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THE FINANCIAL SITUATION OF CITIES WITH POVIAT RIGHTS IN EASTERN POLAND VS. DIVERSIFICATION OF DEVELOPMENT POTENTIAL

SYTUACJA FINANSOWA MIAST NA PRAWACH POWIATU POLSKI WSCHODNIEJ A ZRÓŻNICOWANIE POTENCJAŁU ROZWOJOWEGO

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Summary: Cities with 'powiat' (county) rights are a specific combination of commune and powiat self-governments. They carry out both the tasks of the commune and powiat. To this end, they create their own financial policy. Local finances, as a resource of the individual, become a development factor. Finances are the basis for the implementation of public tasks and determine the conditions for economic development. The rate and structure of income that determine investment activity have a decisive impact on the pace of socio-economic development. The conditions of the financial situation may be shaped by the area (e.g. location and size of local government units, available resources and natural values, investment attractiveness) and may also be independent of it (e.g. economic fluctuations in (the country and in the world, the state of public finances, the scope of income control) and expenditure LGUs).

Keywords: financial standing, synthetic measure, 'powiat' cities, development.

Streszczenie: Miasta na prawach powiatu są specyficznym połączeniem samorządów gminnego i powiatowego. Wykonują one zadania zarówno gminy, jak i powiatu. W tym celu kreują własną politykę finansową. Finanse lokalne, jako zasób jednostki, stają się czynnikiem rozwoju. Finanse stanowią podstawę realizacji zadań publicznych i rozstrzygają o warunkach gospodarczego rozwoju. Na tempo rozwoju społeczno-gospodarczego decydujący wpływ mają poziom i struktura dochodów, które warunkują aktywność inwestycyjną. Uwarunkowania sytuacji finansowej mogą być kształtowane przez obszar

(np. położenie i wielkość JST, dostępne zasoby i walory naturalne, atrakcyjność inwestycyjną), a także mogą być od niego niezależne (np. stan finansów publicznych, zakres władztwa dochodowego i wydatkowego JST).

Słowa kluczowe: sytuacja finansowa, miara syntetyczna, miasta na prawach powiatu, rozwój.

1. Introduction

The activities of local government units (LGUs) as an employer, principal, client and investor in the area of local property disposal, service provision and financial management have an impact on the local economy. They are carried out in their own name and on their own responsibility, they are usually non-profit entities and are financed from public funds. To this end, local government was furnished with public revenues and given the right to incur liabilities. The activity of local government units should be focused on the use of available endogenous resources [Parysek 2001], e.g. raw materials, economic, social and natural capital, finances and human resources [Kisiała, Stępiński (eds.) 2013]. One of the challenges faced by local officials is to ensure the quality of life and social services, while coping with underfunding [Kennedy 2013].

The development of LGUs is a complex phenomenon and difficult to clearly assess from the point of view of the examined aspect of the structure, which cannot be expressed by one feature [Wysocki 2010]. This is a complex process both in terms of the size of the entities that participate in it, and the quality of phenomena and processes affecting it [Jóźwik, Ponikowski (eds.) 2008], and it applies to many dimensions, and the basic ones include the social, cultural, economic, and spatial dimensions.

It is worth emphasizing that the analyses conducted by Churski et al. [2013], Stanny [2015] and Dziekański [2017] show that local finance is the development factor. These authors in their research indicate the importance of municipal self-government revenue and investment expenditure, emphasizing their significance from the point of view of the potential financing of self-development tasks of local governments. The answer was sought to the question as to which budget elements best explain a certain level of development and financial standing.

The financial situation of a 'powiat' means the financial condition within a specified period of time, demonstrated by the ability to perform tasks, as well as to increase assets and meet the needs of residents. It is shaped, among others, by: the level of income, financial independence, the amount of investment expenditure, the ability to raise extra-budgetary funds, and the financial result [Ossowska, Ziemińska 2010]. The financial situation is a component of the responsibility of local authorities for the development and meeting the needs of its residents. This assessment allows to determine not only the efficiency of functioning, i.e. the ability to meet the obligations, but also the possibility of raising the quality standard of the services they provide to local communities [Dziekański 2014a].

2. Purpose and research method

The aim of the article is to analyse the spatial disproportions in the development of the financial situation of cities with 'powiat' rights in relation to their development potential using a synthetic measure. The analyses were made in the layout of cities with 'powiat' rights in Eastern Poland. Data from the Local Data Bank of the Central Statistical Office were used as the source material. The time range of the survey covers the period 2010-2017, and thus includes the financial crisis, which had a significant impact on the operating conditions and inflows to the budgets of cities with 'powiat' rights.

The TOPSIS method was used in the analysis of the spatial diversity of the financial situation and development of cities with 'powiat' rights in Eastern Poland. The following procedure was used in the analyses:

I. In the first stage, the variables stimulant and destimulant were selected from the demographic aspect, economy (economic), technical and social infrastructure, finance and the environment. The selected variables constituting the synthetic measure of development are: population change, birth rate, migration balance (per 1000 inhabitants), registered unemployment rate, employed persons, registered entities, natural persons conducting economic activity, foundations, associations and social organizations, production sold production of industry, investment outlays in enterprises, gross value of fixed assets and forest land area, treated wastewater, mixed waste, own income and property expenditure per capita. The variables describing the financial situation are: the share of own revenues in total revenues, the share of tax revenues in total revenues, the operating surplus per capita, the share of transfer income in total income, the share of property expenditure in total expenditure, expenditure for debt service, housing, education and upbringing, health protection and public safety.

From the set of selected variables, those characterized by low spatial variability (threshold value coefficient of variation = 0.1) and high correlation of variables (according to the inverted matrix method) [Wysocki, Lira 2005; Wysocki 2010; Malina 2004], were removed.

II. The set of variables was subjected to zero unitarisation using the following formulas:

$$z_{ij} = \frac{x_{ij} - \min_i x_{ij}}{\max_i x_{ij} - \min_i x_{ij}} \text{ when } x_i \in S, \tag{1}$$

$$z_{ij} = \frac{\max_i x_{ij} - x_{ij}}{\max_i x_{ij} - \min_i x_{ij}} \text{ when } x_i \in D, \tag{2}$$

where: S − stimulant, D – destimulant, $i = 1, 2... n$, $j = 1, 2... n$, x_{ij} − means the value of the $j - t$ feature for the examined unit, max − the maximum value of the $j - t$ feature, min − the minimum value of the $j - t$ feature [Dziekański 2017; Młodak 2006; Wysocki, Lira 2000].

III. Then the Euclidean distances of individual objects from the pattern and anti-pattern were calculated according to the formula:

$$d_i^+ = \sqrt{\frac{1}{n}\sum_{j=1}^{m}\left(z_{ij} - z_j^+\right)^2}, \tag{3}$$

$$d_i^- = \sqrt{\frac{1}{n}\sum_{j=1}^{m}\left(z_{ij} - z_j^-\right)^2}, \tag{4}$$

where: n stands for the number of variables forming the pattern or anti-pattern, z_{ij} stands for the value of the uniformized feature for the examined unit [Wysocki 2010]. Next, the synthetic measure values were determined according to the TOPSIS method for individual objects based on the formula:

$$q_i = \frac{d_i^-}{d_i^- + d_i^+}, \text{when } 0 \le q_i \le 1, i = 1, 2, \ldots, n;\ qi \in [0;\ 1], \tag{5}$$

where: d_i^- means the distance of the object from the anti-template (from 0), d_i^+ means the distance of the object from the template (from 1). Higher values of the q_i measure indicate a more favourable financial situation and a higher level of development of the commune [Hwang, Yoon 1981; Łuczak, Wysocki 2012].

IV. In the last stage of the analyses, in order to interpret the obtained measures the division into quartile groups was used where the indicator size in the first group means a better unit and in subsequent groups − weaker units. The mutual compliance of the results obtained was also verified based on the correlation coefficient and regression analysis [Dziekański, Wyszkowski 2018].

3. The city (cities with powiat status) as a local development centre

A city with 'powiat' rights performs public tasks in its own name and on its own responsibility. Its tasks include all public matters of local importance. The tasks are completed after providing the city with the necessary financial resources for their implementation [Dolnicki 2012]. These cities are currently one of the most significant service providers and public investors and an important player in shaping local policy [Czupich 2016].

Cities with 'powiat' status have recently faced many financial problems, concerning the decrease in own revenues caused by the limitation of activity by enterprises and, consequently, lower revenues from personal and legal income taxes, as well as local taxes and fees. In this way, cities became economically dependent on funds from the central budget. The implementation of public tasks depends on the amount of income received. Therefore, these are own revenues and

supplementary revenues in the form of transfers from the state budget or budgets of other entities (e.g. earmarked funds). Ensuring a high level of own income is conducive to better meeting the needs of residents and is the basis for sustainable development, increasing the attractiveness of the region and the quality of public services [Głowicka-Wołoszyn 2017].

The local development process is influenced by many factors, both dependent and independent of the municipality itself, among them the financial situation should be considered one of the most important, along with the political, social and economic aspects. Investment expenditure contributes to the improvement of the macroeconomic situation and increases the comfort and quality of life for residents. The size of investment activities is also determined by the costs of carrying out ongoing tasks, as well as the availability of external sources of financing. One of the basic problems of the functioning of local government is the limited financial resources in relation to the scope of the ongoing tasks and reported investment needs [Gonet 2013].

The financial situation is closely correlated with the level of local development, understood as a set of quantitative and qualitative transformations of the 'powiat', relating to the standard of living of residents and the functioning of economic entities. As Hendrick points out, the financial situation cannot be described in one--dimensional space (one indicator). It indicates the local government's ability to timely fulfil its financial obligations and ensure continuity in providing services to the local community [Hendrick]. Douglas and Gaddie relate the financial situation to the ability to timely meet financial obligations and ensure continuity in the provision of services to the local community. There is also the potential insolvency of the local government or the inability to implement its own tasks, emphasizing the context of limited resources in economics (including financial resources) [Douglas, Gaddie 2002].

The financial situation of a commune is the state of its finances in a specific (examined) time period. Its level is demonstrated by, among others the ability to achieve a budget balance or increase the commune's assets. The financial situation translates into disproportions in the scope of the ability to meet the local needs and activities of 'powiats' [Kopyściański, Rólczyński 2014]. The conditions of the financial situation may be shaped by the area (e.g. location and size of local government units, available resources and natural values, investment attractiveness) and may also be independent of it (e.g. economic fluctuations in the country and in the world, the state of public finances, the scope of income control) and expenditure (LGUs) [Dziekański 2014b]. The financial situation is the goal of the action and the result of previous decisions and related development opportunities, and is also influenced by stable development strategy, its resources, skills, entrepreneurship of local authorities [Dylewski 2006]. It can be treated as one of the endogenous factors of the level of development. The assessment of the financial situation allows to manage the development of local government as well as the carried out tasks and can be prepared both for their own needs and for external recipients.

The regional level of development is an extremely complex concept and depends on both endogenous and exogenous factors of economic growth. In terms of non-natural conditions, it is primarily a location in socio-economic space. Due to the development possibilities, the orientation towards the settlement and communication network is particularly important [Ossowska, Poczta 2009]. Local development is a multidimensional process. Its basic dimensions include the social, environmental, infrastructure, economic and spatial aspects [Klasik, Kuźnik 2001; Kosiedowski 2005]. The key decision-making actors in the field of local development policy, as a result of which they contribute to changes taking place in the multidimensional local space, are the local authorities [Katoła 2011]. Among the elements conditioning the development of the region, S. Korenik identified, among others human capital, innovative facilities, entrepreneurship, transport and communication infrastructure, good living conditions and value of the landscape, quality of the regional administration. He also indicates the process of the densification of economic and social activity around active centres (local development centres) and the disappearance of this activity with distance from them [Korenik 2011].

The results of the analysis of A. Pawlik confirm the general gradual improvement of the economic situation of cities with 'powiat' rights in Eastern Poland. This is also demonstrated by the decrease in the level of unemployment and the increase in the number of registered business entities. The results also confirmed the great importance of cities with 'powiat' rights: Kielce, Rzeszów, Lublin, Białystok, Krosno, Olsztyn, Elbląg, Suwałki, and Zamość as local centres of economic activity and competitiveness [Pawlik 2018].

4. Financial situation of cities with Eastern Poland powiat status and their development potential

Table 1 summarizes the values of the measure of the synthetic financial situation and the development of cities with 'powiat' rights in Eastern Poland in 2010 and 2017 in subsequent quartile groups. The first group includes units with the best situation in the examined aspect, the last group has the weakest.

The value of the synthetic measure allowed dividing the cities with 'powiat' rights of Eastern Poland into four groups. Units with a higher level of development were characterized by a much higher level of financial standing and development. In 2010, the measure of financial situation ranged from 0.23 (Tarnobrzeg) to 0.50 (Olsztyn), in 2017 from 0.28 (Chełm) to 0.48 (Rzeszów). The best units in terms of financial situation are Rzeszów, Białystok, Krosno, Kielce, Lublin, and Olsztyn, the weakest being Zamość, Przemyśl, and Chełm. The measure of urban development in Eastern Poland powiats in 2010 ranged from 0.31 (Przemyśl) to 0.55 (Olsztyn), in 2017 from 0.34 (Chełm) to 0.58 (Olsztyn). The best units in terms of development were Olsztyn, Rzeszów, Lublin, Białystok, and Kielce, while the weakest were Przemyśl, Tarnobrzeg, and Chełm (Table 1).

Cities with group A 'powiat' rights, in the best situation in terms of financial situation and development, were characterized by high values of variables, among others own income, tax income from PIT and CIT, property expenditure, migration balance, number of employees, business entities, persons conducting business activity, sold production of industry, investment outlays in enterprises, and gross value of fixed assets.

Table 1. Quartile groups measure the synthetic financial situation in relation to the development of cities with Eastern Poland 'powiat' status in 2007 and 2017

	TOPSIS $_{\text{financial situation}}$			TOPSIS $_{\text{development}}$		
	2010	2017	2017/2010	2010	2017	2017/2010
A	Olsztyn 0.5 Białystok Elbląg 0.47 Rzeszów 0.47 Kielce 0.44 Krosno 0.42 Lublin 0.41 Suwałki 0.39	Rzeszów 0.48 Białystok Krosno 0.41 Elbląg 0.39 Kielce 0.39 Lublin 0.39 Łomża 0.39 Olsztyn 0.39	Rzeszów 0.02 Białystok –0.04 Krosno –0.02 Elbląg –0.17 Kielce –0.11 Lublin –0.05 Łomża 0.03 Olsztyn –0.22	Olsztyn 0.55	Olsztyn 0.58 Rzeszów 0.56 Lublin 0.54 Białystok 0.53 Kielce 0.53	Olsztyn 0.05 Rzeszów 0.12 Lublin 0.15 Białystok 0.2 Kielce 0.02
B	Łomża 0.38	Biała Podlaska 0.38 Tarnobrzeg 0.38	Biała Podlaska 0.09 Tarnobrzeg 0.65	Kielce 0.52 Rzeszów 0.5 Lublin 0.47 Białystok 0.44 Krosno 0.44 Suwałki 0.42	Krosno 0.48 Suwałki 0.44	Krosno 0.09 Suwałki 0.05
C	-	Suwałki 0.37	Suwałki –0.05	Elbląg 0.4 Zamość 0.4 Biała Podlaska 0.38 Tarnobrzeg 0.38	Elbląg 0.4 Biała Podlaska 0.38 Łomża 0.38 Zamość 0.38	Elbląg 0 Biała Podlaska 0 Łomża 0.03 Zamość –0.05
D	Biała Podlaska 0.35 Chełm 0.31 Zamość 0.3 Przemyśl 0.25 Tarnobrzeg 0.23	Zamość 0.33 Przemyśl 0.29 Chełlm 0.28	Zamość 0.1 Przemyśl 0.16 Chełm –0.1	Łomża 0.37 Chełm 0.35 Przemyśl 0.31	Przemyśl 0.36 Tarnobrzeg 0.36 Chełm 0.34	Przemyśl 0.16 Tarnobrzeg –0.05 Chełm –0.03

Sorted by quartile for 2017.

Source: own calculations of the authors based on the data from the Local Data Bank of Statistics Poland and Central Statistical Office.

Figure 1 below indicates the increase in dispersion according to the synthetic measure of development in 2017 and the decrease in differentiation according to the measure of financial situation. Outliers in the financial situation are Rzeszów and Białystok (measure above the median value) and Zamość, Przemyśl, and Chełm (below the median).

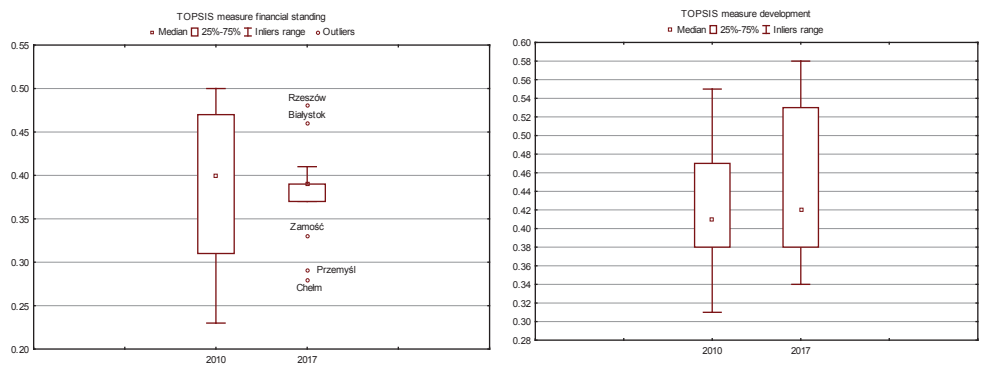

Figure 1. Scattering of cities with poviat rights in Eastern Poland according to the measure of synthetic financial situation and development in 2010 and 2017

Source: own calculations of the authors based on the data from the Local Data Bank of Statistics Poland and Central Statistical Office.

The measures of spatial diversity indicate the relative stability of the diversity of cities with 'powiat' rights in Eastern Poland in relation to their financial situation and development. In 2017, compared to 2010, a slight decrease in the diversification according to the financial situation (standard deviation 0.09-0.06; 2017-2010) and an increase according to the measure of development (0.07-0.09) can be indicated. The decrease in the diversity for the financial situation is indicated by the classic coefficient of variation, which was 0.14-0.23 (2017-2010) and the increase in differentiation according to the development measure 0.19-0.16, respectively. In the financial situation, the range value indicates a decrease in diversity (0.20-0.27) and its stability according to development (0.24-0.24; Table 2).

Figure 2 presents the correlograms describing the relationship between the synthetic measure of financial situation and development in 2010 and 2017. In the examined period, 'powiats' were subject to divergence. The correlation coefficient of the financial situation measure in 2017 in relation to 2010 decreased and amounted to 0.321-0.498 (2017-2010) and in the case of development measure 0.219-0.677, respectively. A decrease in both values may indicate a similar reaction of cities with poviat rights in both areas studied to changes in the economy. The outliers, regardless of the synthetic measure, are Rzeszów, Olsztyn, Przemyśl, Chełm, and Tarnobrzeg.

Table 2. Differentiation of the measure of the synthetic financial situation and development of cities with 'powiat' rights in Eastern Poland in 2010 and 2017

	TOPSIS financial situation		TOPSIS development	
	2010	2017	2010	2017
Average	0.24	0.31	0.39	0.41
Median	0.23	0.31	0.39	0.41
Standard deviation	0.08	0.08	0.04	0.04
Quarter (quartile) deviation	0.23	0.31	0.39	0.41
Classic coefficient of variation	0.33	0.27	0.09	0.10
Positional coefficient of variation	1.00	0.99	1.01	1.01
Min	0.04	0.13	0.31	0.32
Max	0.43	0.53	0.46	0.52
The range	0.39	0.41	0.15	0.20
Quartile range	0.10	0.11	0.05	0.06
Skewness	0.46	0.51	0.10	0.31
Measure of concentration-kurtosis	–0.02	0.19	0.64	–0.08

Source: own calculations of the authors based on the data from the Local Data Bank of Statistics Poland and Central Statistical Office.

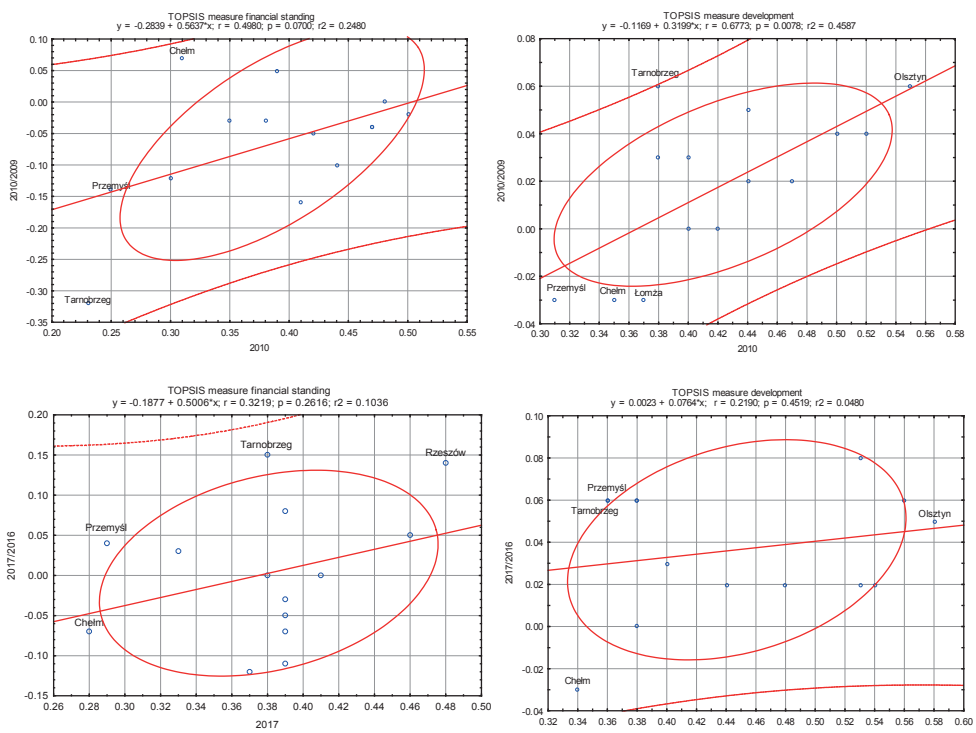

Figure 2. Relative change in the measure of synthetic financial situation and development and its value for cities with poviat rights in Eastern Poland in 2010 and 2017

Source: own calculations of the authors based on the data from the Local Data Bank of Statistics Poland and Central Statistical Office.

The Pearson correlation coefficient between the value of the synthetic measure of the financial situation in 2010 to 2017 was 0.712, and the development measures 0.927 (Figure 3). This may indicate the stable spatial diversity of units. The group of distinguished entities includes Rzeszów, Olsztyn (with a high value of the measure of development and financial standing at the same time), Elbląg, Olsztyn, Tarnobrzeg (for which the decrease in the financial situation indicator is characteristic), Chełm, and Przemyśl (with a low indicator of the financial standing).

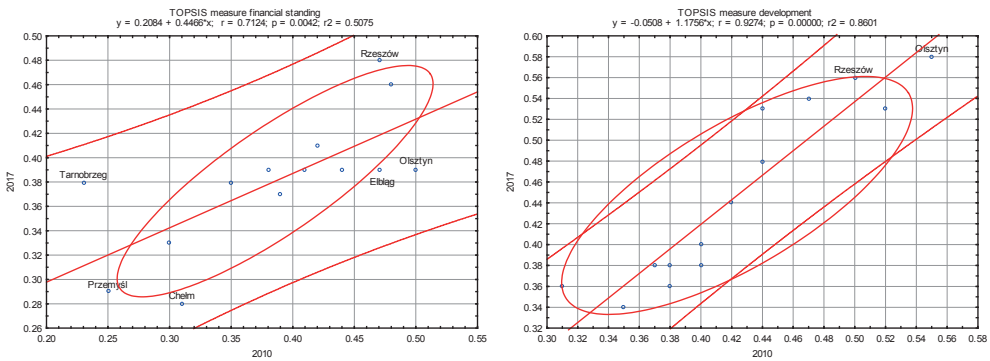

Figure 3. Ratio of synthetic measure − 2010 to 2017 − financial situation and development of cities with poviat rights in Eastern Poland

Source: own calculations of the authors based on the data from the Local Data Bank of Statistics Poland and Central Statistical Office.

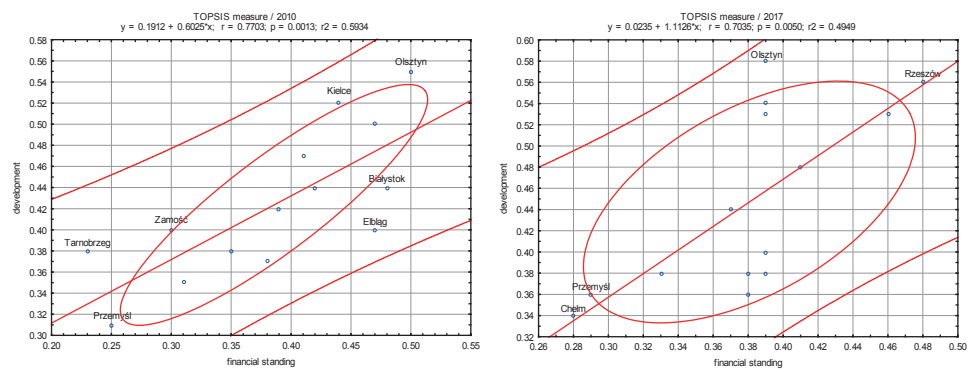

Figure 4. Differentiation of the measure of the synthetic financial situation and development of cities with poviat rights in Eastern Poland in 2010 and 2017

Source: own calculations of the authors based on the data from the Local Data Bank of Statistics Poland and Central Statistical Office.

Pearson's correlation coefficients between the value of the measure of synthetic financial situation and development in 2010 was 0.770, and in 2017 0.703. This

may indicate a similar classification of units according to the areas studied and their similar response to changes in the local economy. The units that have a high level of measure of the synthetic financial situation and development are Rzeszów, Olsztyn (2017, units performing the metropolitan function), and Chełm, Przemyśl (with a low level of indicators).

When analyzing the stability of the spatial diversity of the financial situation and the development of cities with poviat rights in Eastern Poland in the period 2010--2017, a correlation coefficient can be used. Its value was 0.761 (Table 3), which may indicate that they described the diversity of units in the studied areas to a very similar extent, and the spatial diversity of the phenomena was stable.

Table 3. Correlation of a measure of the synthetic financial situation and development of cities with 'powiat' rights in Eastern Poland in 2010-2017

	TOPSIS $_{\text{financial situation}}$	TOPSIS $_{\text{development}}$
TOPSIS $_{\text{financial situation}}$	1.000	0.7612
TOPSIS $_{\text{development}}$	0.7612	1.000
Own income *per capita*	0.6025	0.7524
The level of tax income (PIT and CIT) *per capita*	0.5745	0.7624
Operating surplus *per capita*	0.3879	0.2989
Expenditure (investment) *per capita*	0.5545	0.4221
The level of public debt *per capita*	–0.3767	–0.1741
Expenditure in the housing sector	0.3617	0.2201
Expenditure in the department of schools and education	0.468	0.1776
Expenditure in the section on public safety and fire protection	0.0806	–0.0039
Migration balance per 1000 people	0.5194	0.4737
Registered unemployment rate	–0.6724	–0.8101
Employed persons by groups of sections and sex in total 'powiats'	0.5981	0.7953
Registered entities per 1000 population	0.5767	0.8625
Natural persons conducting economic activity per 1000 population	0.5635	0.7495
Total sold production of industry and *per capita* (entities with more than 9 employees) *per capita*	0.6161	0.7853
Investment outlays in enterprises *per capita*	0.6616	0.7998
Gross value of fixed assets in enterprises *per capita*	0.6585	0.858
Total forest area	0.1766	0.3718
Residential stock / flats per 1000 inhabitants	0.3554	0.6409

Linear correlation coefficients for observations from sample 1-112; critical value (at a two-sided 5% critical area) = 0.1857 for $n = 112$.

Source: own calculations of the authors based on the data from the Local Data Bank of Statistics Poland.

The level of the phenomenon under study was mostly affected by their own revenues, tax revenues (PIT and CIT), property expenditure (investment), migration balance, the employed, registered entities, natural persons conducting business activity, sold production of industry (entities with the number of employees > 9), investment outlays in enterprises and the gross value of fixed assets. A negative correlation was indicated by the relation with the registered unemployment rate (Table 3).

Considering the impact of factors from the demographic aspect, economy (economic), technical and social infrastructure, finances and the natural environment on the spatial diversity of measures of the synthetic financial situation (TOPSIS), the following equation was estimated:

$$f(TOPSIS_{financial\ standing}) = \Sigma\ (TOPSIS_{development}, \text{own revenues, tax revenues (PIT and CIT), operating surplus, level of transfer income, level of public debt, expenditure in the schools and education department, expenditure in the public safety and fire protection department})$$

The results of the analysis for TOPSIS show that the presented regression model explains $R = 0.900$ variable variations. The high values of F (116.118) statistics and the corresponding level of probability p confirm the statistical significance of the linear model. The t-Student statistic value for the p parameter means that all parameters are statistically significant. The value of the coefficient of determination (R2 = 0.892) indicates a good fit of the regression model to the data (Table 4).

Table 4. Regression estimation KMNK (observations 1-112 used; dependent variable TOPSIS financial situation)

	Rate	Standard error	Student's *t*-	*p*-value
Constant	0.326090	0.0216640	15.05.	<0.0001
$TOPSIS_{development}$	0.0457829	0.0578610	0.7913	0.4306
Own income per capita	1.85358e-05	8.19042e-06	2,263	0.0257
The level of tax income (PIT and CIT) *per capita*	7.47760e-05	2.22093e-05	3367	0.0011
Operating surplus *per capita*	0.000174421	1.71301e-05	10.18	<0.0001
Level of transfer income *per capita*	–6.48949e-05	5.59990e-06	11.59	<0.0001
The level of public debt *per capita*	–7.61905e-05	9.00488e-06	–8,461	<0.0001
Expenditure in the department of schools and education	0.000189572	4.06159e-05	4,667	<0.0001
expenditure in the section on public safety and fire protection	0.000554285	0.000204434	2.711	0.0079

Table 4, cont.

The arithmetic mean of the dependent variable	0.382500	Standard deviation of the dependent variable	0.065216
Sum of squared residues	0.047121	Residual Standard Error	0.021389
Coefficient of Determination *R* square	0.900188	Corrected *R*-square	0.892436
F (8, 103)	116.1181	*P*-value for the *F* test	5.37-48
Logarithm of credibility	276.3968	Crit. inform. Akaike'a	–534.7937
Crit. Bayes. Schwarz	–510.3272	Crit. Hannan-Quinn	–524.8669

Source: own calculations of the authors based on the data from the Local Data Bank of Statistics Poland and Central Statistical Office.

5. Conclusions

The annual plan of poviat cities 'activities is determined by endogenous resources and is related to the political, economic and social functions of the individual, the residents' satisfaction, the satisfaction of aspirations and sense of improvement in their living conditions. The financial potential of 'powiats' is determined by processes related to the accumulation and spending of public funds, which creates boundaries for the implementation of the tasks and the development process. This is understood as a process which concerns the changes taking place in the local socio-territorial system.

Local development and financial situation, as complex concepts, include not only financial and economic changes, but also processes that occur in society and other types of social systems.

Cities with 'powiat' rights in Eastern Poland were divided according to a synthetic measure (financial situation and development) into four quartile groups (the first best, the last weakest). In 2010, the measure of financial situation ranged from 0.23 (Tarnobrzeg) to 0.50 (Olsztyn), in 2017 from 0.28 (Chełm) to 0.48 (Rzeszów). The measure of urban development in Eastern Poland 'powiats' in 2010 ranged from 0.31 (Przemyśl) to 0.55 (Olsztyn), in 2017 from 0.34 (Chełm) to 0.58 (Olsztyn). Units with a higher level of development were characterized by a much higher level of financial standing, e.g. Rzeszów, Białystok, Krosno, Kielce, Lublin, and Olsztyn (the best units in the studied areas), the weakest being Zamość, Tarnobrzeg, Przemyśl, and Chełm.

The financial situation of cities with powiat rights in Eastern Poland was shaped by, among others own income, tax income (PIT and CIT), property expenditure (investment), migration balance, employed persons, registered entities, natural persons conducting economic activity, sold production of industry (entities employing > 9), investment outlays in enterprises and gross value of fixed assets. The relationship with the registered unemployment rate showed a negative correlation.

The value of the correlation coefficient between the measure of financial situation and development was 0.761, which may indicate that they described the diversity of units in the studied areas to a very similar extent, and the spatial diversity of the phenomena was stable. This may suggest a similar classification of units according to the areas studied and their similar response to changes in the local economy.

The development of cities with poviats rights is multidimensional. It is shaped by elements that make up the demographic, economic, financial and environmental aspects. The findings of the research can be used in discussions on the shape of changes taking place in the development processes of cities with 'powiat' rights, or the previously used instruments, the assessment of the accuracy of decisions made in the past, indicating better or worse developed 'powiat' areas.

The method used allowed to compare the degree of development and financial situation of one unit relative to the other. The value of the measure depended on the number and type of variables adopted for the study. It also made it possible to present the hierarchy and assess the disparities between individual cities within the 'poviat'. The indicator's design ensures the high comparability of the tested units. The proposed indicator can also be a starting point for further studies taking into account a narrower or broader group of examined units.

A problem of assessing the development potential and financial situation of cities with 'powiat' rights is the relative quality of information. The low availability of statistical data on the indicated areas makes it difficult to analyse the operation or programming, conduct and evaluation of local development policy. The lack of properly selected indicators increases the risk of their selective choice and the possibility of making wrong decisions in the future.

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