish established parameters annually.

Based on the detailed characteristics of the obtained data from 2014, the following can be concluded: heterogeneous representation of the monitored indicators (the incidence rate varies from availability of all the indicators to their complete absence); low availability of data about decision making in selected municipalities (maximum 75%, although this value was also identified in a box plot as an outlier); and a statistically proven positive relationship between the population (the number of inhabitants in the municipality) and the number of indicators available on the website of the municipality.

Based on the incidence rate of the monitored indicators in selected municipalities, it was found that municipalities have different approaches to information disclosure. While some information is published by all, or almost all, municipalities, others are published only rarely or as the invention of a single municipality that then has an inspirational character for others. However,

certain standardization measures for the public administration presentations are given by law in Act No. 106/1999 on Free Access to Information. Information provided in accordance with this Act shall be published in every case, which also corresponds to the reality on the researched websites. The disclosure of other information is fully in the competence of the municipality, which corresponds to the outputs of the research connected with the low availability of the monitored indicators on the municipal websites. Czech municipalities, for various reasons, prefer to publish only the minimum amount of information beyond the scope given by law. Only a small number of municipalities actively discloses information in accordance with the principle of openness and transparency in public administration. This approach is usually applied if it is desired to become more visible or to compete for a prize for innovation. The results of the research also show that the quality of the website from the perspective of information disclosure is dependent on the size of the municipality. From this fact, it can be assumed that smaller municipalities do not have sufficient financial or human capacity, and this is reflected in the level of web portals of municipalities.

The main recommendations resulting from the research are directed towards increasing citizens' access to information on decision making in the municipality. The possibility of watching the decision-making processes of the elected representatives in real time is one of the basic examples of e-participation. Direct supervision over the negotiations of municipal councils using ICT is not common in Czech municipalities according to this research. The problem is not so much the lack of technology or finance but the unwillingness of representatives to publish the audio-visual records. The most effective way to ensure the publication of that information online is to establish the requirement by law.

References

ANCARANI, A. (2005). Towards quality e-service in the public sector: The evolution of web sites in local public service sector. *Managing Service Quality* 15(1): 6–26.
<http://dx.doi.org/10.1108/09604520510575236>

BANNISTER, F. (2007). The curse of the benchmark: an assessment of the validity and value of e-government comparisons. *International Review of Administrative Sciences* 73(2): 171–188.
<http://dx.doi.org/10.1177/0020852307077959>

BORJA, J., CASTELLS, M. (1997). *Local and Global: Management of Cities in the Information Age*. London: Earthscan Publications Limited.

CARRIZALES, T. (2008). Functions of e-government: A study of municipal practices. *State and Local Government Review* 40(1): 12–26.

<http://dx.doi.org/10.1177/0160323X0804000102>

CHEN, S. et al. (2009). Take your time first, time your search later: How college students perceive time in web searching. *American Society for Information Science and Technology* 46(1): 1–19.

<http://dx.doi.org/10.1002/meet.2009.1450460253>

ČERMÁK D., VOBECKÁ, J. et al. (2011). *Spolupráce, partnerství a participace v místní veřejné správě: význam, praxe, příslib*. Praha: SLON.

GUPTA, B., DASGUPTA, S., GUPTA, A. (2008). Adoption of ICT in a government organization in a developing country: an empirical study. *Journal of Strategic Information Systems* 17(2): 140–154.
<http://dx.doi.org/10.1016/j.jsis.2007.12.004>

HILL, H. (2007). Current trends in public sector modernization in Europe. In: *Modernizing government in Europe*. Baden-Baden: Nomos-Verl.-Ges., 11–20.
<http://dx.doi.org/10.5771/9783845203430>

HOLZER, M., KIM, S.-T. (2006). *Digital Governance in Municipalities Worldwide (2005): A Longitudinal Assessment of Municipal Websites Throughout the World*. Newark: National Center for Public Productivity.

KHOSROW-POUR, M. (2005). *Practicing E-Government: A Global Perspective*. Hershey: Idea Group Publishing.
<http://dx.doi.org/10.4018/978-1-59140-637-2>

KLENK, T., NULLMEIER, F. (2004). *Public Governance als Reforms Strategie*. Düsseldorf: Edition der Hans-Böckler-Stiftung.

LIM, J. H., TANG, S. Y. (2008). Urban e-government initiatives and environmental decision performance in Korea. *Journal of Public Administration Research and Theory* 18(1): 109–138.

<http://dx.doi.org/10.1093/jopart/mum005>

MAREK, J. (2006). Evropské principy dobré veřejné správy. In: *Principy dobré správy*. Brno: Masarykova univerzita, 91–96.

MARKECHOVÁ, D., STEHLÍKOVÁ, B., TIRPÁKOVÁ, A. (2011). *Štatistické metódy a aplikácie*. Nitra: Univerzita Konštantína filozofa v Nitre.

OSBORNE, D., GAEBLER, T. (2006). Reinventing Government. In: *Znovunalezení vlády*. Plzeň: Západočeská univerzita v Plzni.

PACÁKOVÁ, V. et al. (2009). *Štatistické metódy pre ekonómov*. Bratislava: Iura Edition.

- PINA, V., TORRES, L., ROYO, S. (2009). E-government evolution in EU local governments: A comparative perspective. *Online Information Review* 33(6): 1137–1168.
<http://dx.doi.org/10.1108/14684520911011052>
- POREBSKI, L. (2011). Evaluating the dDevelopment of eGovernment systems: The case of Polish local government websites. In: *Proceedings of the 11th European Conference on e-Government*. Reading: Academic Publishing Limited, 475–481.
- ŠMIDOVÁ, Z. (2011). Public spending efficiency in the Czech Republic: Fiscal policy framework and the main spending areas of pensions and healthcare. *OECD Economics Department Working Papers*, No. 922. Paris: OECD Publishing, 1–43.
- ŠPAČEK, D., MALÝ, I. (2010). E-government evaluation and its practice in the Czech Republic: Challenges of synergies. *Journal of Public Administration and Policy* 3(1): 93–124.
- VANÍČEK, Z. et al. (2011). *Právní aspekty e-governmentu v ČR*. Praha: Linde Praha.
- WEST, D. M. (2004). E-government and the transformation of service delivery and citizen attitudes. *Public Administration Review* 64(1): 15–27.
<http://dx.doi.org/10.1111/j.1540-6210.2004.00343.x>
- ZIEMBA, E., PAPAJ, T., DESCOURS, D. (2014). Assessing the quality of e-government portals – the Polish experience. In: *Proceedings of the 2014 Federated Conference on Computer Science and Information Systems*. Warsaw: Warsaw University of Technology, 1259–1267.
<http://dx.doi.org/10.15439/2014f121>
- Additional sources**
- EC (EUROPEAN COMMISSION) (2014). *E-Government Benchmark: Insight Report*. [Online], accessed at 20. 02. 2015. Available at: <<https://ec.europa.eu/digital-agenda/en/news/eu-egovernment-report-2014-shows-usability-online-public-services-improving-not-fast>>.
- FOM (FOND OTAKARA MOTEJLA) (2012). *Hodnocení krajů*. [Online], accessed at 05. 04. 2014. Available at: <<http://www.hodnocenikraju.cz/cz/sets/kraje-2012/about>>.
- MV ČR (2013a). *Vyhodnocení implementace Strategie Smart Administration*. [Online], accessed at 04. 04. 2014. Available at: <<http://www.smartadministration.cz/soubor/vissa-final-pdf.aspx>>.
- MV ČR (2013b). *Analýza aktuálního stavu veřejné správy*. [Online], accessed at 04. 04. 2014. Available at: <<http://www.mvcr.cz/soubor/analyza-aktualniho-stavu-verejne-spravy-pdf.aspx>>.
- OS (Otevřená společnost) (2014). *Infoliga. Projekt otevřené společnosti*. [Online], accessed at 04. 04. 2014. Available at: <<http://www.infoliga.cz/>>.
- RIS (Regionální informační servis) (2015). *Správní členění kraje*. [Online], accessed at 08. 01. 2015. Available at: <<http://www.risy.cz/cs/krajske-ris/moravskoslezsky-kraj/verejna-sprava/spravni-cleneni>>.
- TIS (Transparency International Slovensko) (2014). *Otvorená samospráva 2010*. [Online], accessed at 05. 04. 2014. Available at: <<http://samosprava.transparencysk.sk/sk/>>.
- TORRES, L., PINA, V., ROYO, S. (2005). *E-government and the Transformation of Public Administrations in EU Countries: Beyond NPM or just a Second Wave of Reforms?* [Online], accessed at 20. 08. 2013. Available at: <<http://www.dteconz.unizar.es/DT2005-01.pdf>>.
- UNPACS (2014). *Data Center – Government Development Index*. [Online], accessed at 02. 08. 2014. Available at: <<http://unpan3.un.org/egovkb/en-us/Data-Center>>.
- Zákon č. 314/2002 Sb. o stanovení obcí s pověřeným obecním úřadem a stanovení obcí s rozšířenou působností*. [Online], accessed at: 8. 1. 2015], Available at: <<http://www.psp.cz/sqw/sbirka.sqw>>.
- Zákon č. 128/2000 Sb. o obcích*. [Online], accessed at 08. 01. 2015. Available at: <<http://portal.gov.cz/app/zakony>>.
- Zákon č. 106/1999 Sb., o svobodném přístupu k informacím*. [Online], accessed at 08. 01. 2015. Available at: <<http://www.mkcr.cz/scripts/detail.php?id=325>>.