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INTERREGIONAL DIFFERENTIATION OF THE DEVELOPMENT LEVEL IN POLAND WITH REGARD TO THE CHOSEN PARAMETERS

MIĘDZYREGIONALNE ZRÓŻNICOWANIE POZIOMU ROZWOJU W POLSCE PRZY UWZGLĘDNIENIU WYBRANYCH PARAMETRÓW

Key words: differentiation, development, region, Poland, parameters
Słowa kluczowe: zróżnicowanie, rozwój, region, Polska, parametry

Abstract. The paper deals with the phenomenon of differentiation, which refers to the interregional plane within one state. This differentiation concerns the general economic level of the administrative entities, i.e. regions, indicating the level of their advancement in the development process. So as to describe in a synthetic way the developmental output, the author has chosen such economic parameters which regard the GDP calculated per capita and per area, employment in service sector, as well as the problem of unemployment. The examples of intraregional differentiation, which enable to understand better the interregional statistical distances, have also been presented.

Introduction

The process of regional development immanently forces the existence of statistical distances between the individual regions, which seems to be an inevitable necessity. Thus, the issue of differentiation is a fact, otherwise we have to consider the sort of utopia (everybody totally equal), but it does not mean that one should not work on decreasing the level of differentiation. The highly developed states show their economic maturity by constantly reducing these statistical distances. So, the trend is obvious, as well as the consciousness of „absolute success" denoting the earlier mentioned utopia, but the gist consists in how to maintain the equilibrium within the differentiation, which means achieving the level of slight differences called diversification and eliminating the danger of big disproportions, i.e. disparities. Each country has its own examples for interregional differentiation which are conditioned by a wide spectrum of determinants. The higher disparities the lower the level of economic sustainability of the state. The more advanced the level of diversification (small statistical distances between the regions) the higher the living standard, and consequently, prosperity – convergent with the idea of welfarism.

In Poland there is a long tradition of interregional differences and the problem of not properly balanced differentiation has always existed, e.g. since the period between the wars (1918-1939). The problem of interregional disparities is one of the main barriers on the way to full and real (not only formal) integration with the United Europe understood as the Western Mentality Influence Civilization Area.

Interregional differentiation of development in Poland

There are a lot of definitions explaining the essence of development which seems to be a resultant of positive changes considering the quantitative growth as well as the qualitative progress in economic, social and natural (environmental) system. One should emphasize that in the contemporary paradigm of local and regional development the natural (environmental) system is treated as its integral component [cf. Markowski 2008].

Thus, regional development may be perceived as a process of transformation in terms of economic, social, technical and environmental aspects. It refers respectively to the transformation of regional factors and resources into goods and services, to the improvement of living standard influencing to a certain extent the quality of life, to the technical and technological progress implying the higher and rational efficiency with regard to the environmental aspect leading to eco-development. All these aspects should proceed simultaneously within the process [cf. Strzelecki 2008].

The issue of regional development process is a compact phenomenon, which increases the chances for interregional differentiation perceived as statistical distances between the individual regions within the country.

Table 1. GDP calculated per capita and per area in Poland divided into regions

Region (province)	GDP/CAP*	Region (province)	GDP/AREA**
Mazowieckie	1.000	Śląskie	1.000
Dolnośląskie	0.428	Mazowieckie	0.531
Śląskie	0.419	Małopolskie	0.403
Wielkopolskie	0.410	Dolnośląskie	0.311
Polska	0.352	Łódzkie	0.239
Pomorskie	0.336	Polska	0.220
Łódzkie	0.263	Wielkopolskie	0.214
Zachodniopomorskie	0.256	Pomorskie	0.212
Lubuskie	0.233	Kujawsko-pomorskie	0.160
Kujawsko-pomorskie	0.216	Opolskie	0.127
Małopolskie	0.208	Świętokrzyskie	0.110
Opolskie	0.139	Podkarpackie	0.104
Świętokrzyskie	0.092	Zachodnio-pomorskie	0.067
Warmińsko-mazurskie	0.087	Lubuskie	0.058
Podlaskie	0.063	Lubelskie	0.042
Podkarpackie	0.010	Warmińsko-mazurskie	0.003
Lubelskie	0.000	Podlaskie	0.000

Remarks: Data in tables use comas instead of points due to the Polish version of Microsoft Office Excel 2007.Data updated on 31 Dec. 2007.Data normalized by the Zero Unitarization Method (ZUM) <0, 1>. * Gross Domestic Product (current prices) calculated per capita. ** Gross Domestic Product (cu rrent prices) calculated per area (1 sq. km).
Source: own calculations based on the Statistical Yearbook...2008.

Table 2. Employed in services and unemployment rate in Polish regions

Region (province)	S%*	Region (province)	U%**
Mazowieckie	1.000	Wielkopolskie	1.000
Zachodniopomorskie	0.902	Małopolskie	0.917
Pomorskie	0.836	Mazowieckie	0.890
Dolnośląskie	0.767	Śląskie	0.872
Lubuskie	0.713	Podlaskie	0.761
Śląskie	0.672	Pomorskie	0.734
Małopolskie	0.623	Łódzkie	0.688
Polska	0.561	Polska	0.688
Warmińsko-mazurskie	0.498	Dolnośląskie	0.670
Kujawsko-pomorskie	0.428	Opolskie	0.624
Opolskie	0.427	Lubelskie	0.523
Wielkopolskie	0.346	Lubuskie	0.431
Łódzkie	0.319	Podkarpackie	0.413
Podkarpackie	0.212	Świętokrzyskie	0.349
Podlaskie	0.135	Kujawsko-pomorskie	0.349
Lubelskie	0.057	Zachodnio-pomorskie	0.211
Świętokrzyskie	0.000	Warmińsko-mazurskie	0.000

Remarks: *Employed in services in total (in %). ** Registered unemployment rate in % (ZUM – destimulant).
For other clarifications see table 1.
Source: own calculations based on the Statistical Yearbook...2008.

Obviously the measurement of such a process seems to be a real challenge due to difficulties referring to the objective factors, considering simultaneously their accessibility in a defined state. Among the chosen parameters for the development evaluation there are GDP measures calculated per capita and per area. GDP (Gross Domestic Product), being the market value of all final goods and services produced by its factors of production within the geographic confines of a country and sold on the market in a given interval of time [cf. Mankiw, Taylor 2006], may be regarded as a more or less representative measure of economic status of the state. Table 1 presents the ranking of Polish regions concerning the GDP.

GDP calculated per area shows the potential investment into area, resulting in e.g. infrastructural improvements.

Next parameters refer to the percentage of people employed in services sector (with regard to total employment) and to the unemployment. Both of them appear to be intrinsic measures of development. See table 2. All these four measures of determinative character have been summed up and once more unitarized. Additionally, the unitarized value of relative dispersion coefficient has been shown in order to present the level of their statistical sustainability. The result has been shown in table 3. Analyzing the statistics, it is not difficult to notice the distance (statistical gap) between the Mazowieckie Province and other regions

Table 3. Final rankings regarding total score and statistical sustainability

Region (province)	SUM 4*	Region (province)	V% 4**
Mazowieckie	1.000	Mazowieckie	1.000
Śląskie	0.840	Śląskie	0.939
Dolnośląskie	0.566	Dolnośląskie	0.906
Małopolskie	0.558	Kujawsko-pomorskie	0.879
Pomorskie	0.546	Polska	0.853
Wielkopolskie	0.494	Łódzkie	0.781
Polska	0.443	Małopolskie	0.774
Łódzkie	0.334	Pomorskie	0.770
Zachodniopomorskie	0.308	Wielkopolskie	0.670
Lubuskie	0.308	Opolskie	0.652
Opolskie	0.267	Lubuskie	0.613
Kujawsko-pomorskie	0.209	Podkarpackie	0.499
Podlaskie	0.142	Zachodniopomorskie	0.429
Podkarpackie	0.065	Świętokrzyskie	0.395
Lubelskie	0.025	Podlaskie	0.108
Warmińsko-mazurskie	0.013	Lubelskie	0.021
Świętokrzyskie	0.000	Warmińsko-mazurskie	0.000

Remarks: *Unitarized sum value of four former components (GDP/CAP, GDP/AREA, %S, %U). ** Unitarized value of relative dispersion coefficient of four former components (ZUM – destimulant). For other clarifications see table 1.
Source: own calculations based on the Statistical Yearbook...20008.

Table 4. Employment in agricultural and industrial sectors

Region (province)	A%*	Region (province)	I% **
Śląskie	5.7	Lubelskie	17.7
Dolnośląskie	10.0	Podlaskie	19.3
Lubuskie	11.1	Mazowieckie	21.7
Pomorskie	11.1	Świętokrzyskie	23.7
Zachodniopomorskie	11.8	Małopolskie	27.1
Mazowieckie	18.8	Łódzkie	29.8
Warmińsko-mazurskie	19.6	Polska	29.9
Wielkopolskie	20.3	Podkarpackie	30.0
Polska	20.4	Zachodniopomorskie	30.9
Opolskie	20.6	Kujawsko-pomorskie	31.8
Kujawsko-pomorskie	21.5	Warmińsko-mazurskie	32.1
Małopolskie	21.8	Opolskie	32.7
Łódzkie	25.9	Pomorskie	33.0
Podkarpackie	28.1	Wielkopolskie	34.8
Świętokrzyskie	39.1	Dolnośląskie	35.7
Podlaskie	40.5	Lubuskie	35.8
Lubelskie	43.8	Śląskie	42.1

Remarks: *Employed in agriculture, hunting, forestry and fishing. **Employed in industry and construction. For other clarifications see table 1.
Source: own calculations based on the Statistical Yearbook...2008.

(especially in terms of calculated GDP value), which is caused by the capital city of Warsaw itself and substantially is a derivative of intraregional statistical distances layout. Just for comparison table 4 shows the ranking of regions with regard to the employment in two remaining sectors: agricultural and industrial.

The next chapter presents the examples of intraregional differentiation, which enables better understanding of the interregional statistics.

Intraregional statistical distances layout

The fact of including the big cities (e.g. Cracow, Warsaw being separated subregions) in the data concerning provinces (e.g. Małopolskie, Mazowieckie) causes certain statistical disproportions while comparing different regions and does not reflect the real mean value of a region divided into individual subregions. Therefore tables 5-7 present the intraregional layout of unitarized data referring to the formerly mentioned four parameters.

The statistical distance of the „SUM 4" between the City of Cracow and the Małopolskie province amounts to 0.741 (1.000-0.259). The higher the distance the less representative the statistical value of the region including big city, i.e. higher disproportions within the province. Regarding the statistical sustainability measured by „V% 4" the distance between the mentioned subregion and the province equals 0.330 (1.000-0.670). The lower the distance the higher the level of statistical sustainability of the region.

The statistical distance of the „SUM 4" between the City of Warsaw and the Mazowieckie province amounts to 0.609 (1.000-0.391). Regarding the statistical sustainability measured by „V% 4" the distance between the mentioned subregion and the province equals 0.353 (1.000-0.647).

Table 5. Statistics regarding the intraregional layout – the Małopolskie province

Region (province)	GDP/CAP	GDP/AREA	S%	U%
Małopolskie	0.288	0.030	0.437	0.484
Subregions				
Krakowski	0.062	0.007	0.000	0.589
City of cracow	1.000	1.000	1.000	1.000
Nowosądecki	0.000	0.000	0.274	0.000
Oświęcimski	0.184	0.027	0.188	0.274
Tarnowski	0.057	0.009	0.177	0.263
Region (province)	**SUM 4**	**V% 4**	**A%**	**I%**
Małopolskie	0.259	0.670	21.8	27.1
Subregions				
Krakowski	0.103	0.136	41.6	25.4
City of cracow	1.000	1.000	0.8	24.7
Nowosądecki	0.000	0.000	34.3	21.4
Oświęcimski	0.107	0.694	16.9	42.3
Tarnowski	0.062	0.543	34.4	25.2

Remarks: Basic data by region on 31 Dec. 2007 in division obligatory since 1. Jan. 2008 (Introduction of the Nomenclature of Territorial Units for Statistical Purposes – NTS) – Journal of Laws No. 214, item 1573.
For the clarification of the abbreviations – see tables 1-4.
Source: own calculations based on the Statistical Yearbook...2008.

Table 6. Statistics regarding the intraregional layout – the Mazowieckie province

Region (province)	GDP/CAP	GDP/AREA	S%	U%
Mazowieckie	0.377	0.019	0.553	0.682
Subregions				
Ciechanowsko-płocki	0.139	0.004	0.117	0.307
Ostrołęcko-siedlecki	0.000	0.000	0.000	0.406
Radomski	0.002	0.003	0.103	0.000
City of Warsaw	1.000	1.000	1.000	1.000
Warszawski wschodni	0.032	0.007	0.216	0.599
Warszawski zachodni	0.185	0.015	0.337	0.802
Region (province)	**SUM 4**	**V% 4**	**A%**	**I%**
Mazowieckie	0.391	0.647	18.8	21.7
Subregions				
Ciechanowsko-płocki	0.118	0.558	35.6	26.2
Ostrołęcko-siedlecki	0.077	0.000	48.8	18.6
Radomski	0.000	0.067	41.7	20.7
City of Warsaw	1.000	1.000	0.6	18.1
Warszawski wschodni	0.192	0.361	26.1	30.9
Warszawski zachodni	0.316	0.495	21.5	29.6

Remarks: For the clarification of the abbreviations – see tables 1-5.
Source: own calculations based on the Statistical Yearbook...2008.

The statistical distance of the „SUM 4" between the Rzeszowski subregion and the Podkarpackie province amounts to 0.532 (1.000-0.468). Regarding the statistical sustainability measured by „V% 4" the distance between the mentioned subregion and the province equals 0.135 (1.000-0.865).

Thus, the Podkarpackie province seems to be the most coherent region (of the three analyzed) in terms of statistical distances, as well as the statistical sustainability which reflects its statistical homogeneity.

Table 7. Statistics regarding the intraregional layout – the Podkarpackie province

Region (province)	GDP/CAP	GDP/AREA	S%	U%
Podkarpackie	0.589	0.354	0.536	0.707
Subregions				
Krośnieński	0.214	0.000	0.546	0.488
Przemyski	0.000	0.002	0.589	0.000
Rzeszowski	1.000	1.000	1.000	1.000
Tarnobrzeski	0.859	0.619	0.000	1.000
Region (province)	**SUM 4**	**V% 4**	**A%**	**I%**
Podkarpackie	0.468	0.865	28.1	30.0
Subregions				
Krośnieński	0.192	0.592	24.0	33.9
Przemyski	0.000	0.000	39.7	17.8
Rzeszowski	1.000	1.000	25.7	27.1
Tarnobrzeski	0.553	0.642	26.4	37.7

Remarks: for the clarification of the abbreviations – see tables 1-5.
Source: own calculations based on the Statistical Yearbook...2008.

Conclusion

The problem of differentiation reflected by statistical distances within the process of regional development is a very complex multi-plane issue. Hence, the increase of distances may be caused by a wide spectrum of socio-economic factors, some of which are presented in this paper. Thus, among the chosen determinants representing different characters of contemporary differentiation we may encounter:
– the need to grow rich,
– the access to information and the ability to its selection,
– the proportions in employment.
  These determinants, in turn, are connected with the following phenomena:
– wealth,
– asymmetric information,
– unemployment.
  The man's immanent reason for the decline in interest in inequality, i.e. differentiation, is the phenomenon of wealth. There are three basic benefits resulting from wealth. First is the satisfaction in the power with which it endows the individual. Second is the enjoyment of physical possession of the things which money can buy. Third is the distinction or esteem that accrues to the rich man as the result of his wealth [cf. Galbraith 1999].
  In the era of infotainment happening simultaneously with such processes as globalization, integration and regionalization, the number of people wishing to be well informed increases. The objective is to be informationally efficient, i.e. to reflect all available information about the value of the asset in a way relying on the rational selection of possessed data. However the gist of the problem lies in the so called random walk which denotes the path of a variable whose changes are impossible to predict from available information. In turn, the phenomenon of information asymmetry means a difference in access to relevant knowledge and thus, the economics of asymmetric information refers to the situation where some people are better informed than others, and this difference can affect the choices they make and how they deal with one another, which in consequence can shed light on market equilibrium [cf. Mankiw, Taylor 2006].
  The structure of employment may also be a reason for statistical distances and involve a certain delay in development. Some quotations regarding the Polish economic condition in the past are as follows: „…Poland, where the feudal system still continues to take place, is at this day as beggarly a country as it was before the discovery of America…" and „…Spain and Portugal, the countries which possess the mines, are, after Poland, perhaps, the two most beggarly countries in Europe…" [Smith 1976]. The historical past, mentioned by A. Smith in the 1770s makes reference to

the Polish contemporary regional problems alluding, among others, to the too big amount of people working in the agricultural sector, which is reflected in general economic statistics.

The point of reference considered in the paper is the region, therefore the interregional diffe-rentiation is a topic issue. But, the statistical distances must be corrected by the intraregional layout dimension concerning mostly the subregions forming at the same time urbanized area, e.g. Cracow, Warsaw.

Thus, analyzing the „SUM 4" values, the distance between the Cities of Cracow or Warsaw and respectively the Małopolskie and the Mazowieckie provinces reflects the clear gap between these two capital cities and their regions in terms of development. The case of the Podkarpackie Province shows a smaller gap between the capital city and its region. Considering statistical sustainability measured by „V% 4" the Małopolskie and the Mazowieckie Provinces are rather heterogeneous whereas the Podkarpackie Province is more likely to present statistical homogeneity. Thus, the interregional statistical distances are the derivative of the intraregional structure of regions in terms of their heterogeneous or homogeneous character.

Obviously, looking at the presented interregional statistics one should not miss the historical context of the past concerning the results of the partitions of Poland and areas taken over from Germany after the Second World War, both of which are still statistically visible on the map.

Concluding, the problem of interregional differentiation in Poland is still distinctly recognizable, but this phenomenon should be consciously monitored towards lesser differentiation leading to diversification and against polarization pushing to dangerous disparities connected with a notable mentality gap. Such monitoring requires a responsible policy based on a continuous stream of rational implementations stressing the key role of interregional multi-plane sustainability.

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Streszczenie

W artykule skoncentrowano się na zróżnicowaniu międzyregionalnym w ramach kraju. Zróżnicowanie to dotyczy poziomu rozwoju regionów (w sensie ekonomicznym), wskazującym też na stopień ich zaawansowania. Do oceny poziomu rozwoju wybrano parametry ekonomiczne takie jak PKB per capita i w przeliczeniu na jednostkę powierzchni, zatrudnienie w sektorze usług, jak również poziom bezrobocia. Autor przedstawił przykła-dy wewnątrzregionalnego zróżnicowania, aby lepiej ukazać przyczyny różnic międzyregionalnych.

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