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COMPETITIVENESS OF THE RESPECTIVE DISTRICTS OF THE MAŁOPOLSKA PROVINCE IN THE SOCIAL, ECONOMIC, AND ENVIRONMENTAL DIMENSION

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Summary

The aim of the article was to present and examine the level of competitiveness of the districts (*poviats*) of Małopolska province, and compare them with each other in this respect. The analysis included three dimensions: social, economic, and environmental. This subdivision results from the direction of implementing the principles of sustainable development. In each dimension, typical variables have been selected, which facilitated the determination of respective competitive positions of each district. The study was based on a multivariate space of variables, using one of the methods of taxonomic classification – Ward's agglomeration, and combinatorial operative method of enabling separation of homogeneous clusters in respect to the studied phenomenon. In order to determine similarities between individual units (districts called *poviats*, or counties), matrix of Euclidean distances was used. Analyses have shown that towns with district rights tend to enjoy high competitive positions, as well as those districts located in the southern part of the Małopolska province.

Keywords

competitiveness comparison • governance • sustainable development • Ward's classification • determining similarities

1. Introduction

The development of processes taking place in the region is characterized by high volatility. This means that distinguishing the basic factors, as well as those determining their impact on competitiveness levels, is an extremely complex task. Difficulties arise when measuring the intensity and direction of impact of each of the factors [Górski and Lazarek 2009, p. 307]. The popularity of research into competitiveness results from the fact that it can serve to assess the condition of the environment, as well as economic and social conditions of a given region. The competitiveness of the region is related to the success and the competitive advantage of the given administrative unit, which results from the appropriate use of the resources that the given region possesses. Spatial

planning instruments also play an important role in shaping competitiveness levels of regions [Mickiewicz and Nowak 2016].

The integration of Poland with the European Union has placed Polish local governments under the obligation to adapt to the trends, legal regulations, and recommendations existing in the EU. One of such elements is the concept of sustainable development in the social, economic, and environmental dimensions. The concept of sustainable development is one of the tools for creating regional development at all levels of territorial division. Its underlining idea assumes the focus on economic, social, and environmental aspects, including each of these aspects in equal balance. The concept of sustainable development is a response to harmful human impact on the natural environment and to the economic crisis, and it constitutes a guarantee of long-term development for present and future generations.

To conduct a proper analysis of competitiveness, it is necessary to choose and apply appropriate measures. Due to the difficulties posed by any attempt to define the concept of competitiveness in unambiguous terms, it is problematic to identify such measures of the phenomenon in question that would be universally accepted. Therefore, when measuring the phenomenon of competitiveness in the context of a company, a sector, or a country, a number of indicators should be taken into account. Several classifications of competitiveness measures are available in the subject literature. The most common is the division according to: time, the manner of competing, the manner of measuring competitiveness, and the degree and scope of the aggregation of statistical data [Misala 2002, pp. 7–33].

Information on competitiveness may provide useful arguments for *poviat*-level (district, or counties) authorities during the preparation of development strategies and regional programs [Wysocki 2010].

The article is aimed at presenting and examining the level of competitiveness of the *poviats* (districts) of the Małopolska province, and comparing those various Małopolska districts with each other. Competitiveness was defined by means of features representing three groups of information, relative to the social, economic, and environmental character, in accordance with the premises of sustainable development.

2. Study method

The assessment of the level of competitiveness was based on social, economic, and environmental indicators. The analysis covered three dimensions that result from the directions of implementation of the sustainable development principles within the administrative units – that is, the social, economic, and environmental dimensions. The first stage of the analysis was to select the output variables. The selection was made based on the analysis of the subject literature [Ziemiańczyk 2010, Hydzik 2012, Nowak 2000, Pociecha 2008] as well as substantive premises, so that the selected set of variables would facilitate the assessment of competitiveness in social, economic, and environmental terms. The choice of variables was also limited by the availability of statistical data found in the GUS (Polish Statistical Authority) resources. In order to determine

the impact of particular variables on the directions of competitive correlation, they were divided into stimulants ($x_{i\,(s)}$) and deterrents ($x_{i\,(d)}$). Thirteen variables were qualified to be entered into the set of output variables:

- The social dimension:
  $X_{1\,(s)}$ – population growth per 1000 inhabitants;
  $X_{2\,(s)}$ – population density;
  $X_{3\,(s)}$ – percentage of working-age population [%];
  $X_{4\,(d)}$ – unemployment rate.
- The economic dimension:
  $X_{5\,(s)}$ – share of people working in the services sector in the general population [%];
  $X_{6\,(d)}$ – average employment rate [% of the total population];
  $X_{7\,(s)}$ – the number of state economy entities per 10 thousand of the population;
  $X_{8\,(s)}$ – share of newly-registered creative sector entities in the number of newly-registered entities in the total population;
  $X_{9\,(s)}$ – share of newly registered entities in the agri-food processing sector in the number of newly registered entities in the total population.
- The environmental dimension:
  $X_{10\,(s)}$ – population using municipal water supply network as the share [%] of the total population;
  $X_{11\,(s)}$ – population using sewage systems as the share [%] of the total population;
  $X_{12\,(s)}$ – share of legally protected areas in the total area of the given *poviat* (district) according to BDOT10k [%];
  $X_{13\,(s)}$ – the amount of waste collected from households per 1 inhabitant [kg].

The variables accepted for the analysis largely account for the degree of competitiveness of the respective entities, as shown by the reports from studies carried out by numerous authors [Frankowski 1991; Śleszyński 2012, pp. 559–576; Sekuła 2008, p. 93; Szymla 2000; Baker and Hart 1992; Gorzelany-Plesińska 2012, pp. 119–120; Jelonek 2003; Hamel and Prahalada 1993; Matwiejczuk and Pawlaczuk 2002; Machaczka 1999; Gorzelany-Dziadkowiec 2014, pp. 9–10].

The data adopted for the study came from the sources of official statistical authorities (variables X_1 – X_{11}, X_{13}), and from the database of topographic objects BDOT10k (variable X_{12}). The data represent the state of affairs as of 2014. The research object was the province of Małopolska, with the *poviat* (district) serving as the area unit of primary assessment. The Małopolska province (*voivodship*) is subdivided into 22 *poviats* (districts or counties), including three cities with the *poviat* rights. The region as a whole is classified among high-innovation areas, which testifies to its high level of competitiveness, and high development potential [Firlej and Firlej 2015; Firlej 2013].

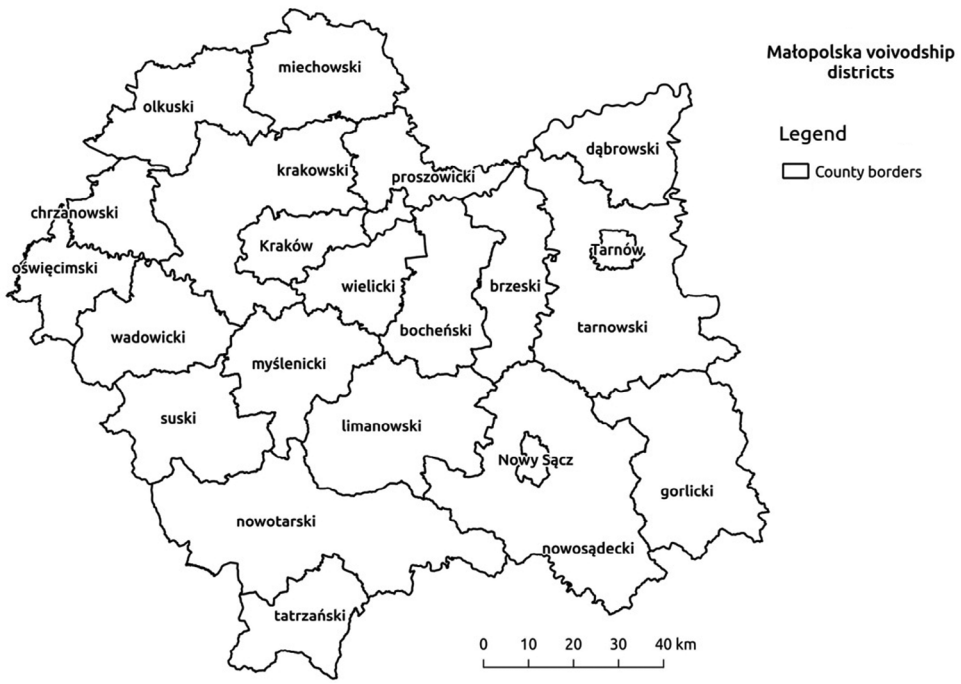
The initial set of variables adopted for the analysis was reduced in order to determine the optimal set of diagnostic features. Variables characterized by low discriminatory ability in relation to the tested objects, for which the coefficient of variation was below 5%, have been eliminated [Malina and Malina 2005; Zimny 2011]. Subsequently, the features that were significantly correlated with other features, and thus provided

Table 1. Observation matrix – values of output variables in the *poviat* districts of the Małopolska province

Poviat (district)		x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}
1	bocheński	3.3	162	62.8	9.2	5.91	14.3	811.45	6.32	0.50	75.4	55.6	33.6	86.2
2	krakowski	1.4	218	63.2	8.3	4.58	14.8	1045.33	6.19	0.77	92.3	48.8	19.2	162.7
3	miechowski	−2.6	74	61	9.4	6.17	9.1	876.49	4.75	1.00	87.5	28.0	3.3	35.1
4	myślenicki	3.3	185	63.5	10.4	5.13	11.0	959.82	6.73	0.47	69.3	51.3	0.9	54.6
5	proszowicki	−0.9	106	62.6	11.2	5.11	9.5	757.54	3.25	0.97	88.9	32.8	0.0	134.3
6	wielicki	2.8	292	63.5	9.3	5.45	14.6	1109.24	5.95	0.49	89.5	42.5	11.8	157.4
7	Kraków city	0.6	2331	62.8	5.1	20.42	39.9	1661.00	9.56	0.59	99.7	91.5	0.0	234.8
8	gorlicki	1.8	113	62.5	12.4	6.03	12.6	707.72	7.07	1.03	38.9	53.9	56.1	98.3
9	limanowski	4.7	136	61.5	15.8	5.17	11.7	723.70	5.51	1.36	50.7	33.0	14.3	61.9
10	nowosądecki	4.7	137	62.3	14.6	4.26	9.8	709.48	4.07	0.84	50.9	35.9	43.6	99.0
11	Nowy Sącz city	1.7	1456	62.6	8.9	13.21	30.1	1139.61	6.76	0.87	84.0	82.5	2.2	183.2
12	chrzanowski	−1.4	341	63.4	13.6	6.66	12.6	928.22	6.88	0.63	99.3	66.5	25.4	231.2
13	olkuski	−1.7	184	63	13.6	6.44	17.8	1036.25	5.26	1.10	98.5	51.2	38.3	188.8
14	oświęcimski	−0.2	382	62.8	11.4	6.41	13.7	912.85	10.02	0.26	98.1	62.3	22.8	203.4
15	wadowicki	2.4	247	62.9	10.9	5.92	16.8	1013.55	6.11	0.41	84.8	48.1	15.7	110.5
16	brzeski	2.0	157	63.2	11.4	5.91	9.5	686.81	4.57	0.46	72.7	33.5	3.7	66.2
17	dąbrowski	−0.3	112	64.6	16.9	5.36	9.0	524.63	4.55	0.61	88.1	40.7	0.0	84.5
18	tarnowski	1.8	142	63.4	13.4	3.69	9.1	586.00	4.67	0.48	66.4	45.3	23.5	89.2
19	Tarnów city	−0.5	1539	62.1	9.7	14.37	29.3	1004.26	10.08	0.43	100.0	87.0	0.4	223.5
20	nowotarski	2.7	129	62.9	13.1	5.32	11.1	798.67	4.39	0.64	48.5	58.7	21.2	50.8
21	suski	0.5	123	62.3	10	5.07	12.7	921.92	4.74	0.32	37.9	30.6	8.7	59.2
22	tatrzański	1.3	144	62.2	13	7.56	12.1	1450.38	6.16	0.64	73.2	61.4	45.7	192.1

Source: elaborated by the authors based on the BDL data as of 2014.

the same or similar information about the studied phenomenon, have been removed [Cierpiał-Wolan and Wojnar 2001]. Mutual correlation of features was eliminated using the Hellwig's method, calculating the R matrix of correlation coefficients between potential diagnostic features, assuming the r^* parameter – the critical value of the correlation coefficient [Hellwig 1981] – as the criterion for the classification of features. For each column of the R observation matrix, the sum of the absolute values of correlation coefficients was determined, and on the basis of that, a central feature was ascertained, that is, the variable corresponding to the largest sum; then, its satellite characteristics were indicated, that is variables for which the coefficients of correlation with the central feature were no lesser, in module, than 0.75 [Nowak 1990]. These features were eliminated from further calculations by plotting the respective rows and columns in the R matrix, resulting in a reduced R' matrix. The reduction allowed for the identification of the central feature, and of the isolated features, which provide the most accurate and comprehensive description of the level of competitiveness of the districts (*poviats*) within the Małopolska province. Among the variables that thus emerged, there were both the stimulants (S) whose higher values indicate a higher level of competitiveness, and the deterrents (D), for which lower values indicate a lower level of competitiveness.



Source: authors' study

Fig. 1. Małopolska province (*voivodship*) subdivided into *poviats* (districts or counties)

As the next step, normalization of diagnostic features was carried out in order to achieve direct mutual comparability. The mean values of the variables were used as the scaling parameter. In order to determine the similarity between the objects (*poviat* districts), the Euclidean distance matrix was calculated using the following formula (formula 1):

$$d_{i \cdot k} = \sqrt{\sum_{j=1}^{m} \left| x_{i \cdot j'} - x_{k \cdot j'} \right|^2}$$

where:

$d_{i \cdot k}$ – denotes the metric distance between the *i*-th and the *k*-th object.

$x_{i \cdot j'} - x_{k \cdot j'}$ – denote the values in the *i*-th and the *k*-th row of the normalized data matrix *X*' (that is, the values assigned to the *i*-th and the *k*-th subjects).

The metric used in the calculations made it possible to determine the homogeneity and heterogeneity of clusters, therefore it provided the basis for the classification of respective *poviat* districts of the Małopolska province in terms of their mutual competitiveness within the space of many diagnostic variables. According to the spatial taxonomy assumptions, the smaller value of the given metric (in this case, the Euclidean distance) means the greater similarity between the examined units. The classification was carried out using the *Numerical Taxonomy* software, employing a hierarchical, agglomerative combinatorial Ward's method. In the aforementioned method, each object is initially a separate group. The number of groups is gradually reduced by combining them into higher-order groups. The merging process ends when one group consisting of a set of all objects is obtained [Kolenda 2006]. In the case of the competitiveness analysis applied to the *poviats* of the Małopolska region, analysis began with the full set of 22 *poviats*. Then, individual *poviats* were combined into homogeneous groups, until their number decreased, and one set of elements was obtained in the final stage. In the interpretation of the results, a division was accommodated at the level enabling the division into 5 groups of homogeneous *poviats* from the point of view of their level of competitiveness. In order to assess the classification for the correctness of cluster separation, an analysis of the individual classification measures was performed, examining the correctness of cluster separation, as well as intra-group homogeneity and heterogeneity (Rousseeuw 1987). The result of the analysis is illustrated in the form of a dendrogram and a cartogram. Additionally, in order to determine the ranking of *poviat* districts in terms of their competitiveness, ranking according to a synthetic feature was applied [Kolenda 2006].

3. Results and discussion

The variable x_3 adopted for the initial analysis was removed, due to its low diagnostic value (coefficient of variation V = 1%). Based on the assumptions of the Hellwig's method, the initial set of variables was reduced already during the first stage of the

process, resulting in obtaining a reduced matrix of correlation coefficients (Table 1). Feature x_2 displays the properties of the central feature, while satellite features, that is x_5, x_6, and x_{11} have been removed. The isolated features include: x_1, x_4, x_7, x_8, x_9, x_{10}, x_{12}, and x_{13}.

Nine variables (the central feature, along with isolated features) were introduced for further analysis. Correlation coefficients (Table 2) indicate that the average strength of linear correlation (assuming the Guilford's scale conventions) is characterized by variables x_1 – population growth, and x_{10} – the percentage of the population using the municipal water supply network. Generally, the unemployment rate, population density, and the number of entities of the state economy (features x_2, x_4, and x_7), as well as the amount of household waste and population density (features x_{13} and x_2) also display average correlation.

Table 2. The reduced matrix of correlation coefficients

	x_1	x_2	x_4	x_7	x_8	x_9	x_{10}	x_{12}	x_{13}
x_1	1.000	–0.136	0.124	–0.138	–0.141	0.005	–0.591	0.223	–0.381
x_2	–0.136	1.000	–0.596	0.639	0.679	–0.135	0.422	–0.385	0.615
x_4	0.124	–0.596	1.000	–0.634	–0.459	0.306	–0.337	0.361	–0.291
x_7	–0.138	0.639	–0.634	1.000	0.530	–0.132	0.404	–0.061	0.641
x_8	–0.141	0.679	–0.459	0.530	1.000	–0.338	0.429	–0.049	0.658
x_9	0.005	–0.135	0.306	–0.132	–0.338	1.000	-0.162	0.221	–0.122
x_{10}	–0.591	0.422	–0.337	0.404	0.429	–0.162	1.000	–0.361	0.685
x_{12}	0.223	–0.385	0.361	–0.061	–0.049	0.221	–0.361	1.000	0.070
x_{13}	–0.381	0.615	–0.291	0.641	0.658	–0.122	0.685	0.070	1.000

Source: authors' study, employing the *Numerical Taxonomy* software

The Euclidean distance matrix, as well as the classification procedure carried out using the agglomerative combinatorial Ward's method allowed us to get an insight into the structure of the phenomenon, that is, the level of competitiveness in the *poviat* districts of the Małopolska province. In the twenty-one stages of the agglomeration procedure, the *poviats* and the clusters of *poviats* that were the most homogeneous in terms of the adopted diagnostic features, were subsequently joined together. A small number of *poviats* displayed similar conditions of competitiveness on the several initial levels. At level 18, it was possible to select five clusters of homogeneous objects (Figure 2), while maintaining the correct level of homogeneity measures, and correct clustering for the performed classification procedure [Kolenda 2006; Rousseeuw 1987].

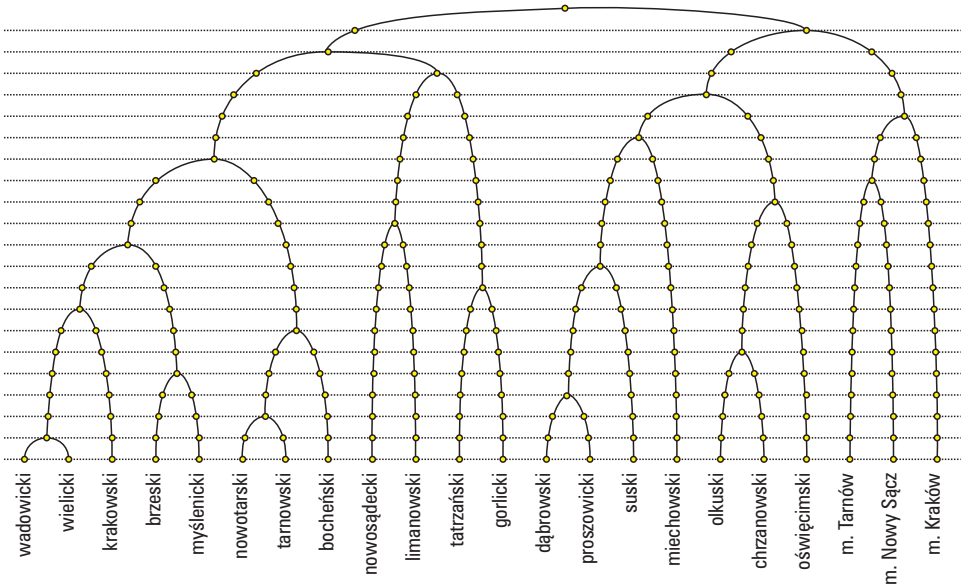
The maximum taxonomic distance in the distance matrix (Table 3), against which the similarity of the objects was tested, equals D = 10.271. The result of the classification is based on the division into five typological groups. The ratio of Dm = 3.260 represents the average value of the distance in the entire matrix. The distance matrix

Table 3. Euclidean distance matrix calculated based on the diagnostic features selected using the Hellwig's method

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	bocheński	0.000	1.904	5.079	1.871	3.956	1.485	6.380	1.980	2.179	1.558	4.043	4.036	4.195	3.146	1.305	2.009	3.515	1.400	5.145	1.087	2.701	2.083
2	krakowski	1.904	0.000	3.493	2.106	2.248	1.276	5.589	2.385	3.109	3.197	3.300	2.432	2.772	1.732	1.106	1.476	2.090	1.171	3.935	1.626	1.612	1.677
3	miechowski	5.079	3.493	0.000	4.788	1.614	4.522	6.599	4.726	5.992	6.344	5.081	2.408	2.488	3.029	4.212	3.786	2.129	3.858	4.493	4.428	2.783	4.218
4	myślenicki	1.871	2.106	4.788	0.000	3.540	1.178	6.079	3.479	2.032	2.838	3.642	4.306	4.740	3.382	1.213	1.144	2.989	1.843	4.805	1.384	2.331	3.244
5	proszowicki	3.956	2.248	1.614	3.540	0.000	3.179	6.030	3.957	4.718	5.166	4.101	1.972	2.365	2.264	2.967	2.521	1.022	2.710	3.963	3.264	1.824	3.317
6	wielicki	1.485	1.276	4.522	1.178	3.179	0.000	5.574	2.919	2.383	2.652	3.160	3.542	4.000	2.624	0.575	1.247	2.796	1.414	4.241	1.326	2.156	2.367
7	Kraków city	6.380	5.589	6.599	6.079	6.030	5.574	0.000	6.786	6.934	7.181	2.584	5.616	6.310	5.263	5.709	5.944	6.054	6.101	2.367	6.294	5.960	6.210
8	gorlicki	1.980	2.385	4.726	3.479	3.957	2.919	6.786	0.000	3.398	2.493	4.680	3.516	3.214	3.078	2.620	3.141	3.743	2.092	5.398	2.246	3.114	1.514
9	limanowski	2.179	3.109	5.992	2.032	4.718	2.383	6.934	3.398	0.000	1.871	4.431	5.367	5.492	4.627	2.512	2.694	4.296	2.771	5.986	2.026	3.793	3.720
10	nowosądecki	1.558	3.197	6.344	2.838	5.166	2.652	7.181	2.493	1.871	0.000	4.848	5.249	5.254	4.492	2.647	3.219	4.744	2.657	6.246	2.120	4.025	3.009
11	Nowy Sącz city	4.043	3.300	5.081	3.642	4.101	3.160	2.584	4.680	4.431	4.848	0.000	4.093	4.741	3.535	3.326	3.531	4.002	3.747	2.055	3.844	3.826	4.196
12	chrzanowski	4.036	2.432	2.408	4.306	1.972	3.542	5.616	3.516	5.367	5.249	4.093	0.000	1.182	1.287	3.301	3.379	2.241	2.977	3.496	3.738	2.559	2.630
13	olkuski	4.195	2.772	2.488	4.740	2.365	4.000	6.310	3.214	5.492	5.254	4.741	1.182	0.000	2.141	3.717	3.824	2.754	3.239	4.359	3.925	3.003	2.576
14	oświęcimski	3.146	1.732	3.029	3.382	2.264	2.624	5.263	3.078	4.627	4.492	3.535	1.287	2.141	0.000	2.371	2.612	2.118	2.238	3.221	2.980	2.016	2.157
15	wadowicki	1.305	1.106	4.212	1.213	2.967	0.575	5.709	2.620	2.512	2.647	3.326	3.301	3.717	2.371	0.000	0.970	2.486	0.937	4.250	0.992	1.767	2.134
16	brzeski	2.009	1.476	3.786	1.144	2.521	1.247	5.944	3.141	2.694	3.219	3.531	3.379	3.824	2.612	0.970	0.000	1.933	1.155	4.344	1.225	1.356	2.788
17	dąbrowski	3.515	2.090	2.129	2.989	1.022	2.796	6.054	3.743	4.296	4.744	4.002	2.241	2.754	2.118	2.486	1.933	0.000	2.189	3.979	2.758	1.358	3.189
18	tarnowski	1.400	1.171	3.858	1.843	2.710	1.414	6.101	2.092	2.771	2.657	3.747	2.977	3.239	2.238	0.937	1.155	2.189	0.000	4.477	0.877	1.506	1.855
19	Tarnów city	5.145	3.935	4.493	4.805	3.963	4.241	2.367	5.398	5.986	6.246	2.055	3.496	4.359	3.221	4.250	4.344	3.979	4.477	0.000	4.903	4.104	4.702
20	nowotarski	1.087	1.626	4.428	1.384	3.264	1.326	6.294	2.246	2.026	2.120	3.844	3.738	3.925	2.980	0.992	1.225	2.758	0.877	4.903	0.000	1.977	2.266
21	suski	2.701	1.612	2.783	2.331	1.824	2.156	5.960	3.114	3.793	4.025	3.826	2.559	3.003	2.016	1.767	1.356	1.358	1.506	4.104	1.977	0.000	2.598
22	tatrzański	2.083	1.677	4.218	3.244	3.317	2.367	6.210	1.514	3.720	3.009	4.196	2.630	2.576	2.157	2.134	2.788	3.189	1.855	4.702	2.266	2.598	0.000

Source: authors' study

indicates that the pair of wadowicki and nowotarski districts are the most homogeneous in terms of competitiveness (the distance in the similarity matrix takes the smallest value, and it amounts to 0.441), followed by the pair of wadowicki and wielicki districts (D = 0.480). The most heterogeneous district, compared to other research units, is the city of Kraków, which merged with the city-*poviats* of Tarnów and Nowy Sącz only at stage 17 of the performed classification process (Figure 2).



Source: authots' study employing the Numerical Taxonomy software

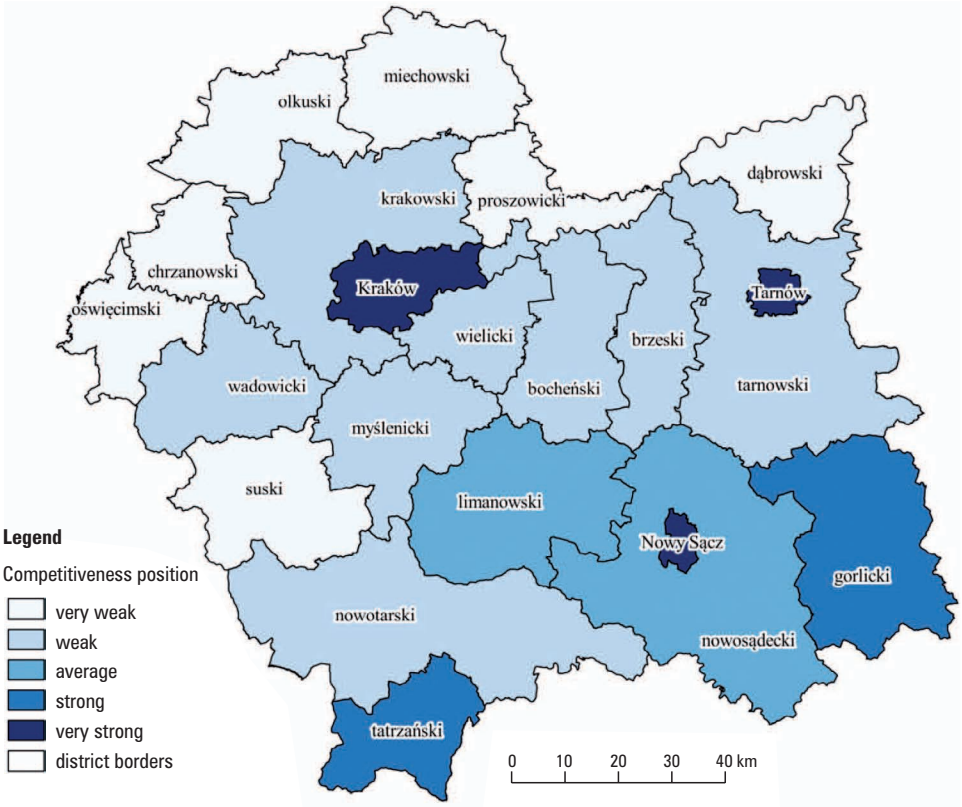
Fig. 2. Visualisation of results from the classification of Małopolska region's *poviat* districts according to the Ward's method.

Values in the distance matrix also indicate a low similarity of Kraków to other studied district units.

Ranking according to the synthetic feature enabled the spatial visualization of the competitive results of the *poviat* districts in the Małopolska province (Figure 3). The research demonstrates that the competitive position varies between individual *poviats* of the Małopolska province. The strongest competitive position is characteristic for cities with *poviat* rights (3 administrative units).

Gorlice *poviat* (1 studied object) distinguished itself with a strong competitive position. The average level of competitiveness of the *poviats* of the Małopolska province, from the point of view of social, economic, and environmental conditions is found in the limanowski and nowosądecki *poviats* (2 studied objects). The most numerous group consists of *poviats* with weak and very poor competitive positions. The *poviats* with low levels of competitiveness include: brzeski, myślenicki, nowotarski, krakowski,

tarnowski, wielicki, bocheński, and wadowicki districts (8 studied objects). The poorest competitive position is found in the following *poviats*: dąbrowski, chrzanowski, miechowski, olkuski, suski, proszowicki, and olkuski (7 studied objects). The conclusion can be drawn that the poorest competitive position is found in the *poviats* located on the outskirts of the Małopolska province. The *poviat* districts in the central and southern part enjoy strong competitive positions.



Source: authors' study

Fig. 3. Spatial variability of competitiveness levels within the Małopolska region, in terms of social, natural, and environmental conditions.

4. Conclusions

The choice of variables for the analysis of the phenomenon of competitiveness, supported by the literature of the subject, remains subjective. Initial selection of data using the Hellwig's method facilitated the rejection of features characterized by a high degree of correlation (i.e. satellite features), and retaining the essential and substantive

diagnostic features (i.e. the central feature, as well as isolated features). The initial set of variables consisted of thirteen features; after the reduction, nine features were obtained, three from each of the thematic groups (social, economic, and environmental). This may confirm the substantive correctness of the factors adopted for the analysis. Among the factors that had been selected for further analysis were: the population growth, population density, unemployment rate, number of entities of state economy, share of newly registered entities operating in the creative sector and agri-food processing sector in the number of newly-registered entities in total, the percentage of population using the municipal water supply network, the size legally protected areas, and the amount of mixed waste per 1 inhabitant.

By conducting a sample interpretation of diagnostic features, it can be observed that the occurrence of forms of natural environment's protection, on the one hand, causes the increase in the competitiveness of *poviats*, because it increases the natural, tourism, or recreational values of the area, however in the case where the area covered by legal protection is too large, this will be an obstacle, for example in the implementation of investment objectives. The diagnostic features adopted for the study indicate a correlation between the competitive conditions and the demographic (social) characteristics, for instance, the population growth, as well as the economic or environmental characteristics. This is because these features are characterized by a high level of diagnostic value (variability) among the examined objects.

The Ward's agglomerative method facilitated the classification of *poviat* districts in terms of their competitiveness, and the examination of the degrees of similarity. The correctness of the obtained classification results has been confirmed by the values of the classification assessment measures. The conducted study leads us to the conclusion that a significant portion of *poviats* (almost 68.2%) is characterized by a weak or very poor level of competitiveness. This may be due to low birth rates, as well as unfavourable economic conditions. Against the background of the Małopolska region's districts, the city-*poviat* of Kraków stands out considerably, and it has been classified as the district with the highest level of competitiveness in the classification. The two other cities enjoying *poviat* rights: Tarnów and Nowy Sącz also distinguish themselves.

The level of competitiveness of the *poviats* will depend both on the *poviat* authorities' policies, pertaining to the support for the production sector, and on the demographic conditions, which often develop independently of the policy pursued at the micro level. The exogenous factors, resulting from the conditions of the location, and from the state-wide, national economy, will also have a significant impact on the competitiveness of *poviat* districts.

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