POINT METHOD FOR THE ASSESSMENT OF REGIONAL DEVELOPMENT – POSSIBILITIES AND PRACTICAL APPLICATION

Juraj TEJ[1]

Abstract: *The article presents the method and its use for measuring regional development, that reflects the true status quo based on the identifiable quantities that can be used in assessment. Relatively simple method is an indirect method of measuring regional development - point method based on the maximum, that when used with an adequate number of indices provides the relatively objective and broad view in the possibilities of economic development compared to other municipalities or administration units.*
Key words: *competitiveness, measurement of regional development, region, regional development, town potential.*

INTRODUCTION

The characteristic sign of contemporary Slovak regions is a marked and constantly deepening spatial differentiation in their socio-economic level. Balancing the differences among the regions is one of the basic aims and principles of the regional policy of the EU member states. To evaluate the real state and the objectivity of lagging behind it is necessary to use the exact determination of the socio-economy level of the region and its economy development in comparison to other regions. The objective regional policy should direct individual regions to improve their prosperity and effectiveness completely using the local potential and to remove problems that impede their development. The similar situation is in a different potential of individual towns and municipalities, in their objective facilities by the growth or developmental factors that are present at their territory.

Similarly, as a region cannot be only perceived as a part of the national economy but also as an individual economy basis, town cannot be only understood as an inseparable part of the region. Towns are individual territorial-administration micro-units that influence their development by their policy and using the tools determined for those purposes. The center of the economy vitality lies in demographic structure, economy basis structure, in natural resources, transport possibilities, in social infrastructure, but especially in an ability to use these presumptions and to influence them to an appropriate degree.

The problem of the economy development in the field of functioning and operating of the self-government is relatively new. A town as a basic unit becomes a subject matter of various analysis and its managing is becoming more complex and complicated. Management to a large degree is based on the erudition of the main town-representatives and self-government officials. Their task is to professionally and effectively approach to solving the basic problems that arise at the town territory, to flexibly react to the changes and also to be responsible for creating the strategic developmental plans. Town

1 ***Ing. Juraj Tej, PhD.,***
The University of Prešov in Prešov, Faculty of Management, Department of Public Administration, 17. novembra 1, 080 01 Prešov, tej@unipo.sk

management is thus not a matter of a small group but a matter of professionals of broader range of branches.

MATERIAL AND METHOD

To evaluate the socio-economy level of the development we used the commonly accessible data of the Statistics office and the statistics at the level of three towns– Liptovský Mikuláš, Poprad and Spišská Nová Ves, in the time horizon of 2002 – 2004, in the horizon from which we had the most complex and homogeneous data. We also presumed that in such a short horizon there are no radical changes in the towns' potential. The acquired data were divided into several levels and we applied the point method of measuring the regional development according to the maximum. The results of individual levels' evaluation were summarized in the final table. The evaluation presents the particular view at the towns that were compared. This kind of methodological application has not been published in the scientific literature yet. However, the reaction of the administration practice to such acquired data has been positive.

Each of the assessed indices in a sample has been assigned a certain number of points sorted by their values (compared to the maximum value within a sample of the same hierarchic matrix structure (100 – the best, highest rank to 0 – the worst position, lowest rank), the data are then added and present the basis for setting the order of the regions in particular group of indices in the file of the compared towns.

MEASURING REGIONAL DEVELOPMENT

Regional development is a complex and complicated process that is influenced by many factors and conditions. The basic problem is thus the objectivity of measuring these processes. The indexes that can be used for measuring the development in region should reflect the dynamic processes that are changing in time in different regions. Each region presents a certain type of organism and it is necessary to adjust the indexes for its assessment. Local economy presents the economy subsystem that is spatially limited by the borders of the of the self-government territories that this subsystem is a part of larger national economy systems. The term local economy can be understood as the economy system at the lower level of the territorial-administration units (Čapková 2004, pp. 9 - 10).

Generally, it can be stated that indexes for measuring a regional development should reflect the following criteria (Hamalová a kol. 1996, p. 106):

- indexes should reflect changes in a level of the economy development,
- are statistically determinable, i.e. statistics can find them,
- set of statistics should be optimal from the point of their usability in analyses.

A selection of indexes can be narrowed as some indexes are in the functional relations with another ones (e.g. level of urbanization versus ration of population working in agriculture...).

The methods that are used to compare the level of development of regions can be divided into two groups – direct and indirect methods (Belajová, Fáziková 2002, p. 113). Direct methods are the ones that are usually used in the cases when the statistics observes some of the synthetic level indexes that are used as an indicator of measuring

the economy level of regions (Kravčáková 2005, p. 34; Fuchsová 2005, p. 69). Currently there is a problem with finding such indexes at the level of towns or municipalities and thus it is suitable to use indirect methods. Using the methods of measuring the regional development is not very frequent, and it is even less frequently used in measuring the potential of urbanization of the socio-economy systems of the towns.

COMPARATIVE ANALYSIS

To apply the comparative analysis of the economy development of the town we used the point method we compared the following towns Liptovský Mikuláš (LM), Poprad (PP) and Spišská Nová Ves (SN). Before applying the selected method to compare the above mentioned towns we bring the short description and characteristics.

Considering the area - Liptovský Mikuláš is the largest town. It is spread on the area of 69,67 ha with the population of 33 004. The second position as to the area belongs to Spišská Nová Ves. Its area is approximately 3 ha (66,67) smaller. The population is slightly bigger than in LM (38 785). Poprad is the smallest one out of the three selected towns with its 63,05 ha, however the population is the biggest here - 55 680. All three towns can be considered to be the centers the traveling (LM – Liptovská Mara, Západné and Nízke Tatry, Chočské vrchy, PP – Vysoké and Belianske Tatry, Levočské pohorie, uplands of Kozie chrbty and Štrba water parting, SN – Levočské vrchy, Spišsko–gemerské rudohorie, part of Gotická cesta). Industry is present in all towns and is mostly based on traditions.

Demographic aspect

To assess the development of the town and its further development in the field of demography it is necessary to evaluate not only population growth but also its mechanic migration caused by population moving from and to different towns. Another demographic information that is interesting and that was applied was the educational and age structure of the population. Natural and mechanical migration of population is calculated per number of inhabitants in particular cities and particular years. Age and educational structure is expressed by the proportional share from the total population and thus it is not necessary to recalculate these indexes.

Tab. 1: *Comparison of the towns: Demography 1*

	PN/PM			MIC/MDC			Pre			Prod			Popr		
Year	LM	PP	SN	LM	PP	SN	LM	PP	SN	LM	PP	SN	LM	PP	SN
1999	2,87	4,59	3,10	-2,13	-5,23	-3,62	20,00	21,87	28,73	64,62	66,15	59,42	15,38	11,98	11,96
2000	0,44	4,27	2,30	-2,54	-3,19	-0,28	17,95	20,79	24,61	62,63	66,88	62,04	19,42	12,33	13,48
2001	0,67	4,34	1,07	0,03	-3,77	-3,12	17,37	19,63	23,30	63,27	67,45	61,70	19,36	12,92	14,60
2002	1,15	3,25	1,80	-0,85	-7,82	-6,01	16,74	18,68	22,68	63,60	67,82	62,57	19,67	13,50	14,75
2003	0,88	2,30	2,60	-2,03	-7,69	-7,06	15,97	17,67	22,54	66,64	68,19	62,43	17,38	14,14	14,82

Legend: PN/PM – population natality, resp. mortality per 1 000 inhab., MIC/MDC – increase, resp. decrease by migration per 1 000 inhab., Pre – pre productive age in % /0–14 r./, Prod – productive age in % /15-59 males, 15-54 females/, Popr – post productive age in % /60+ males, 55+ females/

Considering the population structure one can see that the low increases and low migration in LM are given by high number of the population in the post-productive age. It is also confirmed in the low share of the people in the pre-productive age. These constituents also have the most negative values out of the selected towns and indexes. Poprad and Spišská Nová Ves can be considered to be more progressive towns. The share of Roma community is a phenomenon in SN that positively influences especially the indexes that reflect population natality.

Tab. 2: *Comparison of the towns: Demography 2*

	educational structure v %			points		
Category	**LM**	**PP**	**SN**	**LM**	**PP**	**SN**
Elementary education	15,04	14,50	15,14	99	96	100
Secondary education without CCSE	22,57	20,90	22,02	100	93	98
Secondary education with CCSE	29,50	30,34	30,42	97	100	100
University education	11,96	9,96	9,33	100	83	78

Source: Regional administrations of the Statistics offices of the SR in Prešov, Košice and Žilina and author's calculations

The educational structure of population markedly influences the developmental potential of town. Based on the calculated data the most educated town is Liptovský Mikuláš. The highest number of points reached the population with the University education and secondary education without GCSE. As to Spišská Nová Ves, here prevails the population with the elementary education and with secondary education with GCSE. Between these two towns is Poprad with the only first position, in the category of population with secondary education with GCSE.

Tab. 3: *Point analyses of the towns: Demography*

	PN/PM			IC/DC			Pre			Prod			Popr		
Year	**LM**	**PP**	**SN**	**LM**	**PP**	**SN**	**LM**	**PP**	**SN**	**LM**	**PP**	**SN**	**LM**	**PP**	**SN**
1999	63	100	68	100	40	59	70	76	100	98	100	90	78	100	100
2000	10	100	54	11	9	100	73	84	100	94	100	92	63	100	91
2001	16	100	25	100	1	1	75	84	100	94	100	91	67	100	88
2002	36	100	56	100	11	14	74	82	100	94	100	92	69	100	92
2003	34	87	100	100	26	29	71	78	100	98	100	92	81	100	95
Total	**159**	**487**	**303**	**411**	**87**	**203**	**363**	**404**	**500**	**478**	**500**	**457**	**358**	**500**	**466**

Source: author

Tab. 4: *Total summary of the reached points: Demography*

Index	Liptovský Mikuláš	Poprad	Spišská Nová Ves
Natality, resp. mortality	159	487	303
MIC/MDC	411	87	203
Pre-productive age	363	404	500
Productive age	478	500	457
Post-productive age	358	500	466
Elementary school education	99	96	100
Secondary school education without GCSE	100	93	98
Secondary school education with GCSE	97	100	100
University education	100	83	78
Total points number	**2165**	**2350**	**2305**

Source: author

Based on the calculations each index was assigned the points. The maximum value that could be reached was 2 900 by one town. Reading the table it is clear that the most perspective town is Poprad, that reached the highest number of points in the total of the observed values (2 350), especially thanks to the development in the field of natural population migration, appropriate age structure of population. On the second position is Spišská Nová Ves (2 305 points), with the positive demographic characteristics especially in the field of pre-productive category of population and the education structure - secondary school. The advantage of Liptovský Mikuláš (2 165 points) is especially the situation in the field of mechanical migration, University education and the population in the productive age.

Based on the previous analysis the problem areas of the studied towns can be evaluated. Considering Poprad it is especially the decrease of population caused by migration and the low number of people with University degree. Liptovský Mikuláš lags behind in the population structure; Spišská Nová Ves has the problems in the field of University education and the population decrease caused by emigration.

Economy

One of the areas that influence the development of town to a large extent is especially its economy structure and performance, efficiency. This is why we selected such set of indexes to evaluate the potential of town that characterizes the economy potential of town. Here can be classified the structure of economy subjects, revenues reached in industry, building industry and in the internal trade. The only negative index is the level of unemployment. This means that the maximum number of points is assigned to the lowest value.

Tab. 5: *Comparison of the towns: Economy*

Year	2001			2002			2003		
Category per 1 000 inhabit.	**PP**	**LM**	**SN**	**PP**	**LM**	**SN**	**PP**	**LM**	**SN**
Industry in mil. Sk									
Income for capacity and goods	283,97	167,24	232,09	253,17	204,89	227,86	276,98	157,95	226,09
Income for sales for export	163,49	122,11	128,24	128,86	94,53	126,03	149,87	103,78	137,76
Building industry in mil. Sk									
Produkcia cez dod. zmluvy	22,74	23,57	14,24	19,06	24,40	16,58	23,78	27,78	18,54
Production by own workers	18,63	17,74	10,71	14,93	18,85	11,53	20,22	21,15	14,23
Internal trade in mil. Sk									
Income for capacity and goods	76,07	134,54	62,73	110,39	128,42	54,49	117,62	164,50	53,06
Juridical body	33,25	34,64	36,53	32,51	36,95	30,37	35,76	39,48	32,46
Physical person	104,35	129,69	97,90	103,02	127,20	99,39	114,71	137,29	112,88
Unemployment rate in %	20,66	15,88	25,79	19,67	15,53	24,35	17,86	16,48	21,98

Source: Regional administrations of the Statistics offices of the SR in Prešov, Košice and Žilina and author's calculations

Poprad seems to be the most advanced town as to the industry. It reaches the highest revenue for realization of own performance and goods as well as the sale for export. This situation is also given by the long-term existence of the industrial production in town. In building industry as well as in the incomes from the internal trade Liptovský Mikuláš seems to be the most perspective in all studied indexes. Similarly, there is the highest number of entrepreneurs in this town – juridical bodies and physical persons. As to the last index, i.e. unemployment rate, LM is at one of the leading position, i.e. the unemployment rate is the lowest in this town during the period of the studied years. It means, that based on the above mentioned indexes we can state that the economy potential of Liptovský Mikuláš is the highest from among the three analyzed towns. The maximum number of the points that can be achieved is 2 400.

Tab. 6: *Point analysis of towns: Economy*

Year	2001			2002			2003			Spolu		
Category	**PP**	**LM**	**SN**	**PP**	**LM**	**SN**	**PP**	**LM**	**SN**	**PP**	**LM**	**SN**
Industry												
Revenue for performance and goods	100	9	82	100	81	90	100	57	82	300	147	254
Revenues for sales for export	100	75	78	100	73	98	100	69	92	300	217	268
Building industry												
Building production performed based on the contracts	96	100	60	78	100	68	86	100	67	260	300	195
Building production performed by the own employees	100	95	57	79	100	61	96	100	67	275	295	185
Internal trade												
Revenues for own performance and goods	57	100	47	86	100	61	72	100	32	215	300	140
Juridical body	91	95	100	88	100	82	91	100	82	270	295	264
Physical person	0	100	75	81	100	78	84	100	82	165	300	235
Unemployment rate	77	100	62	79	100	64	92	100	75	248	300	201

Tab. 7: *Total summary of the achieved points: Economy*

Revenues for sales for export	217	300	268
Building industry			
Building production performed based on the contracts	300	260	195
Building production performed by the own employees	295	275	185
Internal trade			
Revenues for own performance and goods	300	215	140
Juridical bodies	295	270	264
Physical persons	300	165	235
Registered unemployed	292	290	182
Total number of achieved points	**2146**	**2075**	**1723**

Source: author

Based on the tables above we can confirm that Liptovský Mikuláš can be considered to be the economically most advanced town. It took this position thanks to the excellent results achieved in the field of building industry, in number of entrepreneurial subjects and low rate of unemployment. Poprad lags behind LM only in 71 points, and it reaches high volumes in industrial production and also in building production. In comparison to LM and PP - Spišská Nová Ves does not reach a marked economy performance but its industrial production has been continuously growing. Among the negative factors that influence the development of this town belong high unemployment, low building production and incomes in internal trade.

ANALYSES SUMMARY

Based on the point analyses we can compare the towns in two selected areas. The maximum number of points that could be reached by individual towns was 5 300.

Tab. 8: *Number of points achieved in the selected towns*

	Town		
	PP	**LM**	**SN**
Demography	2 350	2 165	2 305
Economy	2 075	2 146	1 723
Total	4 425	4 311	4 028

Source: author

Poprad was the town with the number of achieved points that was closest to the maximum and as the town with the best socio-economy potential it took the best position. Liptovský Mikuláš achieved just 114 points less. The last position belongs to Spišská Nová Ves that lags behind Poprad in 397 points. Considering Liptovský Mikuláš, economy indexes seem to be the biggest strength of the town. Incorporating other indexes as e.g. traveling, transport infrastructure, social infrastructure and/or others, the differences among the town would be even more crystallized and the total view to comparative analyses would be more plastic.

CONCLUSION

Application of the point method of measuring the development of towns according to the maximum of their developmental potential showed its possible use with relatively high validity depending on the used structure of indexes. The importance of using the indirect methods of the economy development lies in simplicity of its application and in using such structure of indexes that can be currently obtained at the level of towns. At the same time the completed process of the competencies transformation to the municipalities and completion of the tax reform that markedly contributes to the extension of their income basis – gives a presumption for the desirable future economy development for using and activisation of all practically identifiable factors of the town development with the active help of the regional policy with the tools that can be markedly objectivized by applying the methods of measuring the development of towns and municipalities. It is especially a high validity of the method, simple application and data obtainability, ability to compare individual towns, knowing own „value" of the town in region, possibility to find the comparative advantages of town and position, as well as the use for the needs of regional policy.

Using objective methods enables towns to learn about their topical, current „value" in a region and thus to contribute to the correct subconsciousness, that leads toward higher level of the local identity of inhabitants in the social area and to an increase of the competitiveness of towns and municipalities in the economy area.

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References

BALÁŽOVÁ, E., PAPCUNOVÁ, V. (2006): Vplyv fiškálnej decentralizácie na rozpočtové hospodárenie obcí v SR. In IX. Mezinárodní kolokvium o regionálních vědách. Brno: Masarykova univerzita ESF KREaS v Brne, 2006. s. 163, ISBN 80-210-4155-2

BELAJOVÁ, A., FÁZIKOVÁ, M. (2002): Regionálna ekonomika. Nitra: SPU, 2002. 191 s. ISBN 80-8069-007-3.

ČAPKOVÁ, S. (2004): Rozvoj miestnej ekonomiky. Banská Bystrica: EF UMB, 2004, 95 s. ISBN 80-8055-994-5

FUCHSOVÁ, K. (2005): Inovačný potenciál a migrácia z pohľadu redukcie regionálnych disparít. In: Analytický pohľad na základné súvislosti a výzvy regionálneho rozvoja v slovenských podmienkach [elektronický zdroj]: Štefko, R. (ed). Prešov: Prešovská univerzita, 2005. ISBN 80-8060-390-5, s. 69- 77
http://www.pulib.sk/elpub/FM/Stefko1/index.htm

HAMALOVÁ, M. a kol. (1996): Priestorová ekonomika. Bratislava: Ekonóm, 1996. 144 s. ISBN 80-225-0750-4.

KUZMIŠIN, P., KUZMIŠINOVÁ, V. (2006): Regionálna konkurencieschopnosť v podmienkach Prešovského samosprávneho kraja. In IX. Mezinárodní kolokvium o regionálních vědách. Brno: Masarykova univerzita ESF KREaS v Brne, 2006. s. 7, ISBN 80-210-4155-2

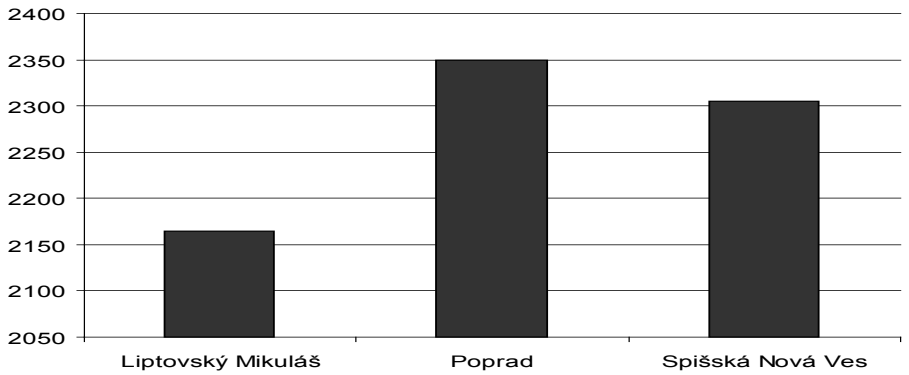
KRAVČÁKOVÁ, G. (2005): Aplikácia vybraných teórií regionálneho rozvoja v Prešovskom kraji. In: Analytický pohľad na základné súvislosti a výzvy regionálneho rozvoja

v slovenských podmienkach [elektronický zdroj]: Štefko, R. (ed). Prešov: Prešovská univerzita, 2005. ISBN 80-8060-390-5, s. 34–43, http://www.pulib.sk/elpub/FM/Stefko1/index.htm

TEJ, J. (2006): Praktické využitie bodovej metódy hodnotenia regionálneho rozvoja. In: Acta Facultatis Humanitatis et Naturae, Folia Geografica 10, Prírodné vedy. Prešov: FHPV PU, r. XLV, 2006. s. 521, ISSN 1336-6149

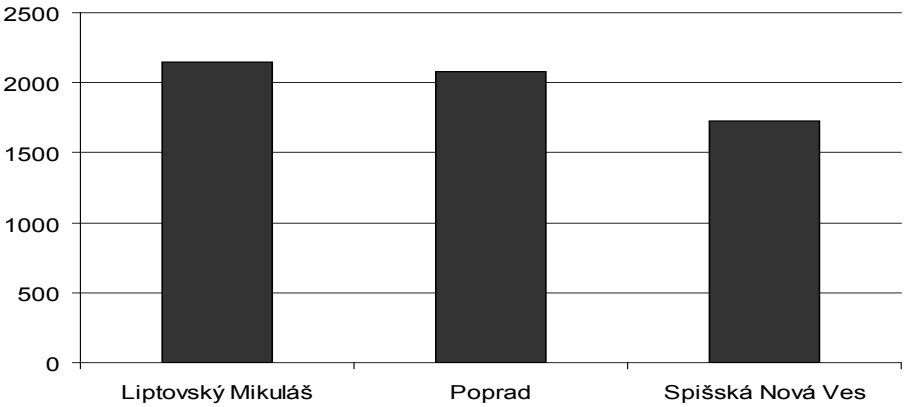
ŽIŠKA, D. (2005): Komparatívna analýza hospodárskeho rozvoja mesta Poprad v porovnaní s jeho konkurentmi v regióne. Diplomová práca vypracovaná na Katedre verejnej správy Fakulty manažmentu, Prešovská univerzita v Prešove, pod vedením Mgr. Ľ. Budziňáka.

Graph 1: *Demography totals*



Source:author

Graph 2: *Economy totals*



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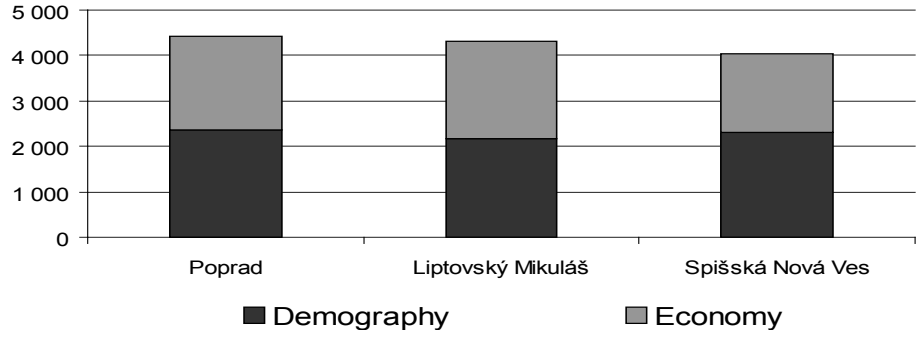
Graph 3: *Total ranking*



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BODOVÁ METÓDA HODNOTENIA REGIONÁLNEHO ROZVOJA – MOŽNOSTI A PRAKTICKÁ APLIKÁCIA

Zhrnutie

Práca sa zaoberá použitím nepriamej metódy merania regionálneho rozvoja a možnosťami jej využitia v praxi, pretože odráža skutočný status quo založený na identifikovateľných veličinách, ktoré sa v hodnotení využívajú, pretože sú dostupné. Ide o jednoduchú metódu bodovú metódu podľa maxima, ktorá pri použití adekvátneho počtu ukazovateľov poskytuje relatívne objektívny a široký pohľad na možnosti ekonomického rozvoja v porovnaní s inými obcami či administratívnymi celkami.

Pre vyššiu transparentnosť sme použili iba dve skupiny údajov – oblasť ukazovateľov týkajúcich sa demografickej charakteristiky a oblasť týkajúcu sa hospodárstva. Metódu hodnotenia sme aplikovali v troch okresných sídlach – v Poprade, Spišskej Novej Vsi a Liptovskom Mikuláši. Výhoda použitia nepriamej metódy merania regionálneho rozvoja spočíva v tom, že ide o ukazovatele, ktoré nepodliehajú rýchlym zmenám a preto má výsledok analýzy časovo širšiu platnosť, zároveň prakticky neexistuje obmedzenie počtu ukazovateľov, ktoré je možné do analýzy zaradiť.

Použitie objektívnych metód umožní mestám poznať aj svoju aktuálnu „hodnotu“ v regióne a tak prispieť aj k správnemu povedomiu, ktoré vedie v sociálnej oblasti k vyššej úrovni lokálnej identity obyvateľov a v oblasti ekonomickej k zvyšovaniu konkurencieschopnosti miest a obcí.

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