



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Systems Research Institute, Polish Academy of Sciences
Newelska 6, 01-447 Warsaw, Poland
owsinski@ibspan.waw.pl
lark@ibspan.waw.pl

Web-based functionality of Polish self-governmental units and its effectiveness in promoting the development of rural areas

Abstract: *The paper presents an initial stage of a modest empirical study of the web sites run by a set of Polish self-governmental authorities of a definite level. The study, which is an on-going effort, is carried out according to the standard WAES methodology. The region, for which the study is being carried out, is characterised shortly, and the proper results are reported as seen in various aspects. The conclusions drawn refer to (1) the developments in the domain (quantity and quality); (2) the importance attached by the self-governmental units; and (3) the potential effectiveness in promoting the development of rural areas. It is shown that the local administrative authorities, even if starting with a definite delay, are effectively catching up in terms of both presence and the range of information and service provided. Although there is still quite a way to go regarding deeper functionality of the web services oriented at the development of rural areas, the current situation looks promising. The paper ends with a summary evaluation and indication of some prospective directions of work, both in web-based functionality and related research.*

Keywords: *regional authorities, self-government, province of Masovia, Poland, internet, website functionality.*

Introduction

The paper provides an account from an initial stage of the on-going study devoted to monitoring of the websites of the local (self-governmental) authorities in one of the Polish provinces. This particular province, one of 16, into which Poland is subdivided, the province of Masovia, with the seat in the capital of Poland, Warsaw, is both largely representative for most of the Polish local conditions, and at the same time it is highly „rural“ in the traditional sense of the word, including the prevalence of agricultural function. Thus, it can be assumed that situation is, roughly, similar in the whole of the country.

The study looks at the presence of the local authority's website and at its contents and functionality, as well as other definite features, such as, e.g., updating of the contents. The widely applied WAES methodology is used for the sake of comparability with other similar studies and watchdog results.

The objective of the study is twofold. First, it is the cognitive goal of gathering information on the presence of local authorities on the web and the information as well as services they offer, and drawing conclusions concerning the character of this presence and its characteristics. Second, it is the assessment of the functionality from the point of view of promotion and facilitation of local development. The latter seems of particular importance for the rural areas, given the limited access to markets and promotion outlets, as well as information shortages, characterising these areas. Alas, the second goal can as of now only partly be attained in view of both the present stage of the study (main emphasis being still on information gathering) and the limited functionality oriented more or less explicitly at local development. Thus, the present paper will give more ample account dealing with the first of the goals, and much less so in terms of the second one.

The province under study

As mentioned, the province under study is one of the 16 provinces (voivodships) of Poland, the province of Masovia. The capital of the province is at the same time the capital of Poland. Despite the fact that this is the „capital region“, and the largest in Poland (more than 11% of total area), it remains sufficiently representative for the large part of the country, if not for the whole of it. This is due to the specific features of the Polish urban system (flat distribution of town sizes) and the particular characteristics of the region in question. A very cursory illustration is provided in Table 1.

Table 1. Some characteristics of the province of Masovia against the Polish background

Characteristic	Poland: average (min and max across all 16 provinces)	Province of Masovia
Population density (persons per sq.km)	122.3 (min: 59.0; max: 384.6)	144.0
Urban population share (%)	61.8 (min: 40.5, max: 79.1)	64.6
Share of agricultural land (%)	58.7 (min: 49.7, max: 69.8)	69.8
Share of forested land (%)	28.5 (min: 20.9, max: 49.7)	22.3
Protected areas of high natural value (%)	33.1 (min: 16.4, max: 62.0)	30.1
Share of population served by wastewater treatment (%)	57.1 (min: 44.6, max: 75.8)	45.1
Unemployment rate (%)	18.1 (min: 13.9, max: 28.8)	13.9
Wages and salaries, gross (relative to Polish average)	100 (min: 83.7, max: 129.2)	129.2

Source: *Concise...* (2003).

Thus, while the province is on the average representative for Poland in terms of population density and urban population share, it also features the highest share of agricultural land among the Polish provinces. At the same time, one can suspect a distribution effect in the paradoxical juxtaposition of the province-wise highest wage and salary index as well as the lowest unemployment rate, confronted with the very low share of population served by wastewater treatment plants. (The farming character of a large part of the province can also be seen in Figure 1 of Bański 2003).

The province is composed of 42 counties („poviats“), five of them being urban counties (towns, treated as separate counties). Table 2 shows counties in a similar setting as that of Table 1, in order to illustrate internal differentiation of the province. Yet, notwithstanding this differentiation it can easily be seen that indeed the province has a largely rural character. Even the counties forming the metropolitan area of Warsaw, featuring relatively high population densities (up to 556 persons per sq. km in the county of Pruszków), show limited shares of urban population (not exceeding the average for the province in the same county of Pruszków) and high shares of agricultural land. It appears that – except for the case of Warsaw itself, where 31% of land is still agricultural – the share taken by agricultural land is mainly influenced by the share of forested land, with urbanisation and industrialisation playing marginal roles (see also Table 2).

Let us further note that in many cases the county seat is the sole urban centre of any significance in the county. The four urban counties, except for Warsaw, are a very good illustration here: in their respective „land“ counties, i.e. outside of the town itself, the shares of urban population are 3.6%, 9.5%, 20.5% and 2.3%! Thus, although for reasons of formal correctness and comparability with the results of the study, accounting for all the 42 counties, Table 2 shows the urban counties separated from their respective „land“ counties, when taken together with them they would not differ significantly from the general „rural landscape“ around. On the basis of data from Table 2 the map of Figure 1 was elaborated, illustrating this „rural landscape“ aspect. An ad hoc index L was used for this purpose, defined as follows:

$$L = \frac{(p_i - p_{MIN})}{(p_{MAX} - p_{MIN})} + \frac{(u_i - u_{MIN})}{(u_{MAX} - u_{MIN})} + \frac{(f_i - f_{MIN})}{(f_{MAX} - f_{MIN})}$$

where p_i are population densities in the counties, u_i – shares (in %) of urban population in the counties, and f_i are obtained as a sum of the % share of agricultural land and half of the share of forested land; the values p_{MAX} , p_{MIN} , u_{MAX} , u_{MIN} , f_{MAX} , f_{MIN} corresponding to the respective maxima and minima, but at the level of entire provinces of Poland, not the counties. In this way the values of L can both fall below 0 and exceed 1. In general, the lower the value, the „more rural“ the landscape, and it can be expected that for the urban counties the values of L are well beyond 1. What, again, is important in Figure 2 is the very high share of counties with values of L below 0.

Table 2. The counties („poviats“) of the province of Masovia (as of 2000-2002)

County	Population density (per sq. km)	Share of urban population (%)	Share of agricultural land (%)	Share of forests (%)
Białobrzegi	54	24.1	66.6	8.8
Ciechanów	89	54.0	75.4	9.2
Garwolin	85	27.1	62.6	10.1
Gostynin	80	40.9	69.6	9.8
<i>Grodzisk Mazowiecki</i>	<i>198</i>	<i>60.2</i>	<i>73.5</i>	<i>12.8</i>
Grójec	78	33.2	77.8	8.7
Kozienice	72	30.4	57.0	13.4
<i>Legionowo</i>	<i>228</i>	<i>58.4</i>	<i>44.5</i>	<i>31.4</i>
Lipsko	54	15.6	75.3	17.2
Łosice	45	21.3	72.7	20.3
Maków Mazowiecki	47	27.0	68.2	24.5
Mińsk Mazowiecki	105	43.9	67.9	22.2
Mława	64	40.0	73.2	18.4
Nowy Dwór Mazowiecki	108	50.5	58.7	26.3
Ostrołęka-town	1925	100.0	32.2	5.5
Ostrołęka	40	3.6	62.8	30.7
Ostrów Mazowiecka	65	32.1	64.1	27.7
<i>Otwock</i>	<i>183</i>	<i>61.8</i>	<i>53.5</i>	<i>30.2</i>
<i>Piaseczno</i>	<i>192</i>	<i>48.2</i>	<i>61.5</i>	<i>20.3</i>
Płock-town	1486	100.0	42.2	4.5
Płock	60	9.5	72.6	16.7
Płońsk	66	30.5	76.3	13.2
Pruszków	556	62.9	65.7	10.9
Przasnysz	45	36.6	64.2	29.3
Przysucha	59	14.0	62.9	30.4
Pułtusk	62	37.4	70.3	19.0
Radom-town	2071	100.0	51.0	6.5
Radom	94	20.5	67.8	24.0
Siedlce-town	2406	100.0	41.4	6.0
Siedlce	51	2.3	74.2	17.8
Sierpc	66	34.6	78.2	13.3
Sochaczew	116	46.0	73.7	15.3
Sokolów Podlaski	54	35.1	71.8	21.4
Szydłowiec	91	29.7	59.3	32.4
Warsaw	3258	100.0	30.5	13.6
<i>Warsaw West</i>	<i>167</i>	<i>36.0</i>	<i>61.4</i>	<i>25.5</i>
Węgrów	58	27.6	65.7	25.5
<i>Wołomin</i>	<i>193</i>	<i>66.1</i>	<i>57.1</i>	<i>27.4</i>
Wyszków	82	37.2	57.2	33.0
Zwoleń	67	21.7	78.3	14.6
Żuromin	52	26.0	72.8	18.3
Żyrardów	142	64.0	68.3	22.3

Italics – counties forming (in total or in part) the metropolitan area of Warsaw

Thus, altogether, it is obvious that the province of Masovia, see at the level of its individual counties, can be regarded as a good representation of the rural regions of Poland, that is – of the majority of Polish territory, see, again, Figure 1 of Bański (2003).



Figure 1. The values of index L of non-rural character across the counties of the province of Masovia

The presence and significance of Internet

Heilig (2003) analyses the potential impact of internet-based functionality on the income generating capacity of rural areas and rural communities. He indicates a number of domains, in which an impact from internet is expected or is actually being observed. Of special importance for the here reported study is the domain of *E-administration and online public services*, which is directly addressed,

although we will also touch upon some of the other types of internet-based activities.

The study addressed the web sites of the local administration for several reasons. First, and foremost, these services can be easily found and analysed, and this over a complete, or quasi-complete “population” of these services. Then, this allows for an adequate comparability across the “population” analysed (possibility of applying the same set of functions and criteria), in distinction from the commercial web sites, which usually stem from various background, span different ranges of services, and refer to different spatial ranges. Third, not only comparability across units is assured, but also comparability over time (evolution of functionality and quality of service), this being much more difficult to preserve in the commercial sphere (bankruptcies, profile changes, mergers,...).

Further, it is also assumed that in the Polish rural areas the internet services of the local administration are, as a whole, most developed among the local initiatives of this kind. In fact, the web sites of the local administration, mostly of the county level, are most easily found by the search engines when the name of a given area is used as (a part of) a query. Not only this, for in numerous localities in Poland it is the local administration, using also the medium of internet, tries to promote local business, tourism, and the area at large. Thereby a connection is made to other functions and domains, indicated by Heilig (2003), including, in particular, *E-marketing* or *Virtual communities*. There is also a common conviction that the socio-economic dynamics of an area would be reflected through the activity of its related internet network. Thus, the presence, contents and quality of the web-based services offered by the local authorities become an important element and indicator of the potential effectiveness and efficiency of such services for the local rural development.

The methodology

The study was based upon the frequently applied WAES (Website Attribute Evaluation System) methodology (WAES 2001). This methodology refers to a list of simple criteria, corresponding to the features of the website evaluated. These features-criteria are formulated in such a manner as to allow, in principle, for the simple binary evaluations: YES or NO (PRESENT or ABSENT), with only few exceptions. This fact, together with quite detailed level of the criteria, and their grouping into a set of domains in such a way as to ensure their possibly balanced representation, provide for the high degree of *objectivity* of the resulting evaluation, even if it is still done „by hand“.

The checklist of the WAES method used in the study was as given below (the notions here quoted are translations from the Polish version of the method used in this case, with the „office“ denoting the respective self-governmental administration unit, whose website is under evaluation). It should be noted that this set of criteria, see, e.g. *Raport...* (2002), Kułagowski (2002) differs from the original one by five items.

Address data (these are organisational data, not treated as criteria):

1. Locality; 2. Commune; 3. County; 4. Name of unit; 5. E-mail address; 6. www;
7. Time of waiting for response; 8. Webmaster

Criteria:

I. Clarity

1. Structure
 - 1.1. Layout (is the office the provider and editor of the website?)
 - 1.2. Updating (is the contents updated sufficiently frequently, e.g. last updating done X weeks ago?)
2. Contacts
 - 2.1. Regular mailing address (is it provided?)
 - 2.2. Telephone numbers (are telephone numbers, and other mailing data, of the officers provided?)
 - 2.3. Webmaster's e-mail address (is the e-mail of the person responsible provided?)
 - 2.4. Editor's e-mail address (is the e-mail of the main editor provided?)
3. Information on the institution
 - 3.1. Vision of the future (are mission/vision documents provided?)
 - 3.2. Principles of functioning of the office (is timetable of functioning of departments provided?)
 - 3.3. Organisational structure (is a graphical scheme of office's organisation provided?)
4. Subject-oriented information
 - 4.1. Governmental addresses, links (are addresses of and links to other associated offices provided?)
 - 4.2. Other links and addresses (are addresses provided of other offices, not directly associated?)
 - 4.3. NGO links and addresses (are links & addresses of NGOs given as e.g. information providers?)
 - 4.4. Reports, studies, regulations (are these documents provided in an easily accessible form?)
 - 4.5. Archives (is there a possibility of searching in the archives for bulletins, regulations, etc.?)
 - 4.6. Downloadable publications (are internal publications of the office – like protocols – available?)
 - 4.7. Link or reference to Law on Information (are readers made aware of their rights?)
5. Direct contact with the citizens
 - 5.1. Explanations for citizens (is information provided on current regulations, laws, studies, etc.?)
 - 5.2. Instructions (are instructions & assistance provided on how to fulfil regulations?)
 - 5.3. Ombudsman (are readers instructed how to appeal from the decisions of the office?)

II. Interactivity and accessibility

1. Safety and privacy
 - 1.1. User's privacy (is the service using cookie-like applications to collect user info?)
 - 1.2. Privacy of logging (is the user required to provide any other info than e-mail address?)
 - 1.3. Safety of personal data (are personal data safeguarded in any way [triple choice; -1, 0,+1]?)
2. Contacts
 - 2.1. Webmaster's e-mail (is automatic reference to webmaster provided?)
 - 2.2. Highest officer's e-mail (is automatic reference to the highest officer provided?)
 - 2.3. Officers' e-mails (are easily accessed e-mails to several key officers provided?)
 - 2.4. Predefined communication format (is the office trying to enforce a communication format?)
 - 2.5. Chats / discussion lists / forums (are such possibilities offered for the users and officers?)
3. Information on organisation
 - 3.1. Links to (sub)units (are there direct links to sub-pages of individual units?)
 - 3.2. E-mail bulletin (is such a bulletin available?)
4. Subject-oriented information
 - 4.1. Subject-oriented links (are the addresses provided correctly linked?)
 - 4.2. Other governmental links (are such addresses correctly linked?)
 - 4.3. NGO subject-oriented links (are such addresses correctly linked?)
5. Interaction
 - 5.1. Office forms for downloading (are necessary forms & sheets downloadable?)
 - 5.2. Office forms on line (can users fill in forms on line and file them with the office?)
 - 5.3. Responding (is the electronic filing acknowledged and information on deadlines provided?)
 - 5.4. Appeal link (is the appeal procedure described in a clear and simple manner?)
 - 5.5. Language versions (are other than Polish versions available?)
 - 5.6. Graphical facility (is orientation facilitated by easily understood icons and pictograms?)
 - 5.7. Audio access (is website in some way accessible in audio form?)
 - 5.8. Simplified access (are other possibilities available of simple access – text mode etc.?)

Evaluation: total score is the sum of points (0-1), except for II.1.3, over all criteria.

It should be noted that the definitions of criteria provided here are just abbreviations of the ones used in the actual study, which were made sufficiently unambiguous (e.g. threshold numbers of definite items, deadlines etc.) to secure comparability across various self-governmental units evaluated. In addition, it is possible to shape the formulation of the concrete criteria according to the object and purpose of a given study, while entirely preserving the character of evaluation (i.e. first of all – keeping it possibly objective).

There are, therefore, two main domains of evaluation („Clarity“ and „Interactivity and accessibility“), subdivided into sections and then into binary criteria (YES-NO questions). The total number of criteria is 40, of which 19 make up Clarity and 21 the other domain. This almost complete balance, coupled with a distinct correspondence between numerous items in the two domains, is another device securing a possibly high degree of objectivity.

It is, then, clear that the WAES checklist allows for a comparison across websites of similar character. If doubts can arise when differences in total evaluations are small (1–2 score points), the difference of, say 10 points indicates definitely a wide gap in website quality.

The course of the study and the results

The evaluation was carried out until now three times, at definite dates, in Spring 2003, Autumn 2003 and Spring 2004 (see Larkiewicz 2004, for more details). This allowed for the recording of the dynamics, which is quite visible through the results we report here. This dynamics, anyway, does not only concern the WAES scores, but also other aspects, like the design of the websites, which significantly changed, and, in particular, the uniformity of the websites (the increase of uniformity being due, apparently, to some institutional, if not commercial, measures). Table 3 presents the summary scores for the counties of Masovia obtained in Autumn 2003 and Spring 2004.

The average scores for Autumn 2003 (for the websites classified) and Spring 2004 were, respectively, 16.63 and 22.67 (out of the maximum of 40, let us remind), meaning a decisive progress (by roughly 15% of the overall scale in just half a year!). The non-classified websites may have been under construction, re-construction or simply not existed (the latter being most presumably the least frequent case). The counties with top five scores are marked in bold: there were six of them in Autumn 2003 and nine in Spring 2004. Likewise, there were seven counties with scores below 10 in Autumn 2003, and only one in Spring 2004. Figure 2 shows the spatial distribution of scores in Spring 2004 within even intervals of score values, demonstrating that the differentiation is by no means pronounced, and that it does not emphasise the more “urbanised” counties (see the remarks below).

Now, Table 4 shows the summary scores across the counties for individual criteria, and the changes having taken place between Autumn 2003 and Spring 2004.

Table 3. Summary results for the counties of Masovia for Autumn 2003 and Spring 2004

Counties	Summary scores		Counties	Summary scores	
	2003	2004		2003	2004
Białobrzegi	9	7	Płońsk	14	24
Ciechanów	13	20	Pruszków	19	24
Garwolin	29	28	Przasnysz	9	27
Gostynin	15	11	Przysucha	7	21
<i>Grodzisk Mazowiecki</i>	29	29	Pułtusk	7	17
Grójec	22	22	Radom-town	22	27
Kozienice	11	20	Radom	13	24
<i>Legionowo</i>	22	24	Siedlce-town	–	24
Lipsko	11	10	Siedlce	–	20
Łosice	8	15	Sierpc	10	28
Maków Mazowiecki	16	18	Sochaczew	16	24
Mińsk Mazowiecki	11	29	Sokołów Podlaski	25	24
Mława	21	22	Szydłowiec	12	22
Nowy Dwór Mazowiecki	28	28	Warsaw	35	35
Ostrołęka-town	32	32	<i>Warsaw West</i>	9	–
Ostrołęka	28	28	Węgrów	28	30
Ostrów Mazowiecka	16	26	<i>Wołomin</i>	–	28
<i>Otwock</i>	8	21	Wyszków	–	25
<i>Piaseczno</i>	17	–	Zwoleń	–	22
Płock-town	26	26	Żuromin	–	24
Płock	14	25	Żyrardów	–	21

Here, the progress comes out in an even more pronounced manner: there are criteria, on which progress is astounding (like +61 or +52 percentage points), while there is also a group of items, on which no progress was observed.

Obviously, the situation is the worst, on the average, in the group of criteria related to „Interaction“. This group is very important from the point of view of functionality, since it allows for active use of the service offered, rather than passive reception of information (e-mail communication being treated elsewhere, under „Contacts“, also, however, with a not too spectacular effects). Here, as well, progress is the least satisfactory.

In fact, even without comparing Tables 3 and 4 one can easily see which areas are developed as the first, which ones follow and which still require definite effort. Naturally, the first to be implemented are the items related to simple information items, even if requiring an extra effort in putting together a broad

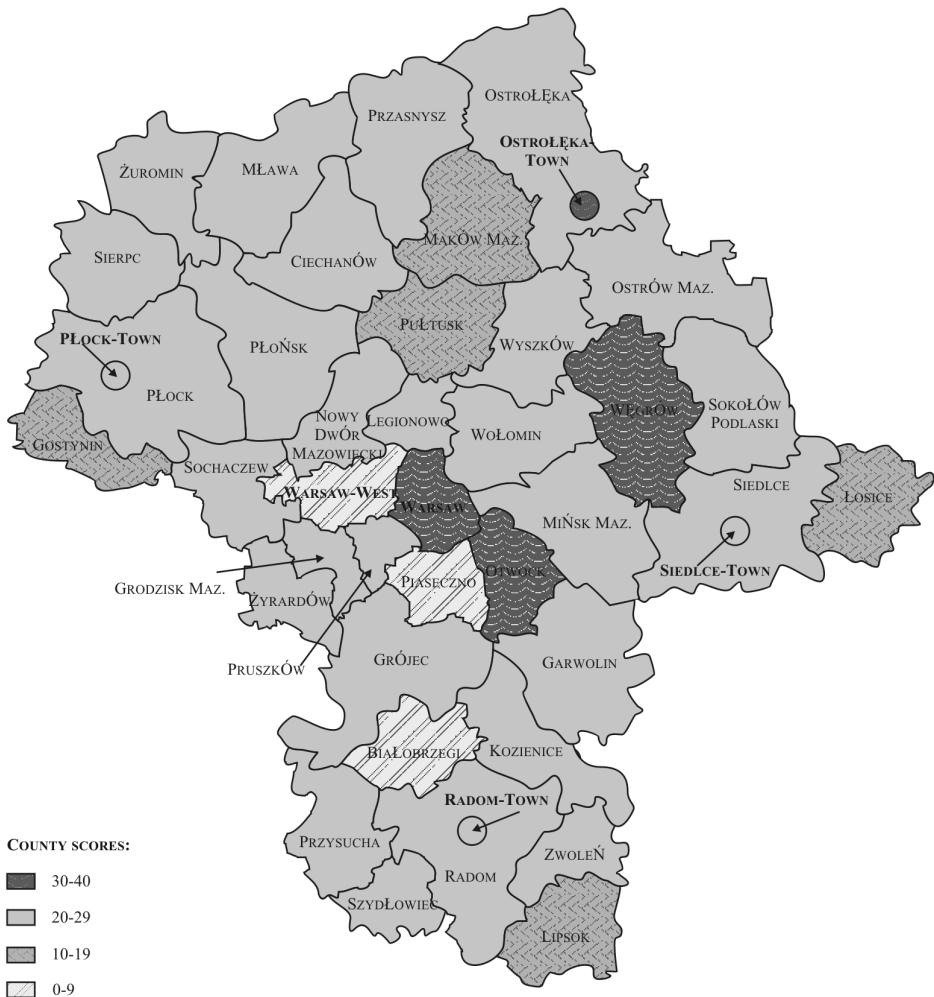


Figure 2. WAES county scores in Spring 2004

range of sources and editing and updating them. Even at this level, though, if the respective content is well thought-out, the effectiveness of the web services can be highly significant, and can be provided with relatively modest technical means (i.e. even without highly developed interaction applications). This difference of advancement in the areas of „Clarity“ and „Interactiveness“ can be clearly seen from figure 3 and 4. These figures illustrate also very distinctly the advancement in the „Clarity“-related quality of the population of websites analysed.

The scores for the urban counties are on the average higher than for the counties as such, their averages being equal around 27 at both time instants. It can then be easily seen, however, that the mean scores for the counties catch up quickly with, and currently do not differ anyhow significantly from the urban administrations' web services.

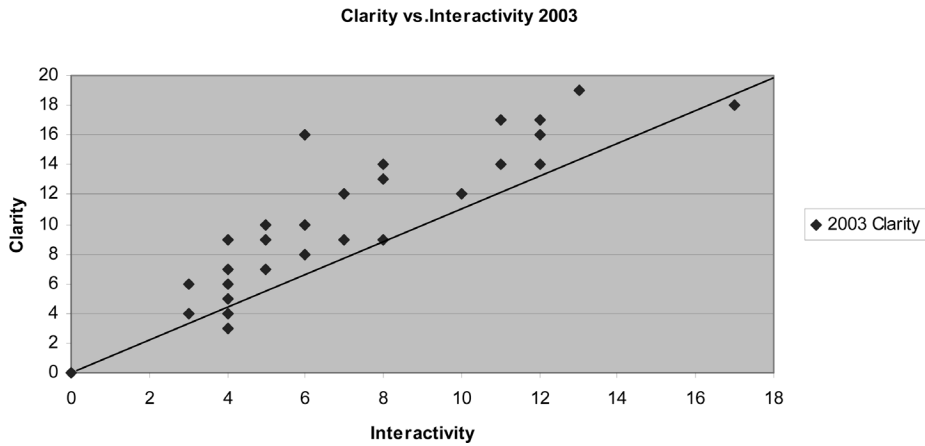


Figure 3. Clarity vs. Interactivity in 2003 for the counties of the Masovian province

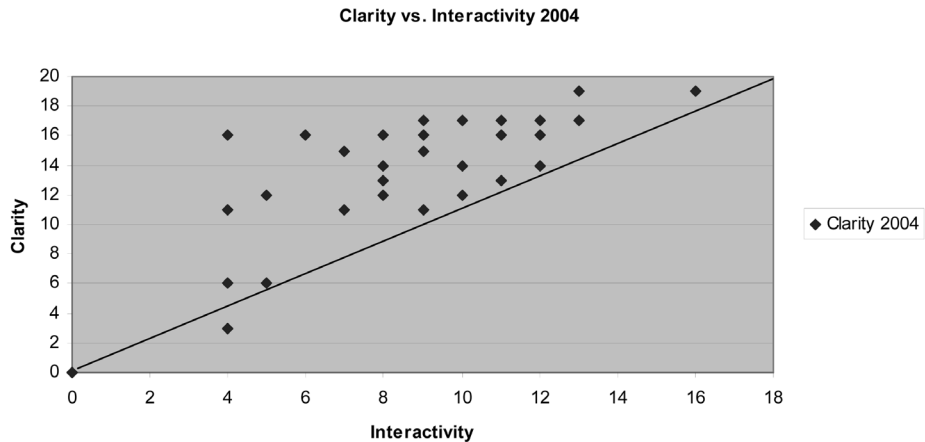


Figure 4. Clarity vs. Interactivity in 2004 for the counties of the Masovian province

On the other hand, though, as we look at the information in Table 5, we can conclude that within the set of counties not being separate towns there was no interdependence between the degree of rural character of a county and the WAES score, both in 2003 and in 2004. This, indeed, is a positive result from the point of view of (at least relative) advancement of the rural areas (see also Figure 1).

As pointed out already, it was assumed that the adequate quality of the official websites was a prerequisite for the farther-reaching functionality of these websites, especially regarding promotion of local business, local potential, human resources and the area in general. That is why the subsequent phase of the study would involve a series of additional criteria, with a working title of the domain „Territorial marketing“. The respective list of criteria is provided in the section dealing with future work.

Table 4. Summary scores of the counties per criterion in Autumn 2003 and Spring 2004, expressed in % of counties, for which the scores were equal 1

Criterion	Average scores			Criterion	Average scores		
	2003	2004	Change		2003	2004	Change
Clarity				Interactivity & accessibility			
1. Structure				1. Safety & privacy			
1.1	82%	92%	+10 pp	1.1	84%	84%	-
1.2	58%	92%	+34 pp	1.2	82%	82%	-
2. Contacts				1.3	3%	26%	+23 pp
2.1	82%	95%	+13 pp	2. Contacts			
2.2	79%	95%	+16 pp	2.1	74%	87%	+13 pp
2.3	74%	82%	+8 pp	2.2	32%	61%	+29 pp
2.4	50%	71%	+21 pp	2.3	8%	29%	+21 pp
3. Information on institution				2.4	84%	84%	-
3.1	42%	87%	+45 pp	2.5	18%	21%	+3 pp
3.2	66%	87%	+21 pp	3. Information on institution			
3.3	32%	32%	-	3.1	42%	71%	+29 pp
4. Subject-oriented information				3.2	5%	8%	+3 pp
4.1	34%	61%	+27 pp	4. Subject-oriented information			
4.2	39%	63%	+24 pp	4.1	29%	61%	+32 pp
4.3	55%	82%	+27 pp	4.2	18%	53%	+35 pp
4.4	29%	79%	+50 pp	4.3	29%	68%	+39 pp
4.5	45%	71%	+26 pp	5. Interaction			
4.6	32%	66%	+34 pp	5.1	18%	37%	+19 pp
4.7	3%	13%	+10 pp	5.2	3%	3%	-
5. Direct contact with citizens				5.3	0%	0%	-
5.1	24%	76%	+52 pp	5.4	5%	16%	+11 pp
5.2	13%	74%	+61 pp	5.5	21%	32%	+11 pp
5.3	3%	21%	+18 pp	5.6	0%	0%	-
				5.7	3%	3%	-
				5.8	5%	5%	-

Table 5. Coefficient of correlation between the WAES score and three selected indicators for 37 Masovian counties not being separate towns

Correlation between the WAES score and:	population density	share of urban population	share of agricultural land
In 2003	0.098	-0.030	-0.025
In 2004	-0.026	0.089	0.013

Conclusions

The results to date, here only superficially illustrated, indicate that

- (1) the self-governmental bodies of the county level in rural areas are definitely present on the web in Poland, though
- (2) there is a wide differentiation of the quality – and contents – of the respective services; but
- (3) there is a distinct and quick overall progress in both quality and contents of the websites, though (again)
- (4) the progress is by no means uniform and linear; yet
- (5) the present state of things and the direction and rate of evolution demonstrate that these services can be instrumental and effective in promoting local development, including, in particular, the development of rural areas.

It is envisaged that the future work will include other aspects, constituting an extension of the WAES set of criteria, aiming more directly at promotion of and information about the county services, amenities, assets, etc. (e.g. culture, history, education, health care, entrepreneurship, and so on). A list of criteria, similar to the one already presented here, has been elaborated and will be used for this purpose.

References

- Bański, J., 2003, *Transforming the functional structure of Poland's rural areas*, [in:] J. Bański, J. Owsiniński (eds.), *Alternatives for European Rural Areas*, ERDN, IERiGŻ, IGiPZ PAN, Warsaw, 19–37.
- Concise Statistical Yearbook of Poland 2003*, 2003, CSO, Warsaw.
- Heilig, G. K., 2003, *Information society and the countryside: can internet-based systems bring income alternatives to rural areas?* [in:] J. Bański, J. Owsiniński, (eds.), *Alternatives for European Rural Areas*, ERDN, IERiGŻ, IGiPZ PAN, Warsaw, 65–79.
- Kuлагowski, Sł., 2002, *Polskie gminy w internecie (Polish communes on the web; in Polish)*, II Kongres E-Gospodarki, Warszawa.
- Larkiewicz, A., 2004, *Witryny internetowe samorządów mazowieckich – analiza i ocena (Web pages of the Masovian self-governmental units – analysis and assessment; in Polish)*, Paper for BOS 2004 – Polish conference on Operational and Systems Research, IBS PAN, Warszawa.
- Raport – Administracja publiczna w sieci 2002 (Report – Public administration on the web 2002)*, 2002, Internet Obywatelski.
- [WAES] Website Attribute Evaluation System. Cyberspace Policy Research Group, 2001, Website: http://www.cyber-state.org/1_0/govt2001/waes.html