

MORAVIAN GEOGRAPHICAL REPORTS

sciendo

The Czech Academy of Sciences, Institute of Geonics

journal homepage: http://www.geonika.cz/mgr.html

doi: https://doi.org/10.2478/mgr-2022-0012

The influence of administrative status on the trajectory of socio-economic changes: A case study of Polish cities

Katarzyna PRZYBYŁA [a *], Marian KACHNIARZ [a], Maria HEŁDAK [a], David RAMSEY [b], Bogdan PRZYBYŁA [c]

Abstract

Most of the academic literature indicates that high administrative status positively influences the development of a city, while the loss of such status leads to marginalisation. Most of these studies, however, investigated national capitals, and relatively little research has analysed the effect of a change in status at lower levels of government. Poland is an obvious subject for such research, due to the recent extensive reforms of its system of territorial government. This article presents the recent dynamics of socio-economic development in Polish cities and their relation to whether a city maintained or lost its status as a regional capital. These results enable us to identify correlations between the dynamics of socio-economic development and the status of a city. The nature of these correlations is more ambiguous than the results presented in previous studies. The findings of this study give new insight into the effect of changes in a city's administrative status.

Key words: *administrative status, level of socio-economic development of cities, territorial reform, Poland*

Article history: *Received 19 March 2022, Accepted 20 September 2022, Published 30 September 2022*

1. Introduction

The effects of the administrative status of a city on its economic development are considered in this report. The authors address the questions of whether possessing the role of a regional capital has a significant effect on the development processes in a city and whether losing such status leads to marginalisation.

Based on classical theoretical models, it is generally thought that administrative functions play a significant role in the evolution of a city by determining its position in the hierarchy of a network of human settlements and having a positive influence on its socio-economic development. The existence of administrative functions in a city can lead to multiplier effects that influence other elements of the urban economy and lead to the further development of that city (Krugman, 1996; Markusen, 1996; Dascher, 2000; Heider et al., 2018). This view is shared by a large proportion of researchers and often treated as being intuitively obvious. Very little research has pointed out the negative effects of being a capital. The increasing frequency of public functions in the employment structure can weaken the dynamics of the development of a city by monopolising real estate and talented employees (de Vries and Sobis, 2018; Wendt, 2007; Heider et al., 2018). The bureaucratic culture of administration and management can have a negative impact on the local climate of innovation and enterprise (Polčse, 2015).

The trajectories of the development of cities have been used to investigate the phenomena described above. Analysis of the available literature, however, led the authors to three conclusions. Firstly, investigation of the role of administrative status on the development of cities has mainly been restricted to the consideration of national capitals and rarely to lower levels of the administrative structure. Secondly, these studies have often considered multiple factors, which has not enabled researchers to gain a clear view of the role of administrative status on the development processes of cities. Thirdly, in relation to the importance of administrative structure in forming public policies, very little research has been carried out at the level of regional government. As both Campbell (2000) and Gordon (2006) note, the enthusiasm of researchers for cosmopolitan megacities has come at the expense of investigating provincial capitals.

[a] Institute of Spatial Management, Wroclaw University of Environmental and Life Sciences, Wrocław, Poland (*corresponding author: K. Przybyła, e-mail: *katarzyna.przybyla@upwr.edu.pl*)

[b] Department of Computer Science and Systems Engineering, Wroclaw University of Science and Technology, Wrocław, Poland)

[c] Department of Mechanics of Structures and Urban Engineering, Wroclaw University of Science and Technology, Wrocław, Poland

The main goal of this article is to assess the level and dynamics of socio-economic development in Polish cities that are presently or were, prior to the administrative reforms, regional capitals. The authors also address the questions of whether a change in the administrative status of a city has had a significant effect on its development processes and whether losing the status of being a regional capital has led to marginalisation.

2. Theoretical background

The results of previous research generally confirm the significant effect of administrative status, including the loss of the status of being a capital, on the development trajectory of a city (Potts, 1985; Guerin-Pace, 1995; Gordon, 2002; Corey, 2004; Schatz, 2004; Bennett, 2010; Rossman, 2017). Except for the final study cited, these studies were individual case studies, based on simple non-parametric methods. Somewhat more advanced methodologies, based on the pattern of public sector investments, were used in the studies of Randall (1990), Lars-Hendrik and Waverman (2001), Swianiewicz and Łukomska (2004), Yigitcanlar et al. (2008); Polčse and Denis-Jacob (2010), Leigh and Blakely (2012), and Snieska and Zykiene (2015). Cities compete for these limited investment funds. Hence, in accordance with Christaller's Central Place model, capitals have a privileged position in accessing investment funds (Dascher, 2000). Thus, political, and administrative capitals have a specific advantage over cities that do not play such a role. Carroll and Meyer (1982) found that state spending in the USA was relatively higher in the state capitals than in other cities. Ma (2005) made similar conclusions regarding public spending in China. Moreover, Mayer et al. (2017) noted that, apart from having an advantage in accessing public funds, the administrative role of capitals leads to the creation of a specific institutional environment, which also favours the concentration of administrative functions in the private sector. Paddison (1983), Lea (2005) and Lessmann (2012) note that this effect depends on the level of decentralisation in a country and the role of the private sector in a country's economy. Research indicates that the higher the level of decentralisation in a country, the lower the regional disproportions in government spending.

Fundamental reforms of territorial administration are an ideal source for such studies. In countries with a stable political system, however, they are carried out very rarely. European studies have in recent times concentrated on two countries, Poland and Germany. Studies of the German system have covered both the transfer of the role of national capital from Bonn to Berlin and the effect of regional reforms at lower levels. Becker et al. (2018) present one of the most interesting studies in this field by comparing Bonn to 40 similar cities using the Difference-in-Differences and Synthetic Control methods. They found that Bonn underwent significant socio-economic growth after becoming the national capital. There was however no counteracting fall after its loss of this status. Several publications have been published on the effect of these reforms at regional and local level (Krippner, 1993; Dascher, 2000; Kauffmann, 2009; Holtmann et al., 1998; Heider et al., 2018). In general, the results of these studies confirm that the loss of political status leads to a tendency for socio-economic development to slow down slightly. This correlation is most marked when studies are based on the subjective opinions of representatives of local society. Quantitative studies, based on numerous socio-economic measures, give more ambiguous results.

Recent research on Polish cities leads to similar conclusions. Due to its fundamental reforms of territorial administration, Poland appears to be the best European subject for research in this field. Most of these studies, however, have only been published in Polish by national journals. Most of these studies find that cities which have lost the status of regional capital then develop at a slower rate, which indicates that administrative status is commonly a highly significant determinant of development (Dziemianowicz, 2000; Krysiński, 2013; Komorowski, 2012). In this context, concentrating public administration and, as a result, administrative functions, in the largest urban centres will only accelerate and deepen the socio-economic divide at regional and sub-regional levels (Heffner, 2011). The research of Łukomska (2011), however, observes a rather heterogeneous pattern of urban development processes. Kurniewicz and Swianiewicz (2016) present the most wide-ranging study in this field using the methods of Difference-in-Differences and Synthetic Control. In their opinion, the attribution of negative phenomena as resulting from a city's loss of status is subjective and is not confirmed by socio-economic measures of development. The real causes of the economic problems of some cities lie elsewhere (Łukomska and Swianiewicz, 2019). Similar conclusions were made by Przybyła (2022), who analysed, among other things, changes in the following: structure of the labour market; quality of life; and the level of investment by local governments, according to whether a city had retained or lost the role of regional capital. An interesting example of work by Polish authors on the consequences of administrative reform is Gendźwiłł, Kurniewicz and Swianiewicz (2021), which contains a systematic overview of 31 studies carried out in 14 countries. Their work analysed the association between changes in jurisdiction size and economic outcomes. They find that there are economies of scale regarding administrative spending, but not in other areas.

As argued above, although there is wide debate about these phenomena, the number of studies on this subject that use objective measures is surprisingly small. As Mayer (2017) observes, this does not hold only for Poland, but there is a lack of interdisciplinary studies (both theoretical and empirical) on the development of provincial cities. One of the goals of the authors is to, at least partially, address this gap.

Two hypotheses, based on the reviewed literature, are tested. The first hypothesis states that the level and rate of socio-economic development is associated with the status of a city. The second hypothesis states that there is an association between changes in population size and the level of socio-economic development.

3. Data and methods

Poland joined the EU on May 1st, 2004. Since the practical effects of the administrative reform became much more visible after accession and data collection was made more uniform at this time, this study covers the period 2004–2018. The 69 cities studied are split into three groups: current regional capitals (18), former regional capitals (31), other cities (20). The geographical location of these cities is presented in Figure 2. In preparation for Poland's accession to the European Union, major administrative reforms were implemented in 1999. These reforms reduced the number of administrative regions (województwa) from 49 to 16. Since the role of regional capital was shared in two of the newly formed regions (by Toruń and Bydgoszcz in Kuyavia-Pomerania and by Zielona Góra and Gorzów

Wielkopolski in Lubusz), this meant that 31 cities lost the status of regional capital, becoming the seats of counties. In addition, 20 other Polish cities have the administrative status of being a county (powiat).

3.1 Constructing a measure of a city's socio-economic development

To assess the economic performance of cities, most often researchers choose a set of variables and measures that reflect, directly or indirectly, the state and dynamics of a city's economy. Various studies on and measures of different aspects of development can be found in the literature (e.g. Przybyła et al., 2014; Przybyła et al., 2019; Kurtyka-Marcak, 2019; Hełdak et al., 2021; Moskowitz, 2021). Since the forms of data available are limited, particularly at the level of cities, the choice of measures is, by necessity, a compromise between the accessibility of the required data and their efficacy in assessing the aspects of economic development studied. On the other hand, the research goals determine which aspects of economic growth are considered.

No.	Aspect	Variable (X_j)
1	Housing stock	Mean housing space (m^2 per inhabitant)
2	Housing stock	Number of registered dwelling places per 100 married couples
3	Housing stock	Frequency of rent debt in local government housing (number of households in debt per 1,000 inhabitants)
4	Municipal infrastructure	Percentage of households connected to the water supply network
5	Municipal infrastructure	Percentage of households connected to the sewage network
6	Municipal infrastructure	Percentage of households connected to the gas network
7	Furnishing of houses	Percentage of households with a bathroom
8	Furnishing of houses	Percentage of households with central heating
9	Environmental protection	Percentage of population serviced by sewage works
10	Environmental protection	Percentage of particulate pollution emitted by heavy industry that is prevented by pollution reducing devices
11	Environmental protection	Investment in fixed capital aimed at environmental protection per inhabitant (NUTS 3) (PLN)
12	Environmental protection	Annual refuse per inhabitant, excluding segregated waste (kg)
13	Employment market	Mean monthly gross earnings relative to prices in 2004
14	Employment market	Percentage of working aged inhabitants registered as unemployed
15	Culture	Number of books in public libraries per 1,000 inhabitants
16	Culture	Number of Internet-connected computers accessible to the public in libraries, per 1,000 inhabitants (2008)
17	Culture	Number of museum visits per 10,000 inhabitants
18	Culture	Number of participants in events organised by cultural and social centres per 1000 inhabitants
19	Healthcare	Number of ambulances per 10 thousand inhabitants
20	Healthcare	Number of inhabitants per bed in a general hospital (NUTS 3)
21	Healthcare	Number of doctors and dentists per thousand inhabitants
22	Healthcare	Number of nurses and midwives per 10 thousand inhabitants
23	Healthcare	Number of inhabitants per general pharmacy
24	Nurseries	Number of nursery places per 100 children of age 0–3
25	Social care	Number of places in social care centres per thousand inhabitants
26	Nursery schools	Number of children in nursery schools per thousand children of age 3–5
27	Schools	Gross percentage of pupils in primary schools
28	Schools	Gross percentage of pupils in middle schools
29	Schools	Pass rate for the school leaving certificate (NUTS 3)
30	Demographics	Number of divorces per 1,000 inhabitants
31	Demographics	Population growth rate per 1,000 inhabitants
32	Demographics	Number of retired inhabitants per 100 inhabitants of working age
33	Demographics	Net migration per 1,000 inhabitants
34	Demographics	Infant mortality per 1,000 live births
35	Socio-economic activeness	Number of registered foundations, societies, and social organisations per 1,000 inhabitants
36	Socio-economic activeness	Budget income of the city (in PLN) per inhabitant relative to prices in 2004
37	Socio-economic activeness	Number of firms on the REGON register per 10,000 inhabitants
38	Socio-economic activeness	Number of self-employed individuals per 100 thousand inhabitants of working age
39	Socio-economic activeness	Investment by firms per inhabitant relative to prices in 2004
40	Socio-economic activeness	Gross value of fixed stock in firms per inhabitant relative to prices in 2004

Tab. 1: Diagnostic traits used. Source: authors' research

To characterise the socio-economic development of cities, this study uses a taxonomic method based on comparisons with an "ideal". This method enables the construction of a synthetic measure that considers several variables associated with development. Such measures give a multi-dimensional appraisal of various aspects of development and enable an overall description of the socio-economic changes occurring in the objects of study. In addition, such measures can be used to create rankings of these objects (Pomianek, 2010; Kachniarz et al., 2019; Świąder et al., 2016). They can also be applied in decision making systems, enabling the integration of various aspects of development policy by taking a wide spectrum of factors into account when making decisions (Kazak et al., 2017).

The chosen method allows us to rank a set of objects (here, cities) that are characterised by a set of diagnostic variables that by nature are positive or negative indicators of development (stimulators or de-stimulators). The values of the observations of the measure of socio-economic development are scaled in the interval [0,1], such that larger values indicate a higher level of development.

Based on an initial analysis of the nature of socio-economic development, several diagnostic traits were selected and statistical data describing these traits were gathered from the Polish Central Statistical Office (Główny Urząd Statystyczny – GUS). Table 1 presents these traits, the variables used to measure them, and the aspects of development assessed: e.g. housing stock, environmental protection, and socio-economic activity. Although these are not all the traits that can be considered by such research, they give a reasonable overview of various aspects of socio-economic development.

Due to the low value of the coefficient of variation (< 0.06 in both years considered), the following quasi-constant traits were eliminated from further consideration: Traits 4, 5, 7, 27 and 29. The correlation matrix for the remaining 35 variables was constructed using Pearson's correlation coefficient. Due to the extremely large correlation of variables 32 and 38 with other variables, it was decided to omit these variables from further analysis. The variables omitted from the analysis are highlighted in grey in Table 1. As a result, we obtained a set of 33 traits to be analysed in the study (see Appendix 1 – Statistical Data). Since increases in the values of variables 3, 12, 14, 20, 23, 30, 34 correspond to lower levels of socio-economic development, these variables were defined to be de-stimulators. Next, de-stimulators were converted into stimulators using Equation (1). This ensures that large values of each of the variables used correspond to desirable traits.

$$X_j = -X_i \tag{1}$$

where X_i = the value of a de-stimulator and X_j = the corresponding value after transforming X_i into a stimulator.

Subsequently, the values of the features adopted for the analysis were standardised according to the following formula:

$$z_{ij} = \frac{x_{ij} - \bar{x}_j}{S_j} \tag{2}$$

where z_{ij} = standardised value of the j-th feature for the i-th subject; x_{ij} = value of the j-th feature for the i-th subject; $\bar{x}_j$ = mean value of the j-th feature; and S_{ij} = standard deviation of the j-th feature.

After standardisation, the variance of each diagnostic variable is equal to 1, whereas the mean of each is equal to 0. Hence, the effect of each variable on the indicator of socio-economic development is independent of the scale it is measured in (Pluta, 1986).

At this stage, each of the variables has been transformed to a unit-free indicator. These indicators have comparable ranges. In each case, large (positive) indicators correspond to more desirable values of the underlying variable and thus to high levels of socio-economic development. Analogously, negative indicators correspond to less desirable values of the underlying variable and thus to low levels of socio-economic development. The ideal value of such an indicator is defined to be the maximum value observed for that indicator. The ideal pattern of development is then defined as the one in which each indicator takes the maximum value observed, i.e.:

$$z_0 = [z_{01}, z_{02}, \dots z_{0j}, \dots, z_{0m}] \tag{3}$$

where $z_{0j} = max_i \{z_{ij}\}$.

Similarly, the anti-ideal pattern z_{-0}, is defined as the one in which each indicator takes the minimum value observed i.e.:

$$z_{-0} = [z_{-01}, z_{-02}, \dots z_{-0j}, \dots, z_{-0m}] \tag{4}$$

where $z_{-0j} = min_i \{z_{ij}\}$.

Next, the Euclidean distance between subject i and the ideal pattern of development, d_{i0}, is calculated using Equation (5):

$$d_{i0} = \sqrt{\sum_{j=1}^{m} \left(z_{ij} - z_{0j}\right)^2} \tag{5}$$

The Euclidean distance between the ideal pattern of development and the anti-ideal, d_0, is calculated using Equation (6)

$$d_0 = \sqrt{\sum_{j=1}^{m} \left(z_{0j} - z_{-0j}\right)^2} \tag{6}$$

Finally, the measure of development for subject i, m_i, is calculated using Equation (7).

$$m_i = 1 - \frac{d_{i0}}{d_0} \tag{7}$$

for i = 1,…, n.

According to Equation (7), the more similar the indicators corresponding to subject i are to the ideal values (i.e. the smaller the distance d_{i0}), the greater the value of the measure of socio-economic development, m_i.

The subjects are classified according to the measure of the level of socio-economic development, m_i, into four classes based on the measure's arithmetic mean, $\overline{m}$, and standard deviation, s_m:

Class A (the highest level of development)

$$m_i > \overline{m} + s_m$$

Class B (medium-high level of development)

$$\overline{m} + s_m \geq m_i \geq \overline{m}$$

Class C (medium-low level of development)

$$\overline{m} > m_i \geq \overline{m} - s_m$$

Class D (lower level of development)

$$m_i < \overline{m} - s_m$$

where m_i is the value of the synthetic measure for subject i.

3.2 Statistical analysis

A significance level of 5% is used in all testing procedures. To analyse the relations between the status of cities and both the mean level of development and changes in the level of development, we used ANOVA (Analysis of Variance) and the Kruskal-Wallis test (non-parametric, used due to the relatively small sample sizes – approximately twenty cities in each of the three groups). It is also unclear whether the measure of the level of development comes from a normal distribution. To ensure a conservative testing procedure, the largest p-value from these tests is reported. Hence, to infer that the level of development varies according to the status of a city, both test results must be significant. To compare the level of development in two groups of cities, the student t-test was used in conjunction with the Bonferroni-Hochberg correction for multiple testing.

To analyse the relation between the population of cities and both the level of development and changes in the level of development, Spearman's correlation coefficient was applied. This was done since the distribution of the population of cities clearly does not follow a normal distribution.

4. Results

Based on the research procedure, we obtained measures of socio-economic development for each of the studied cities in 2004 and 2018. These measures of development differ significantly according to both time and location. The level of socio-economic development of each city was clearly higher in 2018 than in 2004 (see Fig. 1). In 2004, Cracow (Kraków) had the highest measure of socio-economic development, 0.411, while Bytom had the lowest, 0.222. In 2018, the highest ranked was Warsaw (Warszawa, measure 0.601), while the lowest ranked was Świętochłowice (0.291).

4.1 Classification of cities according to socio-economic development

The socio-economic development of the cities studied were classified based on the mean and standard deviation of the measures of socio-economic development. Cities in Class A (the highest ranked) were associated with measures of socio-economic development greater than the mean plus the standard deviation. Those in Class D (the lowest ranked) were associated with measures of socio-economic development lower than the mean minus the standard deviation.

Based on the measures of socio-economic development in 2004, thirteen cities are placed in Class A (the most highly developed): Cracow, Warsaw, Zielona Góra, Katowice, Olsztyn, Opole, Krosno, Rzeszów, Poznań, Bielsko-Biała, Lublin, Nowy Sącz and Zamość (the mean of the measures for this group is 0.37 with coefficient of variation 4.3%). Four

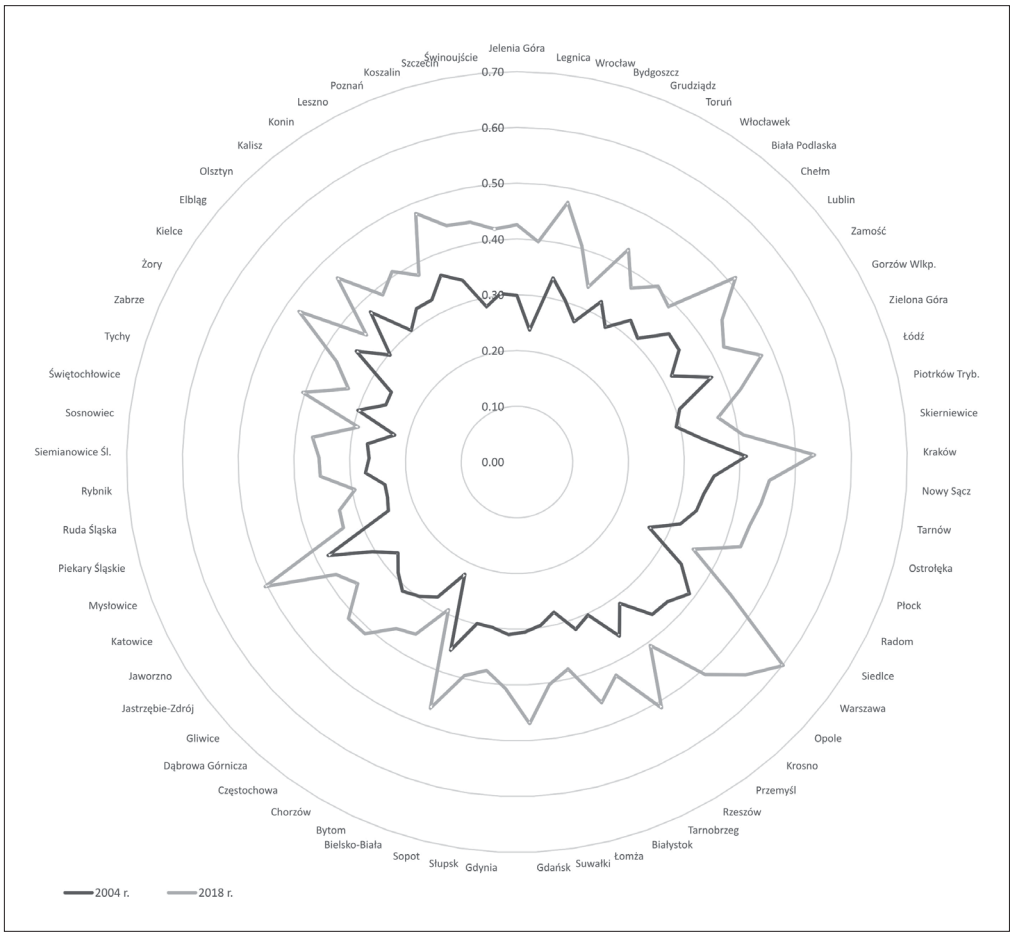


Fig. 1: Level of socio-economic development of cities based on similarity to an ideal
Source: authors' elaboration

of these cities, Krosno, Bielsko-Biała Nowy Sącz and Zamość, are former regional capitals, whereas the remaining cities continue to play the role of regional capital.

Based on the results from 2018, the following cities are categorised as Class A: Warsaw, Opole, Cracow, Lublin, Rzeszów, Krosno, Katowice, Poznań and Zielona Góra (the mean of the measures for this group is 0.521 with coefficient of variation 7%). It should be noted that, apart from Krosno, all these cities hold the status of regional capital.

Based on the results from 2004, fifteen cities are classified as Class B (above average). The mean of the measures of socio-economic development in this group is 0.33 with coefficient of variation 3.4%. It should be noted that all the cities in this class held the status of regional capital before the administrative reforms (five of these cities have retained this status). Based on the results from 2018, twenty cities are classified as Class B. The mean of the measures of socio-economic development in this group is 0.44 with coefficient of variation 4.1%. It should be noted that only one city that did not previously have the role of regional capital, Świnoujście, was classified in this group and as the lowest ranked.

Based on the measures of socio-economic development in 2004, the number of cities placed in Class C (below average) is 27, the largest class. The mean of the measures of socio-economic development in this group is 0.29 with a coefficient of variation 4.3%. Moreover, 29 cities are categorised as Class C based on the results from 2018. The mean of the measures of socio-economic development in this group is 0.38 with a coefficient of variation 5.3%. A mixture of all three types of city (present regional capital, former regional capital and other cities) are found in this category.

In 2004, the small group of class D cities (lowest developed) included ten cities. The mean of the measures of socio-economic development in this group is 0.25 with a coefficient of variation 6%. Two of these cities are former regional capitals, while the remaining eight are from the group of other cities. In 2018, only seven cities belonged to this class. None of these cities had previously been a regional capital. The mean of the measures of socio-economic development in this group is 0.32 with a coefficient of variation 6.4%.

It should be noted that, except for the city of Grudziądz located in the central-northern province of Kujavia-Pomorania, all the cities categorised as Class D in 2018 belong

Class A	m_i	Class B	m_i	Class C	m_i	Class D	m_i
Kraków	0.411	Kielce	0.350	Chełm	0.310	Siemianowice Śląskie	0.265
Warszawa	0.389	Siedlce	0.347	Gdynia	0.310	Radom	0.264
Zielona Góra	0.381	Koszalin	0.340	Dąbrowa Górnicza	0.309	Żory	0.258
Katowice	0.378	Tarnów	0.340	Łódź	0.307	Zabrze	0.257
Olsztyn	0.376	Skierniewice	0.337	Gdańsk	0.305	Mysłowice	0.247
Opole	0.368	Wrocław	0.336	Jaworzno	0.305	Piekary Śląskie	0.241
Krosno	0.365	Ostrołęka	0.333	Świnoujście	0.304	Ruda Śląska	0.240
Rzeszów	0.362	Konin	0.329	Kalisz	0.303	Legnica	0.238
Poznań	0.362	Leszno	0.328	Bydgoszcz	0.302	Świętochłowice	0.224
Bielsko-Biała	0.358	Biała Podlaska	0.326	Tarnobrzeg	0.302	Bytom	0.222
Lublin	0.357	Toruń	0.325	Tychy	0.300		
Nowy Sącz	0.354	Białystok	0.318	Słupsk	0.300		
Zamość	0.353	Gorzów Wlkp.	0.317	Jelenia Góra	0.299		
		Przemyśl	0.313	Sopot	0.298		
		Płock	0.313	Częstochowa	0.298		
				Elbląg	0.297		
				Suwałki	0.296		
				Piotrków Tryb.	0.292		
				Gliwice	0.291		
				Włocławek	0.289		
				Szczecin	0.284		
				Chorzów	0.281		
				Łomża	0.277		
				Rybnik	0.272		
				Grudziądz	0.272		
				Sosnowiec	0.270		
				Jastrzębie-Zdrój	0.269		

Tab. 2: Measures of the socio-economic development of Polish cities in 2004, together with their classification
Legend: light grey – regional capitals (group I), dark grey – former regional capitals (group II), white – other cities with the administrative status of "county" (powiat; group III).
Source: authors' calculations

Class A	m_i	Class B	m_i	Class C	m_i	Class D	m_i
Warszawa	0.601	Kielce	0.475	Gliwice	0.413	Grudziądz	0.338
Opole	0.560	Wrocław	0.474	Dąbrowa Górnicza	0.411	Mysłowice	0.333
Kraków	0.534	Gdańsk	0.470	Konin	0.409	Piekary Śląskie	0.330
Lublin	0.513	Bielsko-Biała	0.468	Skierniewice	0.408	Zabrze	0.329
Rzeszów	0.511	Olsztyn	0.461	Gdynia	0.408	Ruda Śląska	0.294
Krosno	0.509	Białystok	0.457	Przemyśl	0.407	Bytom	0.292
Katowice	0.504	Nowy Sącz	0.454	Bydgoszcz	0.406	Świętochłowice	0.291
Poznań	0.481	Siedlce	0.451	Biała Podlaska	0.405		
Zielona Góra	0.479	Zamość	0.447	Tychy	0.404		
		Tarnów	0.444	Suwałki	0.403		
		Koszalin	0.442	Legnica	0.397		
		Szczecin	0.438	Sopot	0.394		
		Ostrołęka	0.433	Chełm	0.389		
		Toruń	0.431	Kalisz	0.384		
		Płock	0.429	Łomża	0.382		
		Jelenia Góra	0.426	Jaworzno	0.382		
		Gorzów Wlkp.	0.424	Leszno	0.378		
		Łódź	0.422	Słupsk	0.378		
		Tarnobrzeg	0.421	Włocławek	0.373		
		Świnoujście	0.420	Żory	0.370		
				Piotrków Tryb.	0.369		
				Sosnowiec	0.369		
				Częstochowa	0.369		
				Jastrzębie-Zdrój	0.359		
				Chorzów	0.358		
				Siemianowice Śląskie	0.355		
				Rybnik	0.354		
				Elbląg	0.353		
				Radom	0.352		

Tab. 3: Measures of the socio-economic development of Polish cities in 2018, together with their classification
Legend: light grey – regional capitals (group I), dark grey – former regional capitals (group II), white – other cities with the administrative status of "county" (powiat; group III).
Source: authors' calculations

to the Upper Silesian conurbation. This region is undergoing a difficult period due the transformation away from a coal-based economy. Combined with the effect of globalisation and de-industrialisation, this has led to an increase in social inequality, as observed in other regions of a similar nature. (see: Filion et al., 2019; Bae, Joo, 2020).

It should be noted that each of the four classes exhibited a higher coefficient of variation in the measures of socio-economic development in 2018 than in 2004. This increase is also visible at the level of the whole set of cities (13.5% in 2004 and 15% in 2018). This indicates a general increase in inequality between levels of socio-economic development in Polish cities.

4.2 Analysis of the measure of socio-economic development in 2004

There is a highly significant association between the status of a city and the measure of socio-economic development (for both the Kruskal-Wallis test and analysis of variance, $p < 0.001$).

Status of a city	Mean	Standard deviation
Current capitals (group I)	0.3472	0.0354
Former capitals (group II)	0.3152	0.0306
Other (group III)	0.2715	0.0278

Tab. 4: Measure of socio-economic development in 2004 and the status of a city
Source: authors' calculations

Pair	p-value
Current capitals – Former capitals	0.0013
Current capitals – Other cities	< 0.001
Former capitals – Other	< 0.001

Tab. 5: Pairwise comparison of socio-economic development between groups
Source: authors' calculations



Fig. 2: Map of the regional administrative system and geographic location of Class D cities in 2018
Source: authors' research project

Comparing the three groups pairwise, it can be observed that the measure of development is significantly greater amongst the current capitals than amongst the former capitals, where it is in turn greater than amongst the other cities (based on the Student t-test applying the Bonferroni-Hochberg procedure for multiple testing).

The correlation between the size of a city and its level of socio-economic development is not significant (Spearman's test of correlation, $r = 0.2039$, $p = 0.1032$).

4.3 Analysis of the measure of socio-economic development in 2018

Again, there is a highly significant association between the status of a city and the measure of socio-economic development (for both the Kruskal-Wallis test and analysis of variance, $p < 0.001$).

Comparing the three groups pairwise, it can be observed that the measure of development is significantly greater amongst the current capitals than amongst the former capitals, where it is in turn greater than amongst the other cities (based on the student t-test applying the Bonferroni-Hochberg procedure for multiple testing).

There is a significant positive correlation between the population size of a city and its measure of socio-economic development in 2018 (Spearman's correlation coefficient, $r = 0.3511$, $p = 0.0041$).

Status of a city	Mean	Standard deviation
Current capitals (group I)	0.4794	0.0501
Former capitals (group II)	0.4100	0.0381
Other (group III)	0.3595	0.0411

Tab. 6: Measure of socio-economic development in 2018 and the status of a city. Source: authors' calculations

Pair	p-value
Current capitals – Former capitals	< 0.001
Current capitals – Other cities	< 0.001
Former capitals – Other	< 0.001

Tab. 7: Pairwise comparison of socio-economic development between groups of cities
Source: authors' calculations

The results of the study indicate a clear association between the status of a city and its level of socio-economic development, in both 2004 and 2018. Current regional capitals exhibit a higher level of development than former regional capitals, which in turn exhibit a higher level of development than cities that never possessed such a status. In additional, in 2018 larger cities exhibited a higher level of socio-economic development.

4.4 Analysis of the absolute change in the development measure in the period 2004–2018

Both the Kruskal-Wallis test and analysis of variance indicate that there exists a significant association between the absolute increase in the measure of development over the period 2004–2018 and the status of a city ($p < 0.001$ in both cases).

Comparing these types of city pairwise, the absolute increase in the development measure is significantly higher amongst current capitals than amongst the remaining two groups of city. There is no significant difference between the absolute increase in the development measure between former capitals and cities that never possessed the status of regional capital (student t-test using the Bonferroni-Hochberg procedure for multiple testing).

Spearman's test of correlation indicates that there is a positive correlation between the absolute increase in the development measure and the population of a city ($r = 0.3664$, $p = 0.0027$).

It follows from this analysis that current regional capitals are characterised by a greater increase in socio-economic development in the period 2004–2018 than the remaining cities. These cities were not only more highly developed at the beginning of the period, the absolute gap between the regional capitals and the remaining cities grew over the study period. It should be noted that the absolute increase in the level of development was similar amongst both former regional capitals and cities that never possessed the status of regional capital.

Status of a city	Mean increase	Standard deviation
Current capitals (group I)	0.1322	0.0334
Former capitals (group II)	0.0948	0.0252
Other (group III)	0.0880	0.0179

Tab. 8: Status of a city and the absolute change in the development measure in the period 2004–2018
Source: authors' calculations

Pair	p-value
Current capitals – Former capitals	< 0.001
Current capitals – Other cities	< 0.001
Former capitals – Other	0.3800

Tab. 9: Pairwise comparison of the absolute increase in the development measure between types of city
Source: authors' calculations

4.5 Analysis of the relative change in the development measure in the period 2004–2018

Both the Kruskal-Wallis test and analysis of variance indicate that the relative (percentage) increase in the development measure is associated with the status of a city ($p < 0.001$ in both cases).

The percentage increase in the development measure is greatest amongst the current capitals. Comparing these groups pairwise, the rate of growth in current capitals is significantly greater than amongst the former capitals and close to being significantly greater in comparison with cities that never possessed the status of regional capital. The rate of development in this third group of cities was slightly (but not significantly) greater than amongst the former regional capitals (student t-test using the Bonferroni-Hochberg procedure for multiple testing).

There is a positive, but non-significant, association between the population of a city and the relative increase in the measure of socio-economic development (Spearman's test of correlation, $r = 0.2404$, $p = 0.0537$).

Status of a city	Mean percentage increase	Standard deviation
Current capitals (group I)	38.43	10.04
Former capitals (group II)	30.50	9.852
Other (group III)	32.35	5.401

Tab. 10: Status of a city and relative change in the development measure in the period 2004–2018
Source: authors' calculations

Pair	p-value
Current capitals – Former capitals	0.013
Current capitals – Other cities	0.056
Former capitals – Other	0.478

Tab. 11: Pairwise comparison of the relative increase in the development measure between types of city
Source: authors' calculations

The analyses of the relative changes in the measure of socio-economic development largely confirm the conclusions made based on the absolute changes in this measure. Taken together, these analyses indicate that not only are the absolute differences in the level of socio-economic development between the current regional capitals and the remaining cities growing, but the relative differences are also increasing. The rate of development amongst former capitals and cities that were never regional capitals is comparable (it is marginally higher in the latter group).

4.6 Analysis of changes in population

In addition, the relative changes in the populations of cities (measured at the level of individual cities and not groups) and their association with the measure of socio-economic development were analysed.

4.6.1 Relative changes in population in the period 2004–2018

The Kruskal-Wallis test indicates that there is a significant association between the percentage change in the population of a city and the status of that city ($p = 0.0050$).

Comparing the types of city pairwise, the relative fall in the population of both former regional capitals and cities that never possessed this status is greater than in current

Status of a city	Mean percentage increase	Standard deviation
Current capitals (group I)	0.021	8.141
Former capitals (group II)	– 4.916	3.585
Other (group III)	– 6.412	3.802

Tab. 12: Percentage change in population size and the status of a city
Source: authors' calculations

regional capitals, in which there was no significant change of population size (student t-test using the Bonferroni-Hochberg procedure for multiple testing).

The regional capitals are characterised by larger populations than the remaining two types of city (both in 2004 and in 2018). The latter two types of city are characterised by populations of a similar size. The process of depopulation is observable in both of these types of city.

Pair	p-value
Current capitals – Former capitals	0.0048
Current capitals – Other cities	0.0012
Former capitals – Other	0.3416

Tab. 13: Pairwise comparison of the relative change in population between types of city
Source: authors' calculations

4.6.2 Association between the change in population and the development measure

Spearman's test of correlation indicates that there exists a significant positive correlation between the percentage change in population and

1. The measure of socio-economic development in 2004;
2. The measure of socio-economic development in 2018; and
3. The absolute change in the measure of socio-economic development in the period 2004–2018.

This indicates that the level of socio-economic development is a factor affecting people's decision to move to or remain in a city.

Pair	Spearman's r	p-value
% change in population – development measure in 2004	0.4699	< 0.001
% change in population – development measure in 2018	0.4874	< 0.001
% change in population – absolute change in development measure in the period 2004–2018	0.3304	0.0072

Tab. 14: Association between the change in population and the development measure
Source: authors' calculations

5. Discussion

The analysis has generally confirmed the hypotheses formulated in the introduction, namely that both the level and rate of change of socio-economic development are higher in the regional capitals than in the remaining cities. Not only was the level of socio-economic development greater in the regional capitals when Poland joined the EU, the absolute difference in the level of development has grown since then. It seems reasonable to assume that this process will continue. Hence, we conclude that administrative status is a significant factor in determining the level and speed of development, i.e. the first hypothesis formulated in the introduction has been confirmed.

Moreover, our results indicate that there is a significant positive correlation between the level of socio-economic development in a city and the percentage change in its population. It follows that the regional capitals, which are simultaneously generally the larger cities in Poland and form the core of the regions' development potential, exhibit more positive (or at least, less negative) patterns of demographic change than the remaining cities. The populations of the regional capitals have generally remained stable, while the remaining cities have generally undergone depopulation. This confirms the second hypothesis formulated in the introduction.

The group of cities exhibiting the highest level of development (Class A) are clearly dominated by current regional capitals. The one exception is Krosno, which lost its status as a regional capital in the 1999 reforms. As stated above, this might lead us to conclude that losing this status (as in the case of cities in group II) leads to a significant change in the trajectory of socio-economic development. Our study indicates that cities that lost their status as regional capitals have a lower level of socio-economic development than cities that continued to be regional capitals, and the absolute distance between these groups increased over the study period. It cannot be concluded from this, however, that this loss of status has limited their opportunities for development. In the authors' opinion, the administrative status of a city is of secondary meaning in determining its potential for development when it does not result from the position of the city in the hierarchy of the geographical pattern of settlements. Most cities in Class A play the role of metropolitan areas. According to the polarisation-diffusion model of growth, the hierarchy of cities results mainly from their population sizes. The cities grouping together the main functions for development become regional capitals. Cities whose importance lies at a more local level have lower potential for development, even if they retain the status of regional capital. This seems to be confirmed by the fact that even at the beginning of the study period (2004), the cities that lost their status as regional capitals exhibited a lower level of socio-economic development than cities that retained their status. These were cities that even before the administrative reforms had higher positions in the hierarchy. Cities that lost their status as regional capitals continued to develop at a similar rate to those that never played the role of regional capital. This indicates that the status of regional capital is of secondary importance.

Hence, it seems that the results obtained in this study cannot be explained by one simple theory. In general, the trajectory of socio-economic development results from various social, economic, and technical factors. Instead of looking for a universal set of factors and conditions for socio-economic development, one should use a more hybrid approach. According to Drobniak (2018, p. 24), some cities rapidly adapt to novel situations, while others retain their old structure. One may talk about multiple transformation dynamics resulting from the interaction between institutional, social, economic, and geographic factors. This seems to be confirmed by the set of cities in Class B, in which a mixture of current and former regional capitals can be found. The only current regional capital in Class C is Bydgoszcz (which shares this status with Toruń and is thus lowly ranked in the hierarchy of regional capitals). The members of this class are generally former regional capitals that have a peripheral location with respect to the main centres of development. The lowest ranked cities (Class D) in 2018 are cities that have never played the role of regional capital. With one exception, these cities are part of the Upper Silesian conurbation, which is undergoing a difficult transformation from a coal-based economy. One may argue that this factor is the main determinant of these cities' low position in the ranking.

In summary, the results of this study indicate that at present the largest cities in Poland, which simultaneously play the role of regional capitals, have the best conditions for socio-economic development. For the main part, the effects of the political status of a city result from its naturally high position in the network of socio-economic interactions. This fact should be stressed, particularly when we consider the nature of the decision processes leading to the precise form of the new administrative map of Poland. This was influenced by objective factors, such as the size of a city or its distance from other urban centres. It was also influenced, however, by, for example, prominent politicians, local communities and disagreements between various experts (Kowalczyk, 2000; Miszczuk, 2003; Habuda and Habuda, 2014). On the other hand, the results regarding the effects of a loss of status of being a regional capital are somewhat ambiguous. Hence, our conclusions are more like those made by Łukomska (2011), as well as by Kurniewicz and Swianiewicz (2016), than to Dziemianowicz (2000) and Krysiński (2013), who concluded that former regional capitals then developed at a slower rate due to this loss in status. In the light of our study, the observation that the development of a city has been constrained due to such a loss of status is a subjective feeling, which is not necessarily confirmed by objective socio-economic indicators. Moreover, negative changes in these indicators may result from factors such as geographical location, the size of a city and its economic structure, and not from the results of administrative reform itself. These results are in line with other studies on chosen aspects of urban development (Przybyła and Kachniarz, 2017; Przybyła et al., 2018; Przybyła et al., 2020). For example, studies on the investment activities of cities that retained or lost the status of regional capital (Przybyła et al., 2020; Przybyła, 2022) indicate, for example, that several less developed former regional capitals currently exhibit an above average level of investment activity. This indicates that, apart from the availability of external funds, a well-developed strategy and high-quality administration are also instrumental in promoting development. Making use of the funds and opportunities that are available can lead to the initiation and/or acceleration of development processes, as well as counteracting the effects of previous marginalisation.

6. Conclusions

This study has been based on a model for ranking the socio-economic development of Polish cities based on a set of diagnostic traits using data from 2004 (when Poland joined the EU) and 2018. The measure used is based on a wide range of clearly defined indicators associated with various spheres of socio-economic development, such as the availability of housing, environmental protection, and socio-economic activity. For this reason, it may be argued that this measure is relatively objective.

The results of the study indicate that the level of socio-economic development of Polish cities in 2018 was significantly higher than in 2004. The greatest level of change was observed in cities that retained the status of regional capital, particularly when compared with cities that had lost this status. In 2004, however, the cities that retained the status of regional capital already had a higher level of socio-economic development than those cities that lost this status, which in turn had a higher level of development than other cities (administrative centres at a lower level, poviat). Those cities that retained the status of regional capital continued to develop at a faster rate than other cities. On the other hand, the cities that lost the status of regional capital developed at a comparable rate to the cities that were never regional capitals. Hence, one should not state that the loss of administrative status was the main factor in these changes. The dynamics of change are subject to a range of factors. On the other hand, one may state that the influence of administrative reforms on development processes is visible, but not determinative.

Further investigation indicated a significant positive correlation between the population of a city and the measure of socio-economic development. It follows naturally from this that there exists a positive association between possessing the status of regional capital and socio-economic development. Considering the larger populations of regional capitals, together with the flows of migrants to these cities, it may be concluded that the distance between the regional capitals and other cities will continue to grow.

Socio-economic stagnation does not always automatically follow the loss of status as a regional capital. It is observed more frequently in such cities, however. This conclusion is simultaneously a call to widen and deepen research on the factors affecting the trajectory of socio-economic development in urban centres.

In the light of the heterogeneous pattern of changes observed, further research on the level and dynamics of socio-economic development in Polish cities should not only consider their administrative status, but also consider, for example, the geographical location of cities. A spatial analysis of these changes might be particularly useful in explaining some of the variation seen in our analysis. In conclusion, the authors plan to carry out a cluster analysis, to classify Polish cities according to the variation in underlying factors.

References:

BAE. Y., JOO, Y. M. (2020): The Making of Gangnam: Social Construction and Identity of Urban Place in South Korea. Urban Affairs Review, 56(3): 726–757.

BECKER, S. O., HEBLICH, S., STURM, D. M. (2018): The impact of public employment: Evidence from Bonn. IZA Discussion Paper, 11255.

BENNETT, R. J. (2010): Administrative systems and economic spaces, Regional Studies, 31(3): 323–336.

CAMPBELL, S. (2000): Cold War metropolis: the fall and rebirth of Berlin as a world city. Minneapolis, University of Minnesota Press.

CARROLL, G. R., MEYER, J. W. (1982): Capital cities in the American urban system: The impact of the state expansion. American Journal of Sociology, 88(3): 565–578.

COREY, K. (2004): Relocation of national capitals: Implication for Korea. In: International Symposium on the Capital Relocation (pp. 42–107). Seoul, Seoul Development Institute.

DASCHER, K. (2000): Are politics and geography related?: Evidence from a cross-section of capital cities. Public Choice, 105(3): 373–392.

DE VRIES, M., SOBIS, I. (2018): Trust in local administration: A comparative study between capitals and non-capital cities in Europe. The NISPAcee Journal of Public Administration and Policy, 11(1): 209–228.

DROBNIAK, A. (2018): Hybrydyzacja jako współczesny wzorzec rozwoju polskich miast. Studia Ekonomiczne, 365: 5–29.

DZIEMIANOWICZ, W. (2000): Byłe stolice województw w rok po reformie. Warsaw, Polska Agencja Rozwoju Regionalnego.

FILION, P., REESE, L. A., SANDS, G. (2019): Progressive Economic Development Policies: A Square PED in a Round Hole. Urban Affairs Review, 57(5): 1410–1441.

GENDŹWIŁŁ, A., KURNIEWICZ, A., SWIANIEWICZ, P. (2021): The impact of municipal territorial reforms on the economic performance of local governments. A systematic review of quasi-experimental studies. Space and Polity, 25(1): 37–56.

GŁÓWNY URZĄD STATYSTYCZNY, BANK DANYCH LOKALNYCH: [online]. [cit. 05.06.2021]. Available at: https://bdl.stat.gov.pl/BDL/start

GORDON, A. (2002): Ottawa-Hull and Canberra: Implementation of Capital City Plans. Canadian Journal of Urban Research, 11(2): 179–242.

GORDON, D. (2006): Planning Twentieth Century Capital Cities. London / New York, Routledge.

GUERIN-PACE, F. (1995): Rank-size distribution and the process of urban growth. Urban Studies, 32(3): 551–562.

HABUDA, L., HABUDA, A. (2014): Zasadniczy podział terytorialny państwa. Między racjonalnym wyborem i grą zinstytucjonalizowanych interesów. Wrocławskie Studia Politologiczne, 16: 24–41.

HEFFNER, K. (2011): Funkcje metropolitalne stolic województw Polski Zachodniej, Ekspertyza [online]. [cit. 15.02.2021]. Available at: https://wrot.umww.pl/wp-content/uploads/2015/09/Funkcje-metropolitalne-stolic-wojew%C3%B3dztw-Polski-Zachodniej.pdf

HEIDER, B., ROSENFELD, M. T. W., KAUFFMANN, A. (2018): Does administrative status matter for urban growth? Evidence from present and former county capitals in East Germany. Growth and Change, 49(1): 33–54.

HEŁDAK, M., KURT KONAKOGLU, S. S., KURDOGLU, B. C., GOKSAL, H., PRZYBYŁA, B., KAZAK, J. K. (2021): The Role and Importance of a Footbridge Suspended over a Highway in the Opinion of its Users—Trabzon (Turkey). Land, 10(4): 340.

HOLTMANN, E., KILLISCH, W., STEINHART, A., TULLNER, M. (1998): Die Kreisstadt als Standortfaktor – Auswirkungen der Kreisgebietsreform 1994 in Sachsen-Anhalt. Baden-Baden, Nomos.

KACHNIARZ, M., SZEWRANSKI, S., KAZAK, J. (2019): The Use of European Funds in Polish and Czech Municipalities. A Study of the Lower Silesia Voivodship and Hradec Kralove Region. In: IOP Conference Series: Materials Science and Engineering, 471(11): 112047.

KAUFFMANN, A. (2009): Von der Bezirks- zur Landeshauptstadt: Zum Einfluss der Zuordnung staatlicher Funktionen auf das ostdeutsche Staedtesystem. Wirtschaft im Wandel, 12: 523–532.

KAZAK, J., VAN HOOF, J., SZEWRANSKI, S. (2017): Challenges in the wind turbines location process in Central Europe – The use of spatial decision support systems. Renewable and Sustainable Energy Reviews, 76: 425–433.

KOMOROWSKI, J. (2012): Miasta wojewódzkie a miasta postwojewódzkie w Polsce – zróżnicowanie i zmiany poziomu gospodarczego w pierwszej dekadzie XXI wieku. Studia Miejskie, 8: 9–25.

KOWALCZYK, A. (2000): Reforma podziału terytorialnego Polski w 1999 roku – krytyczna analiza mechanizmu jej wprowadzania. In: Ciok, S., Ilnicki, D. (eds.): Przekształcenia regionalnych struktur funkcjonalno – przestrzennych (pp. 87–100). Wrocław, Uniwersytet Wrocławski.

KRIPPNER, J. (1993): Folgen des Verlusts von verordneter Zentralitat in kleineren Versorgungsorten des landlichen Raums – Eine Bilanz der Kreisgebietsreformen am Beispiel Franken. Bamberg, Bamberger Geographische Schriften-Sonderfolge.

KRUGMAN, P. (1996): Urban concentration: the role of increasing returns and transport costs. International Regional Science Review, 19(1–2): 5–30.

KRYSIŃSKI, D. (2013): Wszystko, co złe, to reforma. O utracie statusu miasta wojewódzkiego w dyskursie kaliszan. Przegląd Socjologiczny, 4: 25–42.

KURNIEWICZ, A., SWIANIEWICZ, P. (2016): Ból fantomowy czy realna strata? Wpływ utraty statusu stolicy województwa na rozwój gospodarczy i miejsce w hierarchii systemu osadniczego. Studies in Geography, 61(2): 25–50.

KURTYKA-MARCAK, I., HEŁDAK, M., PRZYBYŁA, K. (2019): The Actual Demand for the Elimination of Architectural Barriers among Senior Citizens in Poland. International Journal of Environmental Research and Public Health, 16(14): 2601.

LARS-HENDRIK, R., WAVERMAN, L. (2001): Telecommunications infrastructure and economic development: A simultaneous approach. American Economic Review, 91(4): 909–923.

LEA, L. J. C. (2005): Urban administrative restructuring, changing scale relations and local government development in China. Political Geography, 24: 277–297.

LEIGH, N. G., BLAKELY, E. J. (2012): Planning Local Economic Development: Theory and Practice. Los Angeles, SAGE.

LESSMANN, C. (2012): Regional Inequality and Decentralization: An Empirical Analysis. Environment and Planning A: Economy and Space, 44(6): 1363–1388.

ŁUKOMSKA, J. (2011): Byłe stolice województw 10 lat po reformie. In: Dziemianowicz, W., Szlachta, J., Szmigiel-Rawska, K. (eds.): Subregionalne bieguny wzrostu (pp. 59–70). Warsaw, University of Warsaw, Faculty of Geography and Regional Studies.

ŁUKOMSKA, J., SWIANIEWICZ, P. (2019): Is small beautiful? The quasi-experimental analysis of the impact of territorial fragmentation on costs in Polish local governments. Urban Affairs Review, 55(3): 832–855.

MA LAURENCE, J. C. (2005): Urban administrative restructuring, changing scale relations and local economic development in China. Political Geography, 24(4): 477–497.

MARKUSEN, A. (1996): Sticky places in slippery space: a typology of industrial districts. Economic Geography, 72(3): 293–213.

MAYER, H., SAGER, F., KAUFMANN, D., WARLAND, M. (2017): The Political Economy of Capital Cities. New York, Routledge.

MISZCZUK, A. (2003): Regionalizacja administracyjna III Rzeczypospolitej. Koncepcje teoretyczne a rzeczywistość. Lublin, Wydawnictwo UMCS.

MOSKOWITZ, R. L. (2021): Building Public Schools in the City: The Role of Neighborhood Context on Voter Support for School Bonds. Urban Affairs Review, 57(2): 428–459.

PADDISON, R. (1983): The Fragmented State: The Political Geography of Power. Oxford, Basil Blackwell.

POLČSE, M. (2015): The resilient city: On the determinants of successful urban economies. In: Paddison, R., Hutton, T. (eds.): Cities and economic change. Restructuring and dislocation in the global metropolis (pp. 145–162). London, SAGE Publications.

POLČSE, M., DENIS-JACOB, J. (2010): Changes at the top: a cross-country examination over the 20th century of the rise (and fall) in rank of the top cities in national urban hierarchies. Urban Studies, 47(9): 1843–1860.

POMIANEK, I. (2010): Poziom rozwoju społeczno-gospodarczego obszarów wiejskich województwa warmińsko-mazurskiego. Acta Oeconomia, 9(3): 227–239.

POTTS, D. (1985): Capital relocation in Africa: The case of Lilongwe in Malawi. The Geographical Journal, 151(2): 182–196.

PRZYBYŁA, K. (2022): Zróżnicowanie i zmiany poziomu rozwoju społeczno-gospodarczego miast z regionalna funkcją administracyjną w Polsce. Wrocław, University of Environmental and Life Sciences.

PRZYBYŁA, K., KACHNIARZ, M. (2017): The Impact of Administrative Reform on the Central Functions of Larger Polish Cities. Journal of Economic Issues, 51(3): 843–862.

PRZYBYŁA, K., KACHNIARZ, M., HEŁDAK, M. (2018): The Impact of Administrative Reform on Labour Market Transformations in Large Polish Cities. Sustainability, 10(8): 2860.

PRZYBYŁA, K., KACHNIARZ, M., KULCZYK-DYNOWSKA, A., RAMSEY, D. (2019): The impact of changes in administrative status on the tourist functions of cities: a case study from Poland. Economic Research-Ekonomska Istraživanja, 32(1): 578–603.

PRZYBYŁA, K., KACHNIARZ, M., RAMSEY, D. (2020): The investment activity of cities in the context of their administrative status: A case study from Poland. Cities, 97: 102505.

PRZYBYŁA, K., KULCZYK-DYNOWSKA, A., KACHNIARZ, M. (2014): Quality of life in the regional capitals of Poland. Journal of Economic Issues, 48(1): 181–196.

RANDALL, E. (1990): Public infrastructure and regional economic development. Economic Review, QI: 15–27.

ROSSMAN, V. (2017): Capital cities: Varieties and patterns of development and relocation. New York, Routledge.

SCHATZ, E. (2004): What capital cities say about state and nation building. Nationalism and Ethnic Politics, 9(4): 111–140.

SNIESKA, V., ZYKIENE, I. (2015): City Attractiveness for Investment: Characteristics and Underlying Factors. Procedia - Social and Behavioral Sciences, 213: 48–54.

ŚWIĄDER, M., SZEWRAŃSKI, S., KAZAK, J. (2016): The local development index as a tool for the evaluation of socio-spatial inequities. Hradec Economic Days 2016, 3: 197–208. Hradec Králové, University of Hradec Králové.

SWIANIEWICZ, P., ŁUKOMSKA, J. (2004): Władze samorządowe wobec lokalnego rozwoju gospodarczego. Które polityki są skuteczne?. Samorząd Terytorialny, 6: 14–32.

WENDT, J. A. (2007): Wymiar przestrzenny struktur i aktywności społeczeństwa obywatelskiego w Polsce. Warszawa, Prace Geograficzne 208, IGiPZ PAN.

YIGITCANLAR, T., O'CONNOR, K., WESTERMAN, C. (2008): The making of knowledge cities: Melbourne's knowledge-based urban development experience. Cities, 25(2): 63–72.

Please cite this article as:

PRZYBYŁA, K., KACHNIARZ, M., HEŁDAK, M., RAMSEY, D., PRZYBYŁA, B. (2022): The influence of administrative status on the trajectory of socio-economic changes: A case study of Polish cities. Moravian Geographical Reports, 30(3): 179–191. doi: https://doi.org/10.2478/mgr-2022-0012