

Romanian Urban e-Government. Digital Services and Digital Democracy in 165 Cities

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Abstract: There is little disagreement in the doctrine that we live in extremely changing and innovative societies. Nowadays, the information technology is getting more and more accessible, complex and secure, changing the well-established traditions of modern societies. In many democratic states, electronic-government represents an answer to the request of reducing the cost of the decisional process. However, the new administration requires not only an innovative solution, but "intelligent citizens" to make use of it. Recent studies show that e-government has developed five stages, each of them reflecting the degree of technical sophistication and of interaction with the users: simple information dissemination (one-way communication), two-way communication, service and financial transactions, integration (horizontal and vertical), and political participation. Starting from this model, the present research evaluates the stage of urban e-government within Romania, and identifies its influencing variables. All existing sites of urban local administration – 165 cities - are analyzed through the perspective of both digital government (public services through internet) and digital democracy (citizens' participation to the governing process through internet). Despite the fact that literature regarding e-government is continuously developing, the number of empirical researches worldwide is relatively a small one. The evaluation of Romanian local e-government is a national premiere and will enlist Romania among those where a comprehensive evaluation has been made. Finally, alternative future researches on variables that influence Romanian e-government performance are outlined.

Key words: Romanian e-government, digital services, digital democracy, information technology

1. Introduction

During the last few years, electronic government has been an issue more and more present on the agenda, in our societies. However, intense academic debates on the topic are not necessarily reflected in the chosen solution of each administration. There are numerous democratic and democratizing states in which instruments of e-government accessible to citizens are at an early stage.

The aim of our research is to explore and to describe e-government's level in Romania. The 165 existing urban sites have been analyzed using five evaluation criteria: security and personal data protection; usability; content; provided services; and citizen participation. The gathered data are explained and interpreted taking into account the Romanian context and the international achievements.

Finally, we will make suggestions and raise questions for future researches concerning both the independent variables that are influencing Romanian e-government and the theories which could be tested.

2. e-Government: A theoretical approach

Information technology is a factor that generates changes, being one of the central elements of managerial reform within both private and public space. E-government is also an essential dimension in a society of information and knowledge influenced by globalization as well as by localization. The use of information technology opened various possibilities of rising the public services quality and generated major political changes (Norris 1999) regarding the managerial performance (Brown 1999) and reducing bureaucracy (Moon and Bretschneider 2002).

e-Government represents one of the newest concepts of public administration field, emerged at the end of the '90s. As usual in these cases, the annalists and those employed in public services could not agree over a standard definition and a prevailing comprehension of the concept (Moon 2002). *Latu sensu*, e-government includes the use of all communication information and technologies, from faxes to mobile phones, in order to facilitate day-to-day administration of governmental issues. However, as in e-commerce happened, the common interpretation of e-government is referring exclusively to activities based on internet, that are bettering citizens access to governmental information, to services and expertise, in order to satisfy citizens interests and to facilitate mass participation in governmental process (ONU and ASPA 2001). Therefore, e-government means, *stricto sensu*, providing

public services through information technology. As Sprecher (2000) put it, e-government represents any use of information technology in order to simplify and to improve the relations between officials and other actors, such as citizens, private firms, and governmental agencies.

The studies made until now show that there are five stages in the development of e-government, stages which reflect the degree of technical knowledge ability and the extent of interaction with the users: information dissemination (one-way communication), two-way communication, financial services and economic transactions, integration (horizontal and vertical) and political participation (Moon 2002). The first stage is the simplest form of e-government and consists only in posting data on the official website in order to inform the citizens. The second stage is characterised by an interactive communication between government and the citizens, incorporating e-mail and information transfer systems. In the third stage, the sites provide online services and financial transactions (Hiller and Belanger 2001). This type of e-government can be reached partially by providing databases and online access to them (Layene and Lee 2001). The next step is to integrate both vertical (inter-governmental integration) and horizontal (intra-governmental integration) all governmental services. However, this fourth stage requires a lot of time and resources in order to merge the on-line system and the specific services provided by each administration (Hiller and Belanger 2001). The last stage means promoting political participation throughout internet using on-line voting, forums, opinion polls, or any other means of immediate and direct interaction.

This conceptual framework is only an exploratory instrument for understanding e-government's evolution. Practice shows that it is possible this linear evolution to be not respected. It is a problem faced by evaluation researches, especially regarding the municipalities. E-governance Institute realized in 2003 and in 2005 two researches at global level (Holzer and Seang-Tae Kim, 2005). In both cases, 100 cities have been considered through the perspective of digital-government performances. There have been studied e-government (public services providing) as well as e-democracy (citizens participation in governing). Concretely, the analysis focused on: sites security; usability; sites content; the type of on-line services; and citizens' participation to the decisional process throughout local authorities' sites. The evolution of local e-government in recent years has been monitored from both theoretical and practical perspective (Choudrie, Ghinea and Weerakkody 2004, Norris and Moon 2005, Finger and Pecound 2003, Martin and Byrne 2003). Other researches have analysed socio-economic and organizational factors related to local e-government development, or the difference between theory and reality concerning local e-government (Moon 2002).

3. Research methodology

The aim of the research is to evaluate the official websites of Romanian cities, closely following Mark Holzer and Seang-Tae Kim's model described in their study *Digital Governance in Municipalities Worldwide* (2005). There are 308 urban settlements (towns and cities), including the 6 districts of Bucharest Municipality within Romanian territory. At the time of the study, only 165 (that is 53.57%) of these had functional web pages.

The present research examined local government starting from an incremental model of development, as follows: the first step is providing information, the second one information exchange, followed by service provision, service integration and, in the end, political participation. The criteria used for assessing the cities' websites have five components: security and personal data protection, usability, contents, type of provided services, and digital democracy. The study used 98 measures, yielding a maximum raw score of 219, and a maximum weighted score of 100. Weighting was necessary, because each of the five dimensions had a different number of questions (18 in the case of security and 20 for all other dimensions), as well as different scores (25, 32, 48, 59, 55). The five dimensions were given equal weight, not taking into account the number of questions used when assessing it. Thus, after weighting, each dimension was able to take on scores from 0 to 20, the maximum score being 100. Forty three items are dichotomous. For questions that have not only yes or no answers (mostly 0/1 and few 0/3), a scale of 3 or 4 steps has been utilised (0, 1, 2 or 0, 1, 2, 3), where 0 indicates that for the respective site there is no information regarding the asked question; 1 the fact that information does exist; 2 the fact that the information can be downloaded (files of folders, audio or video documents); and 3 indicates the possibility of on-line transactions (payments for goods or services, applications for premises, the existence of certain data bases where information can be searched for, the possibility of using an electronic signature).

In the case of "security and personal data protection", concepts such as public statements concerning personal data protection, authentication, encryption, the management of collected data and the use of cookies were operationalised. Easy-to-understand and easy-to-use design, length of access page, structure, the extent to which it addresses particular target audiences, and the ability to search for information on the site were the concepts behind usability operationalisation. As for contents, the accent was placed on the possibility of accessing recent information, official documents, reports, publications and audio/video materials. In the "services" category were included the transactions that might occur between local administration and citizens, or between local administration and business owners, as well as lodging requests for various authorisations (permits, licenses). The research regarding "digital democracy" dimension started from the means offered to citizens in order to provide feedback to the local officials, from debates concerning local public policies, held via the city webpage, and went through to the existence of a system for measuring citizen satisfaction and governmental performance¹. This evaluation scale has been applied to all Romanian cities that, along the referring period (1 – 20 June 2007), had a functional webpage (165 from 308). The process of data gathering has been realized with the aid of our colleagues, as well as of undergraduate and master students within Political Science Department of "Al. I. Cuza" University of Iasi.

The evaluation grid also included grading examples for each item, the operators being also given detailed explanations about the grading system. In order to ensure the reliability of the instrument and its application, each website has been evaluated at least twice, by separate operators. If the difference between the scores was larger than 5 points (5% of the maximum value of the scale), then the website underwent one more assessment.

4. Results of the study

Table 1 shows the scores obtained by some of the 165 surveyed cities for each of the considered dimensions, as well as the global score resulting from their addition. The highest score was obtained by the website of Timisoara municipality (39.66), the webpage of Bucharest (the country capital) coming very close, at 39.36 points, while the third highest being obtained by the city of Arad, with 38.73 points. The maximum possible score being 100, any score under 40 points to the very long distance between Romanian reality and the ideal type of e-government.

Table 1. Global scores and the scores for the five dimensions of some Romanian cities' websites

No.	City	County	Global score	Security	Usability	Contents	Services	Digital democracy
1	Timisoara	Timiș	39.66	0.65	15.63	8.4	8.81	6.17
2	Bucuresti	-	39.36	1.94	14.38	9.2	9.49	4.36
3	Arad	Arad	38.73	0.65	12.5	9.2	9.49	6.9
4	Aiud	Alba	37.39	3.87	13.75	5.2	4.41	10.16
5	Targu Mures	Mures	36.64	3.87	10	11.2	5.76	5.81

162	Buzias	Timis	5.17	0	3.75	0.4	1.02	0
163	Baia Sprie	Maramures	5.06	0	4.38	0	0.68	0
164	Targu Secuiesc	Covasna	3.93	0	3.13	0.8	0	0
165	Bucuresti Sect 5	-	3.07	0	1.25	0.8	1.02	0

¹ Here are some examples of questions included in our questionnaire. For "security and personal data protection": Is there any note regarding personal data protection?; Does the note make any reference concerning the use of cookies? Is there a contact address or an e-mail address for questions referring personal data protection?. For "usability": What is the length of access page?; Do the accessed links modify their initial colour?; Is there any search engine available?. For content: Does the site contain recordings of local council meetings?; Is there any information on the local budget?; Does the site utilise wireless applications?. For "services" : Is it possible for a citizen to pay taxes on-line?; Are there any on-line forms for complaints against administration?; Is it possible for a citizen to apply on-line for licenses or permits?. For "digital democracy": Can a citizen transmit her/his comments or proposals to the local officials?; Is there a forum regarding community problems?; Is there any e-petition or e-referendum?.

The amplitude of the resulting scores' variation was 36.59. The lowest score was obtained by Sector 5 (District 5) from Bucharest – 3.07 points, followed by Targu Secuiesc – 3.93 points, and Baia Sprie – 5.06.

Figure 1 stands for the average and the best 5 scores obtained by the Romanian cities. As it can be easily observed, the 5 pentagons have similar shapes with high values for "utility" dimension and very low values for "personal data protection" and "citizens participation".

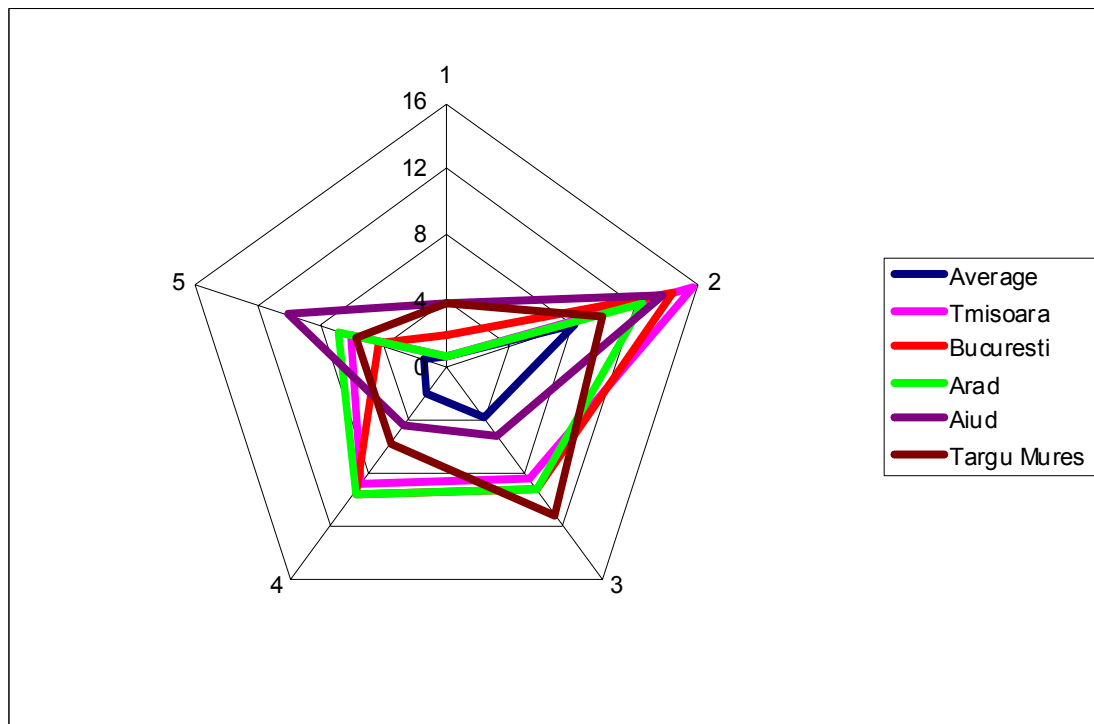


Figure 1: The average score and the best scores

Figure 2 presents the histogram of total scores distribution on class boundaries of 5 units. The average for scores was 16.39, with a standard deviation of 7.66, while the median was 14.87. The fact that the median is lower than the average shows that the score distribution leans to the right, as can be seen in the figure: fewer and fewer sites in the intervals with high performance values. The category with most scores is between 10 and 15, where no less than 49 cities can be found.

The fact that among the 20 cities in terms of global performance of e-government we can find mainly (but not exclusively) large cities, seems to confirm the hypothesis according to which in cities with large populations there is more pressure for increasing the quality of e-services, the same way there are more resources for achieving this goal. However, the hypothesis needs to be tested in later assessments and especially through a qualitative one. The fact that the average for the scores is only 16.39 and that over half of the 165 cities have obtained scores lower than 15 of a possible maximum of 100, suggests that not only the resources allotted to e-government are low, but that the attention given by local authorities to this phenomenon is also marginal. We do plan to test this hypothesis in the future.

In terms of security and personal data protection, the best sites, those of Bistrita and Ploiesti, barely reached 5.81 points of a maximum of 20 possible (table 2). The average was 0.62 and the median was 0. In fact, of the 165 city web pages in use when the study was carried out in Romania, 128 do not even mention personal data protection.

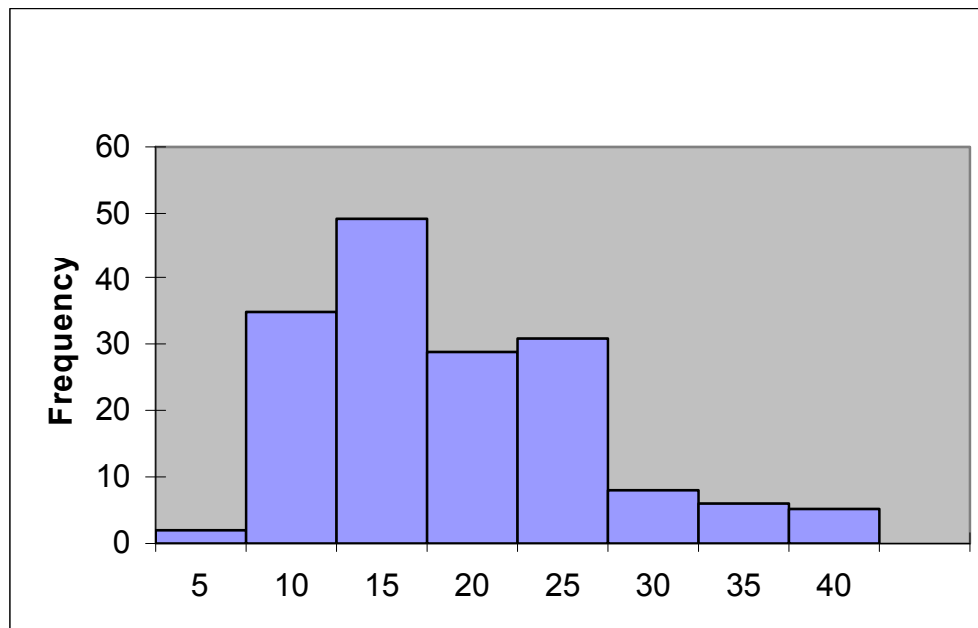


Figure 2: Score distribution histogram for e-government within Romanian cities

The above does not necessarily show the absence of concern for information security on the websites, but the fact that security measures are not pointed out to the users. The notice concerning security and personal data protection is present, most of the times, only on the page where the users can pay taxes online (a service provided only by a minority of the websites assessed). In the majority of cases, the access to such services can be realised only in the "classic" way, by filling in forms and then sending them to the City Hall financial department. None of the sites clearly states whether cookies are used or not, nor if electronic signatures are permitted. This shows that the websites are still seen as a one-way platform of presenting information, from authorities to citizen, and that the importance of personal data protection is still not given the deserved importance.

Table 2: Best websites in terms of security and personal data protection

Pos.	City	County	Score	Security
1	Bistrita	Bistrita-Nasaud	30.56	5.81
1	Ploiesti	Prahova	25.07	5.81
2	Deva	Hunedoara	24.98	5.16
3	Aiud	Alba	37.39	3.87
3	Targu Mures	Mures	36.64	3.87
3	Otopeni	Ilfov	31.44	3.87
3	Turda	Cluj	29.68	3.87
4	Galați	Galati	32.09	3.23
4	Sibiu	Sibiu	27.55	3.23
4	Lupeni	Hunedoara	25.80	3.23
4	Petrosani	Hunedoara	24.70	3.23
4	Bucuresti Sector 3	-	22.52	3.23

Table 3 shows which are the best sites in terms of usability. The maximum score was obtained by Timisoara – 15.63 points of maximum 20 possible. The average score for this dimension was 8.17 points, with a standard deviation of 2.58, and the median was 8.13, the distribution being almost symmetrical. Most of the websites have relatively brief access pages/homepages, extending over maximum two screens. Also, most of the websites have a sitemap, and the navigation bar is present on each opened page. The homepage often displays useless photographs, such as the portrait of the mayor or those of local councillors, fact that further hinders page loading, inducing the idea that the Internet infrastructure is still underdeveloped. There are very few instances where the audience is

targeted as groups. In the best of cases, the websites include links for locals and for tourists, very rarely for business owners, and never for elders, young people or for individuals with special needs. Only few sites give the possibility of filling in online forms, and none of them offers the opportunity for the entire administrative procedure to take place exclusively in electronic form. Approximately one third of the official city pages has a search engine, but without the possibility of sorting the results by relevance or by any other criterion. Approximately one quarter of the websites show the date of latest update, for the rest, this date has to be inferred from the latest press released or documents published.

The website of Targu-Mures municipality obtained the best score in terms of contents – 11.2 (table 4). The rest of the scores were under 10. The average score for this dimension was 3.91 points, with a standard deviation of 2.42, and the median was 3.6. Most of the websites provide the address of the City Hall and some contact details, as well as a list of the decisions/resolutions of the local council. The minutes of the local council meetings can be found on less than 20% of the websites, and information on the local budget is even more limited. Almost half of the websites offers information in at least two languages (Romanian and English, but the information in English is much reduced compared to that in Romanian). In Transylvania there are websites in three and even four languages (Romanian, English, Hungarian and German), but also one website exclusively in Hungarian. There are no specific alert systems concerning natural disasters, no adapted access options for those with sight or hearing disabilities. Most items are concerning events that have already taken place. Future events are announced in few brief words and are related, as a rule, to city's most festive moments (legal holidays, religious festivals, celebrations/commemorations of historic events, Oktoberfest-type celebrations etc.). There are no websites containing information related to day-to-day life aspects, such as the closure of motorised traffic on a certain a route.

Table 3: Best websites in terms of usability

Pos.	City	County	Score	Usability
1	Timisoara	Timis	39.66	15.63
2	Bucureşti	-	39.36	14.38
2	Constanta	Constanta	30.30	14.38
3	Aiud	Alba	37.39	13.75
3	Craiova	Dolj	29.65	13.75
4	Reghin	Mures	22.11	13.13
5	Turda	Cluj	29.68	12.50
5	Oradea	Bihor	22.83	12.50
5	Arad	Arad	38.73	12.50
5	Iasi	Iasi	27.11	12.50
5	Mangalia	Constanta	20.97	12.50
5	Sacele	Brasov	21.40	12.50

Table 4: Best websites in terms of contents

Pos.	City	County	Score	Contents
1	Targu-Mures	Mures	36.64	11.2
2	Constanta	Constanta	30.30	9.6
3	Bucuresti	-	39.36	9.2
3	Arad	Arad	38.73	9.2
3	Bucuresti Sector 3		22.52	9.2
4	Alba Iulia	Alba	33.40	8.8
4	Sibiu	Sibiu	27.55	8.8
5	Timisoara	Timis	39.66	8.4
5	Resita	Caras-Severin	33.54	8.4

Table 5: Best websites in terms of services

Pos.	City	County	Score	Services
1	Bucuresti	-	39.36	9.49
1	Arad	Arad	38.73	9.49
2	Timisoara	Timis	39.66	8.81
3	Resita	Caras-Severin	33.54	7.46
4	Alba Iulia	Alba	33.40	6.78
5	Botosani	Botosani	24.18	6.44
6	Slobozia	Ialomita	23.44	6.10
7	Targu-Mures	Mures	36.64	5.76

Bucharest and Arad City Halls are providing to the citizens the largest number of online services, their score for this dimension being 9.49 (table 5). The average score in terms of services provided was 2.09, with a standard deviation of 1.84, and the median was 1.7. In fact, the websites of 44 cities do not offer any online services to the users. There is no city where the utility bills can be paid using the City Hall official webpage as a portal. On the other hand, in almost one-quarter of the cases, the websites do allow online payment of local taxes. The registration procedure for paying local taxes is not actually an electronic one. The citizen has to take a "classic" written request to the City Hall after which the citizen will be handed, after presenting an identity document, a written answer containing the password for accessing the website area dedicated to payments, which will consist in one additional trip to the City Hall. As concerning time expenditure, such a procedure is more costly than the one consisting in paying at the tax desk. Less than 40% of the assessed web pages are providing access to databases. Most of the sites do give contact details for requesting information or lodging complaints, but only a few have pages for online complaints.

As regarding "digital democracy" dimension, the best results have been obtained by the city of Aiud – 10.16 points (table 6). All the other cities have obtained scores below 7.62, 41 websites including no possibility of online feedback. Thus, the average score for participation was 1.14, with a standard deviation of 1.84, the median being 0.73. Only few websites are providing forms to be online filled in order to comment upon local authorities' performance. Less than 10% of the city halls' websites have online opinion polls, and none of them offers the possibility of organising a digital referendum or to adhere to online petition. Mainly large cities have discussion forums open to citizens, but one very seldom can see any reply from local officials. Therefore, these forums may be considered either a channel for receiving citizens' complains, or a communication environment for individuals facing the same problems in relating to local authorities.

Table 6: Best websites in terms of digital democracy

Pos.	City	County	Score	Digital democracy
1	Aiud	Alba	37.39	10.16
2	Resita	Caras-Severin	33.54	7.62
3	Galati	Galati	32.09	7.26
4	Arad	Arad	38.73	6.90
5	Fetești	Ialomita	22.15	6.53
6	Timisoara	Timis	39.66	6.17
6	Craiova	Dolj	29.65	6.17
7	Targu-Mures	Mures	36.64	5.81

When comparing the scores of the five dimensions of the general e-government index (table 7), it can be noticed that usability has the highest individual maximum score – 15.63 – and the highest average score – 8.17. It can easily be observed that the best performance is reached in the case of technical dimension of e-government: information structuring, easiness in navigation, the presence of forms and the way they can be filled in, the existence of a search engine. However, the performance decreases drastically when assessing the other dimensions, the average scores being 3.91 for contents,

2.09 for services, 1.14 for participation and just 0.62 for security and personal data protection. The existence of minimum scores (i.e. 0 points) for 4 of the 5 dimensions of the assessment suggests that many local authorities consider the issue of an official webpage as a purely formal one, something that needs to exist in order to ensure some transparency, but without any special significance for the way the community is run.

Table 7: Maximum, minimum and average scores for each dimension

Dimension	Maximum score	Minimum score	Average score	Standard deviation	Median
Security and protection of personal data	5.81	0	0.62	1.23	0
Usability	15.63	1.3	8.17	2.58	8.13
Contents	11.20	0	3.91	2.42	3.60
Services	3.91	0	2.09	1.84	3.60
Digital democracy	10.16	0	1.41	1.84	0.73

The next question is "how are the performances of e-government distributed across the regions"? Romania is divided in eight regions of economic development (figure 3) which are not independent administration units, but they form a framework of regional cooperation. Each region covers between four and seven counties. The population of each region, the percentage of the population living in towns/cities, the number of urban settlements and the GDP per inhabitant are shown in table 8.

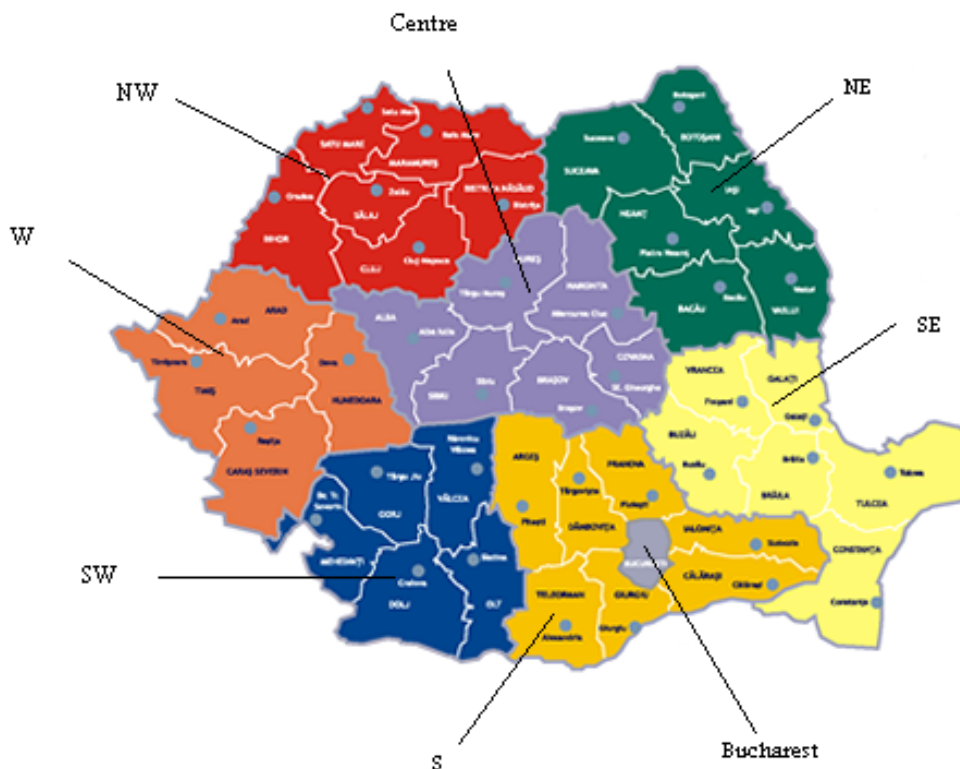


Figure 3: Romanian regions of economic development

Observing the table above, it can be noticed that Bucharest and the West region have the highest number of urban settlements and the highest GDP per inhabitant, while the North-East, the South-West and the South regions have mainly rural settlements and the lowest GDP per inhabitant.

The degree of e-government implementation within various Romanian regions is presented by table 9: while all nine local administration authorities within Bucharest region of development (including the county of Ilfov) have official web pages, in the South-West region (counties of Mehedinți, Dolj, Gorj, Valcea and Olt), only 14 of the 33 cities are visible on the Internet, that is 42.4%. Also below the national average of 60.6% are the Centre region (counties of Alba, Sibiu, Brasov, Covasna, Harghita and Mures), with 54.7%, the North-East region (counties of Suceava, Botosani, Neamt, Iasi, Bacau

and Vaslui), with 56.2%, and the South region (counties of Arges, Prahova, Dambovita, Teleorman, Giurgiu, Calarasi and Ialomita), with 55.8%.

Table 8: Romanian regions of economic development

Region of economic development	Population [,000 inhabitants]	Urban population [%]	No. of towns/ cities	GDP/inhabitant [Euro]
Romania	21623	54.9	308	2932.8
Bucharest	2208	90.5	9	5616.7
Centre	2530	59.9	57	3056.9
North-East	3734	43.4	35	2029.3
North-West	2737	53.1	42	2850.7
South	3329	41.7	48	2447.0
South -East	2846	55.5	35	2661.3
South -West	2306	47.5	40	2443.9
West	3363	63.6	42	3363.7

From the point of view of geographic distribution and depending on each region of development, Bucharest has the best performance – an average score of 21.82 – despite the fact that the lowest score in the country was obtained by Sector 5 (table 10). Scores above the national average were also obtained by the North-East and the West regions (counties of Timis, Arad, Caras-Severin and Hunedoara). Whereas concerning Bucharest and the West region the performance rises to the expected theoretical level, in the case of the North-East region the resulting score reaches paradox. In theory, regions that, in terms of technology, are richer and better developed will have more material, human, and technological resources in order to put into practice an effective e-government system. Moreover, the citizens in these areas will force implementing such a system.

Table 9: Percentage of urban settlements with official websites

Development region	No. of urban local authorities	No. of local authorities that have websites	%
Bucharest	9	9	100
Centre	53	29	54.7
North-East	32	18	56.2
North-West	32	23	71.8
South	43	24	55.8
South -East	33	23	69.6
South -West	33	14	42.4
West	37	25	67.5

Table 10: e-Government scores by region of development

Development region	No. of sites	Maximum score	Minimum score	Average score	Standard deviation	Median
Nationwide	165	39.66	3.07	16.39	7.66	14.87
Bucharest	9	39.36	3.07	21.82	10.12	20.83
Centre	29	37.99	3.93	16.13	8.75	12.79
North-East	18	27.11	7.56	17.96	5.74	19.59
North-West	23	30.56	5.06	15.42	6.82	15.07
South	24	26.94	5.98	14.72	6.45	13.12
South -East	23	32.09	6.99	14.75	6.43	12.49
South -West	14	29.65	6.68	15.33	6.15	15.38
West	25	39.66	5.17	17.02	9.82	13.33

Figure 4 shows the scores obtained by each region of development on the 5 dimensions. In this case, too, the pentagons are similar, with high values for "utility" and low values for "personal data protection" and "citizens participation". Considering the 5 dimensions, Romanian e-government is at the first stage, the one of disseminating information, while characteristics from the other four stages are either missing or poorly represented.

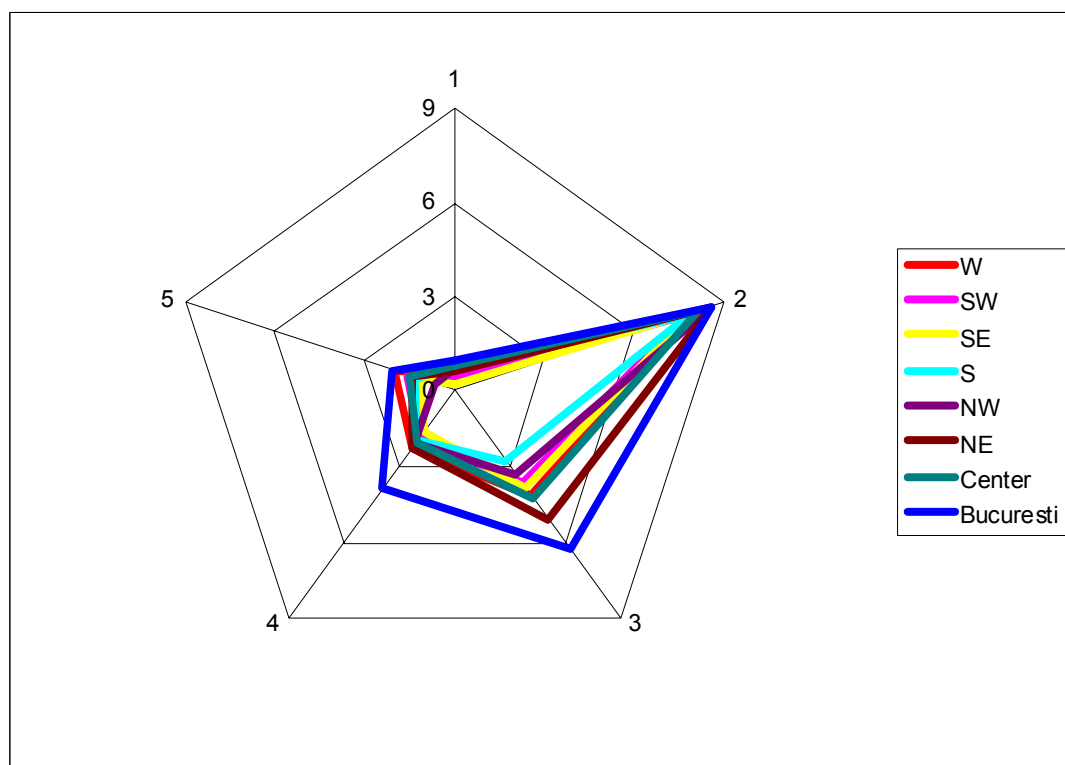


Figure 4: Scores by region of development and by dimension

The North-East region is the poorest within Romania, but, despite this handicap, it has the best results after the municipality of Bucharest. The relatively low spread of scores for this region - the standard deviation being just 5.74, with a median higher than the average - points to a distribution leaning to the left, where no important cities as well as cities that fare poorly can be found. The case of the North-East region suggests new possible research questions: is there a special concern of the local authorities within the poorer regions for modernising the administration precisely in order to cover the gap between them and other regions? Is there any form of regional cooperation as far as e-government is concerned? How is the "learning" process possible at local administration level?

5. Conclusions

Eleven years after the birth of the first city webpage in Romania, e-government seems to be still making its first steps. In terms of usability the performance is somehow acceptable, the average score for this dimension being 8.17 points of maximum 20 possible, and there is practically no concern for security and personal data protection. The information contents of cities' official websites are relatively meagre, most concerning events that have already taken place. The provided services are sparse, mainly because there is no city where the utility bills can be paid using the City Hall official webpage as a portal. The citizens do not have many opportunities to voice their opinion regarding the way the community is run. Less than 10% of the city halls' websites have online opinion polls, and none of them offers the possibility of organising a digital referendum or to adhere to online petition. There are significant differences between cities, as well as between regions. Paradoxically, the poorest Romanian region (North-East) has the best results after the municipality of Bucharest. Further studies could identify the variables influencing the best results, as well as the dissemination of the research results among the local authorities could foster a learning process which might later be translated into an improvement of authorities' performance in terms of e-government, thus leading to better management of local issues and to higher degree of citizens satisfaction.

References

- Arlsan, Aykut, (2007) "Turkish Local e- Governments: a Longitudinal Study", *Electronic Journal of E-Government*, Vol 5, Issue 2, pp 95-106, www.ejeg.com/volume-5/vol5-iss2/v5-i2-art1.htm
- Brown, Douglas, (1999) "Information Systems for Improved Performance Management: Development Approaches in U.S. Public Agencies", *Reinventing Government in the Information Age*, Richard Heeks (editor), Routledge, New York, pp 113-134.

- Choudrie, Jyoti, Gheorghita Ghinea and Vishanth Weerakkody, (2004) "Evaluating Global E-Government Sites: A View Using Web Diagnostic Tools", *Electronic Journal of E-Government*, Vol 2, No. 2, pp 104-114, www.ejeg.com/volume-2/volume2-issue2/v2-i2-art4.htm.
- Finger, Matthias and Gaelle Pecound, (2003) "From E-Government to E-Governance? Towards a Model of E-Governance", *Electronic Journal of E-Government*, Vol 1, No.1, www.ejeg.com/volume-1/volume1-issue-1/issue1-art1.htm.
- Hiller, Janine and France Belanger, (2001) *Privacy Strategies for Electronic Government*, E-Government Series, Pricewaterhouse Coopers Endowment for the Business of Government, Arlington VA.
- Holzer, Mark and Seang-Tae Kim, (2005) *Digital Governance in Municipalities Worldwide (2005). A Longitudinal Assessment of Municipal Websites Through the World*. The E-Governance Institute, National Center for Public Productivity, Rutgers, the State University of New Jersey, Global e-Policy e-Government Institute, Graduate School of Governance Sungkyunkwan University, [www.andromeda.rutgers.edu/~ ego-vinst/Website/researchpgp.htm](http://www.andromeda.rutgers.edu/~ego-vinst/Website/researchpgp.htm).
- Layene, Karen and Jungwoo Lee, (2001) "Developing Fully Functional E-Government: A Four Stage Model", *Government Information Quarterly*, Vol 18, No. 2, pp 122-136.
- Martin, Bill and John Byrne, (2003), "Implementing E-Government: Widening the Lens", *Electronic Journal of E-Government*, Vol 1, No. 1, www.ejeg.com/volume-1/volume1-issue-1/issue1-art2.htm.
- Moon, M. Jae, (2002) "The Evolution of E-government Among Municipalities: Rhetoric or Reality?", *Public Administration Review*, Vol. 62, No. 4, pp 424-434.
- Moon, M. Jae and Stuart Bretschneider, (2002) "Does the Perception of Red Tape Constrain IT Innovativeness in Organizations? Unexpected Results from Simultaneous Equation Model and Implications", *Journal of Public Administration Research and Theory*, Vol 12, No. 2, pp 273-291.
- Norris, Pippa, (1999) "Who Surfs? New Technology, Old Voters, and Virtual Democracy", *emocracy.com? Governance in Networked World*, Elaine Ciulla Kamarck and Joseph S. Nye, Jr. (editors), Hollis Publishing Company, Hollis NH, pp 71-94.
- Norris, Donald F. and M. Jae Moon, (2005) "Advancing E-Government at the Grassroots: Tortoise or Hare?" *Public Administration Review*, Vol. 65, No. 1, pp 64-75.
- Sprecher, Milford, (2000) "Racing to E-government: Using the Internet for Citizen Service Delivery", *Government Finance Review*, Vol 16, No. 5, pp 21-22.
- Tat-Kei Ho, (2002) "Reinventing Local Governments and the E-Government Initiative", *Public Administration Review*, Vol 62, No. 4, pp 434-445.
- United Nations and American Society for Public Administration, (2001) *Global Survey of E-government*, www.unpan.org/egovernment2.asp.

